International Journal of Education and Teaching Research

MARCH 2021 VOLUME 2 NUMBER 1

Publisher: ACADEMIC PUBLISHING HOUSE
Address: Quastisky Building, Road Town, Tortola, British Virgin Islands
UK Postal Code: VG1110

ACADEMIC PUBLISHING HOUSE

CONTENTS

Exploration on the Cultivation Mode of Students' Engineering Practice Ability under the Background of Integration of Production and Education

Pan Wan-Gui, Lin Hai-Bo*, Yang Jian-Xi
Institute of Mechanical & Electrical Technology, Taizhou Vocational & Technical College, Taizhou, Zhejiang 318000, China
*Corresponding Author.

Abstract: By analyzing the current situation of the adjustment of Zhejiang's industrial structure and the new demand for engineering and technical talents, the main problems existing in the process of cultivating the employability of vocational students in Zhejiang Province are drawn, and the effective ways to improve the employability of vocational students are proposed. Through research on the change of practice mode, practice content, and construction of practice platform, we can improve teachers' technical skills and engineer practice skills, and further cultivate the engineering practice ability of technical skills talents. It will try to provide technical skills for Zhejiang manufacturing industry. Engineering service capabilities provide reference and reference for improving the quality of employment in higher vocational colleges.
Keywords: Integration of Production and Education; Path Design; Engineering Practice Ability; Practice Platform; Talent Cultivation

1. INTRODUCTION

With the continuous optimization of the social environment, the social recognition of vocational education continues to increase. In 2014, the National Vocational Education Working Conference was held. General Secretary gave important instructions on accelerating the development of vocational education, emphasizing: Vocational education is an important part of the national education system and human resources development, and it is an important way for young people to open the door to success. It Shouldered the important responsibilities of cultivating diverse talents, passed on technical skills, and promoted employment and entrepreneurship. We must attach great importance to and accelerate development, to adapt to economic development and social progress, higher vocational colleges need to continuously innovate talent training models and school-running models, and cultivate high-quality technical and technical talents for economic transformation.

The Ministry of Education and the Ministry of Finance "Notice on Supporting Higher Vocational Schools to Improve the Development Ability of Professional Service Industries" (Jiaozhicheng [2011] No. 11) requires: higher vocational colleges to strengthen the integration of production and education, school-enterprise cooperation and group education, passed the integration of production and education, school-enterprise cooperation, and group-based schooling enhance the development capabilities of the service industry of higher vocational colleges. It can continuously improve the level of talent training in higher vocational colleges, and create high-quality technical and technical talents for economic and social development. This requires higher vocational colleges to strengthen school-enterprise cooperation with the integration of production and education as the main line.

2. STATUS QUO OF CULTIVATING ENGINEERING PRACTICE ABILITY OF HIGHER VOCATIONAL STUDENTS

At present, the quantity and quality of high-skilled talents cannot meet the needs of enterprise transformation and upgrading. High-quality technical and skilled talents have become an important factor restricting the adjustment of enterprise product structure and industrial transformation and upgrading, directly affecting the core competitiveness and long-term development of enterprises. With the establishment and gradual advancement of the goal of the national innovative talent system, talents are required to have a certain sense of innovation and practical ability while mastering professional knowledge. In recent years, the employment of college students has faced tremendous competitive pressure. When recruiting workers, all units need to have engineering practice experience. Therefore, continuous improvement of practical ability is the key to improving the high-quality employment of college students. However, in actual operation, there are widespread conflicts between "production" and "teaching", and collisions between "work" and "learning", making many school-enterprise cooperation's a mere formality. The skill level of graduates of higher vocational colleges generally cannot meet the needs of society. The school's job requirements and talent training standards are not well connected with the requirements of the company. The content of students' learning at school is inconsistent with the requirements of the jobs they are engaged in. Teachers' teaching goals and students' learning goals are not well aligned; their hands-on skills are poor, and there is a need for a long period of practical exercise after graduation. Even after graduation, the jobs that college students are engaged in are very different from the majors they have learned. There is a contradiction in education that is out of the economy, out of production, self-circulation, and self-service.

In response to the above-mentioned contradictions, a talent training model based on the deep integration of school-enterprise production and education is proposed. The talent training program is designed based on the integration of industry and education, especially the practical link of integration of industry and education, to solve the limitations of students' practical ability and to provide enterprises with Engineering practice talents provide talent support for the transformation and upgrading of enterprises. At the same time, the employment rate of the school will also increase, which can reduce the employment pressure of the school and truly realize the connection of talent training and demand, which has strong practical significance.

3. THE GOAL OF CULTIVATING ENGINEERING PRACTICE ABILITY OF VOCATIONAL STUDENTS

Integrate the integration of industry and education with the professional practice teaching of the colleges and universities, deeply analyze the entry point and integration methods of the integration of industry and education and professional practice teaching, and establish an effect evaluation system, based on the integration of industry and education to improve the design of the practice teaching system in the talent training program , In order to realize the cultivation of engineering practice ability. Starting from the needs of professional positions, according to the needs of the job, determine the requirements of the job for knowledge, ability and quality, design the curriculum content and curriculum system according to the logical relationship of the work task, the high degree of connection between the curriculum and the position, the height of the curriculum content and the professional standard Fusion. Through training, the following problems are mainly solved.

(1) Solve the contradiction between the practical learning in school and the ability demand of the enterprise. The application-oriented training model based on the integration of production and education based on mixed teaching solves the needs of enterprises for the ability to analyze and solve problems outside the school. At the same time, the mixed mode is used to improve the efficiency and practicability of application-oriented talent training. Twice back to the furnace.

(2) In order to promote the reform and innovation of the high-quality talent training model in higher vocational colleges, with the "talent supply and demand" as the link, the goal is to realize the effective connection of the school's high-quality talent training and the enterprise transformation and upgrading talent demand, and realize the reform and innovation of the talent training model. In this way, it promotes the development of related curriculum groups and hardware construction, promotes the construction of teaching teams, promotes the improvement of teaching quality, promotes the "seamless connection" between school talent training and enterprises, and achieves qualitative improvement.

(3) In the practice link, establish three teaching platforms: a subject basic cognition platform, a professional skill practice platform, and an innovative practice comprehensive platform, and a new practice teaching system will be established. Integrate laboratory resources and improve the utilization of practical equipment. Add comprehensive and design practice, so that comprehensive and design practice courses account for more than 90% of the total number of courses. If conditions permit, comprehensive practice courses will be offered or separate courses will be offered. Establish a new practical teaching assessment and evaluation system and operation guarantee mechanism, comprehensively, reasonably and objectively evaluate the learning ability of students, and strictly assess the system. Encourage theoretical teachers to participate in practical teaching, and establish a novel management system.

4. THE MODEL PATH DESIGN OF HIGHER VOCATIONAL ENGINEERING PRACTICE TEACHING BASED ON THE INTEGRATION OF PRODUCTION AND EDUCATION

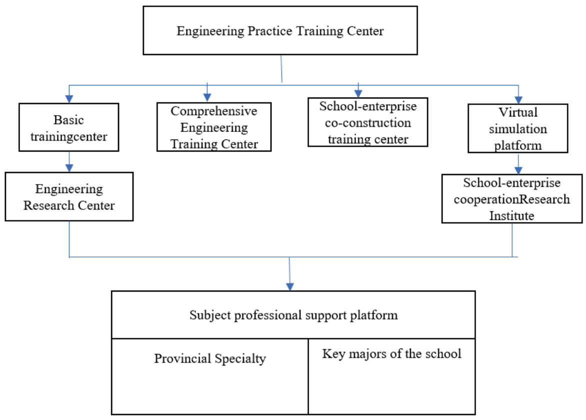


Fig.1. diagram of center practice architecture

Combining the orientation of our school and the characteristics of the college, we will carry out the reform of the engineering practice ability training of college students from the aspects of classroom teaching mode, practice teaching platform construction, experiment, curriculum design, graduation practice, graduation design teaching content, practical teaching and evaluation. From the perspective of the integration of production and education, actively explore the mode and mechanism of higher vocational practice teaching based on the construction of a school-enterprise community of interests.

(1) Based on the integration of production and education, the practical teaching mode is established with the concept of enterprise practicality. Reform the traditional experimental teaching model and establish a new practical teaching model centered on practical education, that is, change from "introduction" to "autonomous" and "interactive"; from teacher teaching to student learning.

(2) Based on the integration of production and education, construct a practical teaching platform with on-the-job practice assignments. Break the boundaries between basic subject courses and professional courses, and build a practical teaching system with clear levels, complete content, strong system, and adaptable talent training requirements based on three platforms (subject basic

cognition platform, professional skills practice platform, innovative practice comprehensive platform).

(3) Based on the integration of production and education, the practical teaching content is reorganized with an innovative platform. Reduce verification and demonstrative practices, increase comprehensive, design and research experiments; focus on the transformation of teachers' scientific research results into comprehensive and design practice teaching links, and incorporate new technologies and new knowledge developed in the discipline into practice. Infiltrate the theories and skills of related disciplines; in order to fully mobilize students' innovative consciousness and improve students' innovative ability.

At the same time, linking their own and other teachers' scientific research results with classroom teaching makes students feel that the scientific research of this industry is very helpful to their future development. It is very meaningful to learn this course and truly feel the importance and practicality of this course. Sex.

Outside of class, the teaching department should often take students to the factory for production and understanding internships, and let the students do internships in the product production department of the factory to let them feel the importance of the knowledge of the courses they have learned.

(4) Reform practical teaching methods with innovative content based on the integration of production and education. Use network technology to develop computer-assisted practical teaching software and multimedia teaching courseware, vigorously promote and use practical technical means such as virtual and simulation, and promote the organic combination of virtual and simulation practice with comprehensive, design, and research practice. On the basis of the relatively independent practical teaching system, construct a relatively independent practical curriculum system, and gradually realize the independent curriculum of basic discipline practice and professional practice; actively promote the opening of laboratories.

(5) Based on the integration of production and education, develop a practical teaching assessment and evaluation system with innovative methods. Establish scientific practical teaching performance evaluation standards, take students' hands-on ability, comprehensive problem analysis ability and innovation ability as the main content of assessment and performance evaluation; establish a complete and independent practical teaching evaluation system.

(6) Based on the integration of production and education, establish an operation guarantee mechanism with innovative requirements. Establish a centralized, open, scientific and standardized practice teaching management model and operating mechanism, maximize the utilization, open rate and management efficiency of the practice teaching center, improve the quality of practice teaching, and give full play to the quality and innovation of practical teaching to students The unique role of “capacity development”.

5. CONCLUDING REMARKS

This article mainly combines the existing problems of the school's engineering practice ability training, and puts forward suggestions and measures on how to cultivate the engineering practice ability. It explored how colleges and universities can deeply integrate with enterprises and balance the relationship between supply and demand, and actively conduct in-depth research and communication with enterprise employers to understand their real needs. Exploring the organic combination of theoretical teaching and practical teaching, and engineering projects are set up according to the standards for new employees of the company. Improve practical teaching links such as in-class practice (training) and curriculum design in professional courses in the design talent training plan. Reform the teaching content of in-class practice (training) and improve the quality of practice (training). Compile the corresponding professional practice (training) course syllabus, instruction book and course standards. Strengthen the implementation of internships, intensive training and graduation thesis (design) in the central practice teaching link, in the hope that the engineering practice ability of students has been greatly improved.

ACKNOWLEDGEMENTS

This work was supported by the staged research results of the teaching reform project of Taizhou Vocational and Technical College in 2018, "Construction of a Professional Practice Teaching System for the Cultivation of Engineering Practice Ability of Higher Vocational Students from the Perspective of the Integration of Production and Education" (document number: Taizhou Vocational College : xyjg20181201), Moderator: Pan Wangui. 2020 Zhejiang Human Resources and Social Security Scientific Research Project (No. 2020067), Host: Lin Haibo; 2019 Taizhou Vocational and Technical College Teaching Reform Research Project "Research and Practice on the Supply-side Reform of Higher Vocational Professional Practice Teaching under the Background of Precision Supply --Take Mechatronics as an example" phased research results, moderator: Lin Haibo. (No. xjg2019006), the phased research results of the Taizhou Educational Science Planning Project "Promoting Innovative Practice Teaching Mode and Policy Research under the Integration of Production and Education" in 2021, (No. TGZ21005), Moderator: Lin Haibo. Taizhou Special Support Plan for High-level Talents (2019).

REFERENCES

[1] Feng Qiming. Strengthen practical teaching and cultivate students' engineering practice and innovation ability[J]. Research on Higher Education, Southwest University of Science and Technology, 2007, 03(No.78): 50-52.

[2] Wang Weixia. Research on the Cultivation Model of Engineering Practice Ability of Chemical Engineering Majors in Higher Vocational Colleges[J]. Guangdong Chemical Industry, 2010, 37(10):193-194.

[3] Liu Yong, Duan Baocai. Thinking on the training of practical ability of engineering higher vocational students[J]. China Vocational and Technical Education, 2010(19):75-76.

[4] Tang Ke, Hong Xin, Zhang Qijian. Thoughts on Cultivating College Students' Engineering Practice Ability[J]. Journal of Science Education, 2014(20).
[5] Tang Ke, Hong Xin. New Thinking on the Cultivation of College Students' Engineering Practice Ability[J]. Journal of Liaoning University of Technology (Social Science Edition), 2015, 17(1).
[6] Wang Xiaohua. Thinking of engineering practice training for engineering majors[J]. Journal of Guangxi University for Nationalities (Natural Science Edition), 2008, 14(3): 106-108.
[7] Fang Xuhua. Thoughts on improving the professional practical ability of college students[J]. Higher Architectural Education, 2014, 23(1): 116-118.
[8] Chen Zhongyi. Countermeasures to improve the practical teaching quality of engineering majors in colleges and universities[J]. Navigational Education Research, 2009, 26(2):75-76.
[9] Zeng Jin, Jiang Li, Yang Xiuzheng. Research and Practice of Teaching Quality Evaluation of Engineering Practice in Colleges and Universities[J]. Higher Education Research, Southwest University of Science and Technology, 2011(2): 54-56.

A Study on Quantitative Economics Postgraduates' Innovation Ability Training Driven by Paper Publication

Hongjun Yuan[1], Ruibing Wu[1], Lingyun Hu[2*]
[1]School of Statistics and Applied Mathematics, Anhui University of Finance and Economics, Bengbu, Anhui, China;
[2]School of Management Science and Engineering, Anhui University of Finance and Economics, Bengbu, Anhui, China
[*]Corresponding Author.

Abstract: Colleges and universities attach great importance to the cultivation of graduate students' innovation ability and academic ability, but due to the distinct objective conditions, there is a certain gap between local universities and well-known key ones. Taking the master's major of Quantitative Economics in a local financial and economic university as an example, from the current situation, incentive policy, effective measures and methods to carry out in-depth research on the cultivation of graduate students' innovative ability, which is driven by the publication of papers, this paper puts forward approaches included subject competition, subject research, curriculum study, social practice, academic forum etc., so as to fully arouse the enthusiasm and creativity of graduate students in writing and publishing academic papers, improving the quantity and quality of academic papers published by postgraduates.
Keywords: Academic paper, Postgraduate student in quantitative economics; Innovation ability; Quantity, Quality

1. INTRODUCTION

Colleges and universities have always play a important role in scientific research and cultivate senior specialized talents, among which graduate education is the highest level of national academic education, showing the core competitiveness of the country.[1-4] In order to improve the quality of talents training and strengthen the innovation ability of graduate students in scientific research, institutions of higher education constantly increase the number of high-quality academic papers published by graduate students through carrying out scientific and technological activities and technological innovation. With the expansion of graduate enrollment scale over the past decade, the number of graduate students in colleges and universities in China has increased greatly. How to cultivate excellent high-level professional talents has also brought great challenges to the graduate management departments and training units of colleges and universities. Graduate student academic papers published is to improve the their academic level and reflect the important of innovation ability.[5] On the one hand, it not only can reflect the graduate students' professional knowledge, but also can reflect their exploring ability to study in the unknown field. More importantly, their research results will draw attention in the field, and lead to better communication with other scholars. On the other hand, publishing academic papers is helpful to employment. In the process of writing and publishing academic papers, students have cultivated their rigorous and pragmatic work style, enhanced their working ability of teamwork and innovation, and helped them stand out from the fierce employment competition and find a satisfying job. At present, China's institutions of higher education have introduced policies and regulations to improve the graduate students' academic level and scientific research ability, strictly required the number of academic papers published during the period of graduate study in school, even in the quality and journal of academic papers published and required academic papers as one of the necessary result for applying for master and doctoral degree, directly linking published papers with degree.[6] In November 2018, the Ministry of Education decided to the problem of overemphasizing the role of thesis, honor, title, awards and qualification in the colleges and universities around the country, [7] but so far there are no objective effective alternative evaluation mechanism, the academic papers published will continuously be the main measure of each level of graduate education in institutions of higher education and basis for a long period.

2.THE CURRENT SITUATION

Anhui University of Finance and Economics(AUFE) is a provincial key university focusing in economics, management science and law. At present, AUFE has 9 first-level master degree disciplines, 36 second-level master degree disciplines and 14 professional master degree programs. The major of quantitative economics is a second-level master of Applied Economics, which is the vice-chairman unit of the Chinese Association of Quantitative Economics and a key discipline at the school level, based on the school-level Institute of Quantitative Economics, we always attach importance to the cultivation quality of postgraduates on the principle of "thick foundation, practical value and high quality".The university clearly stipulates thatthe graduate students of quantitative economics must publish at least one academic paper of their major as the first author or the second author (with the tutor as the first author) in regular journals or above according to AUFE's standard, in addition to the completion of the dissertation. The number of academic papers published as the first author or the second author (with the tutor as the first author) by graduate students who have graduated in the past three years is counted. See

Table 1 for details.

Table 1 Number of academic papers published by graduate students in quantitative economics from 2018 to 2020

Session (number of people)	School designated general journal papers		High-level SCI, CSSCI core journal papers	
	sum	Mean value	sum	Mean value
2018(5)	13	2.60	2	0.40
2019(7)	20	2.86	1	0.14
2020(6)	21	3.50	6	1.00

It can be seen from the data in Table 1 that the total number of academic papers and the number of high-level academic papers published by the recent three graduate students in quantitative economics are not large. Although the number of academic papers published per capita has been increasing year by year, the overall number is still small. Among them, the number of academic papers published in high-level SCI and CSSCI core journals is too small. The total number of postgraduate papers published in 2019 is only 1, and the per capita number is 0.14, the quality of academic papers is generally low.

In order to effectively change the current situation and highlight the characteristics of quantitative economics master program training and improve the scientific research ability of graduate students, we will start to carry out research on the cultivation of innovation ability of quantitative economics graduate students driven by paper publication in the quantitative economics master program from 2018. Taking graduate course teaching as a starting point, each tutor combined with its own research, the teaching method, the content of the course guide graduate students understand the academic frontier in the field of professional, encourage the graduate to discipline competition, social practice and academic forum and conferences, gradually improve quantity economics graduate student's academic papers published quantity and quality of the current situation of the poor. After nearly three years of efforts, the class of 2020 graduate students in per capita have made a large number of academic papers published, with a bigger breakthrough in quality, including the increasing number of high-level CSSCI core periodical publications and the breaking of zero publication in SCI retrieval journals, further improving graduate student's innovation ability and scientific research ability.

3. INCENTIVE POLICY

In order to further strengthen the cultivation of innovative spirit and academic ability of graduate students, promote academic exchanges among graduate students, encourage more outstanding research achievements of graduate students, and improve the quality of graduate training, the school has promulgated a series of relevant policies and regulations, specifically including: *Reward Method for Excellent Scientific Research Achievements of Postgraduates, Administrative Measures for Postgraduate Academic Exchange Funding, Postgraduate Education and Teaching Achievement Award Selection and Reward Measures* (*Trial*)*, Reward Measures for Final Graduate Students Admission to Doctoral Programs, Regulations on Postgraduates' Participation in Academic Activities* (*Revised*), *Classification Catalogue of Academic Periodicals Published by Academic Postgraduates during Studying* (*Revised*). These regulations and policies have greatly stimulated the enthusiasm and creativity of the graduate students to carry out scientific research. Postgraduate students who publish high-level academic papers during their study in school can be rewarded accordingly. The specific recognition criteria are as follows:

(1) For academic papers published in authoritative journals (level 1), the reward will be RMB 30, 000, and for academic papers published in authoritative journals (level 2), the reward will be RMB 20, 000.

(2) For academic papers published in key journals of the university, the reward will be RMB 10, 000 yuan per paper.

(3) For academic papers published in the core journals of the university, each paper will be rewarded with RMB 2000.

(4) To participate in the academic forums organized by ordinary full-time undergraduate universities with graduate schools and win an award-winning papers (the honor given by the institutes are not within the scope of the awards, and the academic forums organized by the association must be co-sponsored by full-time undergraduate universities), the grand prize is RMB2, 000 per article, the first prize RMB1, 000 per article and the second prize RMB500 per article.

At the same time, in order to be more flexible in dealing with the issue of authorship in academic papers, the policy regulations clearly stipulate that if the tutor is the second author, his or her students are the first author, or the student is the second author and his or her tutor is the first author, furthermore, both the tutor and the student are first-named "Anhui University of Finance and Economics", and both the student and the tutor are regarded as the first author in the recognition of scientific research results.

4. EFFECTIVE MEASURES

The number of students enrolled in the Master of Quantitative Economics program is not large each year, even the number of tutors is more than the number of students, resulting in a surplus of tutors. In order to make effective use of the tutors, all the tutors join together to form a tutor group, each new graduate student is codirected by a team of tutors, each of whom has a different field of study and background of knowledge, so that the graduate students have more choices and can get more comprehensive academic guidance. In order to let the tutors and the graduate students have the opportunity of deep exchange and study, the tutors group selects two tutors every week, holds the academic group meeting jointly, and holds the academic discussion face-to-face with the graduate students, on the one hand, we can check and supervise the study of the graduate students every week. On the other hand, we can help the graduate students solve all kinds of academic difficulties by exchanging and discussing with them and sharing their academic experience.

For senior graduate students in quantitative economics, there is a need for substantive guidance in writing and publishing papers, and a fixed supervisor is needed for each graduate student. Graduate students and tutors need two-way selection. Before deciding, both sides can interact with each other through seminars. Graduate students can choose tutors according to their own interests and hobbies, and tutors can be determined according to the actual specialty of graduate students. Once determined, the tutor is the first responsible person for the graduate student, and needs to play a prominent role. The tutor may, according to his/her field of study, to follow and take charge of the whole process of graduate students' literature study, thesis topic selection, writing and revising, and submitting articles for publication, to guide graduate students to participate in the research of Tutor's projects, and to foster graduate students' innovative and academic abilities, urges the graduate student to produce the high-level academic paper during the school period.

The university has issued the *Regulations on the Management Measures for Tutors of Postgraduates* (*Revised*) to further clarify their responsibilities. Tutors are responsible for defining academic direction, carrying out academic research, completing master's degree thesis, undertaking graduate course teaching and academic topic lectures, broadening the academic vision of graduate students. They guide graduate students to study the professional field of domestic and foreign literature, actively participate in academic forums and conferences, so as to publish more scientific research results.

5.METHODS

5.1 Based on the discipline competition

At present, colleges and universities all over the country attach great importance to the subject competition of innovation and entrepreneurship. As a primary-level training unit of postgraduates, focusing on the development strategy of “New Economic Management”, they make full use of the subject competition as an opportunity, we encourage graduate students of quantitative economics to actively participate in such disciplines as the National Post-Graduate Mathematical Contest in Modeling, the National Statistical Modeling Contest, the National Market Survey and Analysis Contest, and the Anhui Service Outsourcing Innovation and Entrepreneurship Competition, cultivating innovative ability and team cooperation ability of postgraduates. In addition, taking the subject contest as the carrier, we strengthen the cultivation and train of post-competition scientific research ability of postgraduates, linking the subject contest questions with the actual problems, taking solving the actual problems as the research orientation. On the basis of combing the literature materials, divergent thinking, refine new academic ideas, carry out post-competition development research, through quantitative methods, software programming and writing, students can collate these into standard academic papers, and have in-depth discussions with instructors and team members, constantly improving the quality of academic papers and actively publishing.

5.2 Based on the subject research

Taking an active part in the research of tutors' topic, students get to know the academic frontier of this field in time. Through literature collation, they peruse the relevant literature monographs and periodical papers with empirical analysis, master the relevant econometric models and quantitative methods, further consolidate professional knowledge, and accumulate experience, gradually master the whole operation process of project's application, writing, management and accomplishment. According to their own interests and hobbies, they can choose practical problems in a certain field, carry out a comprehensive understanding and combing, actively apply for postgraduate research and innovation fund projects, swapping the role from the project participants into the moderator. Due to the accomplishment of the project requiring the academic paper as the stage result, graduate students will spend more time and energy to carry out the research work. With the deepening of the research question, there will be some new ideas, gradually, graduates should timely arrange them into academic papers, to communicate with tutors so as to obtain a more comprehensive understanding, then revising and improving the quality of academic papers for publication.

5.3 Based on course learning

In the first year, a large number of professional courses will be offered to graduate students. During the learning process, teachers should guide graduate students to understand the academic frontiers related to the courses by combining their own research fields. Before the end of the course, the graduate students are required to submit the course work as the basis for grade evaluation. The tutor urges the graduate students not to be perfunctory in dealing with the course work, but to pay great attention to the course work, and to summarize the learning experience seriously, and not to submit some excerpts. Around the course assignments, strengthening the cultivation of graduate student's scientific research ability and training, graduate students need to carefully selected topic, sort documents, find information, process data, improve the model, do the empirical analysis. They also need to write some new ideas into the course assignments, with the help of divergent thinking on the basis of curriculum knowledge, and communicating openly discuss classmate, further improve the academic papers, repeatedly invited lecture teacher puts forward detailed suggestions for modification, continuously improve the quality of academic papers and lead to publication.

5.4 Based on social practice

Postgraduate students are encouraged to take an active part in social practice, experience social work outside the classroom, collect and master first-hand real materials and data, and improve their practical ability, innovation consciousness and teamwork spirit while accumulating work experience. By summing up the relevant papers through social practice, students can well overcome the common problems such as lack of practicability or weak practicability in academic papers, get rid of the shackles of old problems and methods, and take solving practical problems as the research orientation, from the point of view of satisfying people's practical skills and maneuverability, select appropriate research topics and research contents, so that their academic papers written can have strong practical value and applicability, and contribute to solve the realistic problems in social life and let the graduate students realize the value of academic research. With the help of the existing literature, students can improve and perfect the theory and method of the academic paper in time, improve the quality of the academic paper and publish it actively.

5.5 Based on academic forum

Actively trying to go out. Graduate students are encouraged to participate more in academic forums organized by various institutions, to read and explain their academic papers in the forums, and to communicate and exchange more with graduate students of sister schools, peer review of academic papers. At the same time, graduates should carefully study the research achievements of other students in other institutions of higher education, understand their research work, grasp the academic frontiers in this field in time, broaden their own academic horizons, and keep a clear understanding. In combination with their own reality, they will comprehensively untangle their professional knowledge and research topic, update the existing knowledge system, divergent thinking, refine innovative inspiration, and find new findings or new insights on research issues, instead of re-validating other people's work.[8] Through participating in the academic forum, graduates actively establish contact with colleagues in the field, explore problems encountered in academic research at any time, constantly improve the quality of academic papers, and actively contribute to publication.

6.CONCLUSIONS

Postgraduate study is the top stage of higher education, which means graduates should participate more in scientific research and strengthen their innovation ability through the writing and publication of academic papers.[9] As a local higher financial and economic university, it is impossible to blindly copy the practice of well-known key universities in the cultivation of graduate students' innovation ability, but they should make a plan according to the actual situation and the current situation of their own graduate students. Taking the cultivation of master's major in quantitative economics as an example, this paper carry out the research on the cultivation of graduate students' innovative ability driven by the publication of papers, and puts forward such methods as subject competition, subject research, curriculum study, social practice and academic forum, etc., to fully arouse the enthusiasm and creativity of graduate students in writing and publishing papers, to consciously and actively carry out scientific research and exploration in unknown fields, and to enhance the scientific, original and practical nature of academic papers, [10]improving the quantity and quality of academic papers published by postgraduates.

ACKNOWLEDGMENT

This work was supported in part by a grant from Anhui University of Finance and Economics postgraduate education and teaching key research project (cxjhjyzdi1813), Anhui University of Finance and Economics postgraduate demonstration course (Theory and method of economic forecasting), and teaching and research project of Anhui University of Finance and Economics (acjyyb2019021).

REFERENCES

[1] Chen Yameng. Study on the status of postgraduate thesis publication-based on the investigation of six universities in Nanjing. Nanjing Normal University, 2017.

[2] Xiao Tianran. A study on the Relationship between publication and training quality of MEd Education. Huaibei Normal University, 2020.

[3] Zhai Pei. Research on the training mode of finance and economics postgraduate students based on improving their innovation ability-Take Shanxi University of Finance and Economics for Example. Shanxi University of Finance and Economics, 2018.

[4] Zhang Zhihua, Wu Haibo, Liu Yang, and Duan Anan. Analysis and reflection on the present situation of postgraduates' academic papers publication in Southwest Forestry University. Forestry Education in China, 2009, 27(5):50-53.

[5] Wang Qin, and Deng Jianyuan. On the positive effects of publishing paper in postgraduate's academic quality. Journal Beijing University of Chemical Technology (Social Sciences Edition), 2017, 24(3):92-95.

[6] Ye Jihong. Present state, problems and strategies of publication of papers by graduate students and stipulations of student publication. Journal of Graduate Education, 2015, 30(3):44-49.

[7] Cai Jigang. Publication of journal papers and cultivation of academic and professional quality of graduate students. Academic Degrees and Graduate Education, 2020, 37(7):40-45.

[8] Geng Hongwei. Graduate Academic Writing and Publication Strategy. Journal of Ningbo University (Education Science Edition), 2013, 35(1):55-57.

[9] Liu Ruoyong. Research of investigation on the article published of the full-time master's degree graduate students-take A University as a case. MEITAN Higher Education, 2011, 29(5):47-51.

[10] Song Ruhua. On the problems of postgraduate education from the situation of academic papers published. Forestry Education in China, 2009, 27(3):62-64.

No Leading Group Discussion in Case Teaching of Audit Studies under the Epidemic of New Crown Pneumonia

Jian-Ju Du, Pei-Wen Zhu*
School of Accountancy, Anhui University of Finance and Economics, Bengbu 233030, China
*Corresponding Author.

Abstract: Case-based teaching is widely used in the courses of management and management in colleges and universities. It helps students to strengthen their theoretical knowledge and activate their thinking. Therefore, the method of no leading group discussion is introduced in the case teaching of audit, and the in-depth study of cases is realized through situational simulation, so as to improve students' ability to analyze and solve problems, and to cultivate students' ability of language expression, communication and organization and coordination. At the same time, strengthen students' practical ability and lay a good foundation for employment. In particular, under the influence of new crown pneumonia, colleges and universities adopt network teaching method to help the implementation of the discussion without leading group.
Keywords: No Leading Group Discussion; Case Study; Practice

1. CHARACTERISTICS OF AUDIT COURSES AND PRACTICE BOTTLENECKS IN CASE TEACHING

As one of the core courses of accounting and auditing in colleges and universities, auditing is very comprehensive, theoretical and practical, and plays an important role in cultivating high-quality financial management talents needed by the society. Case teaching is a very important part of the training program system of educational talents in colleges and universities in China. With the deepening development of higher education reform, in order to adapt to the economy and train the practical senior talents needed for the development of economic construction, the case form is basically adopted from undergraduate teaching to graduate teaching. The transformation of this teaching mode can not only help students to strengthen professional theory, cultivate the ability to think problems from a professional perspective, but also promote students to change their thinking and combine audit theory with practice.

1.1 CHARACTERISTICS OF THE AUDIT CURRICULUM

As a professional course of economics and management, auditing is very professional, which involves many professional theories and technical terms, which requires students to have a certain knowledge reserve in the process of learning and master it on the basis of understanding. At the same time, too many professional theories involve very abstract concepts, and many domestic audit textbooks are derived from the West. The translated theories are obscure and difficult to understand, resulting in students' understanding difficulties and resistance. Secondly, audit work is the sublimation on the basis of audit theory and the practice of audit theory. Its purpose is to apply it to practice and have strong maneuverability. College students generally lack the experience of audit practice, and their knowledge is limited to books. They lack the most basic understanding of audit workflow, and their practical ability is weak. Thirdly, as a professional course for students of economic management, auditing is very comprehensive and closely related to accounting, financial management, statistics and other disciplines, especially accounting. The audit of the audited unit is based on whether the unit has carried out the correct accounting treatment. It can be said that auditing can not be simply classified as an independent subject. Its application requires a comprehensive consideration of a series of relevant knowledge, and many students can not fully take into account it. Once the knowledge of a subject is weak, It will affect the smooth progress of the whole audit work.

1.2 PRACTICE BOTTLENECK OF CASE TEACHING

In view of the characteristics of audit courses, major universities in China began to introduce case teaching in audit classes, but the current case teaching has encountered bottlenecks in practice:First of all, the ever-changing business market can often lead to a new economic hot spot every few days, audit and accounting related standards and systems continue to change, the publication of teaching books is difficult to keep up with the changes of the times, classic cases can not be "once and for all ", classroom teaching must be forward-looking and divergent;Secondly, many scholars believe that the choice of audit cases is an important part of audit teaching. All kinds of wonderful audit cases should be combined with the theory, which not only requires teachers to have a deep understanding of the case, but also puts forward higher requirements for their own teaching ability. At the same time, the introduction of cases aims to develop students' understanding, judgment and practical ability to solve problems[1][2]Therefore, how to strengthen the classroom management ability to achieve the desired teaching results, teachers need to pay more efforts;Finally, the traditional audit teaching mode is that the teacher says on the platform that the students listen below. This habit of relying on teachers to "cram" knowledge weakens students' ability to think independently. In case teaching, students regard cases as "stories ", do not think deeply, can not combine cases with theory, and can not be applied to practice. Over time, students lose their innovation and classroom effect is not ideal.

Therefore, we want to make case teaching achieve ideal results, so that students can actively participate in teaching activities, strengthen students' subjectivity, active classroom, so that theory can be better combined with practice, we try to introduce "no leading group discussion technology ".

The method of no leading group discussion originated from military application, and was further popularized in enterprise interview and talent selection because of its remarkable effect. "No Leading Group Discussion" was introduced in China in 1980s and has been widely used in human resource management for many years [3][4].

The technology of no leading group discussion is mainly to interview candidates in groups by means of scenario simulation. Because of the high degree of scenario simulation, it can improve the participation of members and make the scope of evaluation more extensive. Help students overcome problems such as difficult opening. Therefore, many teachers have begun to try to introduce this method into practical teaching, especially for the practice of audit courses, the integration of technology and case-based teaching without leading group discussion can improve the teaching effect and teaching quality, but also improve the students' ability to analyze and solve problems, thus promoting the comprehensive quality of language expression, communication and cooperation, leadership organization, etc., which will help students grow and become talented, and promote employment [5].

2. PRACTICAL APPLICATION OF NO LEAD GROUP DISCUSSION TECHNIQUES IN AUDIT CASE TEACHING

In the audit case teaching, the teaching mode of no leading group discussion technology is added, mainly guided by the school talent training program and based on the audit syllabus, the students are divided into 6-8 groups. Through discussion, speech, report, comment and so on, the case analysis class is more vivid and rich, the participation of students is improved, and the teaching mode of "teacher-centered, each student is the object" is formed[6][7].

2.1 LEARNING OF TEORETICAL KNOWLEDGE

Theory is the basis of teaching, practice is based on theory, is the application and sublimation of theory. No matter what method of teaching, we should first explain the theoretical knowledge in detail, the foundation is not firm, to ensure that each student master the central idea and important content of a certain theory, can be applied to specific cases, further analysis, deepening understanding.Audit itself is a comprehensive subject based on professional knowledge, which not only has a strong theoretical and practical nature, but also permeates with other courses of management, which requires students to have a certain reserve of subject knowledge. In addition, auditing focuses on training complex audit talents, requiring students not only to master relevant accounting and auditing professional knowledge, but also to further grasp the relevant legal systems and policies on audit work based on theory. Train the audit thinking of students as soon as possible in order to better serve the reality in the future.Therefore, without theoretical knowledge, even if the introduction of no leading group discussion technology is difficult to make effective communication and discussion in the group at the first time, let alone form a broad and in-depth view of the topic of discussion.

2.2 SELECTION OF APPROPRIATE CASES

A large amount of professional knowledge in auditing is expressed too dull and difficult to understand, and students are prone to conflict in the process of listening and learning. So in the teaching process, the introduction of cases, through the form of cases to connect theory and practice, to help students understand digestion. However, most of the cases selected in the teaching materials of colleges and universities are classic cases abroad, which is slightly different from the audit background and audit practice in China, which is not in line with the social reality of our country and brings difficulties to the teaching work.In order to achieve the purpose of teaching, teachers should select or compile specific cases on the basis of relevant theories. Cases can be presented in the form of text, video, pictures, etc. The content should be mainly classic, supplemented by hot spots, the selected cases should have discussion and research, with appropriate interest. It is necessary not only to be close to theory, but also to reality and life, so that students can have a gradual understanding of the theoretical knowledge and concrete practice of audit, so as to promote the enthusiasm of students to participate in the discussion, stimulate innovative thinking, and increase classroom vitality[8].

2.3 NO LEADING GROUP DISCUSSION

In the traditional audit teaching classroom, the theoretical knowledge is taught by the teacher, and the students' participation is low. This makes it easy for students to habitually accept the teacher's thoughts and views, they do not want to actively think, seemingly understand the content of the teacher, in fact, thinking logic confusion, can not grasp the professional focus, in doing problems and dealing with practical problems appear difficulties.So we introduce the technology of no leading group discussion, let the students become the main body of the classroom, not the passive audience, so that each student can integrate into the classroom, so that everyone has the opportunity to express their views and opinions. The concrete method can be: in the course of audit teaching, the students are divided into multiple groups, the number of students in each group should not be too many 6-8 people, the combination should include students with different personalities, learn from each other. Discussion should be divided into free discussion, statement of views, free debate and summary of statements. There is no standard answer to this process, students can put forward their own views on a certain phenomenon, problems, policies involved, and conduct a comprehensive discussion[9]For example, in a case of audit practice, each student proposes his own solution. The teacher is responsible for encouraging students to speak freely, open their minds, stimulate competition consciousness, turn passivity into initiative, and cultivate independent thinking and logical organization ability.In addition, adding the classroom teaching without leading group discussion method can get rid of the traditional classroom teaching method. In the special period, we can adopt the online teaching method. The specific approach can be: online in advance to publish teaching cases and the core issues discussed in this class, let students prepare in groups, and express their views in the group. The teacher monitors the students' access to a certain problem through the background, and grasps whether the students are completely interactive in real time, which is more helpful to evaluate the teaching effect.

2.4 TEACHING EFFECTS

In order to evaluate the teaching effect after the introduction of non-leading group discussion technology, we selected two students who took audit courses before and after teaching reform as samples. Among them, levels 16 and 17 adopt the traditional audit teaching method, and levels 18 and 19 adopt the audit teaching method after the discussion of no leading group.

First, we collected the list of four class students by hand, and the statistics were 55, 58, 60 and 69 by grade, totaling 242. It can be seen from the number of people that after the introduction of no leading group discussion technology into audit teaching, the number of elective courses has increased significantly, with a very poor of 14.

Secondly, we analyzed the final exam transcripts of the four students. We divided the students into four grades: excellent (≥90), good (76-89), medium (60-75) and failing (<60) according to the score.

Table 1 Student Perfermance Analysis

Level	Excellent	Good	Secondary	Failure	Excellence rate	Failure rate
Level 16	1	10	36	8	1.8%	14.5%
Level 17	3	14	34	7	5.2%	12.1%
Level 18	7	21	27	5	11.7%	8.3%
Level 19	9	33	25	2	13%	2.9%

According to Table 1, draw the following broken line diagram to understand the trend of students' grades more intuitively, which shown as Figure 1.

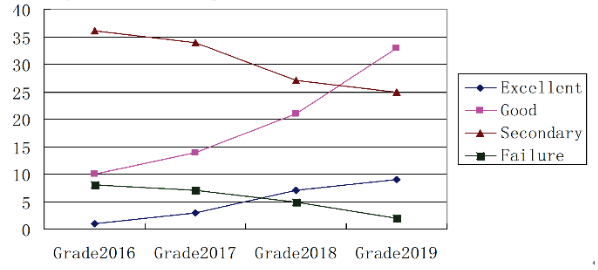


Figure 1 Trends in Grades

According to Table 1 and Figure 1, the excellent ratio of the final examination of the audit class after the introduction of no leading group discussion technology increased significantly, from 1.8% to 13%, and the failure rate decreased significantly, from 14.5% to 2.9%. Moreover, the number of students in good grades increased.

In addition, we collected the attendance rate of the four class students, and the results showed that the attendance rate of the audit class was obviously improved after the introduction of the technology of no leading group discussion. Teaching teachers feedback, after the reform of the teaching model, the students' participation in the classroom has been greatly improved, the interaction between teachers and students is frequent, the phenomenon of students playing mobile phones and reading extracurricular books in the classroom is obviously reduced, and the students' usual homework completion degree is also higher than that of the past.

We also investigated the satisfaction of 18 and 19 students to the new form of audit teaching. A total of 129 students participated in the questionnaire survey and collected 129 valid questionnaires. The results showed that 87.6% of the students were satisfied with the application of the non-leading group discussion in auditing .73.8% of the students said that they could actively interact with the teacher and 71.5% thought that they had been improved.

At the same time, under the influence of the new crown pneumonia, we use the online teaching method for the 20 students who take the elective audit course, combine the non-leading group discussion technology directly with the webcast teaching, share the teaching cases to the students in advance through the online A PP, . After several months of online teaching, students reflect well, offline homework completion is high, online class attendance rate as high as 98. After class feedback said that this teaching method is novel and unique, can maximize the enthusiasm and enthusiasm for learning.

2.5 EXPERT EVALUATION

In order to get more professional comments and opinions, we invited five experts who have made great achievements in auditing to attend the class on the spot, and made a record of the class according to the contents of the class, and discussed and exchanged with the teaching teacher after class. The five experts expressed support for the innovative application of non-leading group discussion technology in auditing, which can fully mobilize the enthusiasm of students in class and enhance students' language expression and logical thinking ability in mutual discussion. It is very important for talent training to enhance students' team consciousness and leadership organization ability.Experts suggest that online communication can be increased, some students who are ashamed to express themselves are more easily released on the Internet, and the functions of online software, such as recording screen, recording and other functions, can help teachers to review in class. In the early stage of teaching mode reform, it plays a great role in summing up new problems and then optimizing teaching methods. In addition, the expert teacher believes that at the end of the course, the teacher should make a general summary of the whole class, not just rely on the students' self-evaluation. The teacher's vision is more long-term and profound than the students, and the opinions on the students' advantages and disadvantages will be more comprehensive. We should make a timely evaluation and summary to help the students to take advantage of their strengths and circumvent their weaknesses.

2.6 SUMMARY

The traditional examination method of auditing is to take the form of examination: the teacher draws the key points, the students recite by themselves, the final period closes the questions by written examination, and finally the teacher marks the examination papers. To evaluate the students' mastery of audit subjects. This kind of examination form is single, rigid, dispels the student to study the enthusiasm and the initiative, also easily produces the resistance mood.After the introduction of no leading group discussion techniques, the final reviewers can be teachers or students. The evaluator does not participate in the previous discussion and is only responsible for observing and recording the performance of each group. In addition, in order to strengthen the grasp of relevant knowledge, non-group members can also ask each other questions and answer a question, put forward their own views, and further explore. While consolidating theoretical knowledge, deepening the understanding of phenomena can better guide practice in the future. Under the influence of the epidemic situation of new crown pneumonia, the teaching mode of no leading group discussion in the online audit course is more acceptable to the students, and it can better supervise the quality of the students' homework and improve the learning efficiency.

3. ISSUES TO BE ADDRESSED BY TECHNOLOGY WITHOUT A LEADING GROUP

3.1 IMPROVING STUDENTS' INITIATIVE

Because of the characteristics of audit course itself, it is decided that the teaching method of audit is mainly concentrated in the classroom. A large amount of theoretical knowledge needs to be paved, teachers need to explain, like engineering major through a large number of experimental operations, improve the quality of teaching. Therefore, audit students usually lack initiative and students' main position is low. Through the introduction of no leading group discussion, students from passive acceptance, to active participation. Stimulate students' sense of competition, let students dare to speak, willing to speak, enhance their subjective will to express their views, encourage students to think actively.

3.2 OBJECTIVITY OF CASE TEACHING EVALUATION SYSTEM

The traditional audit case teaching mainly depends on the teacher's subjective judgment, and the final score results are presented by personal oral summary or analysis report, which lacks objectivity. After joining the leaderless group to discuss the technology, the evaluator can be not only the teacher, but also the student himself. Score on the basis of individual scores, add team scores, make the evaluation more objective.

3.3 ENHANCING PRACTICAL CAPACITY

The purpose of case teaching is to further deepen other professional courses such as auditing by adding cases on the basis of basic theoretical knowledge, and to play a connecting role, rather than blindly stacking theories. After the introduction of no leading group discussion, students' thinking ability of integrating theory with practice can be further cultivated. In learning professional knowledge, but also enhance the practical ability, become a more solid professional ability students.

4. ADVANTAGES OF TECHNOLOGY WITHOUT A LEADING GROUP DISCUSSION

4.1 IT IS BENEFICIAL TO IMPROVE THE TEACHING EFFECT

In the traditional audit teaching method, the classroom takes the teacher as the main body. Many college teachers often just graduated from school and returned to school to teach. Although they have rich theoretical knowledge, they have not experienced audit practice and lack practical experience. This makes them pay more attention to theoretical knowledge in teaching activities, strengthen the image of a certain knowledge point in the way of reciting memory, form a formulaic teaching mode, and ignore the cultivation of students' practical skills. Let the classroom become the stage for teachers to sing monologue. Without leading groups to discuss the application of technology, the old teaching methods have been reversed. Teachers are responsible for guiding and assisting students to become masters of the classroom, which is conducive to improving the teaching effect and improving the teaching quality[10].

4.2 PROVIDING EQUAL OPPORTUNITIES FOR INTERACTION

Before introducing the technology of no leading group discussion, the teacher-student interaction in the audit class is limited to the teacher's question, and the students answer this form. Even so, many students still do not have a sense of participation, often the teacher threw a question, the stage is silent. Unless the teacher calls the roll, he usually does not take the initiative to answer questions. Or the teacher randomly ordered people to answer, the students were not willing to participate, with a perfunctory attitude, no ideas, the interpretation of the problem is not deep enough. Students who really want to join because of various reasons, can not be discussed conditions or opportunities. There is no leading group discussion method, advocating everyone's equal participation, equal discussion, let each student have the opportunity to speak, so as to inspire each other and improve initiative.

4.3 IT IS CONDUCIVE TO THE OVERALL DEVELOPMENT OF STUDENTS

Because each person's character is different, the thought, the behavior way also has the characteristic. In this process, students' ability to master and apply theoretical knowledge is not only exercised, but also strengthened their ability of logical thinking, language expression, teamwork, organization and coordination. So that everyone can see the advantages of others and their own shortcomings, in learning from each other, constantly improve themselves, improve their comprehensive ability, promote the overall development of everyone.

4.4 PROMOTING STUDENT EMPLOYMENT

Nowadays, many colleges and universities have set up audit practice bases, which are designed to help students put theory into practice through a series of audit procedures that replicate entity companies. But at present, many practice bases face the problems of shortage of funds and imperfect facilities, and the effect is not remarkable. But no leading group discussion technology is simple and easy, the cost is low, each big university can introduce, its application in the enterprise personnel selection process is more extensive, its emphasizes and inspects the student's comprehensive ability, At the same time, employers pay attention to the basic ability of college students. Contact with no leading group discussion in study and life, take the lead to help students improve their comprehensive quality, improve competitiveness, but also help students familiarize themselves with the process of no leading group discussion, and provide students with exercise opportunities. In addition, by introducing no leading group discussion, we can further help students understand and absorb professional knowledge, apply theory to practice, and provide valuable experience for students to enter society and carry out practical audit work.

5. OUTSTANDING ACHIEVEMENTS IN THE REFORM OF THE TEACHING MODEL

5.1 SIGNIFICANT IMPROVEMENT IN STUDENT ACHIEVEMENT

The results show that after the educational reform, the scores of students in the subject of auditing have improved significantly on the whole, the number of students with more than 90 points in the examination has increased significantly, the scores of students are generally concentrated in a good range, and the number of secondary and failing students has decreased significantly. Students' enthusiasm for learning has been mobilized, more and more students are interested in auditing after teaching reform, the number of elective courses has increased year by year, the attendance rate of students has been greatly improved, and the quality of learning and the effect of listening to classes have also been significantly improved. In addition, due to the good feedback of students, the requirements for teachers are constantly improving, at the same time, it promotes the cultivation and improvement of teachers' vocational skills, urges teachers to work and arouses teachers' enthusiasm in teaching.

5.2 TEACHER EVALUATION

The introduction of non-leading group discussion technology into audit case teaching is the result of the study discussed by teachers with rich experience in teaching and scientific research. To form a more mature teaching system today. Teachers believe that the reform of the current teaching model has achieved initial results. From the point of view of students' achievements and expert comments, the reform has achieved initial success and laid the foundation for the further completion of colleges and universities from the cultivation of academic talents to the cultivation of practical talents. After the implementation of this teaching model, the students' learning attitude, academic achievement, classroom participation and all aspects of quality have been obviously improved, and the teachers agree that the reform of the teaching model has achieved better results and achieved the expected training goal.

6. DIFFICULTIES IN TECHNICAL IMPLEMENTATION WITHOUT A LEADING GROUP

Although there are many advantages to discussing technology without a leading group, there are difficulties in practice: for example, to determine the topic of discussion, how to find a suitable topic, can be combined with book knowledge, but also can be thought-provoking, stimulate students want to participate in the discussion, make the course more meaningful; moreover, in the process of communication, the members of the same group have different ways of thinking, expression ability, can be very good running-in; when opinions are different, can persuade others to form a unified point of view; when others speak, whether their ideas will be interfered with and so on[11][12]On the one hand, we should pay more attention to hot issues, focus on classic cases, and choose valuable topics for students to discuss. On the other hand, teachers should not act as a bystander when they give the class to their classmates, but rather act as a guide to the students, control the rhythm of the class and maximize the quality of teaching[13][14].

In a word, the reform of teaching mode is the only way to carry out the talent training plan of colleges and universities better. How to improve students' participation and enthusiasm in class, how to improve teaching quality and teaching effect is also the focus of the reform. Combined with the characteristics of case teaching of audit major, combining the discussion technology of no leading group with case teaching can not only arouse students' enthusiasm in class and cultivate their ability of independent thinking. It also helps to train students' ability to solve practical problems, stimulate their innovative thinking and teamwork, and enable them to meet new social life more confidently and actively. Without the guidance of leading group discussion technology, the case teaching courses in colleges and universities are more colorful and provide some reference for other professional courses.

ACKNOWLEDGMENTS

This article belongs to the research result of teaching research project of Anhui University of Finance and Economics in 2019 (No. cxjhjyzdi1907, acjyyb2019013); Anhui University of Finance and Economics 2019" Graduate Education Innovation Program "education and teaching research projectresearch results (cxjhjyzdi1907).

REFERENCES

[1] Gan Yi, Zhu Yuezhen. A Study on the Application of "No Leading Group" Discussion in Curriculum Teaching in. Colleges and Universities Education and Teaching Forum, 2018, (43):188-189.

[2] Wang Anyin, Huang Jun. A Study on the Value of "No Leading Group Discussion" in the Teaching of Major Courses in Administration and Political Science Journal of Xingyi normal University for nationalities, 2019, (3):77-79.

[3] Li Weigang, Jin Xin, Zhang Yu. A Study on Non-lead Group Discussion Teaching Based on Inquiry Teaching

[J]. and Heilongjiang Education (higher Education Research and Evaluation), 2013, (2):12-13.
[4] Liang Qiyin. A Study on "Human Resource Management" Classroom Teaching Based on Experience Teaching [J]. Industry and Technology Forum, 2018, (17):192-193.
[5] Yang Yan, Bao Jian. Application of no-lead group discussion in management [J]. and Vicissitudes of life, 2011, (1):220-221.
[6] Jin Xin, Li Weigang, Shao Huaqing. A Study on Case-based Teaching in Management Courses without Leading Group Discussion [J]. Journal of Heilongjiang Institute of Education, 2013, (5):59-60.
[7] Li Hongbo, Liu Longlong. An Analysis of the Application of Non-leading Group Discussion in the Practical Teaching of Economics and Management Courses [J]. Shaanxi Education, 2016, (3):24.
[8] Ni Zhiping. A Study on the Application of No Leading Group Discussion in the Teaching of Brand Marketing Course [J]. Knowledge economy, 2016, (24):65-66.
[9] Shi Yongfeng, Feng Haizhong, Yuan Fang, et al. A Study on the Application of Non-lead Group Discussion in Classroom Team Teaching in Applied Colleges and Universities [J]. Think tank era 2019, (35):196-197.
[10] Liu Guangchen. A Brief Discussion on Coping Techniques for Unleading Group Discussion [J]. 10 Modern Marketing (Information Edition), 2019, (5):200.
[11] Xu Jiawen. Application Problems and Improvement Strategies of "No Leading Group Discussion "[J]. Rural Economy and Technology, 2017, (21):170-171.
[12] Zhang Lili, Wang Xiaohong. Application of experiential Teaching method in Audit course [J]. Accounting of Township Enterprises in China, 2019, (01):283-284.
[13] Zhang Lili, Tian Mi. Audit Case Teaching Design [J]. New West, 2019, (5):151-152.
[14] Han Yang, Dou Wei. Application of Case Teaching Method in Audit Teaching [J]. Modern Economic Information, 2018, (15):449.

Research and Practice on the Integration of Curriculum Ideology and Politics into Higher Mathematics Teaching

Huang Juhui[1, 2]
[1]Department of Mathematics, Institute of Information Technology of GUET, Guilin, Guangxi, China;
[2]Baise College, School of Mathematics and Statistics, Baise, Guangxi, China

Abstract: Advanced mathematics is a public basic course of university education. The paper mainly takes the teaching of advanced mathematics in the Institute of Information Technology of GUET as an example. It explains how to ingeniously integrate the ideological and political elements of the curriculum into the teaching of advanced mathematics. It combines the knowledge with the outlook on life values leading to an effective combination to realize preaching, teaching, and solving puzzles. Besides, it cultivates students' self-management and self-improvement in daily teaching and life. All in all, it promotes students' development in all ways.
Keywords: Curriculum Ideology; Advanced Mathematics.

1.THE IMPORTANCE INTEGRATING CURRICULUM IDEOLOGY AND POLITICS INTO HIGHER MATHEMATICS TEACHING

General Secretary Xi Jinping said at the National Conference on Ideological and Political Work in Colleges and Universities: It is necessary to integrate the basic principles of being a person, the requirements of socialist core values, and the ideals and responsibilities of achieving national rejuvenation into the teaching of various courses.[1] In the whole process of advanced mathematics classroom teaching, teachers should make full use of the curriculum's ideological, political and moral education functions to improve the content of advanced mathematics.

Curriculum ideological and political practice implements the school-running philosophy of "deployment and cultivating people", which provides a strong guarantee for coping with the challenges of diversified collisions. Besides, it guides students to distinguish the authenticity of various values, ensuring that the work of educating people in universities to shape students' good morals. All the things are the key to transmit the core values of socialism.

The life experience and personal character of many authors in advanced mathematics play a key role in the cultivation of students' moral sentiment and the shaping of will and character. Higher mathematics courses also contain a large number of invisible ideological and political content such as excellent traditional culture and patriotism, which play an inestimable role in guiding students to enhance their interest in learning, imparting cultural knowledge, and improving humanistic quality.

Advanced mathematics is an important support for educating. Teachers should integrate ideological and political factors into the course objectives, course content, and teaching courseware, etc. According to the characteristics of the course content, they should explore the use value, spiritual essence and concepts behind professional knowledge, and discuss the course. Besides, teachers should promote ideological and political work according to classroom teaching and carry out management method theme activities. In classroom teaching, if teachers can fully explore the ideological and political factors in the content of the textbooks, carefully design the planned teaching links, choose infiltration methods, and educate students in politics, ideology and culture, it will help correctly guide students to develop themselves in comprehensive way.

Advanced mathematics is the first mathematics course that the freshman came into contact with in their independent life. Advanced mathematics is the most basic and important course in the university curriculum. If it integrates curriculum ideology and politics into the teaching of higher mathematics, it will guide students to establish correct outlook on life and values, enhance patriotism and cultivate students' positive, optimistic and ambitious character. After completing the ideological and political courses of advanced mathematics, students will have a solid professional foundation. More importantly, under the ideological and political influence of the curriculum, they will become the pillars of the country.

2. HOW TO INTEGRATE THE IDEOLOGICAL AND POLITICAL ELEMENTS OF THE CURRICULUM WITH THE TEACHING OF ADVANCED MATHEMATICS SKILLFULLY

2.1 FROM THE TEACHER LEVEL

2.1.1 TEACHER'S TEACHING DESIGN

Curriculum ideological and political integration of advanced mathematics requires the transformation of teachers' teaching methods. Besides, it requires teachers to work hard on the improvement of teaching design capabilities, including the ability to study students, design and develop courses and textbooks, the teaching and management capabilities of curriculum ideology, and curriculum thinking, political evaluation ability and the ability to reflect and develop.[2]

Curriculum ideological and political integration of advanced mathematics requires the transformation of teachers' teaching methods. Teachers themselves need to strengthen their own mathematical cultural literacy through various channels, methods and methods. Besides, it should strengthen their own mathematical cultural knowledge, and integrate scientific knowledge and humanistic knowledge in mathematics. Teachers can dig out the ideological and political elements in higher mathematics from the source and development of knowledge, the relationship with social life, the values of knowledge connotation, thought, thinking, logic and emotion. If we can reorganize the curriculum ideological and political and advanced mathematics into modules and extend the application, teachers should actively pay attention to moral education resources in higher mathematics teaching activities, focus on the nurturing of students' ideological and moral qualities, strengthen positive guidance, and shape students' soul, conduct and personality. Teachers need to guide students to learn mathematics and apply what they have learned. For example, as the rate of change of a function, the derivative has a very important meaning in the study of the behavior of the function change, so it has been widely used in the fields of natural sciences, engineering technology and social sciences.

2.1.2 TEACHER'S TEACHING METHOD

It is an important exploration to how to thoroughly sort out the teaching content of advanced mathematics, combine the characteristics, thinking methods and values of advanced mathematics, dig deep into the ideological and political elements of the curriculum, and integrate the curriculum teaching organically.[3]

Scientific and reasonable teaching methods are an important guarantee for practicing curriculum ideology in higher mathematics teaching. Teachers should make full use of classroom teaching links, combine advanced mathematics knowledge points to enhance interaction with students in the classroom, develop moral education elements related to this course and enrich the enthusiasm of classroom teaching. Thus, it can make students in a more relaxed and harmonious way that is easy for students to accept to achieve the teaching goals of ideological and political courses. For example, it can use the method of dividing, approximating, summing, and taking the limit to find the volume to introduce the definition of double integral, which enhances students' imagination and creativity, and improves students' logical thinking ability. However, teachers should avoid over-digging the ideological and political elements into the misunderstanding of the curriculum ideological and political elements and exploring more ideological and political factors, so as not to mistake the ideological and political concepts of the curriculum. Some professional course teachers confuse the ideological and political curriculum with the ideological and political courses one-sidedly. They excessively explore the ideological and political elements in advanced mathematics classroom teaching. This will prevent students from learning advanced mathematics as a professional course. It must adhere to the principle of seeking truth from facts, the principle of innovative thinking, the principle of highlighting key points, and the principle of focusing on actual results.[4] The integration of curriculum ideology and politics into the teaching of higher mathematics must follow the teaching rules and highlight the characteristics of higher mathematics courses. Teachers should grasp the proportions, methods and skills of ideological and political content in class. The penetration of ideological and political elements in advanced mathematics knowledge should focus on being close to reality and life. Of course, it must be combined with ideological and political factors. We must adhere to the standards of truth-seeking and pragmatic, the standards of innovative thinking ability, the standards of highlighting themes and the standards of problem orientation. The infiltration of ideological and political factors into advanced mathematics professional knowledge should be close to reality, close to life, and close to students.

2.2 FROM THE STUDENT LEVEL

2.2.1 STUDENTS MUST LEARN TO IMPROVE THEMSELVES

Students must use mathematics websites and science popularization websites. They also must learn how to check related books and publications and other materials, master the mathematical thinking and scientific research methods used by mathematicians, master the transformation of mathematical thinking methods, and stimulate their own interest.[4]

2.2.2 STUDENTS CAN APPLY WHAT HAVE LEARNED AND PRACTICE INNOVATIVELY

Students can use the learned mathematical thinking methods to carry out innovation and entrepreneurial experiments, new projects, student community practice activities and other theme activities. They can test their existing mathematical thinking methods under actual conditions, and shape their own learning thinking ability and teamwork the essence of spirit, the ability to communicate, and creatively deal with specific problems.

2.3 FROM THE SCHOOL LEVEL

The integration of curriculum ideology and politics into higher mathematics teaching cannot be separated from the support of the school. The school can organize research on ideological and political theories, explore the ideological and political elements in the teaching of the major, organize compilations of various relevant cases for ideological compiling, and revise talent training programs.

3.THE CASES OF CURRICULUM IDEOLOGICAL AND POLITICAL INTEGRATION INTO HIGHER MATHEMATICS TEACHING

The integration of curriculum ideology and politics into higher mathematics teaching can deepen their understanding of knowledge, stimulate their desire to learn and have a guiding function for their future.

3.1 GUIDE STUDENTS' LIVES WITH THE CONCEPT OF ADVANCED MATHEMATICS

The choices that one person makes when he is in his twenties will determine his future life and the way he chooses to live. In the first class, the students have just entered the university. Regarding the study and life of the university, they expect that they will be able to learn something at the moment they step out of the school in four years, and develop their own place in the society. The various colorful activities in the university are full of novelty. It is easy to slack off their original intentions and dreams. Some students will indulge in games and waste their studies. As a teacher, you can firstly show the students one of the following topics:

Case 1 When $r_2 > r_1$, how to compare the area of the two circles?

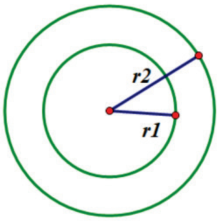


Figure 1. Area of circle

Solution: According to $s = \pi r^2$, we know that because of $r_2 > r_1$, then $s_2 > s_1$.

Analysis: After the teacher finishes this one using elementary school knowledge: the connection between the area and radius of a circle, they can cleverly draw out ideological and political elements.

A person's lifetime achievement is directly proportional to the radius he walks. The larger the radius he draws, the greater the achievement. Teachers guide students who have just entered university and learn to plan their own study and life. That is putting professional knowledge, working hard to learn well, keeping expanding your horizons, going to the library to read and participating in practical activities when you have free space. You should make good use of the short time in university to expand your pattern and knowledge and strive to break through bottleneck. Teachers should encourage students to cultivate their own vision. That is to be persistent in their dreams, live up to the four years of youth in the university and slowly accumulate knowledge and experience growth. As teachers, we must also strive to improve our abilities in all aspects. As a guide, teaching and education is similar to guiding students to climb poles. The teaching level of the teacher determines the height of the students' climbing poles. When the height of the students' climbing poles is different, the scenery of life they see is also different. In the process of teaching, teachers should seriously participate in the development of the discipline integration of ideological and political disciplines. Besides, they should earnestly learn the creation of micro-classes from Mu Class, master computer software such as Geometry Sketchpad, matlab, and make good use of network information resources. With the help of Tencent Classroom, Mu Classroom, Chaoxing and other modern teaching tools, they can establish online and offline education, introduce curriculum ideological and political elements into new knowledge.

3.2 ENHANCE STUDENTS' NATIONAL PRIDE THROUGH KNOWLEDGE OF ADVANCED MATHEMATICS

Case 2 The definition of the limit of a sequence of numbers: $x_1, x_2, x_3, \ldots, x_n, \ldots$, is known, when $n \to \infty$, if the value of its general term x_n is infinitely close to a certain constant A, it is called the limit value of the sequence at that time, denoted as $\lim_{n\to\infty} x_n = A$ or $x_n \to A$ $(n \to \infty)$.

Analysis: The culture of the Chinese nation is extensive and profound. Our country has also made great contributions to mathematics. Zhuangzi, a philosopher in the Spring and Autumn Period and Warring States Period in my country, had a famous saying: "One foot is worth half of the time, and it will last forever." When the teacher tells his classmates about this famous quote of Zhuangzi, he can take the material on the spot, pick up a piece of chalk on the podium and make gestures. It is similar to having a piece of chalk and intercepting the remaining half of it every day. We observe the final trend of the chalk. The students carefully discovered that after the infinite interception, the piece of chalk was close to powder. Finally, we regarded it as 0. So as to we can conclude the definition of the limit of the sequence of numbers. Through living things, it can be displayed visually and vividly. The abstract concepts in higher mathematics are concreted and vivid, and become more accessible and understandable. In the definition of the limit of the sequence of numbers, the ideological and political elements are incorporated into the classroom, so that students can deeply understand the essential idea of the limit: the process of being infinitely is close to a certain constant, while it can enhance the students' national pride and inspire their patriotic feeling.

Case 3 The symbol of the limit of a sequence of numbers $\lim_{n\to\infty} x_n = A$.

Analysis: If it means that we want to win the fight against COVID-19, it means that everyone x_n needs to work hard. Through the teaching of this knowledge point, students can realize that "doing things depends on persistence". In order to realize one's ambition, people should make his perseverance.

Case 4 Definition a quantity with a limit value of 0 is called an infinitesimal quantity: a quantity with a limit value of infinity is called an infinite quantity.

Analysis: It shows the mutual transformation between infinitesimals and infinites. If the infinitesimal quantity means that a certain mathematics test of the students did not do well. The infinite quantity means that the students regain their confidence, improve their learning methods, allocate time more reasonably, and clearly plan what they will do and how to do well each day. However, it will appear in an unexpected time and way. Efforts will not be disappointed. Through this knowledge point, students will learn to believe that whatever they have done is fruitful in life and learning, no matter what difficulties they encounter in the future, the results are divided into what you can see and what you can't see. At present, what is visible is that the difficulties have not been resolved, and that they do not like them. The invisible result is the knowledge and improved ability to deal with in the process of overcoming difficulties. These inner things will be sublimated into your own outstanding character after a long period of time.

Case 5 The Indefinite Integral and the Derivative are the Inverse of Each Other.

The definition of indefinite integral: on the interval I, if $F(x)$ is a primitive function, then all the primitive functions $F(x) + C$ of $f(x)$ are called indefinite integrals $f(x)$on the interval$I$, denoted as$\int f(x)\,dx$. That is$\int f(x)\,dx = F(x) + C$, where$C$is any constant, where $\int$ is the integral number, $f(x)$is the integrand, $f(x)dx$ is the integrand expression, and x is the integral variable. The indefinite integral of the function and the inverse operation of the derivative (or differentiation):

$(\int f(x)dx)' = f(x)$ or $d\int f(x)\,dx = f(x)dx$;

$\int f'(x)dx = f(x) + C$or $\int df(x) = f(x) + C$.

Analysis: Through the knowledge point of indefinite integral and derivative reciprocity, students will find that in many cases what we encounter is not difficult, but they always set a level for themselves. It is easier if we change from another angle makes it easier.

Case 6 Classroom Introduction of Definite Integral Definition Teaching:

(Area of curved side trapezoid) Find the area of a curved $y = f(x) > 0, x = a, x = b$ side trapezoid enclosed by the curve and the axis$x$ (Figure 2).

Analysis: (1) Divide. Use points$x_0, x_1, \ldots, x_{n-1}, x_n$ to divide the interval $[a, b]$ into sub-districts$n$:

In this way, the entire curved-side trapezoid $[x_1, x_2], \ldots, [x_{n-1}, x_n]$ is divided into small blocks$n$. The width $\Delta x_i = x_i - x_{i-1} (i = 1, 2\ldots)$of the first small area (the bottom width of the small block$i$); any point ξ_i in the first small area i, the corresponding function value is$f(\xi_i)$ (approximate height of the small block), then the area of the first small block is approximately $\Delta S_i \approx f(\xi_i)\Delta x_i$. (it is equivalent to finding the approximate value of the small block area), and, the more points and the smaller of Δx_i, the higher the degree of approximation.

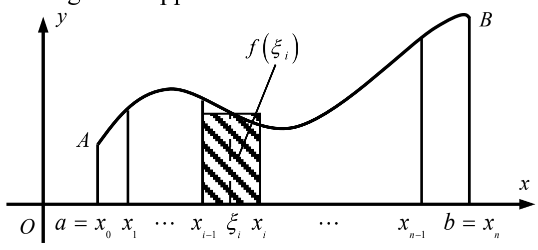


Figure 2.Area of trapezoid with curved edge

(2) Sum. Accumulate the surfaces of each small block to find the approximate value $S \approx \sum_{i=1}^{n} f(\xi_i)\Delta x_i$ of the area of the entire curved trapezoid.

(3) Take the limit. If we use$\lambda = \max_{1 \le i \le n} \{\Delta x_i\}$ to denote the maximum base width in all the small blocks, the area of the trapezoid $S = \lim_{\lambda \to 0} \sum_{i=1}^{n} f(\xi_i)\Delta x_i$ with curved edges is obtained.

Division, summation, and limit are the three basic processes. It is for finding the area of a curved trapezoid. These processes explain: Approximation is a means, and infinite approximation can achieve precise goals. But what must be faced is "divide, sum, and limit". Although the method is solvable, the amount of calculation can be imagined. For the convenience of calculation, we introduce the concept of "definite integral".

In order to study the calculation methods of such limits as $W = \lim_{\lambda \to 0} \sum_{i=1}^{n} F(\xi_i)\Delta x_iandS = \lim_{\lambda \to 0} \sum_{i=1}^{n} f(\xi_i)\Delta x_i$, we give the following definitions according to the above-mentioned method of "divide, sum, and take limits":

Assuming that the function $f(x)$is bounded on$[a, b]$, according to the practice of "dividing, summing, and taking the limit", we get$\lim_{\lambda \to 0} \sum_{i=1}^{n} f(\xi_i)\Delta x_i$.

If this limit exists, then the limit value is called the definite integral of the function$f(x)$ on$[a, b]$. It is denoted as $\int_a^b f(x)\,dx$ .In the formula, $f(x)$ is called the integrand function, $f(x)dx$called the integral expression, x called the integral variable, $[a, b]$ is the integral interval, $a$is the lower limit of the integral, and$b$is the upper limit of the integral.

Analysis: By solving the area of the curved trapezoid to introduce the knowledge point of the definition of definite integral, students learn to do things well in planning, refine each goal, and break it one by one. This is a very good advantage, similar to cutting the target into pieces, putting them together one by one like a puzzle, and finally completing it.

3.3 USE ADVANCED MATHEMATICS KNOWLEDGE TO CULTIVATE STUDENTS' RIGOROUS STYLE OF DOING THINGS AND CULTIVATE THEIR PATRIOTIC FEELINGS

Case 7 Calculation of indefinite integral. $\int f(x)\,dx = F(x) + C$Where$C$ is any constant.

Analysis: Students often forget the additive constant$C$when they are not scoring. As a teacher, you can start from the details and let students form a serious and rigorous scientific attitude. Trivial matters can cause serious losses.

Case 8 The mathematical model consists of various ordinary differential equation models, such as diabetes models, traffic models, economic models, and so on. The ordinary differential equation model reflects the relationship between quantity and quantity in the real world. For example, with the emergence of the new crown epidemic, doctors build corresponding models to effectively predict when the epidemic will have an inflection point, and the confirmed rate of suspected cases per unit time.

Analysis: The application of mathematical models has now been extended to various fields. Taking advantage of mathematical models can be a good job in epidemic prevention control. And it has become an important means of controlling the epidemic of infectious diseases. Mathematics comes from life, and it encourages students to learn mathematics well in peacetime.

4.CONCLUSION

In the ideological and political aspects of the curriculum, it completes the teaching of professional knowledge and the promotion of use value, explicit genetic cultural education and potential cultural education. Besides, it is practical activities exploration and theoretical foundation research. Values correctly guide education and scientific research, and further promote the use of value construction. Teaching of professional knowledge and shaping of working ability are organically combined in one[12]. Colleges and universities should encourage teachers to actively promote, explore innovative teaching methods, increase the diversity of teaching content, and continue to improve the teaching and education role of the ideological and political integration of higher mathematics. As a teacher, we must continuously improve and promote core ideological and political concepts from the perspective of scientific methodology. Ideological and political education is not only the responsibility of ideological and political theory teachers, but also the common job responsibility of all teachers. Teachers' enthusiasm and self-awareness for participating in research projects must be improved.

ACKNOWLEDGEMENTS

2020 Guangxi University Youth Project: Homology Group of Small Cover on Scutoids (Lot Number: 2020KY19011).

REFERENCES

[1] Han Xianzhou. Several Key Issues that Need to be Grasped in Deepening the Construction of "Curriculum Ideological and Political". Journal of Beijing Union University (Humanities and Social Sciences Edition), 2019, 02: 7-12.

[2] "Curriculum Ideological and Political" Teaching Design Compilation Guide-Education Development Center. https://jfzx.hsnc.edu.cn/info/1168/1296.htm - 2019.

[3] Yan Luxin, Tang Minan, Yao Xiangfei, Luo Xiaoyong, Li Mingche, Yang Miao. Research on the Construction of Specialized and Creative Integrated Courses Based on Curriculum Ideological and Political Construction. Journal of Innovation and Entrepreneurship Theory Research and Practice, 2020.

[4] Zhao Fengping. Research on the Construction of a University Culture with the Characteristics of Education Colleges. Journal of Dalian Education University, 2010.

[4] Wang Lingna. The Application of Hierarchical Teaching in the Reform of Higher Mathematics Teaching. Journal of China Science and Education Innovation Guide, 2011.

[5] Gan Zhengjian-. Research on the strategy of integrating information technology into the teaching of mathematics concepts in middle schools. Master's thesis of Guangxi Normal University, 2007.

[6] Li Li Sun Yangyang. A Preliminary Test of the Implementation Effect of "Curriculum Ideology and Politics". Journal of Shaoxing University of Arts and Sciences (Education Edition), 2019, 01: 22-26.

[7] Li Zhansong. A Preliminary Study on the Undergraduate Teaching Design of "Curriculum Ideology and Politics" in Hydraulics. Teaching and Education (Higher Education Forum), 2019, 09:101-103.

[8] Wang Jing. Discussion on the Ideological and Political Construction of the Course "Modern Educational Technology" in Teachers' Training Platform. China Outside School Education, 2018, 35:106-107.

[9] Zhang Quanzhou Di Tianjiao. The Value Meaning and Guiding Strategy of Curriculum Ideology and Politics. Journal of Jinhua Vocational and Technical College, 2019, 01:69-72.

[10] Li Xueping, Ma Faliang. Analysis on the Problems and Countermeasures of the Construction of the "Curriculum Ideological and Political" System in Colleges and Universities. Journal of Inner Mongolia Radio & TV University, 2018, 4:3-3.

[11] Fu Ronglin. Exploration of Ideological and Political Practice Approaches in the Course "College English". Cai Zhi, 2018, 36: 22-22.

[12] Wang Liying, Chen Lierong. "Curriculum Ideological and Political: Knowledge Transmission and Value Leading Each Other".2018.

[13] Liang Liqing, Hu Yuxiang, Tong Mulin, Zhang Congyan. Integrating Ideological and Political Education Into the Teaching of "Water Pumps and Pumping Stations". Shandong Industrial Technology, 2018, 24:253-253.

[14] Li Yiying, Yu Yang. Deepening the Construction of "Curriculum Ideological and Political" and Implementing the Fundamental Task of Lide and Fostering People-Interview with Han Xianzhou, Party Secretary of Beijing Union University. Beijing Education (Higher Education), 2019, 06: 25-28.

[15] Advanced Mathematics, Sixth Edition, Volume One. Beijing: Higher Education Press, 2012.

[16] Advanced Mathematics, Sixth Edition, Volume 2. Beijing: Higher Education Press, 2012.

[17] Mei Qiang. Leading with Dots, Leading with Lines: Exploration and Practice of Two Types of Full-Covering Courses in Colleges and Universities. China University Teaching, 2018, 9:4-4.

The Current Situation and Reform of Engineering Mathematics Teaching in Private Colleges

Liao Xiu
Department of Mathematics, Institute of Information Technology of GUET, 541004, Guilin, Guangxi, China

Abstract: In response to the development needs of mathematics in the professional courses and other fields of engineering students in private colleges and universities, the paper mainly puts forward some teaching reforms and suggestions from three aspects of teaching equipment, student development and evaluation system. It mainly recommends the practice of engineering mathematics teaching, exercise students' thinking ability. Besides, it should help students master a certain knowledge system that adapts to social development.
Keywords: College Engineering Mathematics; Teaching Status; Teaching Reform

1. INTRODUCTION

Mathematics courses such as "Advanced Mathematics", "Linear Algebra", "Probability Theory and Mathematical Statistics" are public compulsory courses for engineering students in colleges and universities. They are important basic subjects in colleges and universities. Mathematics is the basis for students to learn professional courses, and it has a certain influence on the cultivation of students' thinking ability and comprehensive quality. With the rapid development of society and the continuous updating of educational forms, the role of mathematics in real life has undergone revolutionary changes [1-2]. The production of many products is inseparable from mathematics. Mathematics plays a role in natural sciences and society. The role played in the fields of science, engineering and technology and other areas is becoming more and more important. At present, the form of education in colleges and universities has generally changed from "elite education" to "popular education". It is difficult for students trained by the traditional single teaching mode to meet the development needs of talents in the new era. For the development of schools and students, college mathematics teaching needs to keep pace with the times, constantly adapt to the development of the society, and improve the quality of college mathematics teaching through correct changes in teaching methods. Therefore, the reform of teaching methods is necessary.

2. TEACHING EQUIPMENT IS SYNCHRONIZED WITH THE DEVELOPMENT OF MODERN EDUCATION MULTIMEDIA

1.1 SHORTCOMINGS OF TRADITIONAL TEACHING METHODS

The traditional teaching method is generally that the teacher teaches by writing on the blackboard on the stage. Students listen to the lecture under the stage like "instillation". Students have little time for independent thinking and independent learning, and they are more in a state of passively accepting knowledge. In particular, for engineering students, college mathematics is a public course closely related to their majors. Colleges and universities basically adopt large-class teaching. If factors such as weather, blackboard writing, student eyesight and the number of students in class are considered, traditional blackboard teaching has a certain impact on the quality of mathematics classroom teaching. In addition, the class hours of each mathematics course are limited and the teaching content is relatively large. In the teaching process, teachers need to spend a certain amount of time to list the topics for explanation, which reduces the real teaching time. If the time can be used to guide students, it would be better to read, think and analyze. Compared with other courses, there are more classroom notes in mathematics courses. Sometimes it may happen that you are busy taking notes and ignore the following content. The logic of mathematics is strong, and some knowledge points may be left behind, which may directly lead to the failure of subsequent learning. If the school can use a new teaching method to enable students to listen carefully in class and easily add notes after class, this will be very useful for improving the quality of teaching.

1.2 UPDATE TEACHING EQUIPMENT AND IMPROVE TEACHING EFFICIENCY

The mathematics teaching method discussed in the paper is mainly aimed at engineering students. Its teaching method is often different from liberal arts students. Liberal arts mathematics courses are basically a compressed version of science and engineering mathematics courses, which mainly teach a large amount of basic knowledge to students. The teaching time is relatively small. In the teaching of liberal arts mathematics, teachers usually adopt a teaching method that emphasizes conclusions and ignores proofs, emphasizes calculations and ignores reasoning, and emphasizes knowledge and ignores mathematical ideas. In order to cope with the exam, students can only "draw from the gourd", "temporarily hold the Buddha's feet", "rote memorization", and they cannot truly understand and master mathematics knowledge. Mathematics teaching for engineering students in colleges and universities is not only to impart knowledge, but also to cultivate students' mathematical abstract ability, logical reasoning ability, intuitive imagination ability and mathematical operation ability. Facing the various shortcomings of traditional teaching models, it is necessary for teachers to use modern educational multimedia methods in the classroom.

According to the development situation of modern education, teachers can use PPT teaching, but it is not "pure PPT" teaching. At present, the author generally uses "handwriting board + PPT", "blackboard + PPT" and "PDF + ipad" teaching methods in mathematics classes in school. Under this kind of teaching method, teachers can have more time and space to guide students to think and analyze in the classroom, so as to achieve the educational goal of "teacher as the teaching guide and students as the main body of learning". In this way, students only need to take proper notes in class. After class, they can use the classroom PPT saved by the teacher to improve the notes for future review. Mathematics courses are not as interesting as other subjects. The main place of teaching is the classroom. The classroom atmosphere is not only a psychological background, but also a soft environment for teaching. Teachers need to pay attention to the use of classroom teaching methods to improve classroom teaching effects. Through PPT teaching, teachers can better insert mathematics stories and related videos into the classroom. They create a relaxed and pleasant math classroom learning atmosphere, and it can reduce students' fear of learning mathematics, stimulate students' interest in learning mathematics, and improve students' learning efficiency.

2. TEACHING FOCUSES ON THE DEVELOPMENT OF STUDENTS

2.1 DEMAND AND DEVELOPMENT STATUS OF TALENTS IN MODERN SOCIETY

The speed of social development is getting faster and faster, and the requirements for employees are getting higher and higher. In particular, the impact of the new crown epidemic that has continued from 2019 to the present can be seen everywhere in the world. In many parts of our country, in the face of the continued downturn of the overall economic environment, many large companies and small and medium-sized enterprises have to face the situation of layoffs. In addition, the number of postgraduate entrance exams in my country in recent years has continuously set a record high, which means that the number of highly educated students is constantly increasing. Therefore, everyone needs to have certain skills, and only enough outstanding people can better adapt to the society.

2.2 MATHEMATICS TEACHING FOR COLLEGE ENGINEERING STUDENTS SHOULD BE LINKED TO STUDENT DEVELOPMENT

College mathematics is a subject that engineering students must master, and it is one of the necessary knowledge in many aspects of the development of society. In terms of university engineering mathematics teaching, teachers should combine the professional characteristics of the students in the school and the development direction of the students to impart mathematics knowledge. In the teaching process, teachers should pay attention to the cultivation of students' thinking analysis ability and problem-solving ability. It is recommended that the difficulty of the assignment of teachers is hierarchical and creative, so as to increase the confidence of students with poor mathematics foundation and meet the needs of strong learning ability and mathematics knowledge in the classroom. If the teaching conditions permit, colleges and universities can organize students to use extracurricular time to discuss the application of mathematics in the student's professional direction. On the one hand, it can enhance students' interest and purpose in learning mathematics. On the other hand, it can help students integrate mathematics knowledge into the professional direction. In the extracurricular time of the university, there are few opportunities for teachers to meet with students. We have always advocated encouraging students to ask more and solve student questions as much as possible. In order to help students solve math problems quickly and in a timely manner, it is particularly important to arrange online tutoring and answering questions in mathematics courses. In the first class of every class, the class cadres will be required to establish a corresponding class math tutoring QQ group or WeChat group (the author will also in this way). It is convenient for students to ask questions in time when they encounter problems, and it is also convenient for teachers to answer students' questions quickly and in a timely manner. Colleges and universities can carry out mathematics hierarchical teaching[3-5], mathematics elective courses, mathematics improvement classes, mathematics postgraduate remedial classes, etc., according to their own conditions, so that students' mathematical knowledge can be consolidated and improved. In addition, after students have mastered certain mathematical knowledge, they can deepen their understanding and thinking through certain practical applications. The school should appropriately encourage students to participate in relevant competitions and it can give students relevant guidance before the competition, such as college students' math competitions, mathematical modeling competitions and big data competitions, etc. Mathematical modeling[6] uses mathematical symbols and language to describe specific practical problems, mathematically transform it into a mathematical problem, and construct a mathematical model. Through mathematical modeling competitions, students learn to discover problems, build models, solve problems, verify results, solve problems, etc., and learn to use mathematical knowledge to solve practical problems. Of course, the competition also helps students to combine professional knowledge to exercise their data analysis skills. That is the ability to collect and sort data, describe data in mathematical language, and draw conclusions from data analysis. Data analysis ability is a necessary ability for many employed people in society. Many scientific discoveries in society are basically obtained by collecting a large amount of data through experiments, then combing and analyzing the data, obtaining preliminary conclusions, and finally verifying them. Students from colleges and universities must be able to apply what they have learned so as to be more conducive to their own development and to better adapt to the laws of social development.

3. DIVERSITY OF THE FINAL ASSESSMENT SYSTEM

3.1 THE CURRENT END-OF-TERM ASSESSMENT

SYSTEM IN COLLEGES AND UNIVERSITIES

In universities, it is common for students to copy homework. Math homework is no exception. Due to the large number of homework assignments and the large number of people in the entire class, considering the large workload of teachers, schools generally do not require teachers to correct all the homework, but instead use rotating corrections. In the final assessment, the teacher basically conducts a comprehensive assessment based on the students' usual grades and final grades. The usual grades are composed of classroom performance, homework in class, in-class tests, tutoring and answering questions, extracurricular small homework and large homework. Usually grades are generally evaluated by homework and tests. There are a large number of large classes, teachers have limited time and energy. Course hours are limited. Generally speaking, teaching is sometimes difficult to evaluate from classroom performance and Q&A. Many teachers have learned that the homework and test scores of some students who like to sit in the front row to listen carefully and ask questions online after class are not ideal. When correcting homework, one is a carefully completed homework and the other is a copy homework. The former has a grade of B and the latter has a grade of A. We can find that there is a certain degree of unfairness and one-sidedness in the assessment method.

3.2 DIVERSITY OF THE FINAL ASSESSMENT SYSTEM

The current deficiencies in the assessment methods at the end of the term often affect the enthusiasm of some students in learning. In general, a good assessment system is also a way to improve the quality of teaching. Schools can diversify the mathematics final evaluation system, such as: (1) Divide the large class into multiple study groups and conduct group assessments, which will facilitate mutual learning; (2) Reasonably arrange time in class Assessment. That is, students solve problems on the blackboard. Teachers make comments, and record scores; (3) After class, online Q&A will be added to the assessment index, which will save student information. It is convenient for teachers to record and encourages students to be independent after class. Through group assessment, in-class assessment, network-based Q&A and other assessment methods, students can continue to learn mathematics. So that teachers can have a certain understanding of students and make a fairer evaluation, respecting the individual education objects the law of difference.

4. CONCLUSION

College mathematics is boring. How to stimulate students' interest in learning, improve the quality of mathematics teaching, and help students develop in and out of the classroom is the goal of our teachers' teaching. Education is the realization of the sustainable development of people. In the final analysis, school education is the development of students and teachers. Combine the development of teachers with the development of students, and it can continue to explore better college engineering mathematics teaching methods.

REFERENCES

[1] Li Yanyan, Zhang Hong. The Importance of College Mathematics in Life[J]. Mathematics Learning and Research: Teaching Research Edition, 2019, 000(016): 138-138.

[2] Sheng Xiaoling. Analysis on the Application Cases of University Mathematics in Economic Activities[J]. Science and Technology Information: Science Education and Research, 2007(25): 172-173.

[3] Guo Yueling. Discussion on the Hierarchical Teaching of Advanced Mathematics[J]. Education (Weekly), 2016, 000(008): 24.

[4] Peng Liping. On the Teaching of "Advanced Mathematics" for Students in Ordinary Classes in Hierarchical Teaching[J]. Educational Research of Shanghai University of Engineering Science (Phase 3): 36-37.

[5] Zhang Yongfeng. Practical Research on Hierarchical Teaching of Higher Mathematics for Science and Engineering[D]. Northeast Normal University, 2006.

[6] Chen Heping. A Brief Discussion on Mathematical Modeling Teaching and College Mathematics Teaching Method Reform[J]. Mathematics Learning and Research, 2013(5):52.

Research on the Online and Offline Mixed Teaching Model in the "Internet +" Era-Taking the course "Fundamentals of Photography and Video" as an example

Zhu Xinya
Academy of Fine Arts, Zhoukou normal University, 466000 Zhoukou, Henan, China

Abstract: The course "Fundamentals of Photography and Video" is a required course for students majoring in digital media. It has strong practicality and focuses on students' operational ability and aesthetic consciousness. At present, the traditional teaching methods have been unable to meet the needs of students' knowledge, the amount of knowledge cannot be expanded, and the professional level is stagnant. Therefore, in the new era, college teachers should actively innovate the teaching structure, try to introduce mixed teaching methods, accurately use online and offline teaching platforms, collect a large number of course resources, improve the teaching system, create a positive classroom atmosphere, and promote students' independent learning.
Key words: Internet+; Mixed teaching mode; Fundamentals of Photography and Videography

1.THE CONCEPT AND SIGNIFICANCE OF BLENDED TEACHING

At present, the course "Fundamentals of Photography and Video" offered by many colleges and universities mainly cultivates students' aesthetic ability and enriches their spiritual and cultural life. However, the course content is simple and lack of rationality, which leads to the slow improvement of some students' professional level. In order to solve this problem, colleges and universities must strengthen the reform and innovation, integrate course resources, rely on the Internet platform to improve the overall teaching framework, improve the teaching level, help all students to improve the ability of photography and video, so as to meet the vocational market demand. This paper will discuss the analysis in depth, and put forward some pertinent suggestions.

1.1 The concept of blended teaching

Mixed teaching mode is mainly the integration of online and offline teaching methods. It relies on the Internet platform to expand teaching resources, extend classroom teaching content, and teach with modern teaching tools. In the process of classroom teaching, teachers and students can promote the transfer of emotions between the two sides, and the interaction and communication are more frequent. Teachers can fully understand the degree of students' mastery of knowledge points at this stage, so that students' comprehensive ability can be comprehensively improved and the teaching objectives can be achieved. The biggest feature of the mixed teaching mode is networked learning, which gets rid of the limitation of time and space. Students can control the learning time and content by themselves, so as to exercise their knowledge and ability in a targeted way and improve their academic performance. In addition, online and offline mixed teaching also has strong interaction, the construction of a special interactive platform, in line with the characteristics of personalized students; During this period, students can also choose the course chapters independently and learn randomly to improve their interest in learning and obtain good teaching results.

1.2 The significance of mixed teaching

Based on the background of "Internet +", mixed teaching mode has become the mainstream teaching method in various colleges and universities, which changes the traditional teaching structure and plays a positive role in promoting the improvement of teaching quality. From the perspective of information technology, the application of mixed teaching mode can obtain more abundant resources for teaching, enhance the diversity of teaching content, meet the individual needs of different students, constantly expand students' knowledge and vision, create a good classroom atmosphere, form the consciousness of independent thinking, and cultivate the ability of innovation and creation. Secondly, under the mixed teaching system, teachers can conduct comprehensive management of students' learning with the help of the Internet platform, guide students' learning with intent, make up the knowledge gaps and comprehensively understand the knowledge content.

At the same time, with network technology as the central point, the teaching content can be visually presented in the form of video animation, and students can be organized to conduct classroom discussions, attract attention, cultivate cooperation ability, and stimulate innovative thinking. In the loose classroom space, students' subjectivity status is highlighted, and the learning efficiency is also greatly improved. Therefore, the application of mixed teaching mode in course teaching plays an important role in the development of students. Teachers should accurately grasp and utilize, collect rich network resources, lead students in deep learning, build a perfect teaching system and improve their professional ability.

2.ANALYSIS OF THE CURRENT TEACHING SITUATION OF THE COURSE "FUNDAMENTALS OF PHOTOGRAPHY AND VIDEO"

2.1 Teaching the course "Fundamentals of Photography and Videography"

From the data statistics show that most of the colleges and universities teaching of basic course for the photography and camera are around "different camera imaging model, principle, composition, photography categories" and so on, mainly require students to understand the specific knowledge concept, and applied in real life, grasp the complete photography and camera technology, such as photography, film and television play "characters". It belongs to the technical professional system, which contains a wide range of contents. Teachers must assign teaching sections according to students' basic abilities in a planned way, gradually exercise students' knowledge and technology, and achieve teaching objectives.

2.2 Problems existing in the teaching of the course Fundamentals of Photography and Videography

The course "Fundamentals of Photography and Video" belongs to the art system. According to the current teaching situation, the educational conditions of some colleges and universities are not perfect, the basic hardware equipment is not perfect, students can not carry out practical training operation, and the use of cameras is low. Moreover, the lack of high-level professional teachers, teachers are weak, lack of management experience, some teachers can only grope in the teaching, which has a certain impact on students' professional learning. Secondly, photography is systematic and technical, and it is also an artistic way to cultivate sentiment. In some teaching practices, the training content is basically photography and video technology, without paying attention to the training of students' aesthetic ability, teaching objectives deviate. Of course, there are also some teachers to focus on theoretical teaching, practical training content setting less. In short, in classroom teaching, teachers should reasonably allocate, skillfully use the mixed teaching mode, give full play to the value of Internet +, and achieve the most ideal teaching effect.

3. REFORM AND PRACTICE OF BLENDED TEACHING MODE IN THE COURSE"FUNDAMENTALS OF PHOTOGRAPHY AND VIDEO"

3.1Change the teaching idea and enrich the teaching means

"Fundamentals of Photography and Video" is an important course for arts related majors, and it is applied to various cultural industries. According to the market research and analysis, there is a huge demand for imaging professionals at present, and more and higher requirements are put forward for talent training. Therefore, colleges and universities should fit the market trend, build a perfect teaching platform, and effectively cultivate students' professional ability. However, according to the current teaching situation, the teaching methods and concepts of some teachers in the college are relatively backward. Theory is separated from practice, and the interaction and communication with students are low, which cannot improve students' learning enthusiasm. Moreover, the assessment and evaluation method is still based on the shooting of works, which cannot accurately consider the professional level of students and has some drawbacks. In view of this situation, teachers should change the teaching structure, actively use the online + offline mixed teaching mode, expand the teaching content, and effectively improve the technical ability and knowledge level of students.

For example, in the section of "portrait photography", in order to focus students' attention, teachers can rely on the "We Media" platform to create micro-lessons by themselves. Students can watch them through mobile phones or computers. If they encounter problems, they can communicate on the message board to improve learning efficiency. Or, teachers can set up a special "portrait material library", which collects excellent video and picture works on the Internet, as well as some specific shooting skills. Students can imitate and practice, laying a solid foundation for future artistic creation. In order to understand the learning situation of students in class, teachers can use the "SPOC platform" to click random questions, "How many ways are there for portrait composition? How does the shutter work with the sensitivity?" In the problem situation, teachers can find the weakness of students' knowledge points in time, so as to carry out targeted training. After class, the teacher will assign homework characters to shoot a group of special works with the theme of "the elderly and children", and upload them to the "We Media" account. The teacher will check the shooting results of students one by one, and give marks to stimulate students' interest in learning. In this process, students' independent learning ability can be exercised, and their photography skills will also be greatly improved.

3.2 Optimize the teaching structure and improve the teaching effect

"Fundamentals of Photography and Video" has dual nature, theory and practice coexist, and it is a combination of computer and shooting technology. In order to help students master complete knowledge of photography, teachers need to change the traditional teaching methods, construct project-based teaching method, and carry out multi-faceted teaching based on the Internet platform, so as to enable students to acquire rich professional knowledge. At present, most colleges and universities do not have detailed planning and design in the teaching of the course Fundamentals of Photography and Videography. They basically adopt the teaching mode of "theoretical explanation -- arrangement and shooting -- completion", which fails to meet the teaching requirements of integrating theory and reality. Considering that some students have poor basic and aesthetic awareness, and have not received systematic training, and lack of basic shooting equipment. In order to avoid fragmentation of teaching, based on information technology, teachers should use mixed teaching mode, build mobile learning platform, deeply integrate big data, cloud computing and other technologies, build a complete curriculum system, strengthen practical teaching, fully mobilize students' learning enthusiasm, and improve teaching quality.

For example, consider the videotape of marketability is stronger, in order to let all the students deepen the understanding of the filming process, school can hire some one line of photographers to give lectures, take the way of "live" online for supervising professor, specifically to illustrate the basic process of filming, such as the lens design, determine the style and follow-up editors, etc., and answer the student to the photographic camera problem, improve their professional skills. Alternatively, in order to stimulate students' enthusiasm for learning, teachers can create a "web studio" and assign work tasks for students to participate in in small groups, with the theme of "commercial photography", and have students write and create reports and complete photographs. After the submission, the team members will evaluate each other first, and the teacher will comment and point out the shortcomings. For some excellent photography works, the teacher can assist the students to upload them to some platforms for the competition. In order to train students' aesthetic ability, teachers will arrange some picture albums regularly for students to appreciate and express their views, so as to enhance the connotation of their works during the shooting process. The basic course of photography and video shooting does not exist alone. Teachers should also integrate some courses, such as audio-visual language, sub-lens design, PS, AI, etc., to build an integrated teaching structure and effectively improve students' vocational skills and literacy.

4.CONCLUSION

To sum up, the application of mixed teaching method in the course "Fundamentality of Photography and Video" can greatly stimulate students' enthusiasm for learning and improve teaching efficiency. Considering the practicality of photography and video shooting, teachers should set up special practical training courses to create a practical platform to continuously train students' photography and video shooting skills and improve their professional abilities. In addition, teachers should also make use of network technology to improve the structure of curriculum resources and provide students with various types of materials, so as to cultivate talents with high artistic accomplishment and professional level.

Under the current market environment, schools need to deepen reform, innovate teaching ideas and methods, correctly use modern teaching technology, maximize the role of mixed teaching mode, and promote the orderly course teaching.

ACKNOWLEDGEMENTS

Project: This paper is the phased achievement of the construction of the university-level first-class undergraduate course "Fundamentals of Photography and Video" in Zhoukou Normal University in 2020.

REFERENCES

[1] Zhang Lina, Han Zhuqin. Construction and Practice of Blended Learning Mode Based on Cloud Class -- Taking Photography Foundation as an Example [J]. Education Informatization in China · Basic Education, 2020.10.

[2] Jiang Chunhui. Exploration on Innovative Thinking of Teaching Mode of Photography Course under the Construction of "Smart Classroom" [J]. Art education research, 2020 (19).

[3] Zhao Min. Exploration on Online and Offline Mixed Teaching of Digital Photography Technology Course [J]. Chinese Writers and Artists. 2020.10.

On the Application of Translation Theory in Translation Teaching

Chen Jie
School of Foreign Languages, Zhoukou Normal University, Zhoukou, Henan 466001, China

Abstract: With the continuous development of society, the current world is highly integrated and different cultures blend with each other, which not only promotes the rapid development of translation career, but also puts forward new challenges and higher requirements for translation teaching. How to understand and apply many teaching theories to translation teaching practice is a prerequisite for the good development of translation teaching. Correctly using translation theories to guide translation teaching is an important guarantee for the rapid development of translation teaching. This article mainly elaborates the application and guiding significance of translation theories such as functional translation theory, paraphrase translation theory, relevance translation theory, and text translation theory in translation teaching, in order to help and enlighten those engaged in translation teaching.
Keywords: Translation Theory; Translation Teaching; Application

1. FUNCTIONAL TRANSLATION THEORY AND ITS APPLICATION IN TRANSLATION TEACHING

With the continuous progress and development of today's society, the entire world has become closely connected, different cultures penetrate each other, and economic cooperation has become increasingly close. Translation has played a pivotal role in today's economic field, especially for the development of foreign trade economy. This undoubtedly promotes the continuous development of translation career, and puts forward higher requirements and new challenges to translation teaching. Translation teaching is the main way to train translators. The key to the successful development of translation career lies in translation teaching. Translation teaching is guided by translation theories. Translation teaching workers can only improve if they have mastered relevant translation theory knowledge. Grasp the laws of translation well and guide teaching practice based on theory, so as to better improve the level of translation teaching, cultivate qualified translators, and promote the prosperity and development of my country's translation industry. The author analyzes the translation theories commonly used in translation teaching today, expounds the application of functional translation theory, paraphrase translation theory, relevance translation theory, and text translation theory in translation teaching, hoping to inspire translation teachers And help.

As far as the current development of translation education and teaching is concerned, traditional translation theories can no longer meet the needs of current translation teaching, which limits the progress and development of translation teaching in my country to a certain extent. Functional translation theory helps break the shackles of traditional translation theories. It provides a good theoretical basis for translation teaching in our country.

In the 1970s, functional translation theory originated in Germany. It mainly includes text type theory, teleology, and function plus loyalty theory. Functional translation theory is a macro-level translation theory that focuses on text. The type of translation and the function of the translation. The theory believes that translation is a purposeful communicative act, which must consider the needs of readers. Translation is a process of blending between different cultures. Different cultures will show differences in their understanding of the translation. Therefore, translation must pay attention to the function of the translation and the target of the translation, and pay attention to the differences between different cultures and the needs of readers. , And on this basis, the specific form of the translation, the translation strategy and the translation method are selected purposefully. This theory pays attention to the purpose of translation and the function of the translation, combining translation with different cultural backgrounds, breaking the limitations of traditional translation theories, and making translation work more free.

In recent years, functional translation theory has been fully applied to the specific practice of translation teaching, and has promoted the sound development of translation teaching. On the one hand, functional translation theory makes translation teaching break away from the boring mechanical operations of traditional translation teaching on words, phrases and sentences, get rid of the outdated framework of translation teaching, and make translation teaching alive. Traditional translation teaching is mostly word-by-word and sentence-by-sentence translation. After the translation is completed, the standard translation is compared, so that the translation result is limited to a so-called standard limited range, and the quality of the translation depends to a large extent. Translators' ability to master the language and their own cultural background. Most students make many subjective errors due to their own cultural accumulation and lack of translation skills, which greatly compromises the quality of the translation. This traditional translation teaching ignores the translation process. The cultural differences and the function of the translation restrict translation within one frame, which makes it difficult to promote the development of translation teaching. On the other hand, functional translation theory enables students to conduct systematic research on translation problems, helping students to understand the problem and actively find ways to solve the problem. Functional translation theory emphasizes that translation must first start from a pragmatic level, first determine the purpose of translation and the function of the target text, and then make appropriate adjustments according to the content of the original text and the specific needs of the target readers. Different translation strategies are used for different problems. And method. Different contexts have different requirements for the translated text. This requires the translator to infer the function and purpose of the translation from the context of the translation. Therefore, the functional translation theory enables students to exercise and improve their functional awareness. Different translation practices are carried out in the communicative context to meet different translation functions.

2. PARAPHRASE TRANSLATION THEORY AND ITS APPLICATION IN TRANSLATION TEACHING

The paraphrase school has again become the "idea theory". It was born in France in the late 1960s. The theory believes that translation is paraphrase. It is mainly based on the translator's specific language symbols and their own cognitive level to supplement the specifics of the original text. An interpretation of meaning emphasizes the equivalence with the original meaning and effect, rather than the pursuit of equivalence with language units. Interpretation theory not only pays attention to the language problem itself, but also puts more emphasis on the position and role of the translator in the entire translation process, focusing on the translator's translation thinking process. The process of translating the original text by the translator is actually from the repeated process of "language-thinking" and then from "thinking-language", continuously analyzing and combing the original text, and finding out the corresponding translation language to complete the translation. Convey the meaning of the original text. If the translation does not analyze the language itself, there will be no research object, but if the thinking process of translation is ignored, the essence of translation is not grasped. Therefore, the translation must pay attention to the entire thinking process of the translator.

Paraphrase theory has a great influence on my country's translation theory and specific translation practice, and it is also of great significance to my country's translation teaching. The application of paraphrase theory in translation teaching has promoted the progress and development of translation teaching in my country. First of all, paraphrase translation theory enables students to use language symbols and their own cognition as supplements to explain the meaning of the original text. The paraphrase translation theory believes that the understanding of the original text should include the understanding and understanding of the information to be expressed in the entire article, the author's original intention, and the thoughts and emotions. Applying paraphrase translation theory to the specific practice of translation teaching can guide students to fully understand the structural meaning of the entire article, properly grasp the author’s original intention and the thoughts and emotions to be expressed, thereby enhancing students’ cognitive ability of language signs and enhancing Self-cognition supplements the ability to comprehend the original text. Secondly, the use of paraphrase translation theory can break the students' thinking stereotypes in translation, and guide students not to focus too much on just a few words, and not to regard the sentence as a patchwork and combination of individual words or phrases, thereby ignoring the original meaning of the sentence And connotation. Translation should grasp the intention and emotional expression of the original author as a whole, start with the text or sentence, and fully grasp the inner meaning of the language, rather than mechanically split the sentence into scattered words or phrases. Finally, paraphrase theory can help train students' procedural translation thinking. According to the procedures of paraphrase theory translation, students’ procedural translation thinking can be trained in translation teaching. The main steps are as follows: First, read the original text and understand its meaning. To consciously explain the meaning of the original text based on the situation and the situation, the second is to find the corresponding material from the target language of the translation, and the third is to translate the original text according to the behavioral habits of the target language to obtain the translation.

3. RELEVANCE TRANSLATION THEORY AND ITS APPLICATION IN TRANSLATION TEACHING

Relevance translation theory is developed on the basis of relevant principles of pragmatics and relevance theory. This theory is a translation theory system formed by combining relevance theory and translation. It believes that the process of translating the original text is to interpret the original text. The communicative process mainly includes the two aspects of clarification and reasoning. That is, the translator, based on the information expressed in the original text and the original author’s writing intention, combined with his own cultural knowledge, thinks about the original text from the reader’s point of view and makes the best of the original text. Relevance: Based on their own understanding of the original text, the translator connects the original with his own knowledge through logical thinking, and obtains the knowledge connection through reasoning, so as to convey the original information and the original author’s thoughts and writing intentions to the target readers. From the perspective of relevance translation theory, translation is not only the mutual conversion between different languages, but also a dynamic reasoning process involving the author, translator and reader, so that the translation and the reader of the translation can reach the most appropriate Relevance, which is a key factor in the success of translation.

Relevance translation theory is a new exposition of translation from a cognitive perspective. Appropriate use of relevance translation theory in translation teaching will undoubtedly contribute to the great progress and development of translation teaching in our country. According to the relevance translation theory, the first step for translation is that the translator must fully understand the meaning of the original text, as well as the author's thoughts, feelings and writing intentions. In the process of translation teaching, teachers should emphasize the understanding and analysis of the entire article, instead of translating too many sentence patterns or phrases. They should reason about the intention of the text based on different cultural backgrounds, and clarify the author's Writing intent. Relevant translation theory believes that the second step of translation is the translator's appropriate understanding of the meaning of the original text, so that the reader of the translation will resonate with the original author. Therefore, teachers should also pay attention to cultivating students' comprehensive cultural knowledge and help in the process of translation. From the perspective of cultural background, students realize the best connection between the translation and the meaning of the original text.

4. DISCOURSE TRANSLATION THEORY AND ITS APPLICATION IN TRANSLATION TEACHING

Discourse translation theory is a translation theory with text as the translation unit. Its main basic idea is to raise the translation unit from phrase and sentence to text. Discourse has a communicative function in a certain context and depends on the text type of the original text. It chooses different translation strategies and methods for its communicative function. However, most traditional translation theories use phrases or sentences as the translation unit. Too much attention is paid to the translation skills of words and sentences while ignoring the textuality of the article, resulting in improper interpretation of the original intention, which leads to the failure of the target readers to obtain The most appropriate original information.

In the process of translation teaching, text translation theory is used to more accurately guide students to grasp the textuality of the text and properly understand the thoughts, emotions and writing intentions of the original text. Discourse translation theory emphasizes that the translator must fully understand the content of the original text, accurately grasp the structure and style of the text, carefully savor the intentions and emotions of the original text author, and pay attention to the coherence of thinking between paragraphs and sentences, so as to take it as a whole Grasp the level and meaning of the article. In traditional translation teaching, teachers usually guide students to translate from the grammatical level, and the translation problem is attributed to weak grammar, which makes students pay too much attention to grammar and ignore the text, which is not conducive to the cultivation of students' translation ability. Discourse translation theory helps guide teachers to break away from the traditional translation teaching mode, no longer emphasize too much on phrases or sentences, but start from the overall text of the article, select training materials of different styles and styles, and cultivate students' Discourse analysis ability strengthens students' learning of different cultures, so that students can fully understand the content of the original text and the true emotions and writing intentions expressed by the author based on the cultural background, and convey the most appropriate original information to the target readers.

REFERENCES

[1] Xie Yanhong. Application of Functional Translation Theory in College English Translation Teaching [J]. Journal of Luoyang Normal University, 2010, 04:144-146.
[2] Ma Yueyue. Relevance translation theory and its application in translation teaching [J]. Xueyuan, 2013, 27:66.
[3] Jiang Yong. The role of translation theory in translation teaching [J]. Journal of Kaifeng Institute of Education, 2014, 11:40-41.
[4] Zhong Yunxia. The Application of Interpretation Theory in College English Translation Teaching [J]. Journal of Hainan Radio and TV University, 2014, 04:143-146.
[5] Ren Huifang. The Application of Discourse Translation Theory in Translation Teaching[J]. Reading and Writing (Journal of Education and Teaching), 2014, 12:25-26.
[6] Wan Ma Duojie. On the application of translation theory in translation teaching [J]. Young Literary Artist, 2011, 07:49.
[7] Wang Xueling. Application of Discourse Analysis Theory in Translation Teaching[J]. Journal of Xinxiang University, 2014, 03: 28-30.
[8] Liu Dongli. Translation teaching and the application of teaching translation in college English teaching [J]. Journal of Chifeng University (Chinese Philosophy and Social Sciences Edition), 2010, 11:151-152.
[9] Gao Mei. Research on the Application of Interpretation Theory in College English Translation Teaching [J]. Times Literature (second half of the month), 2015, 05: 62-63.
[10] Zhang Wei. On the application strategy of translation theory in practical teaching [J]. Modern Enterprise Education, 2012, 07:88.
[11] Cheng Jiajia. Relevance Theory Translation View and Translation Teaching [J]. Journal of Changchun Normal University, 2015, 03: 186-187.

The Strategy and Path of Cultivating College Students' View of Health and Happiness Are Briefly Discussed

Sun Jingche
School of political Science and Law, Zhoukou normal University, 466000 Zhoukou, Henan, China

Abstract: College students, as the pillar of the country, their happiness outlook has a great impact on life. The concept of happiness is closely related to the study, work and life of college students, which restricts their own development requirements. Therefore, it is particularly important to improve college students' view of happiness. This paper will briefly discuss five aspects, such as school guidance, social shaping and family influence.
Key words: New Period; College Students; Happiness

I. STRONG STATE GUARANTEE

In the new era, college students' pursuit of happiness is an important embodiment of their overall personal development. It affects all aspects of their study, work and life, restricts their own development requirements, and guides their future development direction. Therefore, it is necessary to exert the correct influence of happiness concept on college students in the new era, eliminate some wrong ideas, and constantly improve the level of happiness concept of college students.

①The state should strengthen the role of supervision and management

The state should continue to improve laws, govern the country in accordance with the law and the Constitution, and provide institutional guarantees for cracking down on illegal and criminal acts. Organs of state power should supervise and manage the exercise of power to prevent the absence and abuse of power. The belief and advocacy of fairness and justice are conducive to the increase of college students' sense of happiness and the formation of a scientific view of happiness.

② Relevant departments should pay attention to the surrounding environment of the school

Students' safety should be guaranteed and extra attention should be paid to the surroundings of the school. The places where minors are forbidden to enter should also be supervised to prevent students from breaking the law and committing crimes. In a safe environment, college students are more likely to achieve happiness. The prevention of students' criminal behavior is also helpful to help students establish a scientific view of happiness.

③ The government creates opportunities for college students to find jobs and start their own businesses

"Government management departments should establish a sound supervision mechanism and make the selection process truly transparent and open." [1]The government should provide a fair and just employment environment for college students, encourage and offer preferential conditions for college students to start their own businesses, and provide employment and entrepreneurship guidance for college students from poor families. More and more college students succeed in employment and entrepreneurship, which will increase the happiness of more people.

2. The School To Strengthen Guidance

① Build a team of teachers

Teachers' thoughts will indirectly affect students' thoughts, so teachers' views on happiness will affect the establishment of students' views on happiness. This requires the teacher in class to carry on the concept of happiness education, the concept of happiness education and students' books linked to analyze the nature of happiness. In the classroom should also take a variety of ways, from the perspective of society and students to set up the view of happiness, so that students continue to create happiness.

② Carry out social practice

Schools should hold more survey activities and volunteer activities, which can be interesting to students or meaningful activities outside the school. In addition to off-campus activities, schools can also carry out some on-campus activities, such as some debate contests, speech contests and short plays about happiness. The forms can be diversified, but we must grasp the core and essence.

③Care about students' psychology

After college, students need to solve a lot of problems independently, some students feel restless, serious psychological problems. Both heavy academic work and difficult employment will weaken students' happiness. Therefore, schools should set up psychological counseling rooms, or online counseling rooms, or anonymous mailboxes, which can not only solve the waste of resources, but also eliminate the embarrassment and embarrassment of students.

3. SOCIAL ENVIRONMENT SHAPING

①Create a favorable social environment

In the present society, some bad phenomena such as corruption, mutual support between officials and backdoor have caused a shock to college students' hearts. Some official second generation and rich second generation use the power and money to achieve their own goals, so that many unfair phenomena appear in the society, so that some college students' view of happiness has become distorted. Therefore, we need to increase the fairness and transparency of employment and make the social environment fairer and more just under the supervision of the people.

②Pay attention to the guiding role of public opinion

Public opinion has played an important role in people's lives, television, radio, newspapers, magazines and other positive people and positive deeds of publicity to promote the students to establish a correct view of happiness. In the news and on the Internet to increase the propaganda of positive energy, promote the socialist core value system, so that college students love the motherland, love the society and love the people. The cultural industry should be vigorously developed to provide places for students to learn about culture, such as more open libraries and museums, free of charge in red scenic spots, so that college students can feel the charm of culture.

③Build a healthy network environment

With the popularity of the Internet, the relationship between people and the Internet is getting closer and closer. College students spend more and more time on the Internet, and various negative and corrupt ideas are also spread through the Internet. Therefore, society should strive to build a positive, healthy and green network environment to release positive energy. Therefore, platforms should filter out bad information and prohibit vulgar, backward and negative information from spreading online. Propagate positive energy information actively, enhance students' happiness, so that students form a correct view of happiness.

4. CORRECT FAMILY GUIDANCE

① Create a good family atmosphere

"The family atmosphere is a special atmosphere that envelops the family. It is made up of the mentality of the family members. Conversely, the family atmosphere will also have an impact on the family members. [2] There is definitely a difference in character between a college student in a relaxed and cheerful home atmosphere and one in a depressing and gloomy home atmosphere. The children brought out by parents with good morals are mostly polite, while the children brought out by parents with bad morals are mostly bad in words and deeds. Therefore, parents should improve their own cultural quality and moral character, play a role of example, so that college students to establish a correct view of happiness.

②Friendly cooperation between parents and school

Parents should also keep in close contact with schools and teachers to understand the development of college students at all stages. In view of the different problems of college students, according to the specific situation, try to adopt a gentle way to solve, do not hurt the self-esteem of college students. Whether at school or at home, students should be able to feel a harmonious atmosphere to create conditions for the cultivation of a correct view of happiness.

③ Parents should love their children correctly

Parents' love for their children is selfless, but children should not regard this selflessness as free. Parents should let their children learn to be grateful, grateful to the people who help them. And let them learn to help others, love is mutual, so that more and more people love each other, there will be more people to get happiness.

5.PERSONAL QUALITY IMPROVEMENT

①Integrate material with spiritual

Material is the basis of happiness, and spirit is conducive to us to obtain more long-term happiness, so we should unify the two, and improve our spiritual realm on the basis of material life. In the contemporary society, the productive forces have been greatly developed, many students have had good living and learning conditions, material life has been satisfied. On this basis, college students should constantly improve themselves, actively participate in all kinds of social practice activities, enrich their spiritual world.

②Unification of individual and society

The interests of the individual and the interests of society are not mutually exclusive. College students should not only attach importance to personal interests, but also to social interests, which requires us to make contributions to the society. As the future of the country and the new generation of social successors, college students should take serving the motherland as their own duty, constantly improve their ability, and promote the unity of personal interests and social interests.

③Improve your self-cultivation

A person's self-cultivation determines the quality of his happiness. Therefore, college students should strengthen self-cultivation to obtain a higher quality of happiness. College students can broaden their horizon and gain a deep understanding of happiness through extensive reading. In the acquisition of book knowledge at the same time, but also constantly exercise their own, improve the ability to create, toward a happy life.

④Learn about great culture

For the traditional culture with a long history in China, college students should absorb the part rich in the value of The Times, and eliminate or improve the backward culture. College students should not reject the advanced western culture, but should keep pace with The Times and combine the Chinese and western cultures for our own use. Only to improve the cultural level of college students can help them form a scientific view of happiness, so as to gain their own happiness.

College students are the hope of the future society. Exploring college students' view of happiness plays a decisive role in their development and the direction of social development. A person's view of happiness is related to his or her life situation and perception of happiness. Survival needs are indispensable to individual survival, which is the basic premise of happiness. However, in order to achieve true eternal happiness, we can only unify self-value and social value, and actively contribute to the society and help others in the realization of self-value and pursuit of happiness.

REFERENCES

[1] Zhang Tianjiao, Sun Shutong. Countermeasures to strengthen college students' happiness education [J]. Journal of Jinzhou Medical University, 2018, (1).

[2] Li Miaoxin. Research on the Happiness View of Contemporary Young Intellectuals [D]. Harbin University of Science and Technology, 2014.

In Today's Urban Institutions Endowment Problem Analysis

Duan Yuanyuan
General Committee Office, Zhoukou Normal University, 466000 Zhoukou, Henan, China

Abstract: With the continuous development of the economy and the accelerated urbanization process, China has entered an aging society. The elderly pension problem is a significant problem in today's society. There are many significant problems in urban pension institutions. The cause of the problem is that the government support is not in place; pension institutions difficult to profit; industry standards lack; the social pension concept has not yet been widely accepted; social pension lack of confidence in institutions. According to the actual situation, some ideas of developing urban pension institutions are put forward.
Keywords: Aging society; Institution endowment; Combination of medical and support

1. T PROBLEMS EXISTING IN THE INSTITUTIONAL PENSION IN CITIES TODAY

With the deepening of the aging of society, the urban elderly population in China is increasing, and the number of families who choose to send the elderly to pension institutions is increasing year by year. In particular, public pension institutions are in short supply and far from meeting the development needs of institutional pension. On the whole, the supply and demand of pension institutions are unbalanced. But that doesn't mean nursing homes are full. In contrast, some private nursing homes are only half occupied or even less. Beds' utilization rate is relatively low and even shows a declining trend year by year. The reason is that the construction cost of private pension institutions is high, the service price is high, and those who have a real need for the elderly cannot afford to live. Tt makes the resources of private pension institutions can not be effectively used, forming a waste of resources, resulting in low utilization of resources, development is complicated.

According to relevant investigations, some social institutions for the aged have not established cooperative relations with primary health hospitals. The infirmary inside the institutions is rather crude, with unsound medicines and medical equipment, which can only meet the basic medical needs. For those older adults suffering from long-term chronic severe diseases, basic conditions such as medicine and equipment are still far from being completed, which is not conducive to their health and longevity.

2. REASONS FOR THE DIFFICULTIES IN THE DEVELOPMENT OF PENSION IN URBAN INSTITUTIONS

First of all, the government's policies and financial support for the pension in social institutions are significant for establishing an excellent social service system. The government has formulated and introduced a series of preferential support policies in taxation, water and electricity, land planning, and other aspects, which creates the right development environment for an institutional pension. However, some local government departments' policies are not fully implemented. The subsidy funds cannot be in place, causing some pension service institutions to get into trouble.

Secondly, private pension institutions bear certain operational risks, and their operation needs a certain amount of funds to maintain. According to the survey and the government's limited funding support and donations from social charities, pension institutions mainly rely on their business income to keep necessary daily expenses. Due to the different sources of funds between public and private pension service institutions, private pension service institutions are operating at a loss in the first few years. It makes it difficult for private pension institutions to create a surplus and fall into the dilemma of making ends meet, which seriously affects the development of China's social pension service.

Finally, the institutional pension is an emerging social service enterprise. Still, few enterprises or individuals are willing to invest in it because it is a social low-profit industry with relatively large investments and an extended return cycle. At present, the development of institutional pension service is still far from perfect. There is no industry standard in the management system, service environment, service quality, service personnel, and other aspects within the industry. Simultaneously, pension service institutions' development model is directly borrowed from hotels, hospitals, and other sectors. There are no independent industry management and service standards, and there is no particular industry organization. To some extent, these do not meet the needs of the elderly and are not conducive to developing China's social pension services.

3. THE IDEA OF DEVELOPING URBAN INSTITUTION ENDOWMENT

First of all, children should be aware that the services provided by pension care institutions are beneficial to the physical and mental health of the elderly, which can enable them to get reasonable care from professional medical staff and spiritual comfort. Therefore, children should realize the relevant advantages of institutional pension service, change the traditional pension service concept, and support the healthy development of institutional pension service with practical actions.

Secondly, society should build trust in pension institutions. The fundamental reason for the elderly to live in the pension service institution is the mutual assistance and cooperation between the pension service institution and the elderly family members. The foundation for establishing such a stable cooperative relationship is trust, which can only be established after proper and effective communication between both sides. Therefore, people in charge of pension institutions should organize various activities. The families of the elderly should actively participate in these activities to build a bridge of trust between each other. Simultaneously, before the elderly move into the nursing home, the family members should inform the relevant persons in charge of the nursing home or medical staff about the elderly's physical condition and living habits, etc... The nursing home should also inform the family members of all matters related to the elderly in the management to express the sincerity of mutual trust between the two sides. After check-in, and the older adult's family endowment institutions to maintain close contact, can regularly or not regularly to the older adult's life in the form of pictures, video, tell family members, from the actual situation of the older adult, reasonable adoption of family ideas.

Thirdly, the government should strengthen the leadership of the construction of pension institutions, give play to the government's leading role, guide the construction of institutional pension institutions from all aspects, and regard pension institutions' structure as an essential part of the government's work. Simultaneously, the old private institutions also recruited many older adults who could not take care of themselves. These older adults require a high degree of care, and the corresponding cost is high. That leaves many families unable to pay the bills. It requires the government to give support and help so that more older adults can enjoy better services.

Finally, it is essential to cultivate a stable, professional, and highly qualified medical and management staff to develop and improve pension institutions. To this end, pension service institutions should invite professional training institutions to strengthen professional qualification training for service personnel in pension service institutions, including medical, sociology, ethics, psychology, and other professional knowledge. Simultaneously, skilled nursing and management talents are directly introduced by some universities to realize professional and standardized pension institutions' management.

4. CONCLUSION

With the increasingly tricky population aging situation in China, the development of China's pension undertakings is facing a considerable challenge. On the one hand, the urban institutional pension is the top priority of the development of China's pension undertakings. The government should bring institutional care for the elderly into the national economic and social development system and gradually improve the policies, regulations, and welfare system related to institutional care for the elderly to meet social care services' needs. On the other hand, the needs of the elderly present a diversified, multi-level trend; relying only on an institutional pension cannot wholly meet social pension needs. In this case, we should gradually establish and improve the pension service system, further promote the overall development of China's pension, accelerate the construction of a harmonious socialist society.

REFERENCES

[1] Yan Hao. The development trend and prospect of China's private pension institutions, China's welfare, 2004, 4.

[2] Huang Hemei. Quality of life and its influencing factors of the elderly under institutional endowment mode in Zhengzhou, Chinese Journal of Gerontology, 2012, 21.

Image Adaptation Under the Tone of Nostalgia--Taking Youth as An Example

Huang Xiaoli
School of Political Science and Law, Zhoukou Normal University, Zhoukou, Henan, China

Abstract: The emotional selection of the nostalgic tone, the film Youth has completed the theme variation from "reflection" to "nostalgia"; The narrative thread shifts from multi-dimensional to single. In the crossover from text to film, the combination of singing, dancing and dramatic scenes makes the film present a distinct visual style. The cultural connotation carried by musical elements is separated from the narrative of the film, and the film mainly plays the function of emotional inquiry. The film lacks historical gaze and criticism, but Feng Xiaogang pays attention to the humble individuals crushed by history and ponders the relationship between historical violence and individual destiny. His courage to take responsibility is worthy of affirmation.
Keyword: Nostalgic; Theme Variation; Narrative; Media Transformation

1. YOUTH: MOVIE AS A PHENOMENON

After its release, The film Youth has caused a sensation in the society, with a box office of over 1.4 billion yuan. It has become a phenomenon film in 2017, and Feng Xiaogang has once again shown his influence in the film market. Adapted from a novel of the same name and written by Yan Geling, the film is rooted in the youthful memories of Feng and his military troupe. No matter from the emotional tone of the film or color picture, this is a nostalgic film, the creative impulse from Feng Xiaogang's troupe complex. Mo Yan, a famous writer, also admitted: "It did make me cry more than once... Seeing the film immediately reminded me of my years in the army."

2. THEME VARIATION: FROM "REFLECTION" TO "NOSTALGIA"

In the novel Youth, Yan Geling recalls the youth of the art troupe with the attitude of a historical bystander, connecting the youth story and the destiny of his comrades-in-arms around the storylines of Liu Feng and He Xiaoman. The author faced the crushing of individual by history, dissected the hidden reef of human nature, and wrote the ineffectual sense of the impermanence of fate. Yan geling poured into the complicated and tangled emotional experience, reflected on the relationship among history, individual and fate, and criticized the darkness of human nature. After the novel is transformed into image text, the author prefers the memory and nostalgia of youth in the choice of film tone.

The original title of the novel was You Touched Me, and when Feng Xiaogang decided to collaborate with Yan geling to bring it to the screen, he finally decided to adopt the title of Youth. The film's Creator explained the change of name to Fanghua as follows: "Fanghua is a fragrance and a smell, and Fanghua is a colorful color, very youthful and beautiful, which is in line with the impression of beauty in memory. " About the motivation of Fanghua, comes largely from Feng Xiaogang's "female soldier complex. " . "It was common in the summer for female soldiers to wear their uniforms this way, " Feng Xiaogang recalled, “After taking a shower, wearing wet hair, donning an empty uniform around my neck, slipping my cap into my shoulder bag and walking out of the barracks... ... To this day, I want to make a film for such a detail, to express the female soldier complex buried deeply in my heart for many years.”[1] From criticism to nostalgia, the theme of Feng Xiaogang's film creation has shifted, intentionally or unintentionally, has merged into the current mainstream of consumer culture under the name of Nostalgia, providing a natural path for the emotional distribution of the film, and also forming the image style with the army youth as the main tone.

In the novel, After "touching the event", Lin Dingding and other members of the troupe jointly report and expose the fate of Liu Feng, from the "altar" to the "altar. Yan Geling, With the help of Xiao Sui-zi's viewpoint, makes a profound analysis of human nature: "I knew Liu Feng from the very beginning, when I saw him laughing unbridled show that a trace of shameless, a rogue, subconsciously into a malicious long-term waiting, waiting to see Liu Feng's good play; as long as he has a human nature will definitely perform good play to. In the luxurious and empty villas of Hao Shuwen in Shenzhen, I know myself as well as the confused young men and women in the Red Mansion. I think of that summer in 1977, when the Congress and the small meeting were held in the red building, I realized that I was not the only one secretly waiting for Liu Feng to reveal his secrets, and that all of us secretly (perhaps subconsciously) waited on him to reveal his human nature.”[2] ifferent from the reflection and analysis of human evil in the novel, the film takes xiao Shuzi's "a person who has never been treated well, can most recognize and cherish kindness" as the ethical starting point of the whole film, and advocates kindness and empathy instead of the critical standpoint of the novel. Just like scholar Wang Dewei's interpretation of history, violence and trauma, Yan Geling explores the conflict between the collectivism and individual value in the special era in her novels, reflecting on the historical trauma, thus revealing the writer's humanist compassion, the film aims to seek the nostalgic cultural resources hidden in it, and the film is dedicated to remembering and romancing the friendship of the literary troupe. On the eve of the dissolution of the troupe, men and women in military uniforms bid farewell to each other in tears and songs. A song called "farewell to comrades in arms" pushed the mood of the film to a climax and ignited the nostalgia and emotional tears of the audience outside the screen.

The French thinker Michel Foucaultr once said, "it is not the year in which the story is told, but the year in which the story is told. " Clearly, history is behind the scenes here, the film presents a series of nostalgic cultural symbols, such as the restored courtyard of the provincial military region cultural troupe, the green military uniform, and the red classics. With his outstanding artistic skills and dreammaking ability, Feng Xiaogang revisits his military years with the public. Cultural Symbols, with their nostalgic charm, eventually became associated with consumer culture, as Jameson put it, “Nostalgic films are not historical films. They are a bit like modern dramas, taking a period of history that people are nostalgic for, take the 1930s for example, and recreating the fashions of the 1930s. The characteristic of nostalgic films is that they have a choice of appreciating taste of the past, and this choice is not historical. What this kind of film needs is the image of consumption about a certain stage of the past, but it cannot tell us how the history develops or explain the context.”[3]

3. NARRATIVE CLUE: FROM MULTI-DIMENSION TO SINGLE

As two different art forms, fiction and film have huge differences in their media, aesthetic standards, and value pursuit. Yan geling used many narrative techniques in her novels, and readers must grasp the full picture of the story through independent reading. To compress a novel of more than 100, 000 words and more than 40 years into a two-hour film, it is natural for the creator to reorganize the plot, preserve the main line of the story and make the narrative more focused. As a mass culture consumption, Feng xiaogang targeted middle-aged and elderly audiences in his creation, "youth" in the media transformation simplify the novel complex narrative methods, such as flashback, interleave, and adopt linear narrative for young and old, with his ears tells a story, interspersed with her narrator, the audience is easy to grasp the context of the story.

The film youth retains the structure and relationship of the main characters in the novel. The film deals with the characters of He Xiaoping and Liu Feng in a single, flat way, deleting the seemingly idle stories in the novel. From the perspective of the fate of He Xiaoping and Liu Feng in the film, they both present a common image of the weak. He Xiaoping is hated by everyone and appears in the film as an image of the weak who is discriminated against and excluded, and Liu Feng this "good old man" by the use of the accused, and eventually become sympathetic to each other, each other on the edge of the figure. In the novel he Xiaoman's life experience is rough, the humble embarrassed growing up environment has let Xiaoman develop many bad habits of life, to the army encounter cold shoulder. Yan Geling poured complex human nature writing into Xiaoman's growing narrative, revealing the evil of human nature to the point of Psycho. The movie omits the narrative of He Xiaoping's growing up, and presents the situation of discrimination through the dramatic passages such as "the incident of stealing military uniforms", "the practice room rehearsal" and "the incident of fake corsets" . He Xiaoman in the novel saw the war of life fleeting, spiritual stimulation, later the heroic deeds of the exaggerated publicity and sudden honor eventually led to mental collapse. Yan geling exposes the war's harm to human nature in her novels, but the film focuses on he xiaoping's dedication to rescue the wounded, and attributes her schizophrenia to the great disparity of her personal circumstances.

In the novel, Yan Geling gives him both an idealistic side and a true human nature, such as his ambiguous relationship with his fallen daughter, Megumi, in Haikou. Megumi's character set adds fireworks and street style to the character, making it more authentic and full bodied. In the text of the film, the author adopts the heroic narrative method to show the heroic deeds of Liu Feng in the war, and the characters maintain a high degree of consistency.

4. MEDIA TRANSFORMATION: FROM INDIVIDUAL WRITING TO VIDEO AND AUDIO

Literature and film are two kinds of art forms that express their meanings through different media. Film Constructs the art world through the media of picture, sound and color. From novel to film is a cross-border creation, from language symbols to sensory audio-visual transformation, which depends on the needs of film creators for artistic image thinking and theme expression. As a visual art, film integrates various audio-visual means, such as color, action, sound and picture, etc., to create an artistic world of sensuality and photoelectricity that reaches the audience and conveys individual feelings and aesthetic pursuit.

The film Youth, which was born out of the novel, presents a distinctive visual feature under the Unified Light of Youth Nostalgia and low-key. Feng Xiaogang, a graphic artist, has made youth a unique "this one. " . The color of the film is based on warm colors, which is in tune with the nostalgia of the film. Feng xiaogang spent a lot of money to restore the original appearance of the troupe, and created a sense of history through a series of fashionable modeling elements such as green military uniforms, red armbands, portraits, songs and dances. The use of color is the most convenient and effective way to highlight the visual style in the process of adaptation. The change of times in the novel can only be unfolded in the text, and the film can metaphor the historical footprint through the change of color. The powerful color image in the film is a screen size black gauze flood over Mao Zedong's portrait, where black serves both narrative and lyrical functions.

The presentation of a large number of singing and dancing elements is another stylistic symbol after the adaptation of Youth. At the beginning of the film, Liu Feng, who is in charge of taking over the army, first brought the new soldier --He Xiaoping to the rehearsal spot of "The grassland woman militia". This is the first time that the female soldiers of the art troupe have appeared together. In the plot of the film, the creators inserted a series of red songs, such as "Yimeng Song", "embroidered golden tablet" and "Hero's praise". It is an important part of the youth of the art troupe, and also provides a reasonable opportunity to arrange a large part of the singing and dancing scene. It is the first time that so many songs with the characteristics of the times have been implanted into Feng Xiaogang's films. There is an obvious rift between the historical and cultural connotations carried by these red songs and the film narration, which mainly plays the function of emotional inquiry. It only provides modern audiovisual experience for the audience at the sensory level, and arranges the musical background for the stage theatre-style dance and dance scenes in the film, which triggers the nostalgic feeling of the audience in the audiovisual pleasure. Accompanied by nostalgic music, the dancing body and movement are represented in the film, and the film combines several iconic song and dancing passages and dramatic scenes to form Feng Xiaogang's personal memory of the days of the literary troupe, it also provides a plot narrative for the film's body. The film lost no time through the female soldiers bathroom, Swimming Pool, rehearsal hall and other scenes, panoramic capture scanning dancing body, "fake Bra" incident directly around the female body of Feng's humorous banter. Combined with the swimming pool posters before the film's release, meeting the curiosity of a new generation of " Feng Girls " may be one of the motivations for many moviegoers to enter the cinema.

5. CONCLUSION

"Nostalgia is both a disintegration of reflection and an excessive whitewashing of historical memories, but it also removes value judgments and leaves everything to be fondled and looked at with tenderness."[4] At the end of the fourth film, Liu Feng and He Xiaoping lean against each other on a bench in a dilapidated station. The contented smile at the corners of their mouths seems to melt away the physical and mental wounds they had suffered in their tragic life. Liu Feng and He Xiaoping, who came from the special times, are still struggling in the bottom of society after being crushed by The Times. They are full of tolerant and kind-hearted humanity in the mutual support and consolation of tender feelings. The individual finally reaches a reconciliation with history, which is Feng Xiaogang's solution in the face of history, and I'm afraid it is also the helpless choice of most humble individuals in reality. In the hustle and bustle of the era of mass consumption culture fuelled by capital, despite the lack of depth gaze and critical reflection on the history, Feng Xiaogang dare to tear the historical trauma openly, with his unique image narration, caring for the abandoned and humble individuals who have been crushed by history, thinking of the relationship between historical violence and individual destiny, and pouring the tender care of humanitarianism. As a literary and artistic worker with sentiment and persistence, Feng’s courage to take responsibility is worthy of affirmation.

REFERENCES

[1] Feng Xiaogang. I offer my youth to you, Changjiang literature and art press, 30:31.

[2] Yan geling. Fang Hua, People's Literature Publishing House, 2017, 161.

[3] Jameson. postmodernismand cultural theory, translated by Tang Xiaobing, Peking University Press, 1997, 226:227.

[4] Zhao Young. From novel to Film: How does youth become a -- on the secret of mass culture production. A study of literature and art, 2019(3): 95-106.

A Brief Discussion on The Strategy of Improving Piano Visual Playing Ability

Tao Nana
Students Affairs Division, Zhoukou Normal University, 466000 Zhoukou, Henan, China

Abstract: At present, in China's piano teaching system, there is often a lack of training to improve the visual reading ability of students. Teachers only pay attention to the training of students' playing skills, but ignore the special visual reading training, so that students' visual reading ability is more just in the big, playing music when the spontaneous germination. Therefore, it is necessary to discuss the problem of piano visual playing, and the improvement of piano visual playing ability must also be discussed.

Key words: Piano; Sight Reading; Training

1. CULTIVATE GOOD VISUAL PLAYING HABITS

"A beginner, because of the keyboard and staff are not familiar with, finger control ability of support, depending on the spectrum it is always difficult to play the piano, some students in order to convenient, clauses back spectrum to play the piano, this method of divide and conquer, if under the guidance of teachers, with the help of brief to reinforce the shape of the hand etudes, familiar with the keyboard, also may be used once in a while, but if, as a main way of practice, gradually formed a bad habit with sight-reading, poor can greatly.

Pianists who mainly practice solo and those who are good at accompaniment differ greatly in visual reading ability. Students with more experience in accompaniment consistently show better visual reading than those who practice and play solos, even though the overall piano playing ability of those who practice and play solo is slightly higher. Regardless of the level of experience, there is always a great difference between the ability of a piano player to perform a practiced piece and his visual reading ability. Although a piano player may be a highly accomplished performer, their visual reading may be well below the level of their solo repertoire. Pianists with more collaborative experience are likely to be more successful virtuosos because they generally play a large number of musical accompaniments and must do more visual reading than piano professionals. Thus the piano accompanist's sight-reading skill may be based primarily on the actual amount of time spent in sight-playing. Sightseeing is a professional skill that can be improved through direct experience.

Of course, for a person who just sat on the piano stool, it is not easy to do both hands and eyes. But if you feel the rules, find the crux of the problem, in fact, it is not difficult. The key to cultivate good visual reading habit is to solve the reasonable distribution of attention. Some people take the finger touch key as the main object of attention, so the eyes do not leave the hand, for fear of missing a thing, the result is counterproductive. As a result of the frequent movement of the eyesight hand to make unnecessary, it is easy to cause visual fatigue, nervous tension, and even produce a white blinding blind area phenomenon; Some people distribute the attention equally, both want to look up spectrum, and want to lower the head to see the key, the line of sight shaking up and down, dizzying, the result is often to care about this and lose that, too stretched. The correct approach is to focus the attention on the visual spectrum, because the music content of the spectrum varies greatly, and only through the active work of the optic nerve and central nervous system, can it be accurately transmitted to the hand and displayed on the piano. The hand shape and the accuracy of the touch keys are mainly solved through the basic practice without the burden of visual spectrum and the correct design of fingering, and more mainly by auditory correction, without the need to pay too much attention to the vision. To deal with the reasonable distribution of attention is conducive to focus on solving the main contradiction in visual playing, so as to cultivate a good visual playing habit.

2.THE USE OF SCIENTIFIC TRAINING METHODS

"Piano visual reading is both a motor skill and a mental skill. In a brief moment, cognition, muscle use and information feedback are required to coordinate movements accurately. In order to adapt to the chain reaction of this series of several links, in the training, we must follow the principle of teaching step by step from shallow to deep. Take one step at a time, step by step."

① control the speed, first slow then fast

Life has taught us that some dazzling technical tasks are much easier to perform if you slow down. "The same is true for visual playing on the piano, where it is easier to play one note per second than four. Therefore, adjusting the training speed and insisting on the training method of first slow and then fast is an effective way to cultivate and improve the visual reading ability."

In the primary stage, one should choose a long time value and simple combination of tonal values for training. The speed control depends on the degree that the student can complete the visual reading process in a leisurely and accurate manner. If the students appear busy eyes and hands, muscle tension phenomenon, it is proved that the speed is too fast. The practice speed must be readjusted.

The practice method of first slow and then fast is effective not only for beginners, but also for students who have a good foundation. If a fast piece of music, for example, is composed in a dense rhythmic pattern, the practice is slowed down several times (for example, by playing a sixteenth note on a quarter note), then at least two obvious good effects are produced. One is that it becomes easier where it is difficult. The second is when the music in the mind coherent, spectrum impression is clear, this is the so-called "slow work makes the skillful craftsman".

②Turn complex into simple, first points and then combine

Piano is a very expressive instrument, its notation and playing skills are more complex. To have excellent visual reading ability, must have a skilled playing skills and the ability to read ten lines at a glance. However, daily product short step, will be thousands of miles. Anything complex is contained in a number of simple parts. In piano visual playing training, the complex piano texture is first broken down into simpler parts for practice, and then combined. For example, when it is difficult to play with both hands at the same time, the practice is to break up and play with both hands after one hand reaches a certain degree of proficiency. When it is difficult to connect the visual chords, first use arpeggio (hold) form to play each note separately, find the right pitch, and then a few fingers play down at the same time, to connect the chords. By training in this way, students can master more complex visual reading skills in relatively easy exercises.

③Analyze fingering and master the law of fingering movement

Some beginners mistakenly think that the key is accurate or not, there is a close relationship with visual attention, so the eyes are fixed on the hand and the keyboard dare not have a slight mistake. In fact, the accuracy of the touch key, mainly depends on the correct design of fingering. The width of the keys is not much different from the width of a normal person's finger. Children's fingers are smaller, but they can be stretched a little to fit the keyboard. So as long as the fingering is correct, touch the key is generally not wrong. For example, the right hand 1 refers to play C, as long as the hand type is not twisted, 4 refers to play F, not to look at the wrong key will not play.

In the piano elementary course, many etudes are marked with fingering, visual playing must be played according to the marked fingering, because the fingering design is more reasonable. In the long-term practice of visual reading of fingering according to regulations, students will gradually comprehend some laws of fingering movement contained therein. Combined with the teacher's analysis and guidance, they will master the basic routines of fingering design. This will be of great benefit to further in-depth study.

3.STRENGTHEN MUSIC THEORY CULTIVATION, DEVELOP THREE-DIMENSIONAL THINKING ABILITY

It is not advisable to neglect the study of music theory in practicing the piano. Piano music is a multi-part music, which has rich harmony, multi-level movement of expression space, and profound aesthetic significance in structure. Strengthening music theory is not only an indispensable prerequisite for the second creation of piano art, but also an action guide for piano learning. If you know the knowledge of harmony, the connection of the visual chords will be clear at a glance. To understand the law of rotation, we can predict the development of melody to a certain extent, which is beneficial to correct fingering and improve the speed of visual reading. If one can cultivate good stereoscopic thinking ability on the comprehensive cultivation of harmony, counterpoint, rotation and other knowledge, it will play an important role in improving the visual playing ability. Piano visual reading ability training is not isolated, it is an aspect of the whole piano learning process. Sightreading training should not, in fact, be separated from other aspects of piano learning.

4.IMPROVE THE ABILITY OF EFFECTIVE VISUAL RECOGNITION

Effective visual recognition plays an important role in long-term visual reading training. "Pianos learners will learn to 'chunking' musical information, or frequently use rehearsal techniques such as tapping, flapping, chunking chord structures, changing rhythm or fingering, and other simplified strategies, which will greatly contribute to the improvement of visual skills. Start with simple music, scan a piece of information with your eyes ahead of time, and then quickly direct your fingers to make the correct response." While the finger strummed this piece of information, the eye immediately scanned the next piece of information. According to this hand-eye coordination training method can well cultivate the visual and auditory monitoring ability, improve the visual reading level. "Second, you need to be familiar with the deeper context of music, including understanding harmonic and modal functions, melodic forms, and structural forms. And combining music theory with the background of musical composition." You can also improvise a melody from the provided chords or develop a theme using music theory principles. For beginner piano students, the training emphasizes improvising melodies with a given rhythm pattern, and teaches them to identify the structural details of visual reading material. Before playing the visual material, participants also prepared by slapping or beating the rhythm.

"Piano playing is a highly skilled discipline, which has many technical skills and requires learners to perssistently learn. Then visual reading ability, as the foundation of piano playing skills, also requires us to learn scientifically, correctly and step by step. Only in this way can we learn the piano in the road less detours, improve the efficiency of learning piano shortening the practice of music spectrum time, really for the study of piano to lay a solid foundation!

REFERENCES

[1] Situ Bichun, Chen Langqiu. Piano Teaching Method [M]. Chongqing: Southwest Normal University Press, 1999.
[2] Zhao Xiaosheng. The Way of Piano Performance [M]. Shanghai: Shanghai World Books Publishing House, 1999.
[3] Duan Xiaomin. On Piano Visual Playing Teaching [J]. Art Education, 2006 (3).

A Brief Discussion on Improving the Punitive Compensation System in Product Liability

Zhang Shuyuan
School of Political Science and Law, Zhoukou Normal University, Zhoukou, Henan, China

Abstract: At present, the scope of application of punitive compensation in product liability in China is too narrow, the amount of compensation is uncertain, the application of the law is relatively vague and other problems, in order to solve these problems, improve the punitive compensation system should expand the scope of application, clear the limit of the amount of compensation, clear the relationship between the law.

Key words: Punitive Damages; Amount Of Compensation; Applicable Law

1.EXPAND THE SCOPE OF APPLICATION OF PUNITIVE DAMAGES

Due to the lack of relevant laws on "punitive compensation system in product liability" in China, consumers cannot get relevant compensation in time after product infringement occurs. Even some businesses in order to maximize their interests, would rather pay punitive damages than fundamentally eliminate the defects in their products. Concomitant problems are also increasing, leading to an uproar from all walks of life. In order to better protect the rights and interests of consumers, this issue is more worthy of our discussion and study, and analyze the problems caused by it.

① Subject scope of punitive damages.

In the three laws concerning punitive damages, the definition of the subject of compensation is too vague, which leads to the exclusion of the liability of other commercial subjects in the event of punitive damages. If the existing defects of the product are caused by the mistakes of the third party such as transportation and storage, and the seller and producer cannot make corresponding compensation due to bankruptcy or other reasons, can the infringed directly file a lawsuit against the third party such as transportation and storage and claim that they should bear the punitive compensation liability? From the function of punitive damages, the purpose of the establishment of punitive damages is not only to compensate the various injuries suffered by the victim, but more importantly to prevent the continued occurrence of infringement events. According to this, it can be divided into two situations: the first situation is, if the fact of damage occurs, the third party such as transportation and storage timely informed the producer and seller of its situation and took effective remedial measures, even if the loss to the rights and interests of others, but the third party can not assume responsibility. The second is that if the third party, such as transportation and storage, intentionally conceals the truth and shirks the responsibility after the damage occurs, and fails to take effective measures in time to further expand the damage, the third party shall be liable for the loss caused by the legitimate rights and interests of others.[1]

② Scope of subjective elements of punitive damages The new "Consumer Protection Law" requires operators to be "fraudulent" subjectively in terms of application conditions. According to the general theory, fraud is the practice of deliberately inducing other parties to make mistakes and obtaining benefits from the other party's failure. Thus it can be seen that fraud is nothing but the practice of inducing other parties to make incorrect subjective consciousness and benefiting from it. In the subjective conditions of China's new "consumer protection law", in addition to intentional fraud, it is necessary to expand its subjective scope, and deliberate omission, huge loss and extreme contempt for the rights and interests of other parties should all be regarded as subjective requirements. In China's Tort Liability Law and Food Safety Law, when explicitly requiring producers and sellers to bear punitive damages, they are subjectively "aware" of the production and sale of defective products. Its "knowing" is the key, which means that the producer or seller has already known the defect of the product, but insists on producing and selling it. "Knowingly" is reflected in the scope of malicious product tort, which strictly limits its subjective elements and classifies it as intentional, but does not include the situation of gross negligence. This is different from American law. In the United States, the subjective requirements for the application of punitive damages liability are: intentional or malice and gross negligence. Compared with the subjective requirements for the application of punitive damages in domestic and foreign product liability, the scope of application in foreign countries is obviously much clearer than that in China. Judging from the case of Sanlu, the Chinese court took the issue of gross negligence into consideration when dealing with the case. In practice, we should pay attention to the fact that ordinary fault should not be included, because punitive damages are aimed at punishing others for reckless disregard of their personal and property rights. Article 47 of the Tort Liability Law should clearly stipulate that the subjective elements of product infringement are intentional or gross negligence, which can strongly protect the legitimate rights and interests of consumers in a weak position.

2. Clarifying the upper limit of punitive damages The Tort Liability Law does not mention the aspect of punitive damages, which is exactly the core of punitive damages. Whether the amount problem can be effectively solved is a sign to measure the success and failure of punitive damages system. At present, there are two kinds of elaboration on the issue of punitive amount in the law:

First, the "Consumer Law" and "Food Safety Law" directly specify the amount of compensation. Second, the Tort Liability Law does not clearly determine the amount of compensation, but clearly requires punitive damages. If we want to solve the problem, we still need to start from the problem itself. Article 47 of the Tort Liability Law mentions that the infringer can be required to make corresponding compensation, so we start from the word "corresponding" to solve the problem. How to understand "corresponding"? Does "corresponding" mean that we can place an "upper limit" and a "lower limit" on it? This issue has been a controversial one. In the Food Safety Law, there is a certain gap between the final compensation and the losses suffered by consumers, so that the punitive compensation does not have a deterrent force, leading to frequent food safety problems in China. "Only 23 percent of China's food safety standards adopt international standards, so China's Food Safety Law still needs to be strengthened in terms of compensation, " the materials said. The amount of punitive damages is a complex issue. In product liability events, if the amount of damages is low, the consumers of the injured party cannot get the corresponding compensation, and the effect of punishment cannot be achieved. But if the penalty is high, it will hurt the economy. If it is completely left to the free discretion of the judge according to the circumstances of the case, for China, a country with written law, it may lead to completely different judgment results in different places, which will affect the credibility of the judiciary. Here we can learn the lessons of other countries and make improvements according to the reality of China:

1.China is currently in a good period of economic development, but the regional, urban and rural economic development is unbalanced, some remote areas of the economy is still in a backward state this is an indisputable fact. Therefore, whether to specify a maximum limit of punitive damages has led to different opinions in China for a long time. Therefore, a maximum limit should be set, which is a full consideration of China's national conditions and more conducive to the development of enterprises. The clear ceiling is based on three times the compensation amount, which not only develops the economy but also plays the function of punishment and control.

2. FACTORS TO BE CONSIDERED IN DETERMINING PUNITIVE DAMAGES

①The subjective state of the infringer. As an essential element of punitive damages, the subjective malignancy of the injuring party in our country rarely affects the final amount of the sentence. However, in the United States, it attaches great importance to the subjective malice of the injurer. The greater the subjective malice of the infringer is, the more serious the damage consequences will be, and the more punitive damages the court decides. Fifteen American states even use punitive damages only if the infringer is subjectively in bad faith. Some scholars in the United States put forward that it is best to adopt compensatory compensation when the infringer is subjectively negligent. There are a lot of fake sales in China, so we can increase the punitive damages by a certain amount.

②Actual loss of the infringed. The compensation amount stipulated in the three major laws of our country is usually measured according to products and services, which is very disadvantageous to consumers. Can not reach the punitive damages compensation, check, function. In the United States, victims need to prove that they have suffered actual losses before they want to get compensation. Once the actual loss has been proved, the court does not use the fact of loss as the criterion of measurement. Instead, it considers the damage caused or expected to be caused by the infringer to the victim.

③ the property of the infringer. In one of the most shocking sexual harassment cases in the United States at the end of the 20th century, a jury awarded punitive damages exceeding 10 percent to the plaintiff on the grounds that the defendant would not be bankrupted by the verdict. American courts always consider the defendant's assets when deciding punitive damages. Because the purpose of punitive damages is to punish the infringer in order to prevent something like this from happening again. If punitive damages are too high to be commensurate with the defendant's ability to repay, it is easy for the defendant to become bankrupt and into trouble. However, if the punitive damages amount is too low, it will have little effect on the defendant, and the effect of such punitive damages will not be reflected. Therefore, the court should make a true estimate of the defendant's property when determining the punitive damages.[II]

④ the profits illegally obtained by the infringer. The reason why product infringement cases occur frequently in China is that the illegal benefits obtained by the infringer are far greater than the amount of punitive damages paid. In 1972, the infringement case of Ford, the leading automobile brand in the United States, caused a worldwide sensation. As a result of the wrong design of Ford, the fuel tank was installed on the lower part of the back seat of the vehicle, which could cause an explosion in case of a medium-intensity collision. But it will add $120m if the car is recalled or fitted with a protective assembly because of its faulty design. Ford chose to pay for each injury rather than install the shock absorbers. Ford angered the jury, which awarded $125 million in punitive damages. This has important implications for China's legislation.

⑤The attitude of the infringer after the infringement is discovered. Infringement behavior person after the discovery of the tort, whether can in a timely manner to eliminate the harm behavior and make effective remedy measures, should be as factors of calculation amount, for the "recall" Toyota did not take effective remedial measures caused harm result worse, did not make a satisfactory compensation to consumers, the group should be in accordance with the highest punitive damages in our country sentenced to it.

3.clarify applicable relationship between the law About how to make better coordination between three law applicable, first said "food safety" and "elimination" of food safety is closely related to consumers' health and life, therefore, in comparison with general products, its belong to a special field of consumption, needs and on the other to discriminate between consumption field. Disputes over food safety are also disputes over the rights and interests of consumers. When dealing with such disputes, priority should be given to following the Food Safety Law. The Food Safety Law, the Consumer Protection Law and the Tort Liability Law were all formulated and passed by the National People's Congress. Therefore, there is no difference in rank between the three, so the conflict resolution principle of "the lower law takes care of the higher law" cannot be applied. However, in the concrete practice, there is often competition and cooperation. Consumers can be allowed to choose by themselves, which can fully reflect the respect for consumers.

In our country, the regulation of punitive damages in product liability is not comprehensive, so we should constantly improve the system of punitive damages in product liability. The solution to the problem of "product infringement" is not a matter that can be solved overnight, which requires the efforts of all sectors of society. In order to protect the legitimate rights and interests of each infringed, it is necessary to rely on the law and system to protect it. We should not only perfect the deficiencies of laws and regulations, but also improve and enrich the punitive compensation system in the product liability effectively. Combined with the actual situation of our country, this paper analyzes the problems existing in the system of punitive damages in product liability, and puts forward feasible measures in terms of the legal application of the system, so as to better protect the legitimate rights and interests of the infringed.

REFERENCES

[1] Beijing legal daily. Punitive damages should be set in product liability, no. 3, 1994, pp. 66-67.
[2] Contemporary Law Journal. Tort Liability and Product Defect Liability, 2002 (2), pp. 102-103.

Research on Talent Training Mode of Higher Vocational Education under the Background of Digital Economy Era

Chen Yu
The Open University of Henan, Henan, China

Abstract: The advent of the digital economy has brought changes to the work content and work patterns of professional posts in the social economy. This is both an opportunity and a challenge for the training of talents in higher vocational education. For this reason, higher vocational colleges need to reposition the goal of talent training and change the concept of talent training in accordance with the changes in the job content and professional ability requirements of new vocational posts under the new situation.
Keywords: Digital Economy; Professional Ability; Talent Training

1. INTRODUCTION

The rapid development of the digital economy has promoted the transformation and upgrading of global economic and social development, and it has also driven profound changes in the education ecosystem. With the development of China's digital economy accelerating the promotion of digital industrialization, industrial digitization, and digital governance, the demand for talents with digital skills and digital literacy in economic and social development is increasing rapidly, and the development of my country's digital economy is facing a shortage of digital talents and challenge. How to give full play to the important mission of education, increase the training of high-quality, technical and technical application-oriented digital talents for the development of a smart society, so as to meet the structural demand for talents from the rapid development of the digital economy, and my country's vocational education should have a lot for. From the “Internet+” in 2015, to the sharing economy in 2016, and then to the digital economy today, the connotations are actually the same[1-3]. "Internet +" is the means, and the digital economy is the result. "Internet+" emphasizes connection, while the digital economy is productive and effective. It is foreseeable that for a long time in the future, the digital economy will run through the economic and social transformation and development of Henan Province and become an important starting point for Henan Province to cultivate new economic momentum and build new competitive advantages.

The next few decades will be a period of strategic opportunities for the development and prosperity of the digital economy, and also a critical period for the development of digital transformation. In Henan, the basic part of the digital economy is currently showing a stable growth situation. The structure is optimized. The speed of digital transformation of traditional industries is getting faster and faster. The integration part has become the main engine of growth. However, the development of digital economy in our province still faces many problems and bottlenecks. There are still many obstacles to digital transformation[4-7]. Core technology and equipment are restricted by others. Innovative talents cannot meet the needs of digital economy development. There is a shortage of innovative talents and the original talent training model. Having been challenged, it is urgent to establish a new training model for innovative talents.

2. THE DEVELOPMENT OF THE DIGITAL ECONOMY HAS CREATED A NEW FORM OF EMPLOYMENT

The rise of the digital economy has brought new employment forms and employment opportunities to a large number of practitioners, reflecting the creative effect of the digital economy. With the development of the digital economy, market competition and technological progress brought about the development and diffusion of new business formats, new models, and new technologies, and the development and application of new jobs will generate new job demands, which in turn will generate new employment forms, such as the research and development of 5G, Internet of Things and other technologies. , Manufacturing, marketing, service, etc. In addition, the integration of new technologies and traditional industries will also create new jobs. The professionalization of some new forms of employment also indicates that the digital transformation of enterprises in our province will enter the deep water zone. The technological progress of the digital economy creates a large number of jobs while replacing part of the labor force. In the long run, the compensation effect is greater than the substitution effect. With the expansion and upgrading of people's consumer demand and the continuous expansion of the scale of the industry, our province will have more new jobs in the future, and the new employment patterns generated by the digital economy will absorb a large amount of labor.

3. PROBLEMS EXISTING IN THE TRAINING OF VOCATIONAL ABILITY IN TRADITIONAL HIGHER VOCATIONAL EDUCATION

The emergence of new technologies has created new industries, new departments, and new occupations. According to the 13 new occupations officially released by the Ministry of Human Resources and Social Security in 2019, the analysis found that most of the new positions are closely related to the digital economy, such as digital engineering and technical personnel (artificial intelligence, big data, cloud computing, etc.), digital manager, E-sportsmen and operators, drone piloting operators, IoT installation and debuggers, etc. Inversely inferring job vocational ability from job demand, it is found that in the higher vocational colleges of our province, the following problems exist in the training of traditional higher vocational education vocational ability:

(1) The content focuses on theory and lacks practical ability training. In the process of traditional curriculum system, too much emphasis is placed on theoretical training, with emphasis on teaching concepts, principles, methods and methods, and ignoring the cultivation of practical ability. The ratio of theoretical and practical courses is seriously unbalanced.

(2) Lack of management ability and weak cross-professional learning ability. Education serves production, and the school's majors must be connected to employment positions. At this stage, the incumbents are facing a crisis of transformation or unemployment. Under the influence of informatization, intelligence, big data, etc., many jobs require diversified and compound managers.

4. THE NEW REQUIREMENTS OF INDUSTRIAL DIGITIZATION FOR THE TRAINING OF VOCATIONAL EDUCATION TALENTS

The digital economy requires vocational training in higher vocational colleges to make timely adjustments around the social environment to meet the needs of economic development.

(1) Professional values highlight the shaping of "sustainability". Professional ethics, professionalism, and professional beliefs directly affect the performance and attitude of employees in the workplace. The development of the digital economy requires professionals who are law-abiding, pragmatic, responsible, objective and fair. At the same time, new digital technologies and new environments continue to emerge. It is necessary to ensure the coordinated development of professional abilities and professional standards. It is inseparable from practitioners who continue to strengthen the learning of information technology, information analysis and processing, and have a professional sensitivity to "new" technologies. , Good at observing, understanding and analyzing new economic phenomena, and predicting the problems and coping strategies in the development of enterprises.

(2) Vocational skills require "digital ability". With the increasingly prominent influence of digital technologies such as artificial intelligence, big data, and cloud computing on traditional industries, more and more occupations or positions have increased the requirements for general digital skills in the vocational skills requirements of practitioners. In order to meet the needs of the digital development of the industry, technical skill-based talents cultivated by vocational education need to have general digital skills and literacy. For example: have digital awareness and form digital concepts; proficient in the use of office software, professional related software and hardware; familiar with the application and operation technology of smart devices; clearly understand the laws and regulations related to the application of digital technology; be able to use digital media for digital marketing; have the ability to collect and analyze data , Can analyze massive amounts of data; can combine digitization with business operations, and master certain digital operation capabilities. These abilities will become an important part of the professional ability training of vocational education talents. Although students are not required to master various professional algorithms and technology development skills, they need to understand relevant concepts and technical product applications, and have relevant technical operations. And application ability to improve their intellectual skills. Therefore, digital ability is an important dimension of future vocational education talent training goals[8-10].

5. NEW MEASURES FOR THE CULTIVATION OF DIGITAL TALENTS IN DOMESTIC VOCATIONAL EDUCATION

Vocational education must closely follow the pace of development in the digital economy era, cultivate students' digital awareness, establish digital concepts, and carry out digital practices, so that the "digital dividend" can really benefit teachers and students. The training of digital talents in domestic vocational education must have a complete promotion plan to meet the industrial transformation and large-scale talent demand brought by the digital economy. Earnestly implement the "20 Vocational Education Guidelines", face up to the new requirements for the training of vocational education talents in the digital economy era, enable digitalization to empower education, and strive to promote high-quality and high-level development of vocational colleges.

The first is to adjust and innovate talent training programs based on market talent needs and job skills needs in the digital economy era. There is an urgent need to add courses and practical teaching content related to digital skills training. All majors need to offer basic general education courses on artificial intelligence applications. Different majors need to add big data, cloud computing, e-sports, and robotics according to their respective professional talent training needs. Apply courses and practical activities, fully carry out the reconstruction and construction of "artificial intelligence +" courses, and realize the cross-industry and cross-disciplinary integration of talent training programs.

The second is to focus on cultivating students' innovation and entrepreneurship capabilities. The rapid development of the digital economy industry has led to rapid iterations of related occupations and positions, and put forward higher requirements for employees' cognitive level, skill level, rapid learning ability, and change adaptability. This requires strengthening the training of innovative talents in the context of the digital economy, cultivating applied talents with strong innovative and practical capabilities, and driving employment through entrepreneurship.

The third is to cultivate compound digital talents in line with the needs of industries and enterprises. Different from traditional industries, the subdivision of digital industry development in the future will turn to more industry models characterized by refinement, individualization, and cross-border integration. This requires vocational education to predict the digital transformation trend of traditional industries in advance based on the characteristics of industrial digitalization, realize the cultivation of compound digital talents through in-depth integration of production and education, and connect the new requirements and emerging characteristics of traditional industries in the digital economy. The talent training plan and teaching content of vocational education shall be transformed into relevant "digital" in a timely manner.

The fourth is the need to increase the scale of digital skills training. Carry out digital talent training and training, build a vocational education lifelong learning digital platform system, which can continuously meet the needs of digital talent skills and literacy training, provide a continuous stream of digital talent training services for employees, build a lifelong education school for citizens, and make up for digital skills positions Talent gap. Reserve digital skill talents for the digital transformation of traditional industries, guarantee the scale of digital skill talent training, and alleviate the contradiction between the supply and demand of digital talents.

6. CONCLUSION

The rapid development of Internet + education, Internet of Things, cloud computing, artificial intelligence, education big data and other emerging information technologies are gradually changing the traditional education mode, teaching methods and evaluation system of higher vocational education, which also injects new ideas into talent training. vitality.

ACKNOWLEDGEMENT

2020 Henan Provincial Department of Education Humanities and Social Science Research General Guiding Project: Exploration of Higher Vocational Education Talent Training Model in the Background of Digital Economy Era-Taking Henan Province as an Example (Project Number: 2020-ZDJH-076).

REFERENCES:

[1] Jiang Hua. Research on the cultivation of engineering and technical talents under the background of cultivating and expanding the digital economy [J]. Building Materials Development Orientation, 2020, 18(24):11-13.

[2] Su Xiaoli, Deng Yanling. The development of digital economy in major countries in the world and its enlightenment to China [J]. Journal of Beijing Vocational College of Economics and Management, 2020, 35(04): 13-18.

[3] Guo Shuang. Research on the reform of marketing professional training mode under the background of digital economy [J]. Business Culture, 2020(32): 88-90.

[4] Jiangsu: Building a Powerful Digital Economy Province[J]. Shandong Economic Strategy Research, 2020(11): 3.

[5] Wang Dehui, Wu Ziang. Research on the Mechanism and Countermeasures of Digital Economy Promoting the Transformation and Upgrading of my country’s Manufacturing Industry [J]. Changbai Academic Journal, 2020(06): 92-99.

[6] Han Jing, Sun Yawen, Chen Xi. Analysis of the development path of China's digital economy in the post-epidemic era[J]. Economic and Social System Comparison, 2020(05): 16-24.

[7] Qi Xiang. Research on the Countermeasures for the Upgrading and Transformation of Traditional Manufacturing in the Digital Economy[J]. Fortune Today, 2020(21): 10-11.

[8] Xue Ting, Hu Xia. Difficulties and countermeasures of digital economy in promoting economic development and transformation in Chengdu [J]. Shanxi Agricultural Economics, 2020(20): 13-14.

[9] Zhao Huijuan, He Yaoqin. New requirements and new measures for talent training in vocational education in the digital economy era[J]. Journal of Beijing Vocational College of Finance and Trade, 2020, 36(05): 47-52.

[10] Hu Shuhong, Liu Haili, Tang Baizhi. Research on the Training of Accounting Professionals in Higher Vocational Education from the Perspective of Digital Economy[J]. China Business Forum, 2018(33): 124-125.

Exploration of Integrating Ideological and Political Education with the Course of Sensor and Detection Technology

LI Hongyan
Zibo Vocational Institute, Department of Mechanical and Electrical Engineering, Zibo 255000, Shandong, China

Abstract: It is an important task of higher education to strengthen the ideological and political education of young students and guide them to establish a correct world outlook and values. For personnel training at colleges and universities, ideological and political education should be run through the whole talent training system. While specialized ideological and political courses are offered, gaps are there waiting for broader educational channels, more comprehensive promotion for ideological and political construction of universities and a more enhanced educational role that other major courses could play. Correct values are supposed to be guided along with professional development and integrated with knowledge teaching and skill training. This paper discusses the ideological and political education exploration in an electrical automation professional course, Sensor and Detection Technology.

Keywords: Professional courses; Ideological and Political; Education

1.THE NECESSITY OF INTEGRATING IDEOLOGICAL AND POLITICAL EDUCATION INTO PROFESSIONAL COURSRS

Ideological and political education for young students has always been an important part of talent training in colleges and universities, with relevant courses established and specialized in the talent training system. However, this ideological education mode bears the separation from students' professional coursework. As students tend to pay more attention to the study of professional courses, their interests in ideological and political courses are limited. In particular, with the development of Internet technology and the continuous emergence of various mobile media, students now have a wide range of sources acquiring information and knowledge. Many foreign forces also use the internet to infiltrate their ideology to bewitch and paralyze young people, with the turmoil in Hong Kong in 2019 a good example. Therefore, it is crucial to strengthen the ideological and political education for our young students and actively help them to grow a correct world outlook, a outlook on life and values. Only in this way can we enhance the leadership of the party, preserve the country's long-term stability and achieve the Chinese Dream of national rejuvenation.[1]

In August 2019, the general office of the CPC Central Committee and the general office of the State Council issued opinions on deepening the reform and innovation of Ideological and political theory courses in schools in the new era, pointing out the direction of how to strengthen and improve ideological and political education in colleges and universities. Certain opinions initiate that ideological and political education should be run through the whole talent training system, to solve the fundamental problems of "who, how and for whom" colleges and universities cultivate young people, comprehensively promote ideological and political construction of courses, give full play to the educational role of each course, and guide the values in knowledge delivery. Amid these, value shaping, knowledge imparting and ability training should be integrated and inseparable. We should firmly grasp the "main force" of teachers, the "main battlefield" of curriculum construction, and the "main channel" of classroom teaching, so that all teachers and all courses bear the responsibility of educating people, aligning ideological and political courses and all the other kinds of courses in the same direction, unifying explicit education and implicit education, forming a synergistic effect and building a pattern of all-round education for all staff. That is to carry out the infiltration of moral education in the teaching of professional courses. [2-3]

Moral education penetration refers to the form of education in which educators realize their educational intentions through the use of carriers, constructing an atmosphere, and instructing the objects of education according to their educational goals and training requirements, so that they can accept relevant thoughts, opinions, styles, and behaviors. Moral education penetration is different from moral education indoctrination and moral education preaching. It is an all-round and three-dimensional education from morality, value, behavior, life, etc. through the creation of real situations, the use of suitable carriers, and scientific methods. , Moral education penetration focuses on the educated being educated in a subtle, moisturizing and silent way, and gradually perfecting character and personality in a unaware, from the outside to the inside. It should be noted that the penetration of moral education has a slow effect, which requires perseverance and perseverance to practice.

As a college teacher specialized in electrical automation technology, one has been teaching corresponding professional courses for a long time and has made beneficial explorations on how to integrate ideological and political contents into the teaching of domain knowledge. With the help of theoretical research and practical exploration, construct a teaching model with the core concept of "integrity, expertise, knowledge and action". Provide useful reference and reference for professional course teachers, and solve the current teaching dilemma of focusing on knowledge and neglecting education in the teaching of professional courses; Through the reform of teacher teaching mode, the professional teaching is driven to transform from knowledge-transporting teaching to subject cultivating teaching, improving the teaching level and educating level of teachers, and promoting the realization of the depth of professional subject education.

2. DISCUSSION ON INTEGRATING IDEOLOGICAL AND POLITICAL EDUCATIONAL CONTENT INTO THE COURSE SENSOR AND DETECTION TECHNOLOGY

Sensor and Detection Technology is a required core course for the Electrical Automation Technology major. The course covers the structure, principle and practical applications of the temperature sensors, the force detection sensor, the displacement sensor, the speed sensor, and the liquid level and environmental sensor, so that students are able to understand the basic structure of the measurement system, the principle and applications of the measurement circuit. Through the study of this course, students learn the measurement principle of sensors and get familiar with the composition, function and control mode of the measurement and control system. Upon finishing the course, students are expected to meet the technical requirements and standards of automatic control system operation, operation, maintenance and so on, become familiar with the composition of the current measurement and control system master, the practical application of sensors understand the new development trend of sensor technology to lay a good foundation for the maintenance of electronic and electrical measurement system in the future. In order to strengthen ideological and political education and foster people with morality, we have carried out some explorations in course teaching:

Research on the model reform of "teaching", and transform the traditional knowledge-transporting "teaching" into a moral education-style "teaching", This course takes the principles and applications of various sensors as a breakthrough point, and transforms teachers' traditional teaching concepts through theoretical study and practical exploration. According to the characteristics of professional teaching and moral education penetration, the overall construction of a moral education penetration implementation system.

The method of research "learning" is reconstructed, and the traditional "learning" of exercises training is transformed into the "learning" of active inquiry. The reform of the "teaching" mode will inevitably lead to the reconstruction of the "learning" mode. Based on the psychological characteristics and cognitive laws of college students, this course innovates the learning methods of professional courses, and changes the mechanical "learning" to the active and exploratory "learning". According to the different principles and applications of various sensors, various learning projects are designed to allow students to practice and research in the learning of various projects, from the selection of themes, the design of schemes, the methods and methods of solving problems, the accumulation of experience, and education. Learning and summarizing people's perceptions and other aspects.

At the same time, the course also includes ideological and political education content promptly to guide students' value, cultivate students' patriotic spirit, team spirit and conscientious craftsman spirit. The specific design is as follows: Table 1.

Table 1. Course content arrangement

Course content	Content of Ideological and Political Education	Educational objectives
Principle and method of non-contact temperature measurement	The prevention and control of the epidemic situation and the significance of epidemic prevention and control.	Combining novel coronavirus pneumonia epidemic prevention and control, comparing domestic and foreign prevention and control situation, we will carry out cultural self-confidence and system self-confidence education, so as to stimulate students' strong patriotic feelings and national pride.
Principle and application of photoelectric sensor	Development and application of rare earth resources in China Development and Prospect of photovoltaic industry in China	Through the distribution and importance of rare earth resources, stimulate students' love for the great motherland; the technical level of photovoltaic industry, status in the world, educate students to treat themselves correctly.
Principle and application of piezoelectric sensor	History of ceramics, new ceramic materials	Through the application of new ceramic materials, students can understand the long ceramic history of the great motherland and stimulate national pride, so that they have great enthusiasm to invest in the development of new materials.

The ideological and political education content is introduced into the teaching of Sensor and Detection Technology. After the teaching practice for students in class 2019, the overall teaching effect has been excellent. In addition to the study of their professional knowledge, the students exhibited great enthusiasm and interests in the ideological and political part as well, which would in turn benefit their development of world outlook, outlook on life and values.

3. SUMMARY AND EXPERIENCE

According to the students, the integration of ideological and political education is imperceptible. It was not rigid preaching, but more about a historical summary of the development of the discipline. In the process of focusing on professional learning and training, the students naturally accepted the development of their correct world outlook. Consequently, with this novel education mode, students receive ideological and political education through two complementary aspects, the specialized ideological and political courses and the integrated ideological and political content in professional courses. Since the latter is initiated from the perspective of

professional training, it is more profession-specific and closer to reality for students thus a good supplement.
The introduction of ideological and political education in professional courses is a better way of combining reality, educating students with facts and examples, enhancing their sense of national pride and cultural identity, stimulating their enthusiasm for learning, and forming more conscious learning. Moreover, in the process of preparing and teaching the course, teachers have implemented ideological education on their own as well. They then are more able to assure the general direction of who education serves and how to cultivate students. The new education mode also allow teachers to teach in a better classroom atmosphere full of positive energies, give lectures with more passion and enter a virtuous circle of interaction.
The introduction of ideological and political education in professional courses also raises higher requirements for teachers of professional courses. Under the new teaching mode, teachers are required not only to have discipline-specific skills but also to be equipped with keen humanistic sense. They are expected to be good at mining and refining the ideological value and spiritual connotation contained in their domain knowledge and have a thorough understanding of the current political hot spots and economic policies of the country. That being said, in practice, the new ideological and political education mode is also helpful regarding the improvement of teachers' own moral cultivation.

REFERENCES
[1] Yu Xiaoyan, Wei Guangpu, song Yuchen. Exploration on teaching reform of introduction course of information management major under the background of Ideological and political course-Journal-2019.
[2] Lu Daokun. Some core problems and solutions in the promotion of curriculum ideological and Political Education -- Based on the discussion of Ideological and political education of professional courses [J]. Ideological and theoretical education, 2018 (3): 68.
[3] Deng Li. Research on curriculum ideological and political reform in Higher Vocational Colleges of architecture from the perspective of "three aspects of education" –Journal-2019.

Exploring the New Model of College Student Management

Li Xingzhong
Zibo Vocational Institute, Zibo 255000, Shandong, China
[*]Corresponding Author.

Abstract: Education-based education for a century of planning has been a topic of eager attention since ancient times. The educational work of colleges and universities shoulders the dual responsibility of students' learning cultural knowledge and the integration of society. Therefore, the management of college students is considered in a targeted manner. Today has its necessity.
Keywords: College; Management; Model.

1. ANALYSIS OF THE CURRENT SITUATION OF STUDENT ADMINISTRATORS

College students are the main body of our country's colleges and universities, and the management of students is an important part of the daily operation of colleges and universities. The quality of education directly affects the development of colleges and universities. From the perspective of student management, this article puts forward a few points of view in a targeted manner.

1. 1 EMPHASIS ON MANAGEMENT OVER SERVICE, LACK OF INNOVATION IN STUDENT MANAGEMENT

For a long time, the management methods of college students were single and passive, and the implementation methods of student management lacked initiative and scientificity. The traditional student management model adopted by most colleges and universities mainly emphasizes collective management, rigid management, and standardized management, and restrains students' behavior. To a large extent, it ignores that this management method is likely to collide with the personality characteristics of post-90s college students. Conflict causes their resistance and rebellious psychology, and it is difficult to adapt to the management needs of the new group. The contradiction between the two is increasingly prominent, which is not conducive to the management and growth of students. The existing management model also ignores the cultivation of college students' self-education and self-management ability. Except for a few student cadres who have the opportunity to exercise their organization and management ability, the vast majority of students are almost deprived of the opportunity to cultivate and exercise this ability. The students trained under this management concept lack the ability of independent thinking and the spirit of innovation.

1. 2 INSUFFICIENT HUMAN RESOURCES IN UNIVERSITIES CAN NOT MEET THE NEEDS OF STUDENT MANAGEMENT

At present, a major problem in the management of college students is the shortage of management personnel. A student manager is in charge of the management of multiple classes, which directly leads to the arduous tasks of the managers, and it is impossible to carry out refined management and meticulous ideological education. Student administrators deal with busy affairs every day. It is difficult to analyze each student's problems in detail, and it is even more difficult to summarize and sort out the experience and lessons of student management, the characteristics and thinking of contemporary college students. This makes the management work superficial, mere formality, and lacks in-depth theoretical study and research. Secondly, the quality of student administrators is uneven, some people are not well-trained in theory, the corresponding professional knowledge required for student management work is also lacking, the degree of specialization is low, and at the same time, there is a lack of further training to improve their professional opportunities. The existence of these problems has led to insufficient management and low management efficiency in colleges and universities, which seriously affects the improvement of students' comprehensive quality.

2. INNOVATION IN CURRENT STUDENT MANAGEMENT

2. 1 CHANGE THINKING, HUMANE MANAGEMENT

The current student management workers should change their thinking, renew their concepts, and humanize management. The humanized management of college students must adhere to the people-oriented and student-centered concept. Student management is no longer simply to "manage" students in the past, but to transform management into service, from a manager to a server, a guide, and to create a broad platform and space for the development of students. In the current student management work, many colleges and universities only put the people-oriented concept on the lip service. In actual work, there are still problems of bureaucracy and parental style, completely disregarding the feelings of students and failing to truly put people first. Students are firstly humans, who are intelligent, emotional, thoughtful, and conscious life individuals, and secondly are individuals who learn knowledge, skills, and survive in school. For complex life individuals, management cannot be coercive or rude, but methods and strategies must be emphasized and guided. People-oriented, based on the actual situation of students, aiming to serve students better and faster, and avoid excessive constraints on students and increase the burden on students. In daily management work, we must pay full attention to the feelings of students, understand what students' needs are, and care for every student. We must respect the individuality of students, give full play to their potential, and let them fully understand their own characteristics, so as to cultivate talents that meet the requirements of social development in the new era.

2. 2 BUILDING A TEAM OF HIGH-LEVEL STUDENT ADMINISTRATORS

The level of student administrators has a direct effect on student management. Therefore, it is very important to build a high-level student management team. Facing the new situation, in order to actively create a new situation in student management and promote the development of students and universities, we must strive to cultivate and cultivate a team of high-level student management talents. The main task of colleges and universities is to teach and educate people. It is necessary to train students to have a high sense of social responsibility, love the motherland and the people, and have a spirit of dedication. Colleges and universities take academia as the leading position and focus on teaching and research. Therefore, in order to achieve the university's goals, student management must be put in a very prominent position, a professional student management team must be cultivated, and the problems faced by student management must be studied and countermeasures proposed. Establishing the professional disciplines of student education and management and cultivating talents for student management is also a top priority for universities. By building a team of teachers and student management with good thinking, professionalism, and style, establish student-centered management ideas and concepts, and build a student management system with clear responsibilities, clear division of labor, and orderly cooperation. Modern educational management methods really promote the professionalization, scientification, institutionalization, and humanization of college student management, adapt to the new situation, and continue to make greater contributions to accelerating higher education and economic and social development. [1]

According to the "Outline of the National Medium and Long-term Educational Reform and Development Plan", "Care for each student, promote the active and lively development of each student, respect the law of education and the law of student physical and mental development, and provide each student with appropriate education. " Especially with the popularization and popularization of higher education, the rapid increase in the number of students, coupled with the obvious differences in other personalities, has brought great challenges to the education management of independent colleges. The implantation of big data concepts and related technologies in it provides a new solution for the optimization of education management of independent colleges, which reduces the workload of teachers to a certain extent and allows them to have more time and energy to engage in teaching and research. In terms of specific methods and methods, we always adhere to humanistic guidance and rely on big data analysis to fully understand student personality differences. Based on this, we focus on teaching model innovation, share learning resources through the Internet, and guide students to learn on demand, thereby improving teaching Effective. At the same time, based on the support of big data, we can understand the dynamics of students' learning development in real time, dig deep into the value of relevant information, find out the problems and incentives in time, and then adjust the education strategy in a targeted manner to improve students' learning initiative and enthusiasm.

Facing the fierce market competition environment, the strategic value of talents has become more and more prominent, and the development of its cultivation work has received extensive attention from the state, enterprises and society, and put forward many and higher requirements for it. Under such an environmental ecology, coupled with the growth of the source of students, independent college students are facing severe pressure from employment competition. According to relevant investigations, it is found that the current independent colleges' employment guidance is relatively lagging, and the teaching method is still the main method. The actual effect on students is not obvious. This leads to the phenomenon of unemployment after graduation. This is the daily management work that must be carried out. Point. Organization of a series of activities in employment management. [2]

In the medium, it is necessary to adhere to the economic market demand as the guide, accurately position the talent training goals, and refine it into each management link. At the same time, it can provide employment guidance courses and rely on professional development data to help students develop scientific career development based on their own personal characteristics Plan and encourage them to learn with purpose and motivation. In addition, in the information age, further improve the campus network service platform functions, open employment management modules, build a bridge for interaction between students and employers, and provide personalized guidance to help students solve practical problems.

Under the environment of quality education reform, the core goal orientation of higher education is to promote the overall development of students' physical and mental health. While cultivating good professional knowledge and skills, it is also necessary to care about the shaping of their good psychological quality. This is also true for independent institutions in this way. Life management is an important content of student management in independent colleges, and its professionalism and importance are increasing day by day. In actual practice, independent colleges and universities can build a complete data information system to record students' daily life including canteens, medical care, libraries, water and electricity, etc. [3]And pay attention to their actual conditions and real-time dynamics, and update data. And then formulate a scientific and feasible management plan. At the same time, independent college administrators and teachers should be good at collating and analyzing students' daily life data, in-depth satisfaction surveys, and combining individual differences between individual students to organize personalized management activities. In addition, independent colleges and universities should focus on the mental health of students, formulate a complete early warning mechanism based on a series of data feedback, and use their various thoughts and behaviors to deeply explore psychological factors, and discover problems in time, and provide necessary counseling or guidance.

3. CONCLUSIONS

With the continuous development of society, the management of students should also change their minds, update concepts, and keep pace with the times. Establishing a people-oriented management concept and building a team of high-level student managers are related to the quality of talents cultivated by a university, and it is also related to the future of a university. How to make our current students learn more happily in management is a question that each of our educators should think about.

It is imperative to innovate the student management work of independent colleges under the background of big data. It is an important project to improve the effectiveness of talent training. In practice, it should focus on student development and start from multiple dimensions such as education management, life management, and employment management. Emphasizing the collection, sorting and application of student information, so as to innovate and optimize the management model. The author hopes that everyone in the academia will continue to pay attention to the research on this subject, combine the actual situation, and put forward more effective practical measures in a targeted manner.

REFENCES

[1] Li Si-yuan. Theory and practice of student management in Higher Vocational Colleges. Journal of Nanjing Radio and Television University, 2011, (1): 78-81. Doi: 10. 3969 J. ISSN. 1009-1459. 2011. 01. 020.

[2] Ding Xiaohua. Reflections on the management of students in Higher Vocational Colleges. Scientific and technical information (scientific teaching and research), 2007, (36): 281-282. Doi: 10. 3969 J. ISSN. 1001-9960. 2007. 36. 211.

[3] Lily Wu. Some experiences of student management in Higher Vocational Colleges. Journal of Changchun Institute of Education, 2013, 29(8): 155-156. Doi: 10. 3969 J. ISSN. 1671-6531. 2013. 08. 089.

Talking About the Method of Drawing Arc Connection with AutoCAD Software

Li Xuan
Zibo Vocational Institute, Department of Electronic and Electrical Engineering, Zibo 255000, Shandong, China

Abstract: Circular arc connections often appear in drawing engineering drawings. From years of teaching practice, the author has summarized several methods of using AutoCAD software to draw arc connections for the reference of relevant personnel.
Keywords: Arc connection; Fillet; Tangency; Radius.

1.USING TRADITIONAL DESCRIPTIVE GEOMETRIC METHODS TO DRAW ARC CONNECTIONS

The drawing method that uses a circular arc to smoothly connect the other two known line segments is called circular arc connection [1]. Smooth connection means that the arc and the straight line or the arc and the arc are tangent, and the tangent point is the connection point. In order to ensure a smooth connection, the center and tangent point of the connecting arc must be accurately found. In the process of drawing plane graphics, we often encounter arc connections.

The essence of arc connection is to make the arc tangent to the adjacent line segment, so as to meet the requirements of smooth transition at the arc connection. There are three situations of arc connection: an arc connects two known straight lines, an arc connects two known arcs, and an arc connects a known straight line and a known arc. The method used is summarized as "finding the center of the circle, fixing the tangent point, and connecting the radius", with the wide application of AutoCAD software in the drawing industry. It has gradually replaced the original manual drawing mode. The author of this article focuses on several methods of drawing arc connections using AutoCAD software.

The traditional descriptive geometry method of drawing arc connections. In summary, it is "find the center of the circle, fix the tangent point, and even the radius". In AutoCAD. We can also follow this idea. Find the center of the connecting arc, and find the tangent point between the connecting arc and the known line segment. Then use the drawing arc command of "start point, center, end point" to draw the required arc.

It can be divided into the following situations:

(1) An arc connects two known straight lines
(2) An arc connects a known straight line and a known arc
(3) An arc circumscribes two known arcs
(4) The arc inscribed and connected two known arcs
(5) The arc was inscribed and circumscribed to connect the two known arcs respectively

What needs attention here is when the arc is connected to a known arc. When circumscribing, use the sum of the two arc radii to draw a circle. When inscribed, use the difference between the radii of the two arcs to draw a circle. The disadvantage of this method is the large amount of drawing. Need to draw auxiliary lines, drawing efficiency is low.

2.USING THE "ROUND CORNER" COMMAND TO DRAW

In AutoCAD, we can directly call the "fillet" command to realize the arc connecting two known straight lines, the arc connecting a known straight line and a known arc, and the arc connecting two known arcs. Know the situation of arc circumsection.

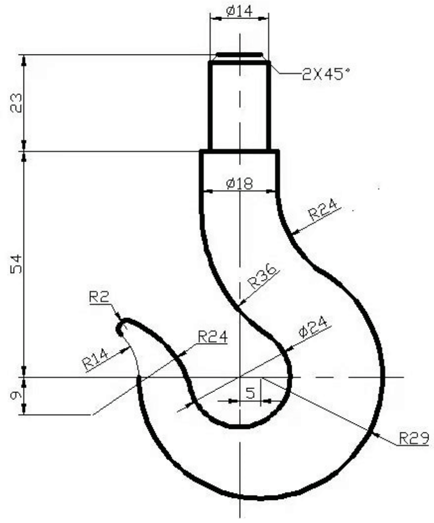


Figure 1 Hook

As shown in Figure 1, R24 and R36 in the hook are connected with a known straight line and a known arc [2]. We can directly click the "round corner" command, enter R on the keyboard, give radius values 24 and 36, and then select the known straight line and known arc that need to be connected by arc. AutoCAD software will automatically connect these two line segments with arcs with radii of 24 and 36.

The R2 arc in Figure 1 is circumscribed with the known arc R14 and inscribed with the known arc R24. Because of the existence of "outside" (outside R14), we can also click directly "Fillet" command, keyboard input R, given radius value 2, and then select the two known arcs R14 and R24, AutoCAD software will automatically complete the arc connection drawing.

3. USE "TANGENCY, TANGENCY, RADIUS" TO DRAW

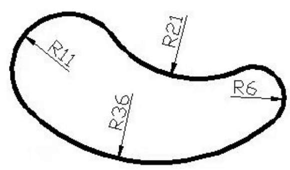


Figure 2 Schematic diagram of arc connection

When encountering a situation where the arc is inscribed with a known arc, the arc connection drawn by the "round corner" command will become an outer tangent situation. At this time, we need to apply the drawing of "tangent, tangent, radius" The circle method cooperates with the "trim" command to draw arc connections.

As shown in R36 in Figure 2, we can use "tangency, tangency, radius" to select the tangent points with arcs R11 and R6, input 36 radius to draw a whole circle, and then cooperate with the "trim" command to cut the excess The line segment is finally drawn.

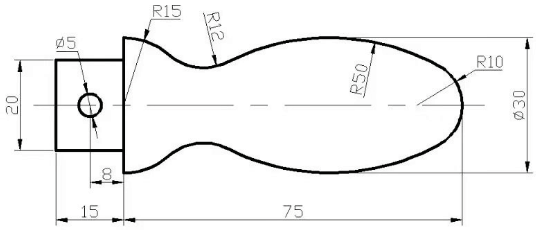


Figure 3 Handle

As shown in Figure 3, the R50 arc in the handle is an intermediate line segment. For the specific drawing method, we can make an auxiliary line 15 from the vertical reference line, and then use "tangent, tangent, radius" [3] to select this Auxiliary line and R10 arc, enter 50 radius to draw a full circle, and then cooperate with the "trim" command to complete the final drawing.

What needs to be explained here is that when drawing a circle that is tangent to two circles, selecting tangent points at different positions will produce an inscribed or circumscribed relationship: (1) Pick two points within the center line, and draw the two circles Circles that are circumscribed; (2) Pick two points outside the center line, and draw a circle that is inscribed to the two circles [4]. Therefore, you must pay special attention when choosing the tangent point and don't choose the wrong one.

4. SUMMARY

Arc linking is often encountered when drawing engineering drawings. In the past, there is no good way to work with manual drawings. You can only follow the method of "finding the center, fixing the tangent point, and connecting the radius" step by step, which is more time-consuming. With the popularity of AutoCAD software, the efficiency of drawing has been greatly improved. The arc connection with the help of AutoCAD software can make the original time-consuming drawing concise and improve the accuracy and efficiency of the drawing as a whole.

Using the "round corner" command and "tangent, tangent, radius" to draw arc connections is based on the traditional arc drawing method, combined with the characteristics of AutoCAD software [5], and the simplified steps of drawing arcs can be said to be twice the result with half the effort. Effect.

The above are the several methods that the author summed up in teaching for many years using AutoCAD software to draw arc connections. In recent years, AutoCAD software has been widely used in the field of drawing design by virtue of its powerful drawing and editing functions. This article only takes drawing arc connections in plane graphics as an example. Discussed the convenience of the software, hoping to play a role in attracting new ideas.

REFERENCES

[1] Ma Lan. Mechanical drawing[M]. Beijing: Mechanical Industry Press, 2008.

[2] Dai Xiaoguang. "AutoCAD" course content design based on project teaching [J]. Neijiang Science and Technology, 2017.10.

[3] Du Hongxiang, Chen Hongkang. AutoCAD2010 tutorial and training [M]. Tianjin: Tianjin University Press, 2013.

[4] Wang Xuhong. Using AutoCAD to Draw Plane Graphics (2) [J]. Information Recording Materials, 2017.7.

[5] Zhang Yangzhi, Zhou Xuan. Analysis of AutoCAD2010 Practical Skills of Drawing [J]. Computer Fans, 2018.8.

Teaching Research on "Principle and Application of Single Chip Microcomputer" in Higher Vocational Education

Guangliang Wang
Zibo Vocational Institute, Department of Electronic and Electrical Engineering, Zibo 255000, Shandong, China

Abstract: "Principle and Application of Single Chip Microcomputer" is a compulsory course offered by electrical majors in higher vocational colleges. It is a comprehensive and practical subject, which occupies a very important position in the entire curriculum system. This article analyzes the status quo and existing problems of SCM technology courses in higher vocational colleges, expounds the importance of practical teaching, and studies the teaching methods and methods of SCM principles and application courses according to the students' academic conditions and characteristics, and how to I talked about some ways to improve students' interest in learning.
Keywords: Single chip microcomputer technology; Practical teaching, Interest.

1.THE TEACHING STATUS AND EXISTING PROBLEMS OF THE PRINCIPLE AND APPLICATION OF SINGLE-CHIP MICROCOMPUTER

With the continuous development of science and technology, single-chip technology has developed rapidly in the field of modern electronic engineering. In order to meet the society's demand for talents and also for students to get better employment, all higher vocational colleges use single-chip technology as an electrical major. A professional core course for students. The course is supported by electronic technology as hardware and assembly language or C language as the main body of software. It involves computer, communication and other fields. It needs strong theoretical knowledge to support, and it also has strong The practicality and practicability of the curriculum occupies a very important position in the entire curriculum system. [1] How to enable students to better master the relevant knowledge of the single-chip microcomputer and improve the students' practical ability is the main problem faced by the teacher.

With the continuous deepening of higher vocational education, practical training, as an important link in cultivating skilled talents, has received more and more attention from schools. However, even so, there are still many problems in the principle and application of single-chip microcomputer principles and practical training teaching.

1.1 THE TRAINING EQUIPMENT HAS DEFECTS

Although many higher vocational colleges have built training rooms for the principle and application of single-chip microcomputers, most of the training equipment they are equipped with are purchased experimental boxes. This kind of experimental boxes mainly complete confirmatory experiments. Students only need to press It is required to connect a few wires and download the debugged program to the experiment box for verification.[2] It cannot meet the requirements of the principle and application teaching of the single-chip microcomputer. The teaching effect can be imagined.

1.2 LACK OF TRAINING MATERIALS

The implementation of practical teaching requires corresponding teaching resources to meet, but the development of practical teaching materials lags far behind theoretical teaching materials. Therefore, it is difficult to find matching practical teaching materials in the teaching of the principle and application of single-chip microcomputers, and the used teaching materials are all relatively Being backward and unable to keep up with the current social technological trend, students cannot adapt to the needs of society immediately after graduation.

1.3 WEAK TRAINING TEACHERS

The goal of higher vocational colleges is to cultivate skilled application-oriented talents. This arduous task falls on the shoulders of training teachers. At present, the principle and application teachers of single-chip microcomputers are mostly part-time teachers of theory courses. On the one hand, they lack corporate expertise. Practical experience. On the other hand, due to the heavy workload, there is not too much time to study and training, and often a teacher needs to instruct dozens of students. When students encounter difficult problems, the teacher has no time to give each student a timely manner. Guidance, this not only affects the effectiveness of training, but also affects students' learning enthusiasm.

1.4 SINGLE TRAINING FORM

In the teaching of the principle and application of single-chip microcomputers, the training form is relatively simple, mainly debugging programs, and the training content is mostly confirmatory experiments. Students generally input the programs compiled by the teacher into the computer for debugging, and rarely have time for themselves Use your brain to write programs, so it is difficult to establish the overall concept of single-chip system development, and it is relatively slow to get started.

1.5 THE ASSESSMENT OF PRACTICAL TRAINING IS UNREASONABLE

Many higher vocational colleges do not have strict assessment standards for the principles and application courses of single-chip microcomputers. At present, two assessment methods are mainly adopted: First, as long as students participate in the training process and complete the training report, the teacher will follow the training process. The performance in the middle school gives a qualified score; the second is the assessment or the assessment method of the theory teaching. At the end of the training, a test paper is used for assessment, regardless of whether the student has really learned knowledge, exercised hands-on ability, or gained a skill. These assessment methods greatly restrict the effectiveness of practical training and teaching.

2. THE IMPORTANCE OF THE PRINCIPLE AND APPLICATION OF SINGLE-CHIP MICROCOMPUTER

Practical teaching is the continuation and supplement of classroom teaching. It is one of the key links in cultivating applied talents in higher vocational colleges. It is a necessary teaching method to improve students' practical and professional ability. The principle and application of single-chip microcomputer are important for higher vocational colleges. [3]The students have far-reaching significance, which is mainly reflected in the following aspects.

2.1 MCU IS ONE OF THE COMMONLY USED TECHNOLOGIES FOR GRADUATION DESIGN.

Students are required to make a graduation design and write a graduation thesis before graduation. The quality of the graduation design directly affects whether the student can graduate normally. In the case of electrical majors, most of the graduation design uses single-chip technology, but the students have not studied the principle of single-chip microcomputer. It is very unlikely that the MCU can be learned well by applying the training link, and it is difficult to guarantee the quality of the graduation design, which affects graduation.

2.2 THE SINGLE-CHIP TECHNOLOGY IS THE BASIS OF VARIOUS COMPETITIONS.

In recent years, in electronic skills competitions held for vocational colleges, the content involved the knowledge of microcontrollers. Therefore, if you want to get good results in the competitions, you must overcome the difficulty of microcontrollers. The principles and application training of microcontrollers can be helpful. Students participating in various competitions create good conditions to lay a solid foundation for them to further learn MCU.

2.3 THE EMPLOYMENT PROSPECTS OF SCM APPLICATION TALENTS ARE GOOD.

The single-chip microcomputer is a very practical technology. The society has a great demand for single-chip talents. At present, many electrical graduates are directly or indirectly engaged in the development and research work related to the single-chip technology. The application course aims to improve the students' design thinking and programming level and the ability to apply the single-chip microcomputer, and can provide help for the smooth employment of the students.

3 HOW TO IMPROVE THE TEACHING QUALITY OF THE PRINCIPLE AND APPLICATION OF SINGLE-CHIP MICROCOMPUTER

3.1 STIMULATE STUDENTS' INTEREST IN LEARNING MCU

The SCM course involves a wide range of knowledge, and it is difficult to get started. In actual teaching, students also generally report that SCM is difficult to learn. If students are afraid and lose interest in learning SCM at the beginning, it will directly affect the training. effect. As a teacher, he should try his best to stimulate students' interest in learning, improve their enthusiasm for learning, and lay the foundation for learning SCM technology. In the teaching process, I adopted the following methods.

3.2 HAVE A GOOD FIRST LESSON

How to make students fall in love with the single-chip microcomputer course, it is very important to take the first class well. Therefore, reasonable selection and organization of teaching content is the key. You can bring the MCU learning board into the classroom, introduce some simple hardware circuits, and demonstrate an experiment controlled by the MCU, such as a patterned water lamp, a two-digit digital tube countdown, etc., through the demonstration, Enable students to experience the charm of single-chip microcomputers in a real situation, thereby inspiring students' curiosity and thirst for knowledge, and enhancing students' interest in learning.

3.3 LOOKING FOR THE MCU IN LIFE

With the continuous development of society, our lives are closely related to single-chip microcomputers. Examples of the use of single-chip microcomputers can be seen everywhere, such as traffic lights at intersections, various household appliances, etc., which are controlled by single-chip microcomputers. By looking for a large number of examples in life, one On the one hand, let students understand that our life is inseparable from single-chip microcomputers. Learning the single-chip microcomputer is very helpful to future work and life. On the other hand, making abstract knowledge specific and visualized can help stimulate students' active learning and improve students. Learning interest.

3.4 ADOPT A PROJECT-DRIVEN TEACHING METHOD

The purpose of practical teaching is to consolidate the theoretical knowledge learned in the classroom and cultivate students' practical application ability. In theoretical classes, most of the traditional teaching models are explained in accordance with the chapters of the textbook, from the composition principle of the single-chip microcomputer system, the instruction system of the single-chip microcomputer and other step-by-step descriptions. The knowledge points are relatively scattered. The knowledge points are linked together, and teachers need to spend their time to organize. The project-driven teaching method can penetrate scattered knowledge through the main line of the project, making it easier for students to master what they have learned.

The following is an example of an 8-bit water lamp to implement project teaching:

The first step: Clarify the requirements of the project, use the P2 port of the single-chip microcomputer to control 8 LED lights, make the lights turn on from LED1 to LED8, and repeat the cycle;

The Seond step: Design the hardware circuit of the project. Students can use the simulation software Proteus to design the hardware circuit. This process can enable students to master the interface technology of the peripheral devices of the single-chip microcomputer system;

The third step: Write the software program of the project, and use the KeilC51 compilation environment to write the program for the hardware circuit. First, let the students think about what sentences need to be used to light up the LED lights. Secondly, remind students to turn on the 8 lights in turn, which can be achieved by using shift sentences. The software design should focus on cultivating students' modular programming thoughts, and exercise students' programming thoughts and methods;

The fourth step: Software and hardware joint debugging, load the compiled and debugged program into the Proteus software, and perform joint debugging until the requirements are met. In the process of debugging, students should be taught the method of joint debugging, and when they encounter problems, they can find the problem and solve it correctly;

The fifth step: Verify on the experiment board. After the simulation debugging is passed, students can download the program to the actual circuit board for debugging, so that students can feel the effect of the changing of the water lamp more deeply, enjoy the joy of success, and enhance them Confidence in learning MCU;

The sixth step: Expansion and extension of the project. After students fully understand the above content, they are required to complete the following two projects: One is to turn on the lights from LED8 to LED1 in turn, and repeat the cycle. The second is to make the lights turn on sequentially from LED1 to LED8, and then turn on sequentially from LED8 to LED1, and so on. In this process, through the students' independent completion of the project, they cultivate their comprehensive ability to analyze and solve problems.

Each project focuses on a task goal to explain the relevant knowledge points, explain what knowledge is used in the project, talk as much as you use, and talk where you use it, learn while you are, learn while practice, let students In the process of completing the entire project, understand the knowledge points, exercise programming thinking, and improve the ability of single-chip applications.

The selection of items should be gradual. The acquisition of knowledge and the cultivation of skills are a gradual process. In the teaching process of the principle and application of single-chip microcomputer, in order for students to quickly grasp the idea of programming, it is very important to select the project, which is directly related to the effect of the training. For this reason, the overall planning of the project, the connection between the projects, and the relationship between the projects should be considered. Step by step, and follow the principle of gradual and orderly progress to select the right project. The project follows the law of learning from easy to difficult, simple to complex, each project gradually adds new knowledge points, and is equipped with some practice projects, so that students have room for self-expression, and they have the ability to complete the project through their own efforts. Tasks give students the opportunity to experience the joy of success, thereby mobilizing students' enthusiasm for learning, enhancing their self-confidence in learning, and improving their learning efficiency.

3.5 USE THE INTERNET TO SHARE WORKS SKILLFULLY TO CULTIVATE STUDENTS' INTEREST AND SELF-CONFIDENCE

Interest is the best teacher. Where does the interest come from? One is the student's own love of the subject, and the other is the guidance, training and inspiration from the teacher. The cultivation of interest is to allow students to experience the joy of success, thereby enhancing self-confidence. In the teaching process of the principle and application of single-chip microcomputer, students are fully given space for independent learning and independent innovation, and students are encouraged to combine reality, establish their own projects, form programming ideas, and then cooperate in teams to complete related learning projects. Cooperative learning encourages students to study together for the collective and individual interests, achieve their own goals in the process of completing common tasks, and also cultivate team spirit. Teachers will make videos of the works of each group, and make voting links, share them with parents and online platforms, and vote and evaluate each group of works. Teachers give feedback to students of positive evaluations and recognition. Success and recognition are what everyone expects. The joy of success and recognition is also the motivation for students to move on. When students are recognized by their parents and others, they have tasted success and strengthened their self-confidence. Students are also more motivated to learn the principles and application of single-chip microcomputer courses, changing from "I want to learn" to "I want to learn. Thereby improving the learning effect. [4]

4. CONCLUSIONS

The training link is very important in the teaching process of the principle and application of the single-chip microcomputer. Teachers should choose the teaching method reasonably according to the characteristics of the teaching content, so as to achieve the ideal teaching effect. For higher vocational students, teachers should highlight the cultivation of students' interest, cultivate students' programming ideas, and cultivate students' ability to solve problems independently. How to carry out the teaching reform in a more in-depth and systematic manner, and cultivate the application-oriented talents of single-chip microcomputer with engineering quality and innovation ability, still needs to continue to work hard, constantly explore new teaching reform methods, and improve the teaching quality of the course.

REFERENCES:

[1] Ding Chunxia. Research on SCM Technology Training Teaching in Higher Vocational Colleges, Computer Knowledge and Technology 2021, Vol.17:103-104.

[2] Dong Xuefeng, Du Gang, Gao Shan. Research on the Application and Development of Single Chip Microcomputer in Electronic Technology, Technology

Forum 2021.01, 02(050):55-57.
[3] Zhong Duanwei. Talking about the basic principles and application research of single-chip microcomputer Science Herald, 2014, Vol.19:216-217.
[4] Wang Ying, Liang Kai, Liu Qi, Gou Yao, Xu Jiaojiao. Principles and Applications of Single-chip Microcomputers, Exploration and Research on Jinke Construction, Journal of Jilin Institute of Chemical Technology, 2020, Vol.5:88-89.

Design and Realization of University Students' We-Media Innovation Management System

Zhang Dedi
Zibo Vocational Institute, Zibo 255000, Shandong, China

Abstract: In recent years, high-quality innovation and entrepreneurship education is the country's talent training requirements for higher education institutions, and it is also a deep reflection of school-enterprise integration. Cultivating high-quality talents is the direction that colleges and universities have been committed to achieving. This paper analyzes the status quo of college students' innovation and entrepreneurship and its management at this stage, and finds some problems from it, and puts forward the concept of design and implementation of the college student's innovation and entrepreneurship management system platform. It is hoped that through this attempt, colleges and universities will improve the management of innovation and entrepreneurship. Efficiency, while improving students' enthusiasm for innovation and entrepreneurship.
Keywords: College students; Innovation and entrepreneurship; Management system; Design and implementation.

1.INTRODUCTION

The cultivation of innovative talents is the task of all levels of education and the entire society, and is particularly closely related to higher education. As the foundation of the knowledge innovation and technological innovation system, higher education is an important cradle for cultivating innovative spirit and innovative talents. The cultivation of innovative talents in colleges and universities should be more important, The goal is to improve the quality of the educated in all aspects, and pay attention to the harmonious development of people's ideological quality, personality ability, and physical and mental health. [1]

On June 13, 2019, Premier Li Keqiang attended the 2019 National Mass Entrepreneurship and Innovation Week in Hangzhou, Zhejiang. He visited the theme exhibition area of “Entrepreneurship and Entrepreneurship”. Outstanding achievements, he emphasized further improving the level of "double innovation" so that it can better play the role of stabilizing employment, promoting innovation and enhancing new momentum. As an important place for cultivating innovative and practical talents, colleges and universities across the country should strengthen the effective management of college students' innovation and entrepreneurship, so as to respond to the call of the country and increase their interest and enthusiasm for innovation and entrepreneurship. Therefore, colleges and universities build a university student innovation and entrepreneurship The management system platform is very important. [2]

The discipline competition jointly established by universities and enterprises is the development form of the training model of high-quality and high-level college students, and is also a mutually beneficial and win-win cooperation mechanism between the two. The discipline competition has gradually formed a trend of enterprise participation and school-enterprise cooperation. Colleges and universities establish a base for scientific and technological innovation activities and entrepreneurial practice bases for college students.

Different forms such as places have actively integrated resources and opened a diversified training model for students. Subject competitions are developing in the direction of comprehensively examining the comprehensive quality of college students. The competition is fierce, which also encourages college students to enrich themselves in all aspects and comprehensively improve their comprehensive quality.

2. INNOVATION AND ENTREPRENEURSHIP MANAGEMENT SYSTEM PLATFORM

The innovation and entrepreneurship management system platform built by using the technological advantages of computer technology, information technology and the Internet can strengthen the communication between teachers and students and enhance the ability of cooperation between students. The construction of this platform can systematically manage the innovation and entrepreneurship practice of college students, and can improve the management efficiency in this area.

3. THE STATUS QUO OF COLLEGE STUDENTS' INNOVATION AND ENTREPRENEURSHIP AND THEIR MANAGEMENT STATUS

As a brand-new educational concept, innovation and entrepreneurship education poses new challenges to the development of college education. The importance of innovation and entrepreneurship education in colleges and universities across the country is increasing day by day. The enthusiasm for innovation and entrepreneurship education in colleges and universities across the country is high, but innovation and entrepreneurship management is not satisfactory. Most colleges and universities have specialized undergraduate scientific research management offices with specialized personnel and specialized websites, which are responsible for scientific research project information disclosure, application organization, approval and acceptance, consulting services, teacher recruitment, overall project funding budget, scientific research credit management, Responsibility for performance evaluation, remuneration payment, campus coordination and other affairs. [3]The process of innovation and entrepreneurship management is composed of multiple activities, but "real-time interaction" is the main link of this process and the central business of innovation and entrepreneurship management activities. The existing college students' innovation and entrepreneurship management model has a single function, and requires many manual operations, and has poor implementation interaction. For example, there are few status management and communication channels in the innovation process. [4]

4. THE PLATFORM DESIGN OF COLLEGE STUDENTS' INNOVATION AND ENTREPRENEURSHIP MANAGEMENT SYSTEM

4.1 DEMAND ANALYSIS OF MANAGEMENT SYSTEM PLATFORM

High efficiency, concise process, scientific and reasonable management methods are the requirements of university management for innovation and entrepreneurship management at this stage. When carrying out innovation and entrepreneurship activities, students need to submit corresponding documents and materials at different stages, and the platform needs to collect and manage the materials effectively.

Teachers often have good innovation and entrepreneurship projects that require suitable students to participate, but they suffer from the inability to publish the information to the students, resulting in a limited number of students to choose from. Therefore, the platform we have implemented can release information about teacher-related innovative practice projects in real time.

In the process of innovative practice, students often encounter problems and difficulties and need to seek the help of the instructor. Whether the instructor's help is timely will directly affect the process of innovative practice activities; at the same time, students also need to communicate, communicate and communicate with other students. Cooperation to improve the efficiency and quality of innovative practice activities. [5]

4.2 DESIGN PRINCIPLES OF MANAGEMENT SYSTEM PLATFORM

(1) Reliability. The innovation and entrepreneurship management system platform is aimed at the teachers and students of our college and Relevant school-enterprise practice bases, etc., involve multiple practice links, so it is necessary to ensure platform security Stable and reliable.

(2) Applicability. The design of the innovation and entrepreneurship management system platform should consider applicability. The technical methods used should be relatively advanced, and the platform functions should be relatively practical.

(3) Ease of use. In the innovation and entrepreneurship management system platform, the database data table adopts the standard, break the time and geographical constraints, improve work efficiency and management efficiency, there is a good user interface makes it easy for users to grasp and operate.

4.3 MANAGEMENT SYSTEM PLATFORM SUBSYSTEM DESIGN

According to the results of sub-system division, the innovation and entrepreneurship management system design is divided into sub-systems system, notification and announcement subsystem, innovation and entrepreneurship learning subsystem, innovation and entrepreneurship project management subsystem system and related achievement registration subsystems and other functional modules.

5. REALIZATION OF INNOVATION AND ENTREPRENEURSHIP MANAGEMENT SYSTEM PLATFORM

The innovation and entrepreneurship management system platform intends to adopt the B/S (browser server) architecture. The biggest advantage of the architecture is: the user's computer can realize the application system and only need to install a browser, The software will do, so that users can apply the system from different locations, so it can be very good, Solve the problem that many teachers and students in the system are distributed in different regions.

Most of the college students at this stage have grown up in the environment of rapid development of network technology, so they have a better understanding of network technology and are able to apply it proficiently. In the era of self-media, not only the speed of information dissemination continues to accelerate, but the content of information is also richer. College students can use self-media technology to expand their knowledge horizons. However, the impact of the We-Media era on the management of college students needs to be studied from two aspects. The first is the positive impact. In the era of We-Media, many colleges and universities have carried out informatization and digital campus construction work, which makes the information transmission speed of student management work. Faster, it is convenient for colleges and universities to discover and deal with problems in time. At the same time, colleges and universities can also use information technology to interact with students to help colleges and universities collect students' opinions and suggestions on management work, so as to make college student management more humane and professional. Promote the realization of management and education goals. In addition, the self-media era has also brought great challenges to the management of students in colleges and universities. Because of the freedom of speech in the virtual online world, it is easy for college students with weak ability to distinguish right from wrong. Those bad information that has not been screened and processed is easy. Let college students have negative thoughts, such as the occurrence of Internet fraud incidents and the prevalence of hedonistic thoughts, will have an impact on the values of college students. Therefore, colleges and universities should actively explore innovative strategies for student management in the self-media era, to prevent college students from being corroded by bad ideas, and to create a safe and healthy learning and living environment for college students. [6]

6. SYSTEM PLATFORM EVALUATION

The design and realization of this innovation and entrepreneurship management system platform incorporates project release, innovation and entrepreneurship learning, project management, achievement registration and other innovation and entrepreneurial related content into the management scope of the management system platform, sharing various materials, forms, innovative projects, and practices on the platform Content, innovation results, etc. The use of the innovation and entrepreneurship management system platform will greatly facilitate teachers and students, improve the learning and work efficiency of teachers and students, provide a favorable platform for teachers and students to improve their innovation and entrepreneurship capabilities, and provide managers with supervision of teachers and students' practice links Management provides effective means.

Whether it is during class time or other periods, whether it is in school or enterprise internship, students can find and download all the content they need anytime and anywhere, ignoring time and space constraints, greatly improving the efficiency and effectiveness of innovative practice management, Which is conducive to the cultivation of innovative and practical talents in colleges and universities.

REFERENCES

[1] Zhuo Ran. Innovative thinking on the management of college students from the perspective of self-media [J]. New Education Era Electronic Magazine: Education Edition, 2016(22): 34-36.

[2] Liu Bin. Analysis on the innovation and development of college student management from the perspective of self-media [J]. Changjiang Series, 2017(17): 171-172.

[3] Yang Gongyi. Design and development of the network platform for the cultivation of college students' innovative ability [J]. Journal of Distance Education, 2016 (01).

[4] Liu Cheng. The characteristics and enlightenment of research training activities in American research universities [J]. Journal of Changsha Railway University, 2017 (02).

[5] Hao Yuanxiao. Thoughts on the cultivation of scientific research training and innovation ability of college students[J]. Technology and Innovation Management, 2018 (06).

[6] Yu Su. Construction of a network management platform for university students' research and training [J]. Technology and Innovation Management, 2018 (06).

Analysis of Optimal Design of Communication Power Supply Monitoring System

Zhou Hongyu
Zibo Vocational Institute, Zibo 255000, Shandong, China

Abstract: Communication power is the power foundation of communication network. With the rapid development of my country's telecommunications industry and the continuous expansion of the scale of communication networks, power supply monitoring directly affects the stability of power communications. This article analyzes the design of the communication power supply monitoring system, including the overall system design, system structure design, etc., and proposes the application of the communication power monitoring system in power communication to ensure that the power supply monitoring system is designed and developed to meet the power communication requirements and ensure the power supply equipment Stable operation.
Keywords: Electric power communication; Communication power supply; Monitoring system.

1. INTRODUCTION

The communication power centralized monitoring and management system is a distributed computer control system, which monitors the operation of the system and equipment in real time through remote measurement and remote signaling of the communication power system within the monitoring range and the power equipment, air conditioning equipment and the environment of the computer room Status, record and process related data, detect faults in time and notify maintenance personnel to deal with them in time; carry out necessary remote control operations to change or adjust equipment operating status; provide corresponding data and reports in accordance with the requirements of the superior monitoring system or network management center to achieve The communication bureau (station) has a small number of people or no one on duty to realize centralized monitoring, maintenance and management of power supply, air conditioning and the environment, and improve the reliability of the power supply system and the safety of communication equipment.

The centralized monitoring system is a centralized and integrated computer system composed of the latest achievements of modern computer technology, communication technology, electronic technology, automatic control technology, sensor technology and man-machine system technology. In recent years, due to the development of the above technologies, the popularization of computer networks, office automation and industrial automatic control have created the necessary objective conditions for the development of monitoring systems. At the same time, the development and improvement of power supply technology itself and the continuous maturity of intelligent power supply equipment have also laid a solid foundation for the implementation of centralized monitoring of communication power supply.

2. THE FUNCTION OF THE COMMUNICATION POWER MONITORING SYSTEM

The centralized monitoring system of the power communication room refers to an intelligent equipment that realizes 24h real-time monitoring of the operating environment and power supply equipment in the power communication room in various regions by using rectifier equipment, batteries, air conditioners, UPS and high and low voltage equipment.[1]The centralized monitoring system of general power communication room has four functions.

2.1 OPTICAL FIBER AUTOMATIC MONITORING FUNCTION

Real-time and unified detection of fiber optic monitoring data in the computer room is carried out through automated or manual methods, aiming to discover the location of the fiber failure in the first time, and timely report the failure to the superior department.

2.2 POWER ENVIRONMENT MONITORING FUNCTION

It mainly conducts comprehensive monitoring and inspection of the environment and various power indicators in the computer room, and these power indicators include access control, air conditioning, fire-fighting equipment, and communication power batteries; the centralized monitoring system of the computer room can also monitor the operation in the power environment in real time In addition, the environmental conditions of the computer rooms in all sites are recorded through video linkage. Once a malfunction occurs, the system quickly issues an alarm, prompting the superior management to inspect and repair it.

2.3 POWER COMMUNICATION RESOURCE MANAGEMENT FUNCTION

By installing corresponding testing equipment, real-time monitoring of the operation status of power communication equipment, organic integration of system software and communication equipment special software, so that work managers can better understand the overall operation level of communication equipment, so as to implement intelligent operation and maintenance management in the future .

2.4 ONLINE DETECTION FUNCTION

Through online detection of the voltage value, internal resistance value and temperature value of the battery of the communication equipment, the performance of the battery cell can be detected in real time [2]. Make full use of the switch unit and sufficient electric unit to remotely and accurately operate each battery, providing the most basic guarantee for the subsequent implementation of all-round operation and maintenance management of the battery pack.

3. STRUCTURE DESIGN OF COMMUNICATION POWER MONITORING SYSTEM

The central structure of the communication power supply monitoring system in power communication is the core part of the whole system. Through the design of the monitoring center structure, the monitoring of different monitoring stations of the communication power supply is realized, and the effective connection between different monitoring stations is realized to ensure the smooth flow of communication information and improve Timeliness of obtaining information from monitoring stations. By optimizing the design of the power supply monitoring system structure, it can meet the actual needs of power communication work. In the system structure design, user permissions, warning levels, and monitoring point performance thresholds are set according to different parameters to ensure that the power of the communication power supply is always in good condition. Under the state, the fault monitoring is realized, and the problem is reported as soon as possible, which provides the system manager with an optimized reference basis for solving the fault problem; the power monitoring system structure design depends on the monitoring center to realize the extraction and transmission of the monitoring station information data, And report the monitoring data information in real time [3]. In addition, according to the working parameters of the power supply monitoring equipment, the design of the monitoring power supply is realized, and the collection and acquisition of information data is supported, so that relevant personnel can understand the real operating status of different system structures online in real time and transmit effective information data to the monitoring station.

3.1 ACCESS DESIGN OF INTERFACE MONITORING UNIT

In the design of the interface unit, through the design of the RS232 interface monitoring unit, the operating data in the AC monitor can be quickly obtained, the MOSEM demodulator is used to realize the digital signal conversion, the signal state is simulated, and the computer serial port is strengthened through the multi-serial port card. Expand and strengthen the monitoring of power supply equipment. The terminal monitoring design is realized with the help of a PC. The four-wire demodulator is used to monitor the power monitoring data of the microwave station, and the monitored information and data are uploaded to the PC in real time. The detection of the monitoring data of the monitoring sub-station gives full play to the management and control role of different equipment, strengthens the extraction of different power equipment parameters, processes the power monitoring system protocol through the auxiliary network switch, and reports relevant information to the server terminal for the equipment Provides effective access services to complete the design goal of access to the interface monitoring unit of the power communication power monitoring system.

3.2 DIRECTLY COLLECT DATA ACCESS DESIGN

In the design process of directly collecting data from the power supply monitoring system, combining the structure and type of the monitoring system to design, obtain the voltage analog quantities of different monitoring areas, effectively convert them into AC and DC voltage transmitters, and smoothly transfer relevant information and data Transfer to the collector to complete the acquisition of analog data, and with the support of the network switch, complete the processing of related protocols, access the server to analyze the received analog data, and display the power communication status in the function interface in real time Provides early warning processing of fault data and abnormal data, and provides relevant parameter data for relevant personnel, which helps the staff to formulate targeted troubleshooting measures based on the monitoring data status and ensure the stability of the power communication power supply Sex.

3.3 HYBRID ACCESS DESIGN

The communication power supply monitoring system in the electric power communication has designed a hybrid access method to give full play to the role of the monitoring unit. With the support of SDH and PCM, the monitoring information of the rectifier power supply can be sent, and the monitoring center station receives the relevant information at the first time. Information data, after optimized processing, upload the relevant information data to the PC, and realize the monitoring of the data information with the support of the protocol processor [4]. During the entire data transmission process, the main collection methods are transmission channels, network bridges, etc., to ensure that the system design realizes effective access to the server, so that the staff can grasp the working status of power communication more clearly, and provide feedback in the monitoring system in time. The problem is dealt with to ensure the final realization of the collection of monitoring information, and display through the interface, optimize the system design, lay a solid foundation for system application, and ensure the credibility of the power monitoring system in practical applications.

4. DESIGN AND IMPLEMENTATION OF A NETWORK-BASED REAL-TIME MONITORING SYSTEM FOR COMMUNICATION POWER

4.1 MONITORING SYSTEM COMPOSITION

From the perspective of monitoring different functions of communication power equipment at all levels, the entire monitoring system is divided into provincial, regional monitoring management, county monitoring management, and station monitoring management systems; each performs its own responsibilities to realize the monitoring and management of power equipment in different ranges , The unit management modules in the monitoring system at all levels have played their own monitoring and management advantages. As far as the network structure in the monitoring system is concerned, the network structure is divided into different levels and provides different functions. In the actual design process, the Internet data transmission mode is adopted to realize real-time monitoring, complete inspection tasks, and transmit data to the serial server. After the server accepts instructions and recovers, the parameters in the device are collected through the monitoring system data acquisition module. The indicators are converted into TCP/IP protocol data, and the information data received by the server is transmitted to the monitoring center to realize the browsing and review of the monitoring information data. If the power equipment fails, the monitoring system will immediately start an alarm to ensure that the maintenance personnel are the first When the time arrives at the fault site, optimize and adjust [5].

4.2 FUNCTIONAL MODULES OF THE MONITORING SYSTEM

The functional modules of the monitoring system support basic setting, real-time monitoring, and provide data collection, database maintenance, data query and other modules; in the basic setting unit link, strengthen the setting of personnel permissions and support the setting of various hierarchical site parameters; in the monitoring unit It supports the setting of current, voltage and other related parameters. Once a fault occurs, the monitoring system can provide sound and image early warning and reflect the fault information in the system interface; the data collection module is to strengthen the maintenance and management of the database, and monitoring management The personnel can display according to the curve presented in this module, and clearly reflect the real-time data. The user can use the data query module to give play to the operating data, alarm information, remote control commands and other instructions, and generate relevant information through the system output module. The data report optimizes the monitoring system functions.

4.3 DESIGN AND IMPLEMENTATION OF MONITORING SYSTEM

4.3.1 DESIGN AND IMPLEMENTATION OF COMMUNICATION PROTOCOL

The communication power monitoring system uses a protocol converter to access data. The transmission protocol uses the "Smart Device Communication Protocol", C# language is used, and TCP is selected for the connection method to better ensure the timeliness of data transmission, and according to the serial server IP address and The port executes the communication protocol program. Based on the serial port server, the ASCII code of the transmission data can be converted into the network data stream, which ensures the reliable connection of the TCP/IP protocol data.

4.3.2 FUNCTION DESIGN AND REALIZATION OF MONITORING SYSTEM

The network-based power monitoring system provides the data communication function. The monitoring system is integrated from the bottom to the top according to the multi-level monitoring level. Each monitoring level is connected to the lower monitoring level in turn according to the radiation mode to ensure Smoothly complete the data collection work, better realize the communication information data exchange work on the system, greatly improve the safety and reliability of the application of the structural system, in the actual application process, the degree of flexibility is high, and the information transmission rate is fast. The network-based communication power monitoring system provides diversified functions, supports the collection, summary and storage of information and data of monitoring stations, and provides functions such as report generation and printing. With the support of the network, the processing and analysis capabilities of information and data are improved To ensure the accuracy of monitoring information data collection information.

5 APPLICATION OF COMMUNICATION POWER SUPPLY MONITORING SYSTEM IN POWER COMMUNICATION

5.1 THE RS232 INTERFACE OF THE MONITORING UNIT IS CONNECTED TO THE MONITORING SYSTEM

The communication power supply monitoring system realizes the monitoring of the operation status of the power supply equipment. By designing the RS232 interface of the monitoring unit, it provides a data reference basis for equipment maintenance and ensures the effective transmission of information and data. The power monitoring system is actually used in the power communication work to support system early warning, and through the RS232 interface for protocol processing and information transmission, the data information is reflected in real time through the interface, and the on-duty personnel can feed the fault information to the superior at the first time and strengthen the fault equipment Maintenance and management to ensure the normal operation of the equipment. Based on the monitoring system that supports the monitoring of the external environment, in the actual operating state, relevant personnel are required to regularly monitor and maintain the equipment status.

5.2 ACCESS TO DIRECTLY COLLECTED DATA

In the process of applying power communication in a certain area, the PMS power supply monitoring system is used to strengthen the monitoring of related power communication equipment in the area. The system directly collects data access to effectively increase the information data transmission rate. When the information transmission process, it appears The phenomenon of power interruption will seriously affect the quality of communication. Based on this, the region has set up corresponding power supplies for backup to improve the level of emergency treatment, ensure the effectiveness and safety of power monitoring, and realize the monitoring of the operating status of the theorem communication equipment. The design and implementation of the communication power supply monitoring system in power communication are feasible for practical application.

6. CONCLUSIONS

The communication power supply monitoring system design in electric power communication provides diversified management functions, saves economic costs, improves the efficiency of data query, and provides safety guarantee for the use of communication power supply. The optimized and upgraded centralized monitoring system for communication power supply and computer room environment not only increases the system's capacity expansion, but also greatly increases the operating rate of the monitoring system. In this way, the goal of unattended and efficient operation is realized in a real sense, and the centralized monitoring system of the power communication room environment is developed in the direction of more intelligence, modularity and information.

REFERENCES

[1] Cheng Gang. Research on the application of intelligent communication power supply in power communication room [J]. Communication World, 2019, 26(7): 13-14.
[2] Liao Zongbing. Design and software implementation of centralized monitoring system for communication power supply and environment [D]. Chengdu: Southwest Jiaotong University, 2014.
[3] Ye Di. Design of communication power supply monitoring system in electric power communication [J]. Communication Power Technology, 2020, 37(01): 249-250.
[4] Huang Haibo. Research on the design of communication power supply monitoring system in electric power communication[J]. China New Telecommunications, 2019, 21(15): 36.
[5] Wu Hongbin. Design and implementation of centralized monitoring system for communication power supply[J]. Communication World, 2016(11): 5-6.

Text Sentiment Analysis Based on BERT-CNN-ATT

An Wang*, Junbo Gao
College of Information Engineering, Shanghai Maritime University, Shanghai 201306, China
*Corresponding Author.

Abstract: Convolutional Neural Networks (CNN) has been proven to be an effective text representation model in text sentiment analysis. However, the traditional convolutional neural network adopts the max pooling strategy in the pooling layer to select the most prominent feature as the entire text, ignoring other valuable features, thereby affecting the accuracy of classification. In response to the above problems, a network model based on BERT (Bidirectional Encoder Representations from Transformers, BERT) combined with a convolutional neural network pooled by attention mechanism is proposed. First, the text word embedding representation containing contextual semantic information is obtained through the BERT pre-training model, then perform further local semantic feature extraction through convolutional neural network, and introduce the attention mechanism in the pooling layer to replace the max pooling, fully consider the contribution of each feature to sentiment classification, thereby improving the accuracy of classification. Multi-group comparative experiments were conducted on the hotel review data set, and the results showed that the accuracy, recall, and F1 index of this method were higher than those of comparative experiments, which proved the effectiveness of the method. Multi-group comparative experiments were conducted on the hotel review data set, and the results showed that the Precision, Recall, and F1 index of this method were higher than those of comparative experiments, which proved the effectiveness of the method.

Keywords: Convolutional Neural Networks; Max pooling; BERT; Attention mechanism; Word embedding

1. INTRODUCTION

With the rapid development of Internet technology, a large number of social media platforms have emerged on the Internet, such as Twitter, Weibo, Tieba, etc. More and more users use social media platforms to express their opinions and opinions, resulting in a large number of emotionally inclined texts. From these texts, mining users' opinions and attitudes on product, news and other review information is of great significance in the fields of marketing, business decision-making, and public opinion monitoring. Sentiment analysis [1] has become one of the hottest research fields in natural language processing (NLP). The current research methods for text sentiment analysis are mainly divided into three categories: methods based on sentiment dictionary [2], methods based on traditional machine learning [3], and methods based on deep learning. The method based on the sentiment dictionary is to construct the sentiment dictionary manually, and then use the sentiment words in the dictionary to match the words of the input text to judge the sentiment polarity of the text. this method depends on the size and quality of the emotional dictionary, and the effect is relatively poor. The method based on traditional machine learning requires manual extraction of a large number of text features, which are vectorized and input into corresponding machine learning algorithms such as Support Vector Machines (SVM) [4] for emotion classification. this method relies more on manually extracted text features, which is time-consuming and labor-intensive, and it is difficult to capture the grammatical and semantic information of the sentence. it has a weak generalization ability for relatively complex classification problems. The method based on deep learning uses neural networks [5] to simulate the learning process of the human brain and automatically learns the deep feature representation of the text, thereby improving the accuracy of classification.

In recent years, a large number of neural network models have been applied to text sentiment analysis tasks. In 2013, Mikolov et al. [6, 7] built the word2vec tool through the CBOW and Skip-gram model, and completed the efficient training of word embedding, allowing the word embedding theory proposed by Hinton [8] to be widely used. As a real number vector that maps from high-dimensional space to low-dimensional space, word embedding can represent a large amount of potential information of words. However, the word embedding obtained through word2vec training does not have contextual semantic information, and cannot solve the polysemy phenomenon of a word. In 2018, Devlin et al. [9] proposed a BERT pre-training model, which uses a multi-layer two-way Transformer encoder [10] to train a large amount of corpus, and extracts the left and right context information of all layers to achieve a deep two-way representation of the text. With the help of word embedding, the application of deep learning in the field of natural language processing has become a research hotspot in recent years [11, 12].

Convolutional neural networks can obtain local semantic feature information from sentences represented by word embedding obtain high-level sentence features, and can be effectively applied to text sentiment classification problems [13]. Kim [14] proposed a classic convolutional neural network sentence classification model, which convolves a matrix composed of word embedding through multiple convolution kernels, and then performs max pooling to extract sentence features and uses them for multiple text classification tasks. A lot of valuable feature information will be lost during the max pooling operation.

Kalchbrenner et al. [15] proposed a dynamic convolutional neural network (DCNN) model for sentence feature learning. The k-max pooling layer was used to select the largest k features and achieved good results.

Although the above methods have achieved good results to a certain extent, they cannot pay attention to the key features of the text features that contribute to the emotional category. In 2014, the Google team [16] first proposed the attention mechanism and applied it to image recognition. It extracts key features by focusing on the more important local image regions in the image, effectively improving the accuracy of image recognition. In 2016, Bahdanau [17] and others applied the attention mechanism to machine translation and achieved remarkable results. Feng X J et al. [18] used Word2Vec for word embedding representation, used convolutional neural networks to learn relevant features of sentences, and introduced an attention mechanism to highlight key features to perform text sentiment analysis.

Therefore, in response to the above problems, this article proposes the BERT-CNN-ATT model, Firstly, the word embedding representation containing contextual semantic information is obtained through the BERT pre-training model, and then further local semantic feature extraction is performed through the convolutional neural network, and the attention mechanism is introduced in the pooling layer to fully consider the impact of each feature on emotion classification Contribute, and then classify sentiment.

2. PROPOSED MODEL

The BERT-CNN-ATT model structure is shown in Figure 1, which is mainly divided into three parts, namely the BERT layer, the CNN layer, and the sentiment classification layer. The overall process of the model in this paper: First, the input text is obtained through the BERT pre-training model to obtain the word embedding representation with contextual semantic information; then the convolutional neural network is used for further local semantic feature extraction, and the attention mechanism pooling is used to replace the max pooling Fully consider the contribution of each feature to sentiment classification; finally hand it over to the sentiment classification layer for sentiment polarity classification, as shown in figure 1.

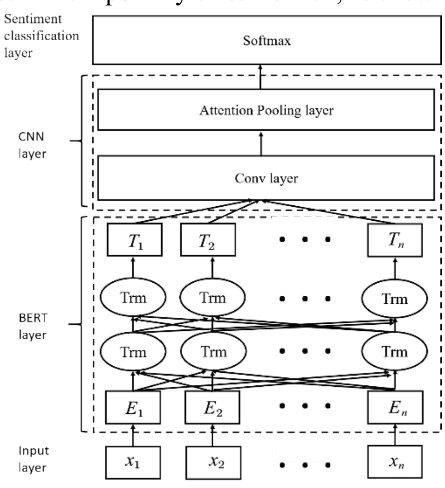


Figure 1. BERT-CNN-ATT model structure diagram

2.1 BERT LAYER

The BERT pre-training model uses a multi-layer two-way Transformer encoder to train a large amount of corpus, and extracts the left and right context information of all layers to achieve a deep two-way representation of the text. The model structure is shown in Figure 2.

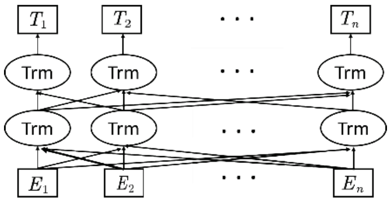


Figure 2. BERT model structure

The biggest innovation of BERT is the Masked Language Model. For each sentence in the training sample, 15% of the token is randomly masked, and then the masked token is predicted through context semantics. The purpose of this is to make the model rely more on contextual information to predict vocabulary, to better understand the semantic information of the entire sentence, and to improve its generalization ability.

The core part of the BERT model is the Encoder in Transformer, which performs text feature extraction. Encoder is composed of self-attention and feed fordward neural network, and its structure is shown in figure 3.

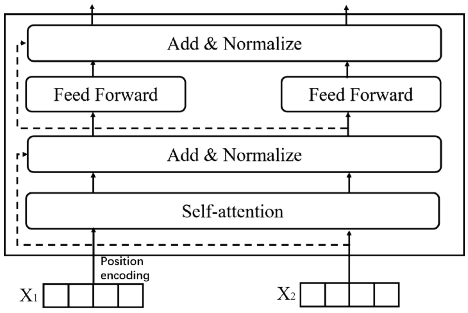


Figure 3. Transformer Encoder model structure

The core of Encoder is self-attention, which can capture the dependency relationship between words in a sentence, and obtain a more semantic contextual representation, but self-attention does not consider the position information of the input sequence. For sentences, the position of words in the sentence has an important influence on semantic information. For example: "I love you" and "You love me", they just disrupt the word order in the sentence, but the semantic information expressed is completely opposite. In order to solve this problem, this article uses the position encoding of the trigonometric function (Position encoding), and the calculation formulas are shown in equations (1) and (2).

$$PE_{(pos,\,2i)} = \sin\left(pos/10000^{2i/dmodel}\right) \tag{1}$$

$$PE_{(pos,\,2i+1)} = \cos\left(pos/10000^{2i/dmodel}\right) \tag{2}$$

where pos is the position index of the word; i is a certain dimension of the vector.

After the position code is obtained, it is fused with the word embedding to obtain a word embedding representation containing position information; then through the Encoder layer of the two-way Transformer, it learns to have contextual semantic information to obtain a better word embedding representation.

2.2 CNN LAYER

2.2.1 CONVOLUTIONAL LAYER

The convolution layer mainly performs feature extraction, and the local features of the sentence are extracted through the convolution kernel, as shown in Figure 4.

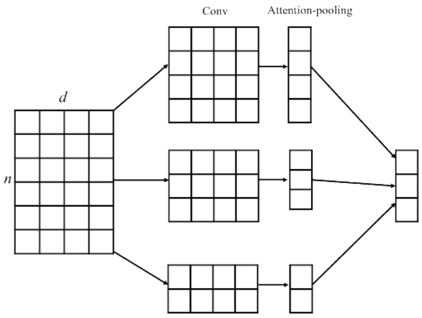


Figure 4. CNN layer model structure

The convolutional layer takes the word embedding representation B obtained by BERT model training as input, as shown in equation (3).

$$B=[T_1,T_2,\cdots,T_n] \tag{3}$$

where T_i represents the word embedding representation of the i-th word in the sentence matrix, and d is the dimension of the word embedding.

Assuming that the size of the convolution kernel is h, the input sentence matrix vector B is convolved and then the corresponding activation function is used to obtain the corresponding local features c_i. as shown in equation (4).

$$c_i=f(w\cdot T_{i:i+h-1}+b) \tag{4}$$

where $f(\cdot)$ represents the Relu activation function, w represents the weight matrix of the convolution kernel, h represents the size of the convolution kernel, $T_{i:i+h-1}$ represents the partial sentence vector composed of vector T_i to vector T_{i+h-1}, and b is the bias term variable.

Therefore, after the convolutional layer operation, the feature matrix is obtained, as shown in equation (5).

$$C=[c_1,c_2,\cdots,c_n] \tag{5}$$

2.2.2 POOLING LAYER BASED ON ATTENTION MECHANISM

The pooling layer is to use the local features after the convolutional layer operation, and complete the extraction of local important features, however, the traditional max pooling strategy is to select the most prominent feature among all local features to represent the entire sentence, ignoring other features that may contribute to classification. In response to the above problems, an attention mechanism is introduced to measure the importance of local convolutional features by calculating the weight of local features for sentiment classification of the entire sentence, and consider as many features that contribute to the classification as much as possible to obtain more critical features.

The pooling calculation of the attention mechanism is shown in equations (6), (7), and (8).

$$u_i=\tanh(W_wC_i+b_w) \tag{6}$$

$$\alpha_i=\frac{\exp(u_i{}^Tu_w)}{\sum_i\exp(u_i{}^Tu_w)} \tag{7}$$

$$V=\sum_i\alpha_iC_i \tag{8}$$

where W_w, b_w respectively represent the weight matrix and bias term of the attention mechanism, which are initialized randomly, and are learned and updated during the training process; C_i represents the i-th feature representation output by the convolutional layer, u_w represents the context vector, which is randomly initialized and continuously updated during training. α_i is the attention weight of the feature.

In order to get richer features, this paper uses multiple convolution kernels of different scales to extract features. After the pooling operation of the attention mechanism, the features extracted by convolution kernels of different scales are spliced together as Input to the sentiment classification layer.

2.2.3 SENTIMENT CLASSIFICATION LAYER

The feature vector V obtained after the attention mechanism pooling is used for text sentiment classification through the Softmax function. The classification process is shown in equations (9) and (10).

$$z=W_sV+b_s \tag{9}$$

$$p_i=\exp(z_i)\Big/\sum_{j=1}^{c}\exp(z_j) \tag{10}$$

where W_s and b_s are the weight matrix and bias of the fully connected layer, which are initialized randomly and are continuously updated during training; c is the number of emotion categories in the data set; p_i is the probability value of the sample sentence belonging to the i-th sentiment category.

At the same time, in order to prevent the model from over-fitting and improve the generalization ability of the model, the Dropout [19] strategy is used between the pooling layer and the Softmax layer of the attention mechanism.

2.2 MODEL TRAINING

This article uses Adam algorithm for model training. It is different from the traditional stochastic gradient descent algorithm. The traditional stochastic gradient descent algorithm maintains a single learning rate (ie σ) to update all weights, and the learning rate does not change during the training process; while the Adam algorithm calculates the first moment of the gradient Estimation and second-order moment estimation design independent adaptive learning rates for different parameters, which are better than traditional stochastic gradient descent algorithms in performance. The loss function uses a cross-entropy loss function. The purpose of the model is to minimize the cross-entropy loss value between the true value of the training sample and the predicted value. The smaller the loss function value, the better the classification effect. The calculation of cross entropy is shown in equation (11).

$$L = -\frac{1}{n}\sum_{i=1}^{n}[y_i \ln(p_i) + (1-y_i)\ln(1-p_i)] \tag{11}$$

where L is the cross entropy loss value, n is the number of samples, y_i is the true value of sample i, and p_i is the predicted value obtained by training of sample i.

3. EXPERIMENTS

3.1 EXPERIMENTAL DATA

The experimental data in this article uses the hotel review corpus compiled and annotated by Professor Tan Songbo, and ChnSentiCorp-Htl-ba-6000 data is selected for the experiment, including 3000 positive categories and 3000 negative categories; taking into account the problem of the amount of data set, another 2000 pieces of data were crawled and labeled from Ctrip.com, of which 1000 were positive and 1000 were negative. After merging the two data, they are randomly divided into three parts: training set, validation set and test set, the ratio between them is 8:1:1.

3.2 EVALUATION INDEX

The experiment in this article adopts internationally common evaluation indicators: Precision, Recall, F1, The meaning of precision refers to the probability of a sample that is actually positive among all the samples that are predicted to be positive; The meaning of recall rate refers to the probability of being predicted as a positive sample in a sample that is actually positive; F1 is the weighted harmonic average of accuracy and recall. The calculation of related indicators is shown in equations (12), (13) and (14).

$$P = \frac{TP}{TP + FP} \tag{12}$$

$$R = \frac{TP}{TP + FN} \tag{13}$$

$$F1 = \frac{2*P*R}{P + R} \tag{14}$$

where TP (True Positive) indicates that a positive sample is predicted to be a positive sample; TN (True Negative) means that a negative sample is predicted to be a negative sample; FP (False Positive) means that a negative sample is predicted to be a positive sample; FN (False Negative) means that a positive sample is predicted to be a negative sample.

3.3 COMPARISON MODELS

In order to verify the validity of this experimental model, a comparative analysis was carried out with the following models.

W2V-SVM. After the word embedding is obtained through Word2Vec training, it is input into the SVM trainer for classification.

W2V-CNN-max. After the word embedding is obtained through the Word2Vec pre-training model, the traditional CNN based on max pooling strategy is used for training.

BERT-CNN-max. After obtaining the word embedding representation of contextual semantic information through the BERT pre-training model, the traditional CNN based on max pooling strategy is used for training.

BERT-CNN-ATT. After obtaining the word vector representation of contextual semantic information through the BERT pre-training model, it is trained using CNN based on the attention pooling strategy.

3.4 RESULTS AND ANALYSIS

The experimental comparison results are shown in Table 1.

Table 1 Experimental comparison results

Model	P	R	$F1$
W2V-SVM	81.25%	81.19%	81.21%
W2V-CNN-max	85.16%	84.96%	85.06%
BERT-CNN-max	91.93%	92.47%	92.20%
BERT-CNN-ATT	93.42%	92.98%	93.19%

By comparing the experiments of W2V-SVM and W2V-CNN-max, we can see that CNN extracts different n-gram information through multiple convolution kernels, and obtains the local semantic information that can be well extracted from the text. Therefore, the results of W2V-CNN are excellent. The result of W2V-SVM.

By comparing the experiments of BERT-CNN-max and W2V-CNN-max, it can be seen that the word embedding obtained by Word2Vec training ignores the problem of polysemous words in different contexts and long-distance semantic association information; while the BERT pre-training model adopts a multi-layer two-way Transformer The encoder learns to obtain a textual word embedding representation with contextual semantic information, so it gets better results.

By comparing the experiments of BERT-CNN-max and BERT-CNN-ATT, it can be seen that the attention pooling strategy is compared with the max pooling strategy. It measures the importance of local convolutional features by calculating the weight of local features for the sentiment classification of the entire sentence , As much as possible to consider the various features that contribute to the classification, and alleviate the problem of information loss caused by the traditional pooling strategy, extract more important features that help classification, and further improve the performance of the model.

4. CONCLUSIONS

This paper proposes a method of text sentiment analysis based on BERT-CNN-ATT. After obtaining the text word embedding representation with contextual semantic information through the BERT pre-training model; Then use the convolutional layer of the convolutional neural network to further extract the local semantic information in the text. When pooling, considering the contribution of each feature in the sentence to its final emotion classification, the attention mechanism is introduced to replace the traditional max pooling. In order to improve the model's accuracy for sentiment classification tasks, consider as much as possible the various features that contribute to the classification. Experimental results show that the BERT-CNN-ATT model greatly improves the performance of sentiment classification tasks.

Since this model mainly performs two classifications (positive emotion and negative emotion) for text data, it ignores the rich human emotions such as happiness, anger, worry, sadness and other emotions. Therefore, in the next research work, in-depth research is mainly on the fine-grained emotions.

REFERENCES

[1] Basant A, Namita M, Pooja B, et al. Sentiment Analysis Using Common-Sense and Context Information. Comput Intell Neurosci, 2015, 2015:30.
[2] J. And V H. Predicting the Semantic Orientation of Adjectives. Proceedings of the Acl, 1997:174-181.
[3] Boiy E, Moens M F. A machine learning approach to sentiment analysis in multilingual Web texts. Information Retrieval, 2009, 12(5):526-558.
[4] Cheng Z S, Wang L. Sentiment analysis method of web comments based on support vector machine. Electronic Technology and Software Engineering, 2019 (16): 3-4.
[5] Mikolov T, Martin Karafiát, Burget L, et al. Recurrent neural network-based language model. Interspeech, Conference of the International Speech Communication Association, Makuhari, Chiba, Japan, September. DBLP, 2015.
[6] Mikolov T, Sutskever I, Chen K, et al. Distributed representations of words and phrases and their compositionality. Proceedings of the 27th Annual Conference on Neural Information Processing Systems. Cambridge: MIT Press, 2013: 3111–3119.
[7] Mikolov T, Chen K, Corrado G, et al. Efficient Estimation of Word Representations in Vector Space. Computer Science, 2013.
[8] Hinton G. Learning distributed representations of concepts. Proceedings of the 8th Annual Conference of the Cognitive Science Society. London: Psychology Press, 1986: 1–12.
[9] Devlin J, Chang M W, Lee K, et al. BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. 2018.
[10] Vaswani A, Shazeer N, Parmar N, et al. Attention Is All You Need. arXiv, 2017.
[11] Peng Y, Jiang H. Leverage Financial News to Predict Stock Price Movements Using Word Embeddings and Deep Neural Networks. Computer Science, 2015.
[12] Abdelghani D. Word Embeddings and Convolutional Neural Network for Arabic Sentiment Classification. Coling 2016. 2016.
[13] Denil M, Demiraj A, Kalchbrenner N, et al. Modelling, Visualising and Summarising Documents with a Single Convolutional Neural Network. Computer Science, 2014.
[14] Kim Y. Convolutional neural networks for sentence classification. arXiv preprint arXiv:1408. 5882, 2014.
[15] Kalchbrenner N, Grefenstette E, B1unsom P. A convolutional neural network for modelling sentences. Proc of the 52nd Annual Meeting of the Association for Computational Linguistics. Stroudsburg, PA: ACL, 2014: 655-665
[16] Mnih V, Heess N, Graves A, et al. Recurrent Models of Visual Attention. Advances in Neural Information Processing Systems, 2014, 3.
[17] Bahdanau D, Cho K, Bengio Y. Neural Machine Translation by Jointly Learning to Align and Translate. Proc of International Conference on Learning Representations. 2015.
[18] Feng X J, Zhang Z W, Shi J H. Text sentiment analysis based on convolutional neural network and attention model. Computer Application Research, 2018, 35(5): 1434-1436.
[19] Hinton G E, Srivastava N, Krizhevsky A, et al. Improving neural networks by preventing co-adaptation of feature detectors. Computer Science, 2012, 3(4): 212-223.

Recognition of Spam Barrage Based on Enhanced Semantics

*Changjing Wang**, *Junbo Gao, Ruolan Fei, Yingxue Sun*
College of Information Engineering, Shanghai Maritime University, Shanghai 201306, China
**Corresponding Author.*

Abstract: With the popularity of barrage videos and the increase in the number of barrages, how to deal with spam barrage is an urgent problem. In this paper, we propose a spam barrage recognition model based on ERNIE_DPCNN. Firstly, we pre-train word vectors using Enhanced Language Representation with Informative Entities (ERNIE) to read word, phrase, and entity information simultaneously. Then, the DPCNN network extracts the dependencies of long-range text to extract more contextual semantic information and avoid the problem of gradient disappearance in deep neural networks. This article uses a total of 20, 000 pieces of data from the barrage texts of dramas, movies, games, and variety shows in station B for experiments. The experiments show that the ERNIE_DPCNN algorithm is used simultaneously with TextCNN, DPCNN, BERT, BERT_DPCNN, and ERNIE models to identify garbage barrage. The improved model proposed in this paper has a recall rate of 0.9657, an accuracy rate of 0.951, and an F1 value of 0.9583, which can more effectively identify garbage barrage.
Keywords: Spam Barrages; ERNIE; Knowledge Integration; DPCNN; Text Classification

1. INTRODUCTION

Barrage is a new type of user comments. It is different from the traditional Reviews collected in the discussion area below the video but flies across the screen like a bullet. The barrage corresponds to the playing time, and users can not only express their opinions in real-time but also understand the viewpoints of other users while watching the video. Barrage has a low cost and a large number of users and can transmit information very quickly. But, newly open the barrage button, we will see lots of repetitive meaningless, or sensitive and insulting barrage sliding past. This will cause the loss of platform users, which is not conducive to the healthy and stable development of short video and live broadcast software, and it is not conducive to maintaining the network culture.

At present, for spam barrages, recognition is mainly based on machine learning methods. Wang Ke et al.[1] proposed automatic construction methods of two types of shielded dictionaries based on seed words and data sets on the basis of keyword shielding, but the keyword shielding method has a high rate of manslaughter against the normal barrage. In order to reduce the manslaughter rate, Zheng Zhan et al.[2] proposed a Bayesian-based garbage barrage filtering algorithm. For barrage text, there are a large number of network terms, and the recognition effect is not good. In recent years, deep learning has significant advantages in text classification. Johnson et al.[3] proposed a deep convolutional network classification model (Deep Pyramid Convolutional Neural Networks, DPCNN). This model refers to the Deep Residual Network (ResNet)[4], which can increase the depth of the network without increasing too much computational cost, and adopts layer jump connection technology to alleviate the problem of gradient disappearance when increasing the depth of the model. Gao Weijun et al. [5]proposed a deep learning model AT-DPCNN based on the attention mechanism, which uses the attention matrix to pay close attention to the part of the text sequence that has a greater impact on the emotional trend, and obtains a significant classification effect.

Currently, pre-training models based on large corpora have gradually become the research trend of natural language processing technology. These pre-training models are trained based on a huge corpus, so compared to models trained on a corpus of specific scenarios, they are more adaptable to text tasks in different scenarios. The ELMO[6] pre-training model can dynamically adjust word embedding according to the context, so it can solve the problem of word ambiguity. But ELMO uses vector splicing to fuse contextual feature fusion ability is weak. The BERT[7] pre-training model uses a two-way transformer[8]; it uses the multi-task learning method of predicting the target word and the next sentence for training. However, BERT lost the semantic information contained in the word itself. Enhanced Representation through Knowledge Integration (ERNIE)[9] model of knowledge integration, the fusion of token, phrase, entity information. It can enhance semantic information, and more comprehensive training to learn Chinese text features.

Based on the above research, this paper proposes a garbage barrage recognition model based on ERNIE_DPCNN. Firstly, the pop-up text data pre-processing stage is performed with pop-up de-weighting, then labeled according to the sensitive word lexicon, and then manually reviewed and labeled. Secondly, use ERNIE pre-processed word vector to learn and train the feature vector of the barrage text. Through the three-stage knowledge masking strategy of word, phrase, and entity, the phrase and entity-level knowledge are integrated into the language representation, making each short text Barrage data features are more comprehensive. Finally, the word vector obtained from ERNIE pre-training is used as the input word vector of the DPCNN recognition model. Using the DPCNN model can further improve the accuracy of spam barrage recognition by deepening the network to capture the long-range dependencies of the barrage text.

To verify and evaluate the effectiveness of the ERNIE_DPCNN network model proposed in this paper, the barrage which obtains 20, 000 labeled bullet screen texts is crawled for data preprocessing. The proposed model is trained and tested on this dataset. All indicators are There is a good improvement.

The rest of this article is as follows. The second section describes the framework of the garbage barrage recognition model based on ERNIE_DPCNN. The third section introduces the data set. The fourth section is the experimental part. The fifth section summarizes the full text.

2.ERNIE_DPCNN GARBAGE BARRAGE RECOGNITION MODEL

To solve the problem of the loss of upper and lower semantic information in the process of spam barrage recognition, this paper proposes the idea of the ERNIE_DPCNN model, as shown in Figure 1.

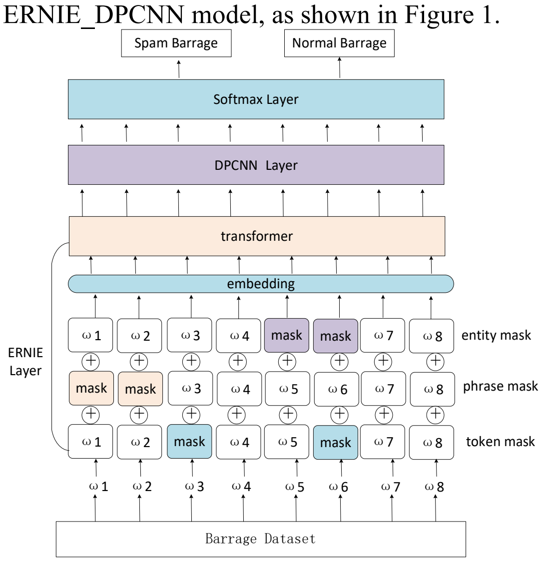


Figure 1 Spam barrage recognition model based on ERNIE_DPCNN

The whole model is composed of three parts. First, we use the ERNIE pre-training model to pre-train the labeled barrage data set to obtain a word vector representation of enhanced semantic information. Then, the ERNIE layer pre-training output is used as the initial input of the DPCNN layer to further obtain the relationship of long-distance dependency of barrage text. Finally, the Softmax layer performs barrage classification. The overall structure of the model is shown in Figure 1.

2.1ERNIE PRE-TRAINING WORD VECTOR

The ERNIE model further enhances the semantic representation of complete concepts in sentences by learning the knowledge of phrases and entity concepts. To achieve such functionality, the model employs a multi-stage knowledge masking strategy[9]. The first stage is the word masking. Random masks are performed in units of words to extract the original semantics. The second stage is phrase covering. The phrase is used as a unit for random masking, and phrase information is stored in the embedding process. The third stage is named entity covering. The entities in the sentence are analyzed first, and then the entity is used as the basic unit to make a random mask, which will better predict the entity information. The three stages complement each other, making the semantic learning prediction effect in the model more significant.

The entire model architecture of ERNIE consists of two stacked modules: (1) T-Encoder is responsible for capturing basic word information, (2) K-Encoder is responsible for integrating the knowledge information of additional phrases and entities into the text information of the basic layer so that we can express the heterogeneous information of words, phrases, and entities as a unified feature space. The ERNIE pre-training model is shown in Figure 2.

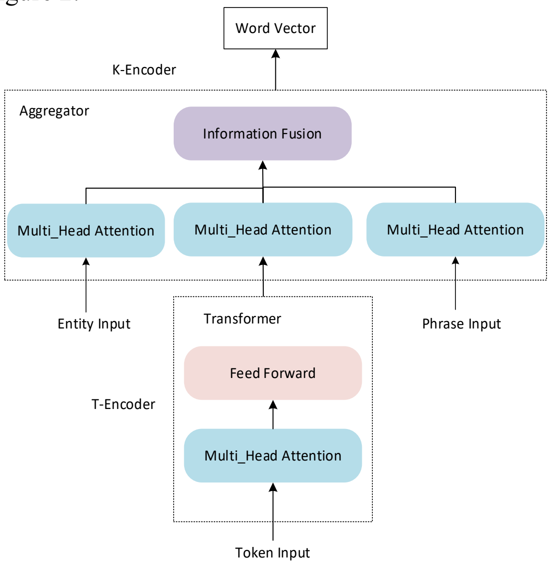


Figure 2 ERNIE pre-training word vector

Given a barrage text sequence $\{w_1,\ldots,w_n\}$ and its corresponding phrase sequence $\{p_1,\ldots,p_m\}$ and entity sequence$\{e_1,\ldots,e_r\}$, the textual encoder firstly sums the token embedding, segment embedding, positional embedding for each token to compute its input embedding, and then computes lexical and syntactic features $\{w_1,\ldots,w_n\}$ as shown in formula 1, where T-Encoder$(\cdot)$ is a multilayer bidirectional transformer encoder[14] , as shown in formula 1.

$\{w_1,\ldots,w_n\} = T - Encoder(\{w_1,\ldots,w_n\})$ (1)

The T-Encoder encodes $\{w_1,\ldots,w_n\}$ and $\{p_1,\ldots,p_m\},\{e_1,\ldots,e_r\}$ into the K-Encoder. K-Encoder fuses the heterogeneous information and calculates the final output embedding $\{w^o{}_1,\ldots,w^o{}_n\}$、$\{p^o{}_1,\ldots,p^o{}_n\}$、$\{e^o{}_1,\ldots,e^o{}_n\}$ will be used as DPCNN input. As shown in formula 2.

$$\{w^o{}_1,\ldots,w^o{}_n\},\{p^o{}_1,\ldots,p^o{}_n\},\{e^o{}_1,\ldots,e^o{}_n\} = K - Encoder(\{w_1,\ldots,w_n\},\{p_1,\ldots,p_m\},\{e_1,\ldots,e_r\}) \quad (2)$$

K-Encoder is composed of stacked aggregators. These aggregators can encode words, phrases, and entities, as well as their heterogeneous features. In the i-th aggregator, the input token embedding$\{{w_1}^{(i-1)},\ldots,{w_n}^{(i-1)}\}$, phrase embedding $\{{p_1}^{(i-1)},\ldots,{p_m}^{(i-1)}\}$, and entity embedding $\{{e_1}^{(i-1)},\ldots,{e_r}^{(i-1)}\}$are fed into each of the three multi-head self-attentions (MH-ATTs)[13] from the previous aggregator. The calculation formulas are 3, 4, and 5, respectively.

$$\tilde{w}_1{}^{(i)},\dots,\tilde{w}_n{}^{(i)} = MH - ATT(\{w_1{}^{(i-1)},\dots,w_n{}^{(i-1)}\}) \quad (3)$$

$$\tilde{p}_1{}^{(i)},\dots,\tilde{p}_m{}^{(i)} = MH - ATT(\{p_1{}^{(i-1)},\dots,p_m{}^{(i-1)}\}) \quad (4)$$

$$\tilde{e}_1{}^{(i)},\dots,\tilde{e}_r{}^{(i)} = MH - ATT(\{e_1{}^{(i-1)},\dots,e_r{}^{(i-1)}\}) \quad (5)$$

The i-th aggregator uses an information fusion layer to merge tokens, phrases, and entity sequences and calculates the output embedding. For w_j of a token and its aligned words $p_k = f(w_j)$, entity $e_k = f(w_j)$, the information fusion process is as formula 6, 7, 8, 9.

$$h_j = \sigma(\widetilde{W}_t\tilde{w}_j{}^{(i)} + \widetilde{W}_p\tilde{p}_k{}^{(i)} + \widetilde{W}_e\tilde{e}_k{}^{(i)} + \tilde{b}^{(i)}) \quad (6)$$

$$w_j(i) = \sigma(W_t{}^{(i-1)}h_j + b_t{}^{(i)}) \quad (7)$$

$$p_j(i) = \sigma(W_p{}^{(i)}h_j + b_p{}^{(i)}) \quad (8)$$

$$e_j(i) = \sigma(W_e{}^{(i)}h_j + b_e{}^{(i)}) \quad (9)$$

h_j in formula 6 is the implicit state of integrating tokens, phrases, and information, and $\sigma(\cdot)$ is a nonlinear activation function, which is chosen here as the GELU function[15]. For tokens without corresponding entities, the information fusion layer calculates the output embedding without integration. The specific calculation steps are formula 10 and formula 11.

$$h_j = \sigma(\widetilde{W}_t\tilde{w}_j{}^{(i)} + \tilde{b}^{(i)}) \quad (10)$$

$$w_j(i) = \sigma(W_t{}^{(i)}h_j + b_t{}^{(i)}) \quad (11)$$

For simplicity, the i-th aggregator operation is denoted as formula 12:

$$\{w_1{}^{(i)},\dots,w_n{}^{(i)}\}\{p_1{}^{(i)},\dots,p_m{}^{(i)}\}\{e_1{}^{(i)},\dots,e_r{}^{(i)}\} = Aggregator(\{w_1{}^{(i-1)},\dots,w_n{}^{(i-1)}\}\{p_1{}^{(i-1)},\dots,p_m{}^{(i-1)}\}\{e_1{}^{(i-1)},\dots,e_r{}^{(i-1)}\}) \quad (12)$$

2.2 DPCNN NETWORK LAYER

DPCNN[3] can extract long-distance text dependencies by continuously deepening the network. Without increasing the computational cost too much, increasing the network depth can obtain better accuracy. The structure of the model is shown in Figure 3.

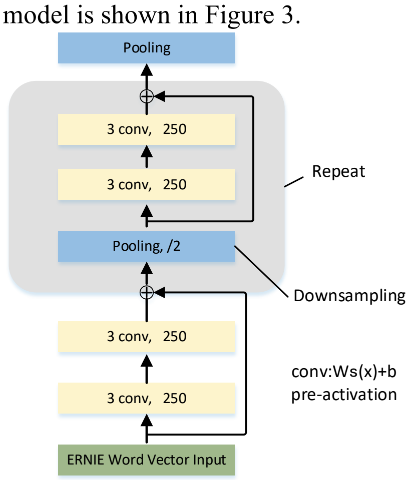


Figure 3 DPCNN network structure

The ERNIE pre-trained word vector is used as input to the DPCNN network, and then the word vector is spliced to obtain the vector-matrix X, as formula 13:

$$X_{1:n} = x_1 \oplus x_2 \oplus \cdots \oplus x_n \quad (13)$$

$\oplus$ is the word vector splicing operator. x_i is the word vector of the i-th word in the sentence. $x_{i:i+j}$ refers to $x_i, x_{i+1}, x_{i+2}, \dots, x_{i+j}$ total j+1 word vectors.

The convolutional layer is the network structure of DPCNN. Each convolutional layer in the convolutional neural network is composed of several convolutional units, and the parameters of each convolutional unit are optimized through the backpropagation algorithm. The purpose of the convolution operation is to extract different features of the text input. The "number of layers" of each convolution kernel needs to be consistent with the "number of layers" of the input, that is, the size of the local perceptual field corresponds to the size of the convolution kernel. The main task of the convolution layer is to select the angular features of the feature map of the previous layer from different levels to make it shift-invariant. The essence of convolution is to process the feature map of the previous layer to obtain the feature map of this layer. The expression is as formula 14.

$$f(x) = w \cdot x + b \quad (14)$$

In formula 14, x is the word vector matrix of the convolution kernel window, w is the weight matrix, b is the bias, and f is the activation function. The convolution process uses equal length convolution to generate features, and the size of the convolution kernel W is h. The feature C_i generated by the word vector $x_{i:i+j-1}$ can be expressed in formula 15:

$$C_i = f(W \cdot X_{i:j+h-1}) + b \quad (15)$$

In formula 15, b is the deviation, and f represents the nonlinear transformation function. The process of f is to perform matrix multiplication first, and then use the RELU activation function[18] to perform nonlinear transformation after obtaining the result of matrix multiplication. The feature obtained after the above convolution operation is $C = [C_1 C_2 \dots C_{n-m+1}]$. The RELU activation function has more effective gradient descent as well as backpropagation performance, avoiding the gradient explosion and gradient disappearance problems. It constructs sparse matrices to remove redundant information from the data and retain the characteristics of the data to the maximum extent possible.

3.3 OUTPUT LAYER

The fully connected layer splices all the features to obtain a high-quality feature map and input to the output layer. The output layer outputs predictive classification nodes through the Softmax classifier[19] as formula 16, each node represents a category, and the sum of nodes is 1 as in formula 17.i stands for node order, $z_i = w_i x + b_i$.

$$\sigma(z) = \frac{e^{z_i}}{\sum_{j=1}^{m} e^{z_j}} \quad (16)$$

$$\sum_{i=1}^{j} \sigma_i(z) = 1 \quad (17)$$

Softmax uses cross-entropy as a loss function to measure whether the predicted (0, 1) probability distribution matches the actual (0, 1) value. The smaller the cross-entropy, the more accurate the matching and the higher the model accuracy. The loss function is as formula 18:

$$loss = -\frac{1}{n}\sum y_i(\ln a) + (1 - y_i)\ln(1 - a) \quad (18)$$

In formula 18, $P(Y = 1|x) = a, a = \frac{1}{1+e^{-x}}$.

Finally, choose Adam Optimizer to optimize the overall network parameters. When the model uses gradient descent, it can dynamically select the learning rate and allocate the gradient descent.

3. DATASET

Given the uniqueness of the barrage text compared to the ordinary text, it has the characteristics of loud noise and less analyzable dimensions, so the four types of video barrage texts in Bilibili, movie, dramas, games, and variety shows are crawled. For each type of barrage type, select videos with more than 100, 000 views before August 1, 2020. A total of 25065 barrage texts were crawled in the four categories. An example of barrage is shown in Figure 4.

Figure 4 Example of a screenshot of the barrage

After the barrage text is crawled and collected, the barrage is pre-processed. The first step is to remove garbled, punctuation, emoji, and other meaningless barrages. The second step is to use regular expressions to delete repeated barrage in the data set. In the third step, the data set is initially labeled with sensitive dictionaries for spam barrages. Finally, manually further confirm the junk barrage and the normal barrage, and obtain high-quality barrage text data.

The 25065 barrages crawled through data pre-processing, and the marked experimental data set is 20, 000, including 8, 000 spam barrages and 12, 000 normal barrages. The data set distribution shown in Table 1.

Table 1 Experimental data set

dataset	Volume of data
TRAIN_DATASET	18000
TEST_DATASET	1000
DEV_DATASET	1000

The labeled dataset will be used to verify the ERNIE-DPCNN garbage barrage recognition algorithm proposed in this paper. The specific evaluation indicators prove the advantages of the proposed model. An example of barrage labeling shown in Table 2.

In particular, ERNIE pre-training word vectors are used in this article. ERNIE uses batch normalization for training, so the trained barrage text data will disrupt the marked barrage text. This can ensure that the ratio of the normal barrage and garbage barrage read into each mini-batch by the model is 3:2.

Table 2 Example of barrage labeling

Barrage Text	Label
玛丽亚之墙沦陷了	normal
前面的老哥，等等我	spam
于林殊而言，已经不是舅舅了	normal
乐华去死吧	spam
98k 配上八倍镜，简直绝杀	normal
想学游戏的来找我啊	spam
著名的五院四系大观赏，哈哈哈	normal
gx 有什么好哭的，无能垃圾	spam

The dataset of this paper is barrage. Most barrage is classified as normal barrage, and the proportion of garbage barrage is small. To solve this unbalanced dataset problem, this paper uses precision, recall, and F1 value as experimental evaluation indicators.

$$precision = \frac{TN}{FN+TN} \tag{19}$$

$$recall = \frac{TN}{FP+TN} \tag{20}$$

$$F1 = \frac{2 \times precision \times recall}{precision + recall} \tag{21}$$

In formulas 19 and 20, TP represents the number of normal barrages that are actual and predicted, FN represents the number of normal barrages that are actually predicted as junk barrage, and FP represents that the actual junk barrage is predicted as normal the number of a barrage, TN represents the actual and predicted number of garbage barrage text. The calculation method of F1 value is as formula 21.

4. EXPERIMENT

In order to verify the feasibility of the garbage barrage recognition model based on ERNIE_DPCNN proposed in this paper. This chapter will implement and test the content described above. This chapter proceeds through the steps of experimental results and analysis, and model validation.

4.1EXPERIMENTAL RESULTS AND ANALYSIS

4.1.1 EXPERIMENTAL ENVIRONMENT

The experiment in this article is run under Windows 10 environment, using the PyCharm programming platform. The version of Python is 3.6. Use PyTorch, a deep learning framework, to build models.

4.1.2 EXPERIMENTAL SETUP

In the ERNIE_DPCNN network, it is mainly composed of 4 parts: (1) Input layer: refers to the input sentence, in this article refers to the barrage in the video; (2) Word embedding layer: The word embedding model adopted is ERNIE; (3) DPCNN layer: Use ERNIE pre-trained word vectors as the input of the DPCNN layer. DPCNN continuously deepens the network to obtain more accurate classification results; (4) Output layer: output specific results, namely garbage barrage or normal barrage.

To train ERNIE, we use the Adam optimizer, attention_probs_dropout_prob is set to 0.1, the selected activation function is GELU, hidden_dropout_prob is set to 0.1, hidden_size is set to 768, the model batch size is set to 128, initializer_range is set to 0.02, max_position_embeddings is set to 513, layer_norm_eps Set to 1e-05. Considering that the dimension of the barrage is shorter than the ordinary long text, the text dimension is taken as 32 here. In the DPCNN model of junk barrage recognition, the activation function uses RELU, and the optimizer is Adam. To prevent over-fitting, we set the probability of random inactivation to 0.1 after each fully connected layer. For all experiments, this article trains on the training set, validates on the validation set, and fine-tunes the parameters in DEV_DATASET.

4.2 MODEL VERIFICATION

To verify the influence of the ERNIE_DPCNN algorithm proposed in the article on the identification of junk barrage, the same data set was tested by comparing the TextCNN, DPCNN, BERT, BERT_DPCNN, and ERNIE methods. The experimental results of the six groups of algorithms are shown in Table 3:

Table 3 Display of results of six algorithms

Method	Precision	Recall	F1	time
TextCNN	0.9123	0.9234	0.9178	55
DPCNN	0.9200	0.9190	0.9195	63
BERT	0.9342	0.9178	0.9259	105
BERT_DPCNN	0.9426	0.9312	0.9369	75
ERNIE	0.9582	0.9401	0.9491	120
ERNIE_DPCNN	0.9657	0.951	0.9583	86

By comparing the models in Table 3, we can first find that the values of ERNIE and ERNIE_DPCNN in the three indicators are higher than all other models. For all neural network models participating in the comparison, TextCNN and DPCNN use word2vec word vectors, BERT and BERT_DPCNN use BERT pre-training word vectors, and ERNIE and ERNIE_DPCNN use ERNIE pre-training word vectors. The three types of word vector algorithm indexes are all lower than the ERNIE pre-training word vector indexes. It can be seen that ERNIE has more advantages in word vector algorithms.

TextCNN uses the features of multiple filters to splice Softmax for category prediction. In essence, it uses similar words of the word vector to have similar vectors to express this feature, but it is still difficult to learn long-distance information features. DPCNN can extract long-distance text dependencies by continuously deepening the network. The experimental results also prove that the DPCNN network is better than TextCNN in the process of barrage text recognition.

Comparing the running time of TextCNN, DPCNN, BERT, and ERNIE, we can find that the algorithm network is becoming more and more complex, and the stronger the learning ability, the more time it takes. Therefore, in this paper, the word vector ERNIE algorithm is used for pre-training, and the recognition and classification algorithm uses the DPCNN network. This method can fully learn the semantic information of the barrage text, and make the later barrage recognition time faster and more efficient.

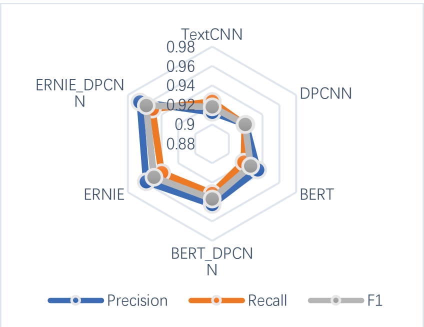


Figure 5 Comparison of evaluation indicators

As shown in Figure 5, the precision value of the ERNIE_DPCNN model is 0.9657, the recall value is 0.951, and the F1 value is 0.9583 higher than other comparison algorithms. The results prove that the ERNIE_DPCNN algorithm proposed in this paper is suitable for the process of junk barrage recognition.

5. CONCLUSIONS

At present, the mainstream review method for barrage is to combine sensitive words with manual review. It consumes a lot of labor costs and requires real-time follow-up. However, in most cases, the barrage cannot be deleted and blocked in time, and the network environment creates a bad atmosphere. To solve this problem, this article innovatively proposes a new model recognition method, specifically: The first step is to use sensitive word filtering to complete the preliminary marking of the garbage barrage; In the second step, all pop-up content is then manually marked using manual auditing to prevent omissions. The third step, which is also the focus of this article, proposes the ERNIE_DPCNN garbage barrage recognition model. The model proposed in this paper is analyzed through experiments, which proves that the model can improve the effect of junk barrage recognition.

REFERENCES

[1] WangGe, Wu Fangjun. Automatic construction of junk barrage screening dictionary based on seed words and data sets. Computer Engineering and Science, 2020, 42(07): 1302-1308.

[2] Zheng Zhan. Research on garbage barrage filtering method based on Bayesian algorithm. Huazhong University of Science and Technology, 2019.

[3] Johnson R. Zhang T. Deep Pyramid Convolutional Neural Networks for Text Categorization. Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers). 2017.

[4] HE Kaiming, ZHANG Xiangyu, REN Shaoqing, et al. Deep residual learning for image recognition. Proceedings of the 2016 IEEE Conference on Computer Vision and Pattern Recognition. Las Vegas, USA: IEEE, 2016: 770-778.

[5] Gao Weijun, Yang Jie, Zhang Chunxia, Shi Yang. Research on sentiment analysis based on AT-DPCNN model. Computer Engineering, 2020, 46(11): 53-60.

[6] Peters, ME, Neumann, M., Iyyer, M., Gardner, M., Clark, C., Lee, K. & Zettlemoyer, L. (2018). Deep contextualized word representations. CoRR, abs/ 1802.05365.

[7] Devlin J, Chang M W, Lee K, et al. BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. 2018.

[8] Vaswani A, Shazeer N, Parmar N, et al. Attention Is All You Need. arXiv, 2017.

[9] Zhang Z, Han X, Liu Z, et al. ERNIE: Enhanced Language Representation with Informative Entities. 2019.

[10] Sproat R, Jaitly N. An RNN Model of Text Normalization. Interspeech 2017. 2017.

[11] Luo Fan, Wang Houfeng. Chinese text sentiment classification combining RNN and CNN hierarchical network. Journal of Peking University Natural Science Edition, 2018, 54(03): 4-10.

[12] Wang Yina, Ma Hongbin, Tang Xinyue, et al. Text sentiment analysis based on Bi-LSTM RN. Digital Design (Part 1), 2019, 000(010): 2.

[13] Vaswani A, Shazeer N, Parmar N, et al. Attention Is All You Need. arXiv, 2017.

[14] Velikovi P, Cucurull G, Casanova A, et al. Graph Attention Networks. Proc of the 6th International Conference on Learning Representations. 2018.

[15] Hendrycks, D. and Gimpel, K, Gaussian Error Linear Units (GELUs), arXiv e-prints, 2016.
[16] TACHIBANA Kanta, OTSUKA Kentaro. Wind Prediction Performance of Complex Neural Network with ReLU Activation Function. Annual Conference of the Society of Instrument and Control Engineers of Japan 2018:1029-1034.
[17] MAZUMDAR A, RAWAT A S, et al. Learning and Recovery in the ReLU Model. Annual Allerton Conference on Communication, Control, and Computing, 2019:108-115.
[18] Zhang Youjian, Chen Chen, Wang Goodbye. Research on the activation function of deep learning algorithms. Radio communication technology: 1-6.
[19] Chen Junfen, Zhao Jiacheng, Han Jie, Zhai Junhai. Softmax clustering algorithm based on deep feature representation. Journal of Nanjing University (Natural Science), 2020, 56(04): 533-540.

Adnet: Attention-Efficient and Differentiable Binarization Scene Text Detection

Yadong Wang, Weiwei Yu*
College of Information Engineering, Shanghai Maritime University, Shanghai 201306, China
**Corresponding Author.*

Abstract: Natural scene text detection is to read the corresponding text content from images or videos in natural situations, with the rapid development of deep learning, natural scene text detection is of great value in the application of image recognition or retrieval, scene understanding, autopilot and other realities. However, scene text detection still exists: (1) there is no clear focus feature information in the process of feature extraction, there will be information loss in the feature mapping between the layers, (2) two instances of text close to each other may lead to error detection, will include even one text instance. (3) There is a possibility of improvement in speed and accuracy. In view of the above problems, we put forward an attention-efficient and differentiable binarization scene text detection--ADBNet, which introduces the visual attention layer in the trunk residual network and uses the attention mechanism to enhance the significant information in the global information in the network under fine granularity. In the feature extraction stage, feature extraction (FPEM) and feature fusion (FFM) can reduce the calculation amount, and the full fusion of low-level semantics and high-level semantics can improve accuracy. Experiments and tests were conducted using the trunk lightweight residual network ResNet-18 and ResNet-50, respectively. Finally, the MSRA-TD500 and CTW1500 data sets are used for verification, and the results show that our experimental effect is good, and the F-measure, 91.6% accuracy and 78.6% recall rate are achieved with 63 FPS on the data set MSRA-TD500.
Keywords: Scene Text Detection; Deep Learning; Attention Mechanisms; Residual Network.

1.INTRODUCTION

Scene images contain rich text messages as shown in Figure 1 that help you understand what is in the scene image, such as billboards, road signs, product packaging, consumer invoices, and so on. Scene text detection is the location of text content detected in any natural scene picture or video and positioned to the area where the text line or word is located. Scene text detection technology has a wide range of applications for text recognition, scene understanding, license plate recognition and its positioning, autopilot, etc. Although scene text detection has great research value, but the natural scene itself has intricate factors, such as text background, lighting, photo clarity and photo shooting angle, and the text also contains its own factors, such as color, size, scale, shape, etc., these factors will bring technical problems to scene text detection.

In 2010, Neuman et al. proposed that the MSERs[1] method be applied to natural scene text detection to obtain text candidate areas by some of the largest stable areas in the image. In 2012, wang et al.[2] proposed an end-to-end text recognition model based on the idea of traditional target detection, which detects text areas by sliding a window, and then uses character confidence to obtain text content. With the continuous development of deep learning (DL)[3] and the continuous progress of artificial neural networks, more and more researchers are using deep learning models instead of traditional research models and achieving good results. The continuous development of deep learning has led more researchers to apply convolutional neural networks (CNN) and recurrent neural networks (RNN) techniques to text detection in natural scenes, and the use of deep learning in text detection is divided into two main directions: regression-based and segmentation-based algorithms, such as the recently proposed classical semantic-based segmentation method. EAST[4], PSEnet[5], DBnet[6] network, the scene text detection achieved good results.

(a) real-world image (b) our results

Figure 1 An example of scene text detection, (a) is a realistic image, and (b) is the result of using our algorithm to detect (a) scene text.

The algorithm of text detection in the above-mentioned scenarios has reached a high level of accuracy and recall rate for text detection, but there are still some defects: (1) there is no clear key feature information in the process of feature extraction, some valuable information will be lost in the feature mapping between the layers; (2) Two instances of text that are close to each other may cause error detection and leak detection, and even one instance of text will be included; (3) In speed and accuracy can be greatly improved.

In order to solve the above problems, an attention-efficient and differentiable binarization scene text detection is proposed, which can carry out scene text detection more accurately and quickly. The main contributions of this paper include three aspects: (1) introducing the visual attention layer in the trunk residual network, using attention mechanism to enhance the significant information in the global information in the network at fine granularity; (2) The use of feature extraction (FPEM) and feature fusion (FFM) in feature extraction stage reduces the computational amount and makes the full fusion of low-level semantics and high-level semantics improve accuracy; (3) Experiments and tests were carried out using the trunk lightweight residual network ResNet-18 and ResNet-50, respectively.

2. RELATED WORK

Regression-based methods usually based on common target detection frameworks, such as Faster-rnn[7] and SSD[8], TextBoxes[9] modifies the shape of the anchor scale and co product core to accommodate the various aspect ratios of the text; EAST is an anchorless method, using pixel-level regression for many text-oriented instances, using FCN to directly predict the score chart, rotation angle and text box of each pixel. RRPN uses Fast er-rnn and presents the rotating proposal of the RPN part to detect text in any direction. For better detection of long text, RRD extracts feature maps for classification and regression from two separate branches, and TextBoxes++[10] is an application of four-way regression to detect multi-orientation text. Regression-based methods typically use post-processing algorithms, such as non-maximum suppression, but they are limited to precise boundary boxes that represent irregular shapes.

Segmentation-based methods are mainly inspired by the Full convolutional network (FCN). Zhang et al.[11] first take FCN to extract blocks of text and detect candidate characters from those blocks of text through MSER. Yao et al.[12] propose that a text area be defined as a variety of attributes, such as text area and direction, and then use FCN to predict the corresponding heat map. Lyu et al. [13] propose using corner point positioning to find suitable irregular triangles for text instances. PixelLink[14] splits text close to each other by predicting pixel connections between different instances of text. Recently, TextSnake[15] used an ordered circle to represent curved text detected by curve text. SPCNet[16] uses instance split frames and contextual information to detect any shape of text while suppressing false detection. PESnet algorithm splits the core of different scale text instances, expands the text kernel gradually, and PESnet algorithm is a new post-processing algorithm proposed for segmentation results, which will lead to a decrease in reasoning speed.

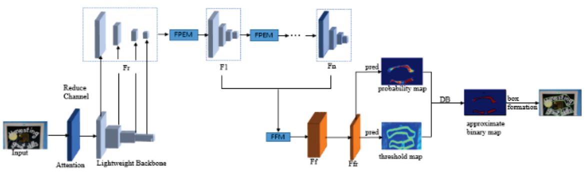


Figure 2 ADBNet network architecture

In this paper, the paper introduces spatial attention mechanism, including spatial attention mechanism and channel attention mechanism, which can enhance the significant information in the global information in the network, pay attention to important features and suppress unnecessary features. In the feature extraction stage, feature extraction (FPEM) and feature fusion (FFM) can reduce the amount of computation and make the full fusion of low-level semantics and high-levelsemantics. Experiments and tests were conducted using the trunk lightweight residual network ResNet-18 and ResNet-50, respectively, as shown in figure 2.

3. OUR METHOD

3.1ADBNET ARCHITECTURE

We put forward attention-efficient and differentiable binarization scene text detection method called ADBNet, ADBNet architecture as shown in Figure 2, first of all, the image input trunk lightweight residual network Resnet-18 or ResNet-50, in the trunk network The spatial attention module is added to the first layer, and then the output of conv2, conv3, conv4, conv5 with steps of 4, 8, 16, 32 is extracted as a high and low-level feature, and then used by 1× 1conv reduces the number of channels to 128 dimensionally to get lightweight feature map Fr, feature extraction (FPEM) is shown in Figure 3 and feature fusion (FFE) iteration is enhanced to generate feature Ff, Ffr is obtained with 1×1conv down diver, Ffr is used to predict probability map called P and use F to predict threshold map called T, and finally through P and T micro-two It is calculated that approximate two-value figure B is used for supervised training on probability graph P, threshold figure T, and approximate two-value figure B during training. Finally,

the reasoning stage, through the formula module from the approximate two-value map or probability map to get the boundary box.

3.2 ATTENTION MECHANISM

Then add the attention mechanism to the first layer of the trunk network. As shown in Figure 3, the attention mechanism consists of two modules, channel attention and spatial attention, using feature mapping F as input, and the model infers a one-dimensional channel attention map and a two-dimensional spatial attention map, calculated as formula (1):

$$F' = Mc(F) \otimes F$$
$$F'' = M_s(F') \otimes F' \tag{1}$$

where $\otimes$ represents element-wise multiplication, F' is the result of the original image feature map passing through the channel domain attention, F'' is the final refined output.

Channel attention module by using the relationship between the characteristic channels to produce channel attention map, for the input feature image, channel attention module is more focused on "what", that is, the channel attention focus is significant text, first input feature map F according to the results of each channel Max Pooling and Global Avg Pooling, and then into the three-layer sensor MLP, the input results directly add up, The Relu activation function is fed back and finally gets the channel attention module diagram Mc. Channel attention is calculated as shown in formula 2.

$$M_c(F) = \sigma(MLP(AvgPool(F))) + MLP(MaxPool(F))$$
$$= \sigma(W_1(W_0(F^c{}_{avg}))) + W_1(W^0(F^c{}_{\max})) \tag{2}$$

Where the feature maps $F \in R^{C \times H \times W}$, where σ represents the Sigmoid function, $W_0 \in R^{C/r \times C}$, $W_1 \in R^{C \times C/r}$, r is the compression rate, W_0 and W_1 are the weights of a multi-layer perceptive machine that shares the activation functions of input W_0, $F^c{}_{avg}$ and $F^c{}_{\max}$ which represent average pooling characteristics and maximum pooling characteristics, as shown in figure 3.

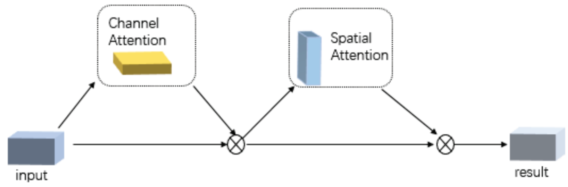


Figure 3 Attention Mechanism

Spatial attention modules generate spatial attention spectrums by utilizing spatial relationships of features, and spatial attention focuses on where the text is in "where", indicating the position of emphasis and complementing the use of channel attention. Mc first calculates two feature diagrams of Global Max Pooling and Global Average Pooling, connects them, and then traditional coil processing one last uses Sigmoid to activate feature map Ms that get spatial attention modules. The calculation of spatial attention is shown in formula 3.

$$M_s(F)=\sigma\left(f^{7\times7}([AvgPool(F);MaxPool])\right)$$
$$=\sigma\left(f^{7\times7}([F^s{}_{avg};F^s{}_{\max}])\right) \quad (3)$$

$f^{7\times7}$ represents convolution operation, the convolution kernel is 7×7, $M_s(F)\in R^{H\times W}$, $F^s{}_{avg}\in R^{1\times H\times W}$, $F^s{}_{\max}\in R^{1\times H\times W}$, $F^s{}_{avg}$, $F^s{}_{\max}$ which represent average pooling characteristics and maximum pooling characteristics, respectively.

The FPEM is a U-class module shown in Figure 4 and is divided into two phases of advanced and low-level enhancement. FPEM has cascading, low computation cost, is the application of separation constume, separation converse calculation is very small, can be seen as lightweight feature network pyramid, and can always cascade to enhance features, with the cascade number of different scale features will be more fully integrated.

FFE combines the results of the feature diagram of the number of times the FPEM module cascades for the feature fusion module, combines the corresponding scale process consists of three steps: (1) the probability feature graph by adding elements, samples the added feature map and stitches it into the final feature map F. FPEM and FFE consist of a lightweight split head with a small additional calculation of only 1/5 of the FPN.

3.3 LOSS FUNCTION

The loss function L can be expressed as a weighted sum of the loss for the probability map Ls, the loss for the binary map Lb, and the loss for the threshold map Lt, as shown in formula 4:

$$L=L_s+\alpha\times L_b+\beta\times L_t \quad (4)$$

where Ls is the loss for the probability map and Lb is the loss for the binary map. According to the numeric values of the losses, α and β are set to 1.0 and 10 respectively.

We apply a binary cross-entropy (BCE) loss for both Ls and Lb. To overcome the unbalance of the number of positives and negatives, hard negative mining is used in the BCE loss by sampling the hard negatives, as shown in formula 5:

$$L=L_b=\sum_{i\in S_l}y_i\log x_i+(1-y_i)\log(1-x_i) \quad (5)$$

Sl is the sampled set where the ratio of positives and negatives is 1 : 3.

Lt is computed as the sum of L1 distances between the prediction and label inside the dilated text polygon Gd, as shown in formula 6:

$$Lt=\sum_{i\in R_d}|y^*{}_i-x^*{}_i| \quad (6)$$

where Rd is a set of indexes of the pixels inside the dilated polygon Gd; y*is the label for the threshold map.

In the inference period, we can either use the probability map or the approximate binary map to generate text bounding boxes, which produces almost the same results. For better efficiency, we use the probability map so that the threshold branch can be removed. The box formation process consists of three steps: (1) the probability map/the approximate binary map is firstly binarized with a constant threshold (0.2), to get the binary map; (2) the connected regions (shrunk text regions) are obtain

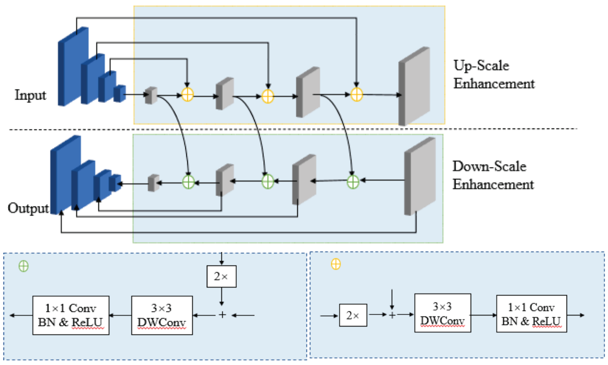


Figure 4. The details of FPEM. "+", "2×", "DWConv", "Conv"and "BN" represent element-wise addition, 2× linear upsampling, depthwise convolution, regular convolution and Batch Normalization respectively, as shown is figure 4.

from the binary map; (3) the shrunk regions are dilated with an offset D' the V atticlipping algorithm. D' is calculated as Vatticlipping algorithm. D' is calculated as formula 7:

$$D'=\frac{A'\times r'}{L'} \quad (7)$$

where A' is the area of the shrunk polygon; L' is the perimeter of the shrunk polygon; r' is set to 1.5 empirically.

3.4 TRAINING

For all models, the pretrained models were trained 25k iterations at a fixed learning rate of 1x10-3 on SynthText. We then trained 100 epoch models in the corresponding actual data sets (CTW1500, ICDAR2015 etc.) with the training batch size set to 4. The initial learning rate is set to 0.007 and the power is 0.9, and we use the "poly" learning rate strategy, where the learning rate for the current training iteration is equal to the initial learning rate multiplied $\left(1-\frac{iter}{\max\_iter}\right)^{power}$, We used a weight attenuation of 0.0001 and a momentum of 0.9. Maximum iter refers to the maximum number of iterations depending on the maximum epoch. The learning framework we're using is Pytorch, and the GPU is Tesla T4.

4. EXPERIMENTS

The experimental data set we used was a Synthtext dataset, a combination of 800k images, which were used only to pretrain our model, and the images were synthesized from 8k background images. The MSRA-TD500 dataset is a multilingual dataset containing English and Chinese, containing 300 training images and 200 test images, plus 400 training images of the HUSTTR400, with text instances marked at the text line level. The CTW1500 dataset is a data set of text bends, containing 1, 000 training pictures and 500 test images, with text instances annotated at the text line level. The data is enhanced by random cropping and random flipping during training, and the image will be adjusted to 640×640 for training efficiency.

We study the effects of cascading FPEM by changing the number of FPMs n from 1 to 4, and table 1 shows that as n grows, the F-measures of the test set rise, and when n≥2 is starting to level off, the calculation cost of FPEM is relatively low, but for every additional FPEM, 1-6 FPS is reduced. In order to maintain a certain degree of balance between performance and speed, we value n=2 in subsequent experiments, as shown in Table 1.Table 1 test results for different settings, Backbone for the backbone network, Attention for the attention mechanism, "P, " "R", and "F" for accuracy, recall rate and F-measure, "N, " "Y" for No, Yes.

Backbone	Attention	MSRA-TD500				CTW1500			
		P	R	F	FPS	P	R	F	FPS
ResNet-18	N	88.3	78.6	83.2	64	83.3	77.8	80.5	60
ResNet-18	Y	91.6	78.6	84.6	63	85.9	78.9	82.3	57
ResNet-50	N	87.5	76.5	81.6	42	84.3	79.1	81.6	32
ResNet-50	Y	92.3	80.2	85.6	38	87.5	81.0	84.1	27

In order to make the conclusions of the ablation study more general, we carried out the ablation study on the MSRA-TD500 data set and the CTW1500 data set, and were able to show the spatial attention mechanism, the number of FPEM and the effectiveness of FFM and different trunk networks, as shown in Table 2.

Table 2 The effect table for the number of FPEM cascades, F for F-measure, and #FPEM for the cascades of FPEM.

#FPEM	MSRA-TD500		CTW1500	
	F	FPS	F	FPS
1	82.9	67	79.5	60
2	83.2	64	80.5	56
3	83.3	57	80.6	51
4	83.4	51	80.8	48.6

In Table 2, we can see that our proposed ADBNet has significantly improved performance on both the two main networks, ResNet-18 and ResNet-50. For the trunk network ResNet-18, Attention achieved 1.4% and 1.8% performance improvements in the F-measure of the MSRA-TD500 dataset and the CTW1500 dataset. For the trunk network ResNet-50, Attention has improved performance by 3.0% and 2.5% on the MSRA-TD500 dataset and the CTW1500 dataset.

The ADBNet method proposed for us compares one of the curved text benchmarks on two benchmarks and the other with the multilingual text benchmarks in Chinese and English. The comparison method is shown in Table 3.

As shown in Table 3, the ADBNet proposed by us is better than the previous method in ResNet-50 in terms of accuracy, recall rate and F-measures, and is better than DB-ResNet-50 (736) on the MSRA-TD500 dataset 0.7% higher, in our proposed ResNet-18 is alightwei-
ght backbone network performance will be the proportion of the backbone network ResNet-50 is lower, and faster than before, running at 63FPS, The Ours-ResNet-18 is 1.8% higher than the DB-ResNet-18.

Table 3: MSRA-TD500 data set detection results. The value in parentheses represents the height of the input image.

Method	P	R	F	FPS
(He et al.2016b)	71	61	69	-
DeepReg (He et al.2017b)	77	70	74	1.1
RRPN(Ma et al.2018)	82	68	74	-
RRD (Liao et al. 2018)	87	73	79	10
MCN (Liu et al.2018)	88	79	83	-
PixeLink (Deng et al.2018)	83	73.2	77.8	3
Corner (Lyu et al. 2018)	87.6	76.2	81.5	5.7
(Xue, Lu, and Zhan 2018)	83.0	77.4	80.1	-
(Xue, Lu, and zhang 2019)	87.4	76.7	81.7	-
CRAFT (Back et al.2018)	88.2	78.2	82.9	8.6
SAE(Tian et al. 2019)	84.2	81.7	82.9	-
DB-ResNet-18(736)	90.4	76.3	82.8	62
DB-ResNet-50(736)	91.5	79.2	84.9	32
Ours-ResNet-18(736)	91.6	78.6	84.6	63
Ours-ResNet-50(736)	92.3	80.2	85.6	38

The CTW1500 dataset from Table 4 is a text benchmark for our curved text detection, and our method is superior in precision and speed. Significantly, the Ors-ResNet-50 is 0.7% better performing than the previous best DB-ResNet-50. The lightweight Network Your-ResNet-18 is the fastest in speed, but slightly lower in performance than the Ors-ResNet-50, and the fastest at 57 FPS, as shown is table 4.

Table 4 CTW1500 data set detection results. The value in parentheses represents the height of the input image.

Method	P	R	F	FPS
CTPN(Liu et al.2019a)	60.4	53.8	56.9	7.14
EAST(Liu et al. 2019a)	78.7	49.1	60.4	21.2
SegLink(Liu et al.2019a)	42.3	40.0	40.8	10.7
TextSnake(L et al.2018)	67.9	85.3	75.6	1.1
TLOC(Liu et al.2019a)	77.4	69.8	73.4	13.3
PSENet(W et al. 2019a)	84.8	79.7	82.2	3.9
SAE(Tian et al.2019)	82.7	77.8	80.1	3
DB-ResNet-18(1024)	84.8	77.5	81.0	55
DB-ResNet-50(1024)	86.9	80.2	83.4	22
Ours-ResNet-18(1024)	85.9	78.9	82.3	57
Ours-ResNet-50(1024)	87.5	81.0	84.1	2.7

5. CONCLUSIONS

In this paper, we put forward attention-efficient and differentiable binarization scene text detection- ADBNet, in the network to add attention mechanism module, feature enhancement module (FPEM) and feature fusion module (FFM) composed of a light split head, is conducive to extract features, the additional calculation is only 1/5 of the FPN. Extensive experiments on the MSRA-TD500 and CTW1500 data sets show that our method uses the trunk network ResNet-50 to achieve competitive advantages in speed and accuracy compared to the most advanced text detectors of the past, especially the lightweight trunk network ResNet-18.

REFERENCES

[1] Neumann L, Matas J. A method for text localization and recognition in real-world images. In: Proc. of the Asian Conf. on Computer Vision. 2010. 770-783.
[2] Wang K, Babenko B, Belongie SJ. End-to-end scene text recognition. In: Proc. of the Int'l Conf. on Computer Vision. 2011.
[3] Hinton GE, Salakhutdinov R. Reducing the dimensionality of data with neural networks. Science, 2006, 313(5786):5-507.
[4] Zhou X, Yao C, Wen H, Wang Y, Zhou S, He W, Liang J. EAST: An efficient and accurate scene text detector. arXiv:1704. 03155v2, 2017.
[5] Li X, Wang W, Hou W, Liu R, Lu T, Yang J. Shape robust text detection with progressive scale expansion network. arXiv:1903. 12473v2, 2018.
[6] Liao M, Wan Z, Yao C , et al. Real-time Scene Text Detection with Differentiable Binarization[J]. 2019. In Proc. ICCV, 3047-3055.
[7] S. Ren, K. He, R. Girshick, and J. Sun. Faster r-cnn: to-wards real-time object detection with region proposal net-works. PAMI, (6):1137-1149, 2017.
[8] W. Liu, D. Anguelov, D. Erhan, C. Szegedy, S. Reed, C.-Y. Fu, and A. C. Berg. Ssd: Single shot multibox detector. In ECCV, pages 21-37. Springer, 2016. 2
[9] M. Liao, B. Shi, X. Bai, X. Wang, and W. Liu. Textboxes: A fast text detector with a single deep neural network. In AAAI, 2017: 4161-4167.
[10] Liao M, Shi B, Bai X. TextBoxes++: A single-shot oriented scene text detector. IEEE Trans. on Image Processing, 2018, 27(8): 3676-3690.
[11] Long J, Shelhamer E, Darrell T. Fully Convolutional Networks for Semantic Segmentation. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2015, 39(4):640-651.
[12] C. Yao, X. Bai, N. Sang, X. Zhou, S. Zhou, and Z. Cao. Scene text detection via holistic, multi-channel prediction. arXiv preprint arXiv:1606.09002, 2016.
[13] P. Lyu, C. Yao, W. Wu, S. Yan, and X. Bai. Multi-oriented scene text detection via corner localization and region segmentation. arXiv preprint arXiv:1802.08948, 2018.
[14] Wang Z, Ma Y, Cheng F, et al. Review of pulse-coupled neural networks. Image & Vision Computing, 2010, 28(1):5-13.
[15] Wachs A, Girolami L, Vinay G, et al. Grains3D, a flexible DEM approach for particles of arbitrary convex shape - Part I: Numerical model and validations. Powder Technology, 2012, 224(none):374-389.
[16] Hinton GE, Salakhutdinov R. Reducing the dimensionality of data with neural networks. Science, 2006, 313(5786):504-507.
[17] Zhong Z, Sun L, Huo Q. An anchor-free region proposal network for faster R-CNN based text detection approaches. Int'l Journal on Document Analysis and Recognition, 2019, 22(3):315−327.[doi:10.1007/s10032-019-00335-y]
[18] Deng D, Liu H, Cai D, Li X. PixelLink: Detecting scene text via instance segmentation. In: Proc. of the National Conf. on Artificial Intelligence. 2018. 6773−6780.
[19] Li X, Wang W, Hou W, Liu R, Lu T, Yang J. Shape robust text detection with progressive scale expansion network. arXiv:1903. 12473v2, 2018.
[20] Xu Y, Wang Y, Zhou W, Wang Y, Yang Z, Bai X. TextField: Learning a deep direction field for irregular scene text detection. IEEE Trans. on Image Processing, 2018, 28(11):55−5579. [doi: 10.1109/TIP.2019.2900589]
[21] Zhu Y, Du J. TextMountain: Accurate scene text detection via instance segmentation. arXiv:1811.12786, 2018.
[22] Dai Y, Huang Z, Gao Y, Xu Y, Chen K, Guo J, Qiu W. Fused text segmentation networks for multi-oriented scene text detection. In: Proc. of the Int'l Conf. on Pattern Recognition. 2018. 3604−3609. [doi: 10.1109/ICPR.2018.8546066]
[23] Li Y, Yu Y, Li Z, Lin Y, Xu M, Li J, Zhou X. Pixel-anchor: A fast oriented scene text detector with combined networks. arXiv: 1811.07432v1, 2018. [24] Girshick RB, Donahue J, Darrell T, Malik J. Rich feature hierarchies for accurate object detection and semantic segmentation.arXiv:1311.2524v3, 2013.[doi:10.1109/CVPR.2014.81]
[25] Ren S, He K, Girshick RB, Sun J. Faster R-CNN: Towards real-time object detection with region proposal networks. IEEE Trans. on Pattern Analysis Machine Intelligence, 2017, 39(6):1137−1149.[doi:10.1109/TPAMI.2016.2577031]
[26] Liu W, Anguelov D, Erhan D, Szegedy C, Reed SE, Fu C, Berg AC. SSD: Single shot MultiBox detector. In: Proc. of the European Conf. on Computer Cision. 2016. 21−37. [doi: 10.1007/978-3-319-46448-0_2]
[27] Liu Y, Jin L. Deep matching prior network: Toward tighter multi-oriented text detection. arXiv:1703.01425, 2017. [doi: 10.1109/ CVPR.2017.368]
[28] Ma J, Shao W, Hao Y, Li W, Hong W, Zheng Y, Xue X. Arbitrary-oriented scene text detection via rotation proposals. IEEE Trans. on Multimedia, 2018, 20(11):311−3122. [doi: 10.1109/TMM.2018.2818020]
[29] Long J, Shelhamer E, Darrell T. Fully convolutional networks for semantic segmentation. IEEE Trans. on Pattern Analysis and Machine Intelligence, 2017, 39(4):6−651 [doi: 10.1109/TPAMI.2016.2572683]
[30] Lin T, Dollar P, Girshick RB, He K, Hariharan B, Belongie SJ. Feature pyramid networks for object detection. arXiv:1612. 03144v2, 2017. [doi: 10.1109/CVPR.2017.106]
[30] Li Y, Qi H, Dai J, Ji X, Wei Y. Fully convolutional instance-aware semantic segmentation. arXiv:1611.07709v2, 2017.[doi:10.1109/CVPR.2017.472]
[31] Tian X, Wang L, Ding Q. Review of image semantic segmentation based on deep learning. Ruan Jian Xue Bao/Journal of Software, 2019, 30(2):440−468. http://www.jos.org.cn/10009825/5659.htm[doi:10.13328/j. cnki.jos.005659]

[33] Jiang Y, Zhu X, Wang X, Yang S, Luo Z. R2CNN: Rotational region CNN for arbitrarily-oriented scene text detection. In: Proc. of the Int'l Conf. on Pattern Recognition. 2018. [doi: 10.1109/ICPR.2018.8545598]

[34] Zhu Y, Du J. Sliding line point regression for shape robust scene text detection. In: Proc. of the Int'l Conf. on Pattern Recognition. 2018. 3735−3740. [doi: 10.1109/icpr.2018.8545067]

[35] He P, Huang W, He T, Zhu Q, Qiao Y, Li X. Single shot text detector with regional attention. In: Proc. of the Int'l Conf. on Computer Vision. 2017. 3066−3074. [doi: 10.1109/iccv.2017.331]

[36] Szegedy C, Liu W, Jia Y, Sermanet P, Reed SE, Anguelov D, Erhan D, Vanhoucke V, Rabinovich A. Going deeper with convolutions. arXiv:1409.4842, 2014.

[37] Deng L, Gong Y, Lin Y, Shuai J, Tu X, Zhang Y, Ma Z, Xie M. Detecting multi-oriented text with corner-based region proposals. Neurocomputing, 2019, 334:134−142.

[38] He T, Huang W, Qiao Y, Yao J. Text-attentional convolutional neural network for scene text detection. IEEE Trans. on Image Processing, 2016, 25(6):2529−2541.

[39] Simonyan K, Zisserman A. Very deep convolutional networks for large-scale image recognition. In: Proc. of the Int'l Conf. on Learning Representations. 2015.

[40] Tang J, Yang Z, Wang Y, Zheng Q, Xu Y, Bai X. SegLink++: Detecting dense and arbitrary-shaped scene text by instance-aware component grouping. Pattern Recognition, 2019, 96.

Cross-project Software Defect Prediction

Ying Wang, Hongmin Ren*
College of Information Engineering, Shanghai Maritime University, Shanghai 201306, China
**Corresponding Author.*

Abstract: In recent years, research on software defect prediction has developed into a hot issue. Insufficient historical data makes it difficult for new software projects to build software defect prediction models. Therefore, cross-project software defect prediction has become a hot spot. This paper builds a defect prediction model based neural network with similar feature item data. This is helpful for insufficient historical data of the software. Defect prediction can improve software reliability.
Keywords: Cross-project software defect prediction; Neural network; Software reliability

1. INTRODUCTION

As people's living needs gradually increase, more and more industries covered by software. Software gradually increases in size and overall complexity. Software defects are inevitable. with the expansion of a software in size and complex, its defects increase. Defects may crash the software, cause economic losses to users, and even affect life safety. Only high-quality software can become a carrier to help human activities and maximize its value. Therefore, the software defect prediction work has gradually attracted people's attention.

In the process of development and maintenance, the discovery and repair of defects is extremely important. We hope to predict defects and fix them before the software is released. Software developers can reasonable allocation of resources. Such as reduce the energy and time for software testing. Defect predict makes software more stable. It will reduce the loss caused by defects and the cost of software development. In a large extent, it could improve software performance and quality.

This paper uses project data which is likes the project to be predicted for cross-project software defect prediction research and application. Building a neural network-based defect prediction model to achieve the prediction of software defects.

2. ECLIPSE DATASET

The dataset uses data linking techniques which called BuCo Regex that link software code to software defect logs based on regular expressions. The link can accurately and comprehensively connect the code of software defects to the contents submitted in the defect logs. From the analysis of the number of modifications, the number of modified codes, the number of workers involved and many aspects, some scholars have designed 48 kinds of measurements. These measurements can be analyzed in all aspects to extract the characteristics related to software defects. The main measurement design is shown in table 1.

3. CROSS-PROJECT SOFTWARE DEFECT PREDICTION MODEL CONSTRUCTION

3.1 DEEP NEURAL NETWORK

This paper uses deep neural network to build a defect prediction model. The deep neural network defines 100 input neurons and two hidden layers. This enhances the expressive power of the defect prediction model.

The input of the first hidden layer is set with 200 neurons, which is also the output of the input layer. The second hidden layer is equipped with 100 neurons. The output of the last hidden layer is used as the final layer output. There are two neurons in the output layer, corresponding to the two cases of ‘defect’ and ‘non-defect’.

Table 1. BuCo Regex dataset metrics

#	Metrics	Describe
File description		
1	File Path	Unique identifier for public class in file
2	Product	Analyze the name of an open source project
3	Release	Analyze the release of open source projects
Code metrics		
4	LOC	Total code lines
5	SLOC-P	Physically executable source line
6	SLOC-L	Logical source code line
7	MVG	The complexity of McCabe VG
8	Block	Empty line code
9	C&SLOC	Lines with code and comments
10	Clock	Comment code line
11	CWORD	Number of comments
12	HCLOC	Title Comments
13	HCWORD	Title words
14	AVCC	Average loop complexity for all methods
15	CCML	Total number of comment lines
16	CCOM	Total number of comments
17	CBO	Coupling between objects
18	LMC	The number of local method calls, i.e. calls to the methods defined in this class
19	NQU	Number of queries (number of methods in class that return values)
20	NSUP	The number of super classes of this class (including object classes)
21	NSUB	The number of super classes of this class
22	PACK	Number of packages imported into this class
23	R-R	Reuse of rations
24	S-R	Specialization disain
25	RFC	Response son
26	SIX	Specialization Index - Measures the extent of sub-category coverage
Defect status		
27	Num_def	Number of defects found in the file

The weight and the bias are defined on the deep neural network, which are used to calculate the cost function. Both the weight and bias are initialized to random numbers within a certain range. The bias value is calculated by back propagation algorithm, and the result is used to calculate the accuracy and recall of experimental results.

Due to the limitations of hardware equipment, it is difficult to carry so many neurons to work at the same time. In the experiment, a part of neurons is removed first through the Dropout algorithm. Letting some neurons not participate in the calculation can greatly reduce the amount of calculation and increase the speed of calculation. In addition, it can prevent overfitting of the training result.

3.2 SIGMOID FUNCTION

The sigmoid function acts on the neuron nodes between the input layer and the output layer of the deep neural network. It can enhance the expression and learning ability of neural networks.

The Sigmoid function is a nonlinear S-shaped curve. It often used in combination with the cost function.

$$f(z)=\frac{1}{1+e^{-z}} \tag{1}$$

The Sigmoid function is equivalent to a compression function. It converts the input continuous value into a value in the interval [0, 1] and outputs it. If the input value is a large negative number, the output of the Sigmoid function is 0. If the input value is a large positive number, then the output of the Sigmoid function is 1.

In this paper, the deep neural network uses the Sigmoid function as the activation function. The output can be regarded as a probability distribution. Combine this function with the deep neural network to form a soft gate that can control the amount of information output by the deep neural network.

In the prediction model, each layer of the neural network needs to call the Sigmoid function, including the calculation of the final predicted value. This can speed up training and save time for model training. The Sigmoid function controls the output value of 0 or 1, which is "defect" and "non-defect". Obviously, it is very suitable to use the Sigmoid function in the software defect prediction model.

3.3 SECONDARY COST FUNCTION

The cost function is also known as the loss function, which uses the error of the data's mark and prediction value to calculate the weight and bias. The gradient descent method is used to minimize the error between the true value and the predicted value, thereby obtaining the cost function. The cost function is applied to the defect prediction model of deep neural network.

In the case that the output neuron is linear, the secondary cost function is selected as the cost function. The function is shown in formula 2.

$$c=\frac{1}{2n}\Sigma_x \| y^{(x)}-a^L(x)\|^2 \tag{2}$$

Where 'x' represents the sample, 'y' is the true value, 'a' represents the predicted value, and 'n' is the total number of samples.

Take a sample as an example to illustrate the quadratic cost function. Suppose the form of the quadratic cost function is formula 3.

$$C=\frac{(y-a)^2}{2} \tag{3}$$

Whereα=σ(z), the activity function isσ(z). Formula 5 is shown 'z' which is calculated by weight and bias.

$$z=\sum w_j + x_i + b \tag{4}$$

When adjusting weights by gradient descent, the gradient derivations of weights and bias are as formulas 5 and 6.

$$\frac{\partial c}{\partial w}=(a-y)\sigma'(z)x \tag{5}$$

$$\frac{\partial c}{\partial b}=(a-y)\sigma'(z) \tag{6}$$

Where 'z' represents the input of neurons. The gradient of W and b is proportional to the gradient of the argon (z). The larger the gradient of the crucible (z), the faster the adjustment of W and b, and the faster the model training converges.

The adjustment scheme of Secondary Cost function is different where the position and convergence target are uncertain. It is necessary to analyze the actual situation of the current project to select the appropriate adjustment plan.

3.4 RANDOM GRADIENT DROP METHOD

This paper uses the gradient descent method to minimize the value of the loss function. Thus, the weight and bias value are gradually forced to the optimal value. Finally, a suitable fitting function is obtained.

The random gradient drop method performs parameter updates for training data x(i) and label y(i). It can be written as formula 7.

$$\theta=\theta-\eta\cdot\nabla_\theta J\left(\theta; x^{(i)}; y^{(i)}\right) \tag{7}$$

The stochastic gradient descent method frequently performs updates with high differences, resulting in large fluctuations in the objective function.

The adjustment parameter is added when the stochastic gradient descent method converges to the minimum value of the concave function. An objective function that keeps fluctuating may find a new local minimum, or it may converge to the lowest limit of function accuracy. When the adjust parameters gradually reduce the learning rate, the stochastic gradient descent method will converge to a local or global minimum in a non-convex and convex function optimization manner.

In addition, the stochastic gradient descent method also needs to apply a back propagation algorithm. What is introduced here is a back propagation algorithm based on stochastic gradient descent.

The input of the algorithm includes training dataset $D=\{(x(n),y(n))\}$, 'L' is network layer, 'α' is learning rate, 'λ' is regularization coefficient, 'V' is verification dataset, 'm (l)' is number of neurons, and $1\le l\le L$.

Step1.Randomly initialize W and b;

Step2. Randomly reorder the samples in the training dataset D,

Step3. for n = 1 ··· N do

Step4. Select sample $(x^{(n)},y^{(n)})$ from training dataset D.

Step5. Use the feedforward algorithm to calculate the net input z(l) and activation value a(l) of each layer of the neural network.

Step6. Use back propagation to calculate the error generated by each layer.

Step7. Calculate the derivative of each layer parameter as formula 8 and formula 9.

$$\forall l, \frac{\partial L\left(y^{(n)},\hat{y}^{(n)}\right)}{\partial w^{(l)}}=\delta^{(L)}\left(a^{(l-1)}\right)^T \tag{8}$$

$$\forall l, \frac{\partial L\left(y^{(n)},\hat{y}^{(n)}\right)}{\partial b^{(l)}}=\delta^{(L)} \tag{9}$$

Step8.Update W(l) and b(l) as

$$w^{(l)} \leftarrow w^{(l)} - \alpha(\delta^{(L)}\left(a^{(l-1)}\right)^{T} + \lambda w^{l}) \quad (10)$$

$$b^{(l)} \leftarrow b^{(l)} - \alpha\delta^{(L)} \quad (11)$$

Step9. end

Repeat step 2 to step 8 until the error rate of the neural network model on validation set V no longer decreases. The output of the algorithm is: W, b.

4.EXPERIMENT

This chapter applies the cross-project software defect prediction model for defect prediction, and its evaluation metrics include accuracy, recall rate, and F-Measure.

4.1ACCURACY

The accuracy rate increases gradually during the test. The accuracy rate can reach about 65% in the first test. This shows that the experimental data is more effective and can meet the basic requirements of cross-project testing. In the test process, the accuracy rate rises more. fast. However, after the number of tests in the same project reached 53 times, the accuracy of the model dropped slightly. After about 10 tests, the accuracy increased again in the form of a concave function. The change is shown in Figure 1.

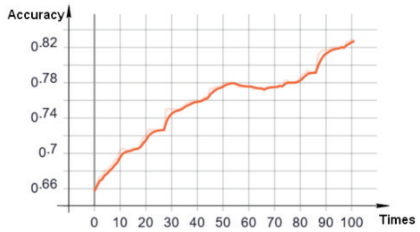


Figure 1. Accuracy Test Change Chart

4.2 RECALL RATE

The recall rate can reach 56.98%. The recall rate fluctuates drastically during the test. After 23 tests, the overall decline began, and the overall slight increase after 90 tests. The change of the recall rate of the data model test result is shown in Figure 2. The overall recall rate test effect is relatively general, and the prediction model needs to be improved.

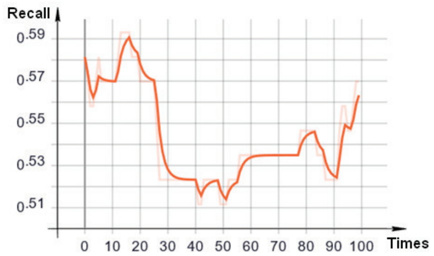


Figure 2. Recall Rate Test Change Chart

4.3 F-MEASURE

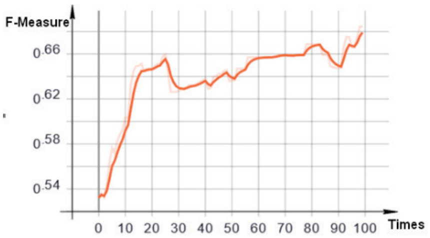


Figure 3. F-Measure Test Change Chart

The F-Measure value can reach 68.43%. During the test, F-Measure showed an overall upward trend. Before the test reached 23 times, it was the time when the value rose the fastest, after which it rose slowly and gradually stabilized. The change of F-Measure is shown in Figure 3. According to the test result of F-Measure value, the effect of this prediction model is good.

4.4 SUMMARY OF EXPERIMENTS

This article focuses on cross-project software defect prediction. The defect prediction model uses a deep neural network combined with Sigmoid function, Secondary Cost function and Stochastic Gradient Descent to predict defects in the Eclipse data set. Common evaluation indicators for predictive models are 'accuracy rate', 'recall rate' and 'F-Measure'. In the experiment, the accuracy rate and the recall rate are not always optimal, and the indicator F-Measure is needed for comprehensive measurement.

5. CONCLUSIONS

It can be seen from the experimental data that the accuracy, recall and F-Measure of the model are generally lower than other software defect prediction data of the same project. In cross-project defect prediction, most of the historical data comes from other projects. Therefore, the effect of predicting defects must be inferior to that of the same project data. This is a common problem in all cross-project software defect prediction research. Many researchers invest a lot of time and energy in improving the effectiveness of data sets and improving learning algorithms. They hope to make cross-project defect prediction more accurate and efficient. In the future, the related research on cross-project defect prediction can be better developed to ensure the quality of software.

ACKNOWLEDGMENT

The authors wish to thank teacher Ren Hongmin, Professor Goran Mauša. This work was supported in part by a grant from Zhang Fengyan.

REFERENCES

[1] Wang, S, Liu, T, Tan, L. Automatically learning semantic features for defect prediction. 2016.

[2] He Jiyuan, Meng Zhaopeng, Chen Xiang, etc. A semi-supervised integration cross-project software defect prediction method. Journal of Software, 2017, 28 (6): 1455-1473

[3] Hall T, Beecham S, Bowes D, et al. A systematic literature review on fault prediction performance in software engineering. IEEE Trans. on Software Engineering, 2012, 38(6):1276−1304.

[4] Radjenovic D, Hericko M, Torkar R, et al. Software fault prediction metrics: A systematic literature review. Information and Software Technology, 2013, 55(8):1397−1418.

[5] Chen Xiang, Gu Qing, Liu Wangshu, etc. Static software defect prediction method researchSoftware Journal, 2016, 27 (1): 1-25.

[6] Liu Shuyi, Yu, Liu Dongsheng. Cross-project software defect prediction based on domain adaptive neural network. Computer and Digital Engineering, 2019, 47 (4).

[7] Liu Shuyi, Yu, Liu Dongsheng. Cross-project software defect prediction for integrated multi-strategy feature filtering. Computer Engineering and Applications, 2019 (8): 53-58.

[8] Juan, M-M, Christian Quesada-López, Carlos Castro-

Herrera, et al, An empirical evaluation of NASA-MDP data sets using a genetic defect-proneness prediction framework, Central American and Panama Convention2016 IEEE 36th, pp. 1-6, 2016.
[9] Review of the research method of inter-project software defect prediction. Journal of Computer Science, 2018, 41 (1).
[10] S. Amasaki, Y. Takagi, O. Mizuno, andet al. ABayesian Belief Network for Assessing the Likelihoodof Fault Content. In ISSRE'03, pages 215-226.
[11] D. Ciresan, U. Meier, and J. Schmidhuber. Multi-column deep neural networks for image classification.2012: pages 3642-3649.
[12] Yu Qiao, Jiang Shuxuan, Zhang Yanmei, etc. The effect of classification imbalance on the performance of software defect prediction modelsJournal of Computer Science, 2018, 41 (4).
[13] D. Bowes, T. Hall, and D. Gray. Dconfusion: A technique to allow cross study performance evaluation of fault prediction studies. Automated Software Engineering, 21(2):287-13, 4 2014
[14] A. N. Lam, A. T. Nguyen, H. A. Nguyen, et al. Combining deep learning with information retrieval to localize buggy files for bug reports (n), In Automated Software Engineering (ASE), 2015 30th IEEE/ACM International Conference on, pages 476- 481, Nov 2015
[15] Huang Ning. Cross-project software defect prediction research based on machine learning. Oxford: Clarendon, 2018.
[16] Li Yong, Huang Zhiball, Wang Yong, et al. Cross-project software defect prediction based on multi-source data Jilin University Journal (Engineering Edition), v.46; No.187 (06): 2034-2041.
[17] Cross-project software defect prediction based on migration learning. Shanghai Jiaotong University, 2015.

PM2.5 Concentration Prediction Based on Combined Model

Zhikang Yang, Junbo Gao, Zi-an Liang*
College of Information Engineering, Shanghai Maritime University, Shanghai, 201306, China
**Corresponding Author.*

Abstract: Accurate PM2.5 concentration prediction is of great significance to citizens' health and environmental protection. Since the original time series of PM2.5 concentration presents strong nonlinearity and the complexity of the series is high, a combined model PM2.5 prediction method is proposed. First, we collected data on air quality in Wuhan, the empirical mode decomposition algorithm (EMD) is used to decompose the original time series into multiple relatively stable component series, Secondly, the support vector machine (SVM) is used to predict the high frequency components, and the gradient boosting tree (GBDT) is used to predict the low frequency components. Finally, the prediction results of each subsequence are used as the input features of the PSO_SVM model to make the final prediction. And compared with CNN_LSTM, PSO_SVM, KMEANS_RF models, the results show that: the PSO_SVM model is better than the CNN_LSTM model and the KMEANS_RF model, and the combined model is better than the PSO_SVM and KMEANS_RF model. The proposed method has higher prediction accuracy.

Keywords: PM2.5 prediction model; Empirical mode decomposition; Support vector machine; Gradient boosting decision tree; Nonlinear

1. INTRODUCTION

In recent years, because our country industrialization level continuously improve, pm2.5 as the important component of smog pollution is increasingly serious, if inhaled, easy to cause the disease such as strep throat, pneumonia and cardiovascular disease, to human life and brought serious damage to the ecological environment, so the accurate and efficient pm2.5 concentration prediction has important practical significance to the human life.

At present, there are mainly two types of atmospheric pollutant concentration prediction methods: statistical models and deterministic models [1].Among them, statistical models are generally based on historical data to establish an association model between air quality and influencing factors, which has the advantage of relatively low requirements for input data, but low prediction accuracy, which is difficult to reflect regional air quality and cannot give a reasonable explanation for the causes and sources of pollution [2].The representative models include [5] recurrent neural network (RNN), [6] long short-term memory neural network (LSTM), y. Chen et al. [4] proposed a hybrid model based on local mean decomposition and support vector regression (SVR) - Elman (LSE), Ren Caiyun et al., proposed a KMean-RF prediction model, and T. Li proposed a hybrid CNN-LSTM model; Numerical models (deterministic models) are based on theories of atmospheric dynamics at different scales, coupling atmospheric physical and chemical change processes, establishing multi-scale types of atmospheric pollutant diffusion models, and relying on computer systems to predict the trend of atmospheric pollutant concentration changes and dynamic distribution. Its advantage is that it can diagnose the cause of pollution, calculate accurately, and can predict the concentration of air pollutants in the region. Its limitation is that it is difficult to obtain time-sensitive pollution emission data, the model has high data requirements, and the actual operation is difficult[3] .Representative models include CMAQ in the United States, CHIMERE in France, and NAQPMS in China.In view of the high cost of the deterministic model, there are also many uncertain factors, the process of establishing the model and the required data requirements are complex, so many scholars use statistical model methods to conduct forecasting research.

T. Li et al. [8] proposed a hybrid CNN-LSTM model, which combines convolutional neural network (CNN) with long short-term memory neural network (LSTM), based on the advantages of long and short-term memory and the characteristics of convolutional neural networks. Advantages, better prediction results are obtained, but if the time series is too long, the calculation time-consuming problem will cause inaccurate accuracy. Ren Cairong et al. [7] proposed to use the K-Means algorithm to cluster the original meteorological data, and then use the under-sampling method to balance the data sampling, and finally use the RF with good generalization ability to build a prediction model, and divide the PM2.5 concentration by level Achieve better results. But the time series is not processed, and the accuracy is not high enough.

To solve the above problems, this paper proposes a combined model based on EMD, SVM and GBDT. Complex nonlinear and non-stationary time series are difficult to construct, and the model is not accurate. Empirical mode decomposition (EMD) is used to process the original time series to reduce the complexity of the time series; for the relatively stable component series after EMD decomposition, GBDT is used to predict high frequency components, and SVM is used to predict low frequency components. Finally, the prediction results of each sub-sequence are combined, and the PSO_SVM method is used as a whole to make the final prediction and obtain the prediction results of the original time series. By comparing the collected data with CNN_LSTM, PSO_SVM, and KMEANS_RF models, the prediction accuracy has been improved, indicating that the method is feasible and providing a theoretical basis for early warning of air quality in Wuhan.

2. MODEL CONSTRUCTION AND BASIC PRINCIPLES

2.1 MODEL BUILDING

This paper first uses empirical mode decomposition method to process the original time series, and then uses SVM and GBDT to predict different sub-sequences respectively; finally, the prediction results of each sub-sequence are used as the input features of the PSO-SVM model for the final prediction.The specific steps are shown in Figure 1.

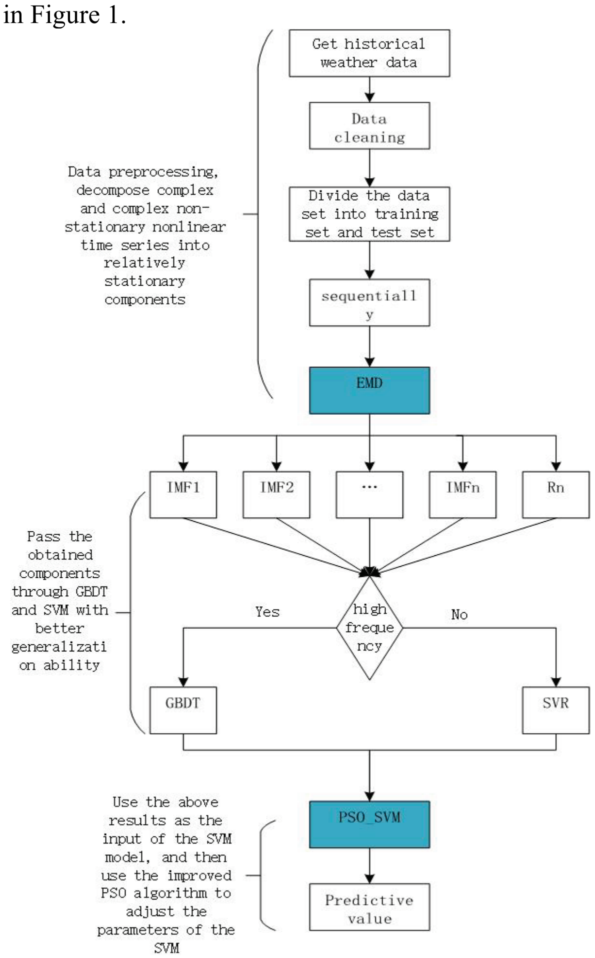


Figure 1. Model building diagram

Specific steps are as follows:

(1) The empirical mode decomposition method is used to decompose the historical data into a series of relatively stable component sequences, that is, several components and a residual component are obtained, which are divided into high-frequency components and low-frequency components.

(2) Use SVM to predict low-frequency component and GBDT to predict high-frequency component.

(3) Pass the prediction results of each sub-sequence through PSO-SVM to get the final value.

In order to verify the accuracy of the prediction model, The standard Mean Absolute Error (MAE) and Root Mean Square Error (RMSE) were used to compare and analyze the prediction models. $\hat{y}$is the predicted value, $y$is the true value, and N represents the output vector dimension, as shown in formula 1, 2.

$$RMSE = \sqrt{\frac{1}{n}\sum_{i=1}^{n}\left(\hat{y}_i - y_i\right)^2} \quad (1)$$

$$MAE = \frac{1}{n}\sum_{i=1}^{n}\left|\hat{y}_i - y_i\right| \quad (2)$$

2.2 EMPIRICAL MODEL DECOMPOSITION

Empirical mode decomposition (EMD) is a signal decomposition method, which is effective in nonlinear and non-stationary signal processing.EMD algorithm decomposes the original complex signal into multiple IMF components and a trend term r_n, which can be expressed as shown in formula 3:

$$s_t = \sum_{i=1}^{n} imf_i(t) + r_n(t) \quad (3)$$

Where, $s_t$is the original signal, namely the concentration value of PM2.5 collected; $imf_i(t)$is the i component; $r_n(t)$ is the trend item.

The essence of EMD method is stable time series. After decomposing the time series, the information contained in the time series can be fully expressed, the fluctuation characteristics of time series in different periods can be accurately obtained, the prediction model of time series can be simplified, and the prediction accuracy of time series can be improved to a certain extent.

2.3 SUPPORT VECTOR REGRESSION ALGORITHM AND GRADIENT BOOSTING DECISION TREE

The $imf_i(t)$ component and $r_n(t)$ trend terms obtained above are divided into high and low frequency components.

The core idea of Support vector machine is to try to make the two separate categories have the maximum interval, and the risk minimization principle is adopted to obtain a small error even if the sample data is relatively small. It has good classification and prediction ability for unknown new samples and is widely used in solving non-linear problems.It is rarely overfitted or underfitted. In support vector machines, kernel function is introduced for nonlinear problems, and sample space is mapped to high-dimensional feature space, so that low-dimensional nonlinear problems can be solved through support vector machines in high-dimensional feature space.Different kernel function has a great influence on final classification prediction effect, common kernel functions are polynomial kernel function, the radial basis function, cauchy kernel function and Laplace kernel function, due to the small sample characteristics of m and n, after radial basis kernel mapping, not only can realize the original training data to achieve linear partition in high dimensional space, and does not have a large consumption calculation. The radial basis kernel function introduced in this paper.

Gradient boosting decision tree is based on Boosting iterative decision tree algorithm. The training process of GBDT algorithm is as follows: GBDT generates weak classifier 1 through multiple iterations to improve the sample weight with errors in classifier 1 learning, and then trains weak classifier 2 according to the residual error of the previous round of classifier. The gradient descent method is used, which iterates until the loss function decreases and converges to the local or global optimal solution or reaches the upper limit of the set number of classifiers. Finally, n trained weak classifiers were assembled into a strong classifier to obtain the final result as shown in figure 2.

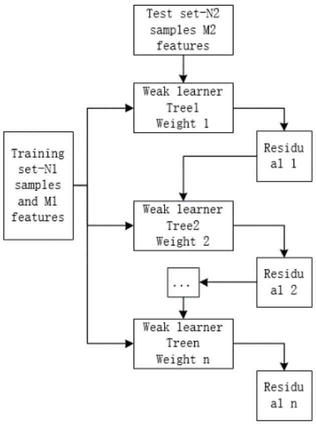


Figure 2. Schematic diagram of gradient boosting decision tree

In this paper, gradient boosting decision tree algorith-
m is used to predict the high frequency component and support vector machine to predict the low frequency component.

2.4 IMPROVED PARTICLE SWARM OPYIMIZATION ALGORITHM

For example, Zhang Jinliang et al. [9] predicted the high and low frequency components by corresponding methods, and then directly summed the results to obtain the final predicted value. The following improvements were made in this paper. The results of each sub-sequence are used as the input of the SVM model, and then the improved PSO algorithm is used to conduct parameter tuning on the SVM to obtain the final predicted value. In the traditional PSO algorithm, the inertia weight will affect the ability and result of optimization, so the selection of inertia weight is very important. In view of the problem that particles in traditional PSO tend to get trapped in local optimal solution and the late iteration efficiency is not high, this paper uses the following improvements:

The acceleration factor represents the strength of the information exchange between particles.c_1 controls the distance for individual particles to find the optimal location of individuals, while $c_2$controls the distance for individual particles to find the optimal location of groups. Therefore, choosing the appropriate acceleration factor can improve the algorithm's optimization speed and avoid getting caught in the local optimal value prematurely. In general, the relationship between $c_1$and c_2 as shown in formula 4:

$$c_1 + c_2 > 4 \tag{4}$$

The value range of $c_1$and $c_2$is [1, 3]. In this paper, a linear algorithm is selected to adjust the learning factor strategy, that is, $c_1$is set to change from large to small, and $c_2$is set to change from small to large [11], as shown in formula 5:

$$\begin{cases} c_1 = 3 - \frac{2.5k}{T_{max}} \\ c_2 = 1 + \frac{2.5k}{T_{max}} \end{cases} \tag{5}$$

3. EXPERIMENTAL ANALYSIS

3.1 THR DATA PROCESSING

The data used in this study are all from the Air Quality Data Query Network. The specific data is historical weather data of Wuhan on January 1, 2014, solstice and May 31, 2020. The data information includes daily PM2.5 concentration, PM10 concentration, SO2 concentration, NO2 concentration, CO concentration, O3 concentration, minimum temperature of the day, maximum temperature of the day, wind intensity and current date. Among them, pm2.5 concentration on the day is also taken as one of the features to predict pm2.5 concentration on the next day, with a total of 2342*11 data.

The first 2000 pieces of data were divided into training sets, and the remaining 341 pieces of data were divided into test sets. The data is cleaned, the date is converted to the month, mode is used to fill the missing value of subtype variable, and the mean value is used to fill the missing value of continuous variable. First, the training data set is normalized, and then the test data set USES the same transformation. All the data are processed according to the formula 6, so that the processed data conform to the standard normal distribution, that is, the mean value is 0 and the standard deviation is 1:

$$x^* = \frac{x-\mu}{\sigma} \tag{6}$$

Wherex^*represents the normalized data, μ represents the mean value of the training data set, and σrepresents the standard deviation of the training data set.

Take the data on January 1, 2014 as an example. The original data are shown in Table 1. After the above processing, the obtained data are shown in Table 2

Table 1. The original data

feature	Data value
PM2.5 concentration of the day	153
PM10 concentration	210
...	...
Wind intensity	Less than level 3
PM2.5 concentration on the second day	181

As shown in figure 3, the x-coordinate is time, in day, and the y-coordinate is PM2.5 concentration, in unit. It can be seen from the figure that the original time series of PM2.5 concentration presents strong nonlinearity and instability, with a high degree of complexity.

Table 2. Processed data

feature	Data value
PM2.5 concentration of the day	2.4648
PM10 concentration	2.4850
...	...
Wind intensity	15
PM2.5 concentration on the second day	181

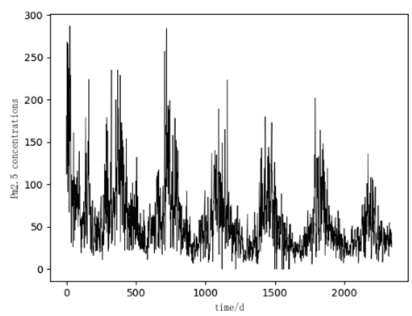


Figure 3. pm2.5 concentration time sequence diagram

The empirical mode decomposition is performed on the time series data. The input dimension is (2000*1), and the total dimension of the component sequence is (8*2000). The resulting component sequence is shown in Figure 4. The abscissa in the figure is time and the unit is days. The ordinate is the component obtained, where is the component and is the trend term. According to the example, the PM2.5 concentration of the second day is normalized. After the EMD method, 8 decomposed data are obtained, as shown in Table 3.

Table 3.EMD processed data

Original value	EMD decomposition value
3.1887	0.3679
	-0.5087
	...
	0.8862
	0.8341

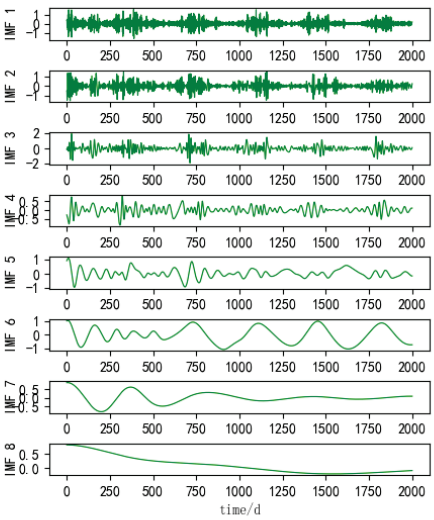


Figure 4. Emd exploded view

It can be seen from figure 4 that the component has a short period and large fluctuation, so it is divided into high-frequency components. GBDT is used to predict the high-frequency components. The remaining components are divided into low-frequency components and the low-frequency components are predicted using SVM.

3.2 MODEL EVALUATION

The prediction result of each subsequence is used as the input of PSO_SVM, the input dimension is (231*8), and the final value is obtained. The relevant parameters in the PSO_SVM algorithm are set as follows: the maximum number of population is 20, the maximum number of iterations is 200, the initial acceleration factor c1=1, c2=3, the inertia weight ω is 0.9, and the range of the penalty parameter C is [0.01, 200], The range of the kernel function parameter γ is [0.01, 200]. The predicted and true values of PM2.5 concentration are shown in Table 4.

Table 4. PM2.5 concentration forecast and true value

date	True value	Predicted value
2019/6/26	48	46.0
2019/6/27	30	37.6
...	...	...
2020/5/28	43	40.4
2020/5/29	26	30.6
2020/5/30	33	29.2

Because the obtained predicted value always has a certain deviation from the true value, this article adjusts some of the predicted data of the combined model as formula 7:

$$y(i+1) = y(i+1) + 0.9 \cdot y(i+1)^{0.4} \qquad (7)$$

In the formula, y represents the predicted value, and i represents the i-th day of the forecast, and the condition for the establishment of the formula is $y(i) >= max(y[i-5:i]), (i = 5-42)$

Calculate the values of rmse and mae by formulas (1) and (2).

Compared with the above-mentioned excellent models CNN_LSTM and KMEANS_RF, the results are shown in Table 5. It can be seen from the table that the mean absolute error of the PSO_SVM model is 10.2498, and the root mean square error is 13.2377; the mean absolute error of the CNN_LSTM model is 11.6610, and the root mean square error is 13.9321; the mean absolute error of the mixed model is 9.1391, and the root mean square error is 11.7659; The mean absolute error of the KMEANS_RF model is 12.6561, and the root mean square error is 15.5101. In summary, the PSO_SVM model is better than the CNN_LSTM model and the KMEANS_RF model, and the hybrid model is better than the PSO_SVM model. This shows that after the original time series is decomposed by EMD, the complexity of the time series is reduced, so a higher predictive ability is achieved, indicating that the algorithm is feasible and effective.

Table 5. Four methods of predictive indicators

Prediction method	mae	rmse
Combination model	9.1391	11.7659
PSO_SVM	10.2498	13.2377
CNN_LSTM	11.6610	13.9321
KMEANS_RF	12.6561	15.5101

4 CONCLUSIONS

This paper proposes a combined model of PM2.5 concentration prediction. Through the verification of Wuhan's air quality data, the EMD is used to decompose the time series into relatively stable sub-sequences. SVM and GBDT can well capture the linear sum of the time series. Non-linear factors, and use the result as the input of PSO_SVM. It provides an effective method for PM2.5 concentration prediction. The combined model can combine the historical factors of the time series and the advantages of the accuracy of the intelligent algorithm to improve the accuracy of the prediction. As there are many factors that affect the concentration of pm2.5, there are few features considered in this article. How to increase other factors is a problem that needs to be studied in the future.

REFERENCES

[1] Wang Ping, Zhang Hong, Qing Zuodong, et al, Prediction of PM_(10) concentration time series data based on WAVELET -SVM is complex. Environmental science, 2017, 38(08):3153-3161.

[2] Ying Jianfei, Peng Fei, Xie Lianke, et al, PM_(2.5) concentration prediction of least squares support vector regression model based on wavelet decomposition and adaptive multistage residual correction. Journal of Environmental Science, 2018, 38(05):2090-2098.

[3] Xie Tao, Yao Xin, Sun Shiyou, Air quality multi-model ensemble forecast system based on GIS. Geographic information World, 2011, 9(01):11-15

[4] Y. Chen, F. Li, Z. Deng, et al, PM 2.5 forecasting with

hybrid LSE model-based approach, Softw. Pract. Exper, 2017, vol. 47, no. 3, pp. 379-390.

[5] Mantas Lukoševičius, Herbert Jaeger. Reservoir computing approaches to recurrent neural network training. Computer Science Review, 2009, 3(3): 127-149.

[6] Li X, Peng L, Yao X, et al.2017.Long short term memory neural network for air pollutant concentration predictions: Method development and evaluation. Environ Mental Pollution, 231:997-1004.

[7] Ren Cairong, Xie Gang.PM2.5 concentration level prediction based on random forest and meteorological parameters. Computer Engineering and applications, 2019, 55(2):213-220.

[8] T. Li, M. Hua and X. Wu, A Hybrid CNN-LSTM Model for Forecasting Particulate Matter (PM2.5), in IEEE Access, 2020, vol. 8, pp. 26933-26940.

[9] Zhang Jingliang, Wang Mingxue. Electricity price forecast based on EEMD, SVM and ARMA combined model. Power demand side management, 2020, 22(03):63-68.

Problems and Countermeasures of Advertising Design Teaching in Higher Vocational Colleges

Xiao Xue
Wuhan Engineering Institute, Wuhan, Hubei, China

Abstract: Nowadays, the advertising design courses of higher vocational colleges have shortcomings. This article analyzes the status quo and problems of advertising design courses in higher vocational colleges, and proposes targeted solutions to these problems.
Key words: Vocational colleges; Advertising design; Teaching; problems; Countermeasures

1. CURRENT STATUS OF ADVERTISING DESIGN TEACHING IV VOCATIONAL COLLEGES

Due to the rapid economic development in China, the advertising industry has developed accordingly. The addition of advertising has made my country's economy more vigorous. In the past, advertising was a tool for economic development. Now advertising is an important method to promote enterprise products and maintain the external image of the enterprise. With the deepening of economic globalization, overseas enterprises gradually join China's advertising market, intensifying the competition in the advertising market, and promoting China's emphasis on the advertising industry to a certain extent. In this case, China has added the specialty of advertising design to higher vocational colleges and achieved a greater degree of development accordingly. However, there are also many problems in this process. For example, the advertising design major is relatively young, and many higher vocational colleges do not have perfect hardware facilities, teaching concepts, and training construction for advertising design. These problems make the time operation of student advertising design relatively lack. Chinese enterprises urgently need advertising design talents, due to various problems in advertising design in higher vocational colleges, it is impossible to cultivate more design talents and fill up the shortage of talents in enterprises. The reason for this problem in Chinese advertising design is that there is no reform and innovation of advertising design teaching mode. In the course of advertising design teaching, book knowledge is regarded as the key object of imparting, students' practical operation has not been recognized enough, resulting in the problem of armchair students.

2. PROBLEMS OF ADVERTISING DESIGN TEACHING IN HIGHER VOCATIONAL COLLEGES

2. 1 Ignore the cultivation of students' artistic quality

The exam-oriented education system is still widely used in China. Students in elementary school, middle school and high school focus more on arts and science, and the score is used as a sign to judge whether the student has mastered the knowledge. Chinese education pays too much attention to the scores of cultural courses, and then ignores art courses such as art and music. Although primary and secondary schools still set art courses, teachers and students did not pay too much attention. In high school, some students choose to pass the art test to enter the university gate. But this part of the candidates is divided into two categories, one is the student's own love for art, and the other is the poor academic performance of the cultural course, and they are forced to enter the university through the art test. These students are not influenced by art from childhood to adulthood, thus reducing the artistic quality of art students.

2. 2 Ignore the history of advertising in higher vocational colleges

Some teachers in higher vocational colleges did not tell students the history of advertising design when they were conducting advertising design courses, because some higher vocational colleges thought it was unnecessary. Let students understand the development history of advertising design, so that students can have a deeper understanding of advertising design, clarify the development trend of advertising design, understand what kind of design talents are needed in today's society, and help students have a better transition from campus to society.

2. 3 Lack of rationality in the arrangement of advertising design courses

Currently, some higher vocational colleges will take a longer time to allow students to learn more basic advertising design courses. But the basic knowledge of advertising design should be a necessary skill for students before they go to school, in higher vocational colleges, the basic knowledge of advertising design is still arranged in the curriculum, this behavior not only wastes students' learning resources and learning time, but also reduces the efficiency of advertising design teaching in higher vocational colleges and reduces the quality of teaching.

2. 4 The imbalance between advertising design theory knowledge and practical technology

In the teaching process of advertising design in higher vocational colleges, teachers only pay attention to the theoretical knowledge of advertising design and ignore the importance of time technology. Because of the imbalance between the theoretical knowledge of advertising design and practical technology, students become armchair. Inspiration is the basis of advertising design, and inspiration is generated through continuous practice, a lot of practice will trigger a lot of inspiration, and then will create good design works. Therefore, teachers in higher vocational colleges should increase the number of students' practice exercises.

3. COUNTERMEASURES TO SOLVE THE TEACHING PROBLEMS OF ADVERTISING DESIGN IN HIGHER VOCATIONAL COLLEGES

As shown in Table 1, the countermeasures to solve the problem of advertising design teaching in higher vocational colleges are divided into two categories.

Table 1 Countermeasures to solve the teaching problems of advertising design in higher vocational colleges

Enhance the scientific nature of planning and advertising design	1. Adapt to market needs 2. Increase the importance of marginalized courses 3. Train students to become all-round talents 4. Use market demand as the basis for the curriculum
Perfect advertising design course	1. Improve student quality 2. Effectively arrange advertising design courses 3. School-enterprise cooperation 4. Increase the number of design competitions

3. 1 Enhance the scientific nature of planning and advertising design

If you want to enhance the scientific nature of planning and advertising design, you must do the following: The first point is that the advertising design teaching model created should adapt to market needs and increase the employment rate of students. The rapid economic development will affect the needs of the market, the advertising design teaching mode must keep up with the trend of the times in order to make advertising design innovative, enhance the scientific nature of planning and advertising design professional development, and timely fill the market for advertising design talents. The second point is that if you want to learn advertising design well, then marginal courses such as art and technology must have good academic performance, and there should be no partial subjects. The third point is that if you want to cultivate more advertising design talents, you must not only improve the students' professional level of advertising design, but also enhance the quality of students. Students must have the spirit of innovation, independence, and professionalism; they must have a good outlook on life, values, and the world; they must have noble morals, strong cultural heritage, and personal charm. The fourth point is to improve positioning accuracy. The purpose of vocational colleges is to deliver talents to society. Cultivating talents is a long-term process, and the time, energy and money spent are huge. In order to improve their own economic level, some higher vocational colleges focus on the number of students enrolled, while ignoring the teaching hardware facilities, resulting in a decline in the quality of talent training. Excellent talents cultivated by vocational colleges are to fill the void in the market, therefore, in the advertising design class, market demand is used as the basis of the curriculum to improve the scientific nature of teaching goals and the predictability of teaching planning. When vocational colleges create the course of advertising design, they should closely link the characteristics and teaching rules of different regions to create teaching methods and teaching models with their own characteristics.

3. 2Perfect advertising design course

Under the requirements of the new curriculum reform, although the advertising design curriculum has been improved under certain circumstances, it is only a superficial effort, and there are many areas that need to be improved. Therefore, it is necessary to change people's views on art education, rectify and innovate advertising design courses in higher vocational colleges. The specific steps are as follows: First, improve the quality of students. In the process of art enrollment, the enrollment strategy is constantly improved with the purpose of enhancing the scientific nature of enrollment. There are three current admission methods. First, the professional course scores are used as a stepping stone for the university. When the students' professional course scores pass the line, the students are admitted in turn using the ranking of the cultural course scores. Secondly, the students' cultural class scores are the first focus of higher vocational colleges. When the cultural class scores exceed the school's score line, the ranking will be based on the scores of professional courses. Third, during the admission process, the school will add up the students' scores in professional courses and cultural courses, and admit them accordingly. According to the current actual situation, the school should construct a more effective admission strategy to create more design talents for the market. The second point is that higher vocational colleges must effectively arrange advertising design courses. As shown in Figure 1, there are a total of four steps in curriculum development. Knowledge introduction, task orientation, auxiliary feedback, and stage results are the important four steps. According to the current status of advertising design in higher vocational colleges, students pay more attention to theoretical courses and ignore practical courses. This requires schools to increase the proportion of practical courses, increase the number of students' practice, and connect theoretical knowledge with practical activities when arranging courses. Through a large number of practical training courses for students to lay a foundation for the future from school to social work positions for a good transition, enhance students' operational level. The third point is that cooperation between schools and enterprises can be carried out, and the tasks of enterprise development can be completed by the students of the school, so that students can experience the atmosphere of work, and make them handy in actual work in the future. The school's counterpart enterprises should provide more internship opportunities for students. For poor students, they can not only carry out advertising design practice, but also reduce the pressure brought by tuition fees. The fourth point is that the school should launch advertising design competitions many times. Through continuous participation in the competition, students can quickly improve their design level, and in the process of the competition, students can also timely change their learning orientation, improve their own knowledge framework of advertising design, and they will gradually have their own unique style of design. Advertising design is not done by oneself, in the advertising design classroom study, the teacher should enhance the students’ ability to cooperate in groups, divide the students into groups, after clarifying the design concept of the work, teamwork is used to complete the tasks assigned by the teacher, which can not only enhance the students' unity and cooperation ability, but also build their own design structure.

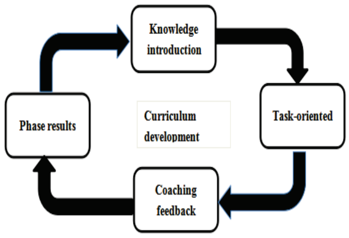


Figure 1 The steps of curriculum development

4. CONCLUSION

All in all, with the development of society, art is gradually being valued by people. In the teaching process of advertising design, we should improve the problems in the teaching process by enhancing the scientificity of planning advertising design major and improving the advertising design course, through continuous efforts to enhance the effectiveness of advertising design teaching.

REFERENCES

[1] Li Jihong, Zhang Yi, Liu Muyuan, et al. The current situation and problems of humanistic quality education in higher vocational colleges-Taking advertising design as an example [J]. Culture and Education Data, 2020, (14): 181-182, 193.

[2] Yuan Shuai. Research on market-oriented project-based teaching of advertising art design in higher vocational colleges[J]. Sino-Foreign Exchange, 2019, (9): 35.

[3] Ma Xiaoli. Research on the Curriculum Reform Model of Advertising Design in Higher Vocational Colleges[J]. Southern Agricultural Machinery, 2019, 50(2):118.

The Development and Future Prospect of Order Form in Book Cover Design

Hongwei Hu
Graduate school of Design, Chosun University, Gwangju, South Korea.

Abstract: Nowadays, it has entered the picture time--book design, especially, the slipcase design, has been becoming the first focal point of the readers to buy books. Only book designers focus on the details of the overall in the slipcase design(Such as creative inspiration, materials technology, and many other elements), they have a chance to seize the valuable three seconds of attention, to win the favor and love of the readers, in order to obtain the Better development. Research the form of order and order beauty in the slipcase design, is to the content of the book service; The intention is to design service; Is the whole beautiful design to books and overall design language law services; In order to enrich and perfect the excavation, the overall design of personalized books form, "has the meaning form" and profound content, meaning services; To the readers better and more fully enjoy reading fun, aesthetic pleasure experience service.

Keywords: Slipcase Design; Form of Order; Form of Visual

1. INTRODUCTION

Section 1. The emergence and development of new forms of order and new books

With the continuous prosperity of the book market and the improvement of people's knowledge and aesthetic appreciation, book cover design has also ushered in new opportunities and challenges; new technologies (such as digital technology, printing technology, etc.) (Figure 1-1), The change and innovation of new materials (as shown in Figure 1-2) have also brought more opportunities and room for designers. For example, "concept books" (as shown in Figures 1-3 and 1-4) provide new inspiration for book design, and the concept can be proposed from multiple perspectives such as theme, content, material, and form. The emergence of new types of books has opened the door to the world for designers to create a palace of the beauty of books.

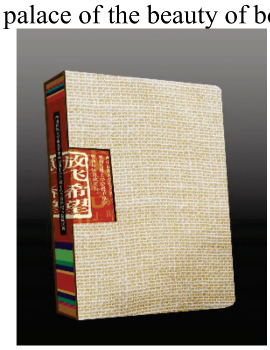
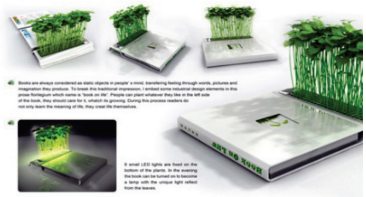


Figure 1-1

Figure 1-2



Figures 1-3

Figures 1-4

At present, China's book design has made great progress and development. Facing the needs and development of the times, book designers also need to embrace the minds of all rivers, learn from others, and advance with the times. In the book design industry, there are world-renowned design masters, the winners of "The Most Beautiful Book in the World" (Figures 1-5 and 1-6) in Leipzig, Germany, and designers at home and abroad who are obsessed with traditional Chinese culture. New elites who are skilled in market-oriented design... The design emphasizes cultural inheritance, creativity and the embodiment of national individuality. Book design is not just about the appearance of the cover of the book or the simple interior decoration. Designers must re-understand and think about the beauty of books. Since ancient times, there has been a tradition of painting and calligraphy with the same origin. The pursuit of painting and calligraphy is the embodiment of the inner spirit, not the appearance of the outside. If a painter does not have a deep cultural heritage, no matter how similar his works are, he can only become a "craftsman" rather than a "home".

Figures 1-5

Figures 1-6

Beauty is a complex human emotion, which cannot be formulated or deductively reasoned. Just like a work, there may be an infinite variety of design options, and there may not be an optimal one at all. "Combined but different" is the inheritance of traditional cultural thoughts, and it is also the current trend of book design. Designed works must always maintain originality and diversity, pay attention to life and humanistic feelings. As the famous painter Han Meilin said, the world would be boring if there were no national things. The Day of the Great Harmony of World Art is the end of world art. We should adhere to the combination of Chinese and Western, and foreign for Chinese use; combination of ancient and modern, ancient for modern use.

The emergence of new types of books has promoted the continuous development of book design, provided readers with a new visual experience, and opened up new ideas and new thinking for designers.

Book design should pay attention to user experience. In addition to high-quality content, it should also pay attention to the "intentions" and "taste" of the binding and pages. These are all criteria for measuring the popularity of the design. For example, in the design of "China Business News Weekly" Memorial Jobs Supplement (see Figure 1-7), (except for the cover and back cover) pure white pages run through, orderly selection of pictures, text, illustrations and other pages and sizes The layout is reasonable under each report, and the unmodified pages and corners reflect the characteristics of attention to detail design. Therefore, its user experience value is very high, and readers are pleased with its clean and clear design.

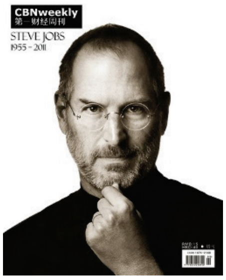


Figure 1-7

And IDEO’s chief creative designer Paul Bennett put forward “hope that design has a place in the current macro dialogue” and “the area where design can play a major role is education.” Traditional design education is facing challenges and opportunities of the times. The educational model that meets the needs of the times needs to teach people how to learn, how to establish connections and create, innovate, and how to continue to create knowledge, so that people can gain the ability to participate, communicate and innovate. IDEO has set up a "learning design" business in response to this. Human-oriented design methods and teams have brought an innovative revolution to design education-developing tools, environments, courses, etc. that make the learning experience more attractive. Just like the British design feature-emphasizing everything to serve people's needs, followed by style.

Section 2. Reflections on the Solutions to the Problems Existing in the Book Cover Design in the Book Market

The industry-renowned Leipzig, Germany, "the world's most beautiful book" selection competition has three criteria: 1. The theme, content and intention are accurate and clear; 2. Transcendence and creativity; 3. Emphasize the quality of binding and printing. We can use it as the criteria and requirements to be followed in judging book design.

When it comes to the problem we want to solve, we must first pay attention to the relationship between content and form. The concepts of "content determines form" and "form obeys function" should run through our book cover design. And it requires designers to have high professional quality, creative passion and unique creativity. The famous German book artist Gert Vondelich pointed out that the important thing is to give the appearance of the book according to the content of the book. The appearance itself is not the purpose. Grasping the content of the book is the fundamental and direction of the designers’ efforts.” Second, focus on innovation. Comrade Jiang Zemin once pointed out: "Innovation is the soul of a nation's progress and an inexhaustible driving force for the prosperity of a country. This shows the importance of innovation. As we all know, creativity is the soul of design. Then, if there is no innovation, it will stagnate or even regress, and creativity will be impossible to talk about. Therefore, it is no exaggeration to say that in the book cover design, innovation plays a vital role in the overall design; again, we must pay attention to the production process and materials, and the perfect combination of art and technology. For example, the choice of printing and binding methods will affect the final product (book) effect, so it is also directly and closely related to whether the designer's design can be reproduced. Therefore, designers can't just confine themselves to the pre-press design work, but also track the subsequent printing and post-press work. Only in this way, it not only guarantees the good expected effect of the final product (book), but also reflects the persistence of its job responsibilities.

Section 3. Practical experience of order form in book cover design

Goethe once said that "theory is gray, and the tree of life is evergreen", which vividly reflects the relationship between theory and practice. Through the study of the order form in book design, the author conducts both in his usual entries (Figure 1-8, Figure 1-9) and graduation design works (Figure 1-10, Figure 1-11) A large number of bold design attempts have gained some experience in the process of practice.


Figure 1-8

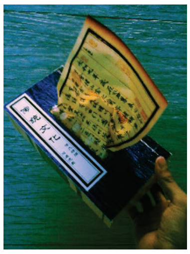


Figure 1-9

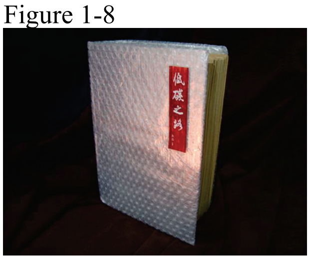


Figure 1-10


Figure 1-11

The conceptual book design of the tissue box style in the work is inspired by the classic Chinese traditional book form-thread-bound book. Using this as a carrier, the inner pages of the book are the "paper towels" that can be extracted, and the content of the book is the extensive and profound traditional Chinese culture (such as the historical and cultural heritage of the philosophers, rubbing seals, etc.). The theme of this series of works is novel, unique in perspective, and is based on current disadvantages. Criticizing and reflecting on the negative phenomena of contemporary society in which traditional culture has been neglected and lost has a certain depth and height, and it is easy to arouse readers' resonance and thinking.

Another work is to advocate the theme of green environmental protection-"Low Carbon Road". Therefore, in the choice of book cover materials, recyclable packaging is lined with polyethylene material, and the inner pages are also recyclable kraft paper envelopes. Improved. The overall design materials are all derived from recycled materials, reflecting the theme of low-carbon, environmental protection and sustainable development.

On the theme of vigorously promoting environmental protection, many domestic and foreign designers are also exemplary, such as: Eric Folstein, founder of the Eric Art Museum, and independent curator Carlo Markromick invited More than forty designers from all over the world are called "Bone Burial Grounds" in Tucson, Arizona, USA (Many old planes abandoned by the U.S. Air Force are parked there, and they are now a vast contemporary art gallery.) Painting freely on the old plane expresses the unique charm of art: to seize people's eyeballs, unexpected opportunities and spaces, expand and extend and maximize its charm. And the other is the artist who used chewing gum as a canvas on the street, which was abandoned by people everywhere. Ben Wilson, through the technique of graffiti, turned the urban psoriasis, which had been uninterested, into a piece of art with unique charm (he used The blowtorch softens the gum and paints on it, then uses a lighter to dry it and shovel it away), and the London government will spend 4 million pounds a year to dispose of the gum sticking to the ground. These artists use their practical actions to call and influence people to pay attention to the sustainable development of green and environmental protection, and use design to influence and change our lives to make them cleaner and more beautiful.

Although the works still have many shortcomings and immature, they have gained a lot of insights about order form research in the process of practice. Creation is the essence of design. First, the psychological preparation stage. This stage is the period of creativity. Before designing a book, the design object must be passed through several times to have a full understanding and grasp of the content of the book. Clarify your creative intentions, collect, organize, and summarize the materials, materials and other information around the subject, and try to find the specific relationship with the design theme, and form a preliminary design idea. Successful book design works are based on the designer's control of the content, so a certain degree of literary cultivation and understanding is required; secondly, the conception stage. This stage has a decisive role and status, because it is related to the direction of the final plan. Conceptualize, analyze, select visual elements related to the theme, make important choices or discard them. It is necessary to conduct selective comprehensive comparison and analysis based on a large amount of data and information, to survive the fittest, and to obtain a draft plan. Of course, this process is also difficult, with the greatest mental labor intensity. It also includes specific analysis from the designer's knowledge structure, aesthetics, value orientation, past experience and many other factors and aspects. Due to limited space, it will not be carried out one by one; the third step is the stage of clear plan. This stage is the beginning of creation and the most exciting moment for designers. The elements must be broken up, reconstructed, combined, and modified. Of course, there are also the selection of materials and craftsmanship, etc., and strive for details to be carefully crafted and crafted; the last step is the verification stage. This stage needs to be grasped and inspected as a whole, with a global perspective and strategic height, which is also the key to the success or failure of the final work.

The soul of design is creativity. The foundation of creativity is discovery, and the core and essence are innovation. The relationship between text, graphics, color and the "ingenuity" in the relationship should be taken into consideration when creating. Having a deep understanding and understanding of the design intent of the work, and re-creating it, realizing its cultural communication and dissemination function, its meaning also came into being. Specifically, creativity is a unique idea that breaks through conventional thinking. Designers are required to have keen insight and rich imagination to discover new meanings that others have not discovered and create new art forms in common things that people are used to. The book design process is actually a process of finding the relationship between visual forms and concepts and communicating information, which involves many aspects such as aesthetics, visual perception, visual psychology, and design principles. Successful works must use the laws of regular beauty, order beauty, spatial structure, and rationality of symbols to achieve the unity of content and form.

2.CONCLUSION

With the advent of the era of knowledge economy, the press and publishing industry is facing new opportunities and challenges. The image designer of the press and publishing industry-book designers will also face severe challenges from a wide range of worlds. How to make Chinese books go to the world and push Chinese book design to a glorious path, with a strong contemporary style and unique National styles stand on their own in the world of books and enter the advanced ranks of the world's book art as soon as possible. It is an inescapable task for our new generation of book designers and teachers by history. The development of book design has provided great convenience to the society, promoted people's communication and information transmission, and also formed a new visual art and culture. With the development of society and the progress of science and technology, the historical mission and important role of book design will become increasingly prominent. Therefore, the research on the form and application of book design order has become the value standard for re-evaluating the new book aesthetics.

In today's diversified social era, the study of book envelope design order forms should arouse designers' attention and use in order to achieve the perfect harmony and unity of book design content and form, art and technology, material form and spiritual form. purpose.

As contemporary book designers, we are quite aware of the historical mission and the heavy sense of responsibility we shoulder. We should contribute our modest contribution to our country's early entry into the world's design power. Therefore, if the form design of the book cover design in this article can arouse the discussion and research of teachers who are engaged in design teaching, students who are learning design, and designers, it will be a blessing to inherit culture and develop book design.

REFERENCES

[1] Qiu Ling. Ling's Art of Binding and Layout [M]. Beijing: Life, Reading and New Knowledge Sanlian Bookstore, 2001.
[2] Zhang Guizheng. Chinese Contemporary Binding Art Collection. Changchun: Jilin Fine Arts Publishing House, 1998.
[3] Wang Shouzhi. World Graphic Design History [M]. Beijing: China Youth Publishing House, 2002.
[4] Wang Shouzhi. The History of Modern Design in the World [M]. Beijing: China Youth Publishing House, 2002.
[5] Zhao Nong. History of Chinese Art Design. Xi'an: Shaanxi People's Fine Arts Publishing House, 2004.
[6] Andrew Haslam. Book Design [M]. Beijing: China Youth Publishing House, 2007.

The Increase of Major Shareholders' Holding and The Pricing of The Capital Market

Peng Yunxiang
Guangdong University of Science and Technology, Guangdong 523083, China

Abstract: In 2015, after the phenomenon of "one thousand shares falling to the limit" appeared in the stock market, China Securities Regulatory Commission (CSRC) issued the notice on matters related to the Increase of Shareholders of Major Listed Companies and Directors, Supervisors and Senior Managers of the Company's Shares "to encourage major shareholders to increase their holdings when the stock price is depressed. According to the signal transmission theory, the increase of major shareholders' holding has always been regarded as a significant positive information in China's capital market, which will lead to the rise of stock prices in the capital market. This paper analyzes the internal relationship between the increase of major shareholders and the pricing of the company in the capital market, and concludes that the increase of major shareholders is not necessarily conducive to the development of the company and the interests of investors, so we must be careful in the face of the pricing of the capital market, not blindly follow the trend.

Keywords: Pricing of The Capital Market; Major Shareholders; Stock Price

1. INTRODUCTION

In China's capital market, the company's stock price will generally rise three days before the announcement of increase in the holding of major shareholders, and the investors will obtain the excess rate of return. And 3 days after the announcement of the stock return rate is still higher than the market average return rate, but generally lower than the 3 days before the announcement of the return rate. It shows that the capital market pricing has reference to the increase of major shareholders' holdings, but the obvious abnormality of the stock price before the announcement indicates the disclosure of information released by the announcement, and the excess return only lasts for a few days, indicating that there is no significant effect on the market in the long term. The increase of large shareholders is conducive to the short-term pricing of the company's stock in the capital market, mainly because the access to information is more and more extensive in the information age, but it is very difficult to identify the real valuable information in the noise. As an important insider of listed companies, large shareholders have a better understanding of the real development of the company.

Through the analysis, it is found that the increase of major shareholders' holding can increase the market confidence in the short term, and improve the capital market's stock pricing because of the asymmetric confidence. The large shareholders of listed companies have more right to know and control, and can even know the company's inside story in advance, more accurately judge the company's development prospects, accurately estimate its intrinsic value, and more accurately predict the company's future development. When the major shareholders increase their shares, the message is that the current stock price underestimates the value of the company and is optimistic about the development prospect of the company. However, minority shareholders cannot recognize the information noise or pay more cost to identify the information, so they blindly follow the trend of increasing their holdings and then improve the capital market's stock pricing of the company. But is the increase of major shareholders completely proportional to the long-term share price? Is the major shareholder's motivation to increase his holding certain to be optimistic about the development of the enterprise? We analyze the answers and make recommend- ations.

2.THE MOTIVATION OF MAJOR SHAREH- OLDERS TO INCREASE THEIR

The motivation of major shareholders to increase their holdings is more complex, which can be divided into the following categories. First, strengthen the maintenance of rights: listed companies are joint-stock companies, the rights and interests of the company are distributed according to shares, large shareholders strengthen the concentration of equity of listed companies by increasing their holdings, equity concentration is conducive to their own access to company information, strengthen the binding force on the management, improve the prestige of the company At the same time, the development direction should be inclined to the company decision which is beneficial to itself, and the interests of small shareholders should be plundered. Once the stock price enters the rising channel, the major shareholders can get more use. It can also alleviate the "free riding" behavior caused by equity. Second, optimistic about the company: firm confidence in the future of the company, the company has development prospects, through self-expression, self holdings, from the fundamentals to protect the company's stock price. The third is to establish a good image for the company and stabilize the stock price: usually, when the stock price is low, the majority shareholders increase their holdings to release a good signal and produce a positive impetus to the market. At the same time, reduce the market liquidity, resulting in hunger and thirst, driving the stock price up at the market level. It is conducive to the short-term development of enterprises and helps them increase their market share. Fourth, macro policy needs: the motivation of state-owned enterprises' large shareholders to increase their holdings includes financial motivation and political motivation. Non state-owned enterprises are generally only for economic interests, while the large shareholders of state-owned companies often only respond to the short-term behavior of relevant policies, and the increase of holdings has nothing to do with the previous stock price realization.

3.RISK

The reason for the increase of major shareh- olders lags behind, the investors can not identify the motivation of the increase of major shareholders in time, and other investments blindly follow the trend, leading to the obvious effect of stock price rise. So in the short term it's a positive behavior. But in the long run it will not affect the share price, or even cause investors to clear out and flee. Long-term ineffectiveness is mainly investors have time through rational analysis, no substantial positive company stock prices will fall. Major shareholders prefer to increase their holdings when the stock price is undervalued, which is an opportunity for the main institutions to deliberately suppress the stock price, leading to the rise and then fall of many stocks after the increase of their holdings. Investors who cannot read market signals suffer from falling share prices.

4.CONCLUSION

From the reaction of the asset market, the increase of major shareholders' holdings only showed abnormal positive fluctuations in the days before and after the announcement. As time goes on, the market returns to its original level. Even institutions and makers take the opportunity to sell shares. Whether it is state-owned enterprises or private enterprises, the behavior of large shareholders is only a short-term behavior to stabilize the stock price. Generally speaking, the macro policy of state-owned enterprises requires us not to consider it. The reasons for the increase of large shareholders' holdings in private enterprises are complex, which can only significantly improve the market confidence in a relatively short period of time. In the long run, the impact of large shareholder's increase on asset market pricing is uncertain, which needs to be analyzed in connection with the real motivation of large shareholder's increase. The motivation of large shareholders to increase their holdings is likely to release false signals, which is only a pure pull up of the company's shares. It may even fail to cash. Dongfang Junsheng announced that it would increase its holding of St Coconut Island no less than 2% of the company's total shares within 12 months from September 15, 2017. After the announcement was issued, the execution was delayed and finally abandoned.

The capital market started late, the country has been learning from the western capital market, and constantly reforming China's stock market. In 2005, the reform of non tradable shares realized the real free circulation of shares and the free pricing of capital market. Due to the immaturity of the market, the major shareholders used their own advantages to create false signals and even breach the contract. The investors lacked experience and rationality and blindly followed suit. So we should strengthen the construction of enterprises, investors should be more urgent and rational.

5.SUGGESTION

The government should strengthen supervision. The behavior of large shareholders only increases the market confidence for a short time, and there is a risk of later decline, which brings great uncertainty to investors. The government should strengthen relevant supervision, avoid abnormal fluctuations in the capital market, require enterprises to improve information disclosure, reduce the cost of investors to obtain information in time, strengthen the standardization of holding increase behavior, and severely punish illegal and default holding increase behavior.

Investors should strengthen rational analysis. The reasons for large shareholders to increase their holdings are complex, but the market thinks that this is a signal of being underestimated, which is an expression of confidence in the future of the company, and the capital market will consciously raise the stock price. The main reason is the lack of rational judgment in investment. In reality, investors should not be opportunistic. They should mine more enterprise information and learn to distinguish the truth and reliability of information rationally.

Enterprises should improve the ownership structure. The most important reason for the short-term positive relationship between the increase of large shareholders' holdings and the capital market is that the high proportion of large shareholders leads to the unilateral tendency of information to large shareholders and damages the interests of small shareholders. We should continue to improve the ownership structure of listed companies, especially private listed companies, including the interests of small and medium-sized enterprises.

In a word, the relationship between the increase of major shareholders and capital market pricing should be analyzed rationally, and the large shareholders with legitimate reasons should be encouraged to increase their shares and develop enterprises. Refuse to increase the holding improperly.

REFERENCES

[1] Jiang Yingbing and Zhang Xiaoli.A Study on the Market Timing Ability of Major Shareholders in Listed Companies and Its Influencing Factors. Economic Management Journal, No.12, 2013.

[2] Li Junfeng, Wang Tingting. Analysis on the Effect and Motivation of the Announcement of Large Shareholders of Listed Companies. Social Sciences in China, No.7, 2011.

[3] Li Yaopai. The Motivation and Performance Effect of Major Shareholders in Listed Companies. Master Dissertation of JiangXi University of Finance and Economics, 2017.

A Study on Discourse Analysis and the Teaching of Literature

Shan Cheng
Guangdong University of Science & Technology, Guangdong, 523000, China

Abstract: The purpose of literature appreciation course is to help students understand the representative literary schools and influential literary works in different periods of history, and improve their imagination, creation and expression ability. In the study of literary works, discourse analysis can stimulate students' learning consciousness and enthusiasm, help them feel the cultural atmosphere, and lay the foundation for them to enter the society. This paper mainly discusses the problems existing in the current literature education in Colleges and universities, and from the discourse analysis method to find solutions to the problems, so as to improve the quality of teaching, students' ability, and provide a feasible way for the reform of literature teaching.

Keywords: Discourse Analysis; Literature Teaching; Problems; Solutions

1. INTRODUCTION

The concept of discourse analysis was first used by the conceptual linguist Zellig Harris to investigate the principle that linked sentences to each other in a text. Harris identified two possible directions for the discourse analysis. One of them is the connection of language and culture, and the other is the continuous descriptive linguistics beyond the limits of a single sentence. Discourse analysis then came to the foreground of the research areas at the end of the 1970's, and the reflections of the method were first on philosophical arguments, hermeneutics and on the constructive role of language on social reality [1]. Using such an analysis method in literature lessons will help students to analyze texts properly, to adopt critical approach and thinking, to get the meaning in texts as a whole unit with all of its parts taken into account, and also to comprehend the relationship between the individual parts of a text that serve certain aims when creating meaning [2]. Through reading, understanding and analyzing the representative literary works of different periods and schools, the aim of the course of literature appreciation is to enable students to acquire comprehensive quality, including imagination, creation, observation, speculation, expression, analysis, judgment and logical reasoning, which does not belong to a specific skill, but is more important than the use of skills. The second part discusses the problems existing in the current literature education in colleges and universities, and the third part from the discourse analysis method to find solutions to the problems, so as to improve the quality of teaching, students' ability, and provide a feasible way for the reform of literature teaching.

2.THE PROBLEMS IN THE TEACHING OF LITERATURE

At present, the major problem in literature teaching in colleges and universities is that it deviates from the starting point of teaching. Teachers often regard literature works as general reading materials and seriously ignore the aesthetic value of literary works. In addition, the old teaching methods, rigid teaching mode and narrow teaching content are the disadvantages of the course teaching. Some teachers often introduce personal opinions on the works, ignoring the students' self-expression. Some teachers ignore or even cut off the connection between foreign literature and Chinese literature, shielding foreign literature artificially and only conducting one-way reading, explanation and analysis. This teaching method of "literature autism" will undoubtedly limit students' understanding of foreign literature [3]. Some teachers focus on the form of language learning, but neglect the teaching of literary context features. They mistakenly believe that vocabulary and grammar learning equals to discourse learning. Some focus on context and functional learning, such as knowledge expansion and semantic analysis, but pay little attention to the teaching of basic vocabulary and grammar in literature reading. So that students can skim fast and master macro meaning, but they don't have solid basic skills. They often make mistakes in spelling, pronunciation and punctuation [4].

3.THE APPLICATION OF DISCOURSE ANALYSIS IN LITERATURE TEACHING

3.1 Before Class: Introducing Background Knowledge in a Flexible Way

No matter which literary work, there will be a specific creative background, creative purpose and creative significance, with different cultural and time labels, which contains the author's experiences, the ideas and views he absorbed, the human geography and customs he contacted, etc. All these need to be explained before literature analysis, as background knowledge, so that students could have a better understanding of the whole work in class. By adopting the discourse teaching method, teachers can not only cultivate students' ability of independent and innovative thinking, but also mobilize students' learning enthusiasm, so that they can actively enter into the literary mood, and then obtain something meaningful. The teacher can divide the students into groups. Each group assigned a different task, and they need look up information before class. They could understand the creative background of literary works, and then discuss with other groups in class, which can cultivate students' ability to study independently. It can also exercise their logical thinking and ability of expression [5].

3.2 During Class: Dynamic Processing of Text Comprehension

To study literary works, it is also necessary to cultivate students' reading ability. In the process of language learning, representations and contexts can help students further understand the practical meaning of the text. These elements are not obvious, but need to be recognized and understood by students themselves under the help of teacher's explanation. Teachers should start from the macro structure of the text, encourage students to explore the real value of literary works. In the process of learning, students can not only accumulate more language knowledge, but also better understand the discourse structure of the whole work. When teachers teach literary works, they need to put discourse in different contexts, train students to constantly change their thinking, from passive role to active role, and finally get good teaching effect [5]. It is very necessary for teachers to open up their ideas in the teaching process. Only by developing their own ideas to ensure the diversity of discourse environment, and then guide students' thinking from passive to active, from static to dynamic, can they create an open and active environment suitable for discourse reading. The answer to the question need not be single, but could be radial and open. The realization of developing and creative teaching, on the one hand, can increase the communication and learning between teachers and students, on the other hand, can effectively mobilize the enthusiasm of teachers and students, so as to achieve the purpose of optimizing the teaching effect [3].

3.3 Classroom Discussion: Broadening the Horizon through Diversified Open Discussion

When teaching literary works, teachers must give students specific time to communicate and discuss the content of the teacher's explanation in class. If a class only depends on the teacher's explanation without students' participating, it is hard for the students to deep understand it. Teachers should encourage students to have an open discussion in the classroom, no matter what is inside or outside the work, they can discuss freely. Through the communication and discussion, students can understand the author's writing intention more clearly and realize the charm of literature more deeply. Teachers should try to use discourse analysis to explore literature works, and cultivate students' ability to analyze and judge literature from the charm of the works [5]. Through group discussions and debates, students' written expression and oral communication ability can be improved. The combination of communication, thought and expression is of great help to improve students' classroom participation, learning efficiency and the frequency of interaction.

3.4 After Class: Reading Expansion

In addition to the preparation before class and the study in class, in order to cultivate a good literary quality, students need to read more after class. Only by extensive reading, can they have a more keen sense of literature. By reading a large number of literary works, students can not only enrich their literary views, but also get more imagination. In literature teaching, many teachers use discourse analysis method as theoretical guidance, which is commonly known as the discourse teaching mode. When teaching literature, teachers must guide students to have a correct way of reading, not only teach them intensive reading, but also teach them extensive reading. The so-called extensive reading is to have a general understanding of various subjects and literary works, and to have a cognition of the object of reading, whether it is difficult or easy. While intensive reading is to have a detailed understanding of the background, grammar, words, etc. of some American articles, which can greatly improve students' language cognition and logical thinking ability [5]. Discourse and context complement each other. Discourse analysis needs to be based on context, cultural and communicative background. Therefore, discourse analysis must be macro and three-dimensional. The study of sentences is a necessary step in discourse analysis. It is not only about sentence structure, but also to supplement and restrict the discourse by using the communicative function of sentences and their context. In order to fully guarantee the role of discourse analysis in various skills training, the primary task of teachers is to improve the requirements of teaching work. First of all, teachers should own global knowledge, so as to better expand students' horizons in the teaching process. Teachers need to analyze the key points and difficulties in the teaching materials in the classroom teaching practice, excavate the cultural background and corresponding language environment of the texts in the teaching materials, and impart the knowledge of culture, style, cognition and other aspects to the students.

4. CONCLUSION

Discourse analysis can mobilize students' subjective initiative and change the traditional indoctrination teaching mode. It can not only enable students to deepen their understanding of the background and structure of the article from the macro level, but also enable them to control the thinking of the article, the author's writing techniques and thinking mode from the micro level [3]. Integrating discourse analysis method into literature lessons created big success on students comprehension and use of language skills, it also made a great contribution to their thinking and communication skills. Additionally, integration of discourse analysis method to literature lessons makes these lessons more interesting and attractive, and so it creates more opportunities for students to actively participate in these lessons. Besides, it will help students to analyze texts properly, to adopt critical approach and thinking, to get the meaning in texts as a whole unit with all of its parts taken into account, and also to comprehend the relationship between the individual parts of a text that serve certain aims when creating meaning. Moreover, using this method in literature lessons equips students with skills and outcomes to be able to participate lessons actively, so it is thought that integration of this method into literature lessons would bring a multidimensional success.

REFERENCES

[1] Dilek Ünveren Kapanadze. The effect of using discourse analysis method on improving cognitive and affective skills. European Journal of Education Studies, 2018(4): 92-107.
[2] D. Ünveren Kapanadze. An innovative approach in language teaching: using discourse analysis method in language and literature courses to improve comprehension skills. Conference Paper, 2018.
[3] Wang Qinghua. The application of discourse analysis in Foreign Literature Teaching [J]. Chinese Construction, 2017 (12): 11-12.
[4] Chang Rong. The significance of discourse analysis in Literature Reading Teaching. Chinese Construction, 2017 (08): 14-15.
[5] Zhu Qing. Analysis of English and American Literature Teaching from the perspective of discourse analysis. Chinese Construction, 2017 (33): 72-73.

A Survey of Trajectory Tracking Control Methods for the Manipulator

Yan Qiyan*, Chang Zhoulin
Guangdong University of Science & Technology, Guangdong 523083, China
*Corresponding Author.

Abstract: Mechanical structure, electrical control and information perception are the three core elements of the manipulator, among which the electrical control is the key part that affects the performance of the manipulator system. Based on the discussion of the common control methods of manipulator, this paper puts forward the technical route and experimental scheme design for the neural network control of intelligent algorithm control, which provides a certain reference for the intelligent algorithm control of manipulator trajectory tracking.
Keywords: Manipulator; Trajectory Tracking Control; Neural Network Control

1. INTRODUCTION

Under the background of industry 4.0, the construction of Guangdong, Hong Kong and Macao Bay area, and the transformation and upgrading of manufacturing industry, manipulators are widely used in many complex tasks such as welding, painting, cutting, handling, packaging and so on. Due to the complex structure, strong coupling and nonlinear characteristics of manipulator, the trajectory tracking control of manipulator is a hot spot in the research of manipulator control technology, and its control tracking effect directly affects the work efficiency and accuracy of automatic production line. As a nonlinear system, the control structure of manipulator is quite complex. In the actual situation, there are modeling errors, even unknown parameters and uncertain external disturbances. The traditional control methods can not meet the high performance requirements of industrial manipulator. Multimode, compound and intelligent control are the main development direction of manipulator control technology.

2.TRAJECTORY TRACKING CONTROL METHOD OF MANIPULATOR

(1) PID CONTROL

In the early stage of manipulator development, the trajectory tracking control of manipulator adopts PID control. PID control is widely used in industrial control, the main reason is that PID control algorithm does not need to establish the model of the control object, and the algorithm is simple, the parameters are less, only three adjustable parameters, by adjusting the parameters can obtain better closed-loop performance. Traditional PID control will lead to poor dynamic performance, accuracy and robustness of the control system. Many scholars integrate other algorithms into PID control, such as adaptive PID, genetic algorithm PID control, fuzzy PID control, fuzzy genetic PID, neural network PID, etc. [1] [2].

(2) ADAPTIVE CONTROL

Adaptive control is a common control method for manipulator trajectory tracking control [3]. The adaptive controller designed for manipulator can keep the automatic adaptation to the environment in the uncertain and local changing environment. At present, the adaptive control of manipulators can be divided into three categories: model reference adaptive control, self-tuning adaptive control and linear perturbation adaptive control. The advantage of adaptive control is that it compensates all kinds of unknown and uncertain factors of the manipulator and ensures the manipulator system to obtain good tracking characteristics. However, the reference model, adaptive algorithm and system identification technology of adaptive controller are often more complex, its calculation is large, and its application is limited, so it can only be used in the case of slow parameter change of manipulator and small number of joints.

(3) ROBUST CONTROL

The characteristic of robust control is that the structure and control parameters remain unchanged, unlike other control methods which can adjust the control parameters online, it is also widely used in the trajectory tracking control of manipulator. The main advantage of robust control is that the parameters of the control system can be changed in a certain range and the performance requirements of the first design can be maintained. The most important thing is to ensure the stability of the manipulator system. Therefore, robust control is not the best control in general, and strong robustness is guaranteed at the expense of performance. One of the main factors limiting the application of robust control is that the uncertain part of the manipulator system, including the uncertain external disturbance and modeling error, belongs to a descriptive set, such as bounded gain and known upper bound.

(4) SLIDING MODE VARIABLE STRUCTURE CONTROL

The sliding surface function of sliding mode control can be designed according to the needs, and it is insensitive to the changes of the parameters of the object and the uncertain external interference. It does not need the real-time online system identification of the system, and the physical implementation is simple

[4] [5]. So sliding mode variable structure control is widely used to track the desired trajectory of manipulator joints.

(5) INTELLIGENT ALGORITHM CONTROL

By using the approximation characteristics of neural network, the external disturbance and uncertainty of manipulator are approached and compensated, or the switching part of sliding mode controller is approached, which greatly weakens the chattering of sliding mode control law [6] [7]. In recent years, a variety of other optimization algorithms have been developed for the trajectory control of manipulator, such as genetic algorithm, particle swarm optimization algorithm and so on. Genetic algorithm is a kind of random search algorithm evolved from the evolution law of biology. Particle swarm optimization algorithm searches the optimal solution mainly through the cooperation and sharing of information among the particles in particle swarm optimization, which is simple and easy to implement, and does not have many parameters to adjust. In the sliding mode control, the chattering reduction design is taken as the optimization objective, and the intelligent optimization algorithm is used to adjust the parameters of the controller or optimize the gain of the switching term. Many scholars have achieved good results in this aspect.

3. TECHNICAL ROUTE OF NEURAL NETWORK CONTROL

Firstly, through the detailed analysis of the manipulator kinematics and dynamics theory, the D-H method is used to establish the manipulator kinematics equation, and the robotics toolbox in MATLAB is introduced to carry out the kinematics simulation experiment to verify the correctness of solving the manipulator kinematics equation. Lagrange equation is used to establish the mechanical model of manipulator, which lays a theoretical foundation for the follow-up study of manipulator control method.

Secondly, aiming at the difficulty of solving inverse kinematics of manipulator, the method of solving inverse kinematics based on BP and RBF neural network is studied. With the help of ABB IRB 120 platform, the motion of the 6-DOF manipulator is simulated to verify the reliability, convergence speed, system error and other performance indicators of the algorithm, and strive to solve the inverse kinematics problem of the manipulator.

Thirdly, the trajectory planning simulation experiments are carried out for the improved cubic polynomial interpolation, quintic polynomial interpolation and quintic spline interpolation methods in the joint space of the manipulator, and the simulation results are analyzed in detail. The problem of smooth trajectory planning of the manipulator is studied and solved, and the effective measures to improve the smoothness of the manipulator motion are put forward.

Finally, the RBF neural network robust control algorithm is introduced into the manipulator trajectory tracking control. The RBF network is used to approximate the uncertainty part of the mechanical model of the manipulator, and the approximation error of the neural network is suppressed by robust control. The related factors of manipulator stability are analyzed in detail, and the effectiveness of the method is verified by trajectory tracking experiments.

4. DESIGN OF NEURAL NETWORK CONTROL EXPERIMENT SCHEME

In the first stage, the development status and classification of manipulator technology are understood. According to the overall characteristics of manipulator system, combined with the existing trajectory tracking control methods of manipulator, the implementation idea of improved and optimized neural network tracking control algorithm is proposed.

In the second stage, the basic structure of the manipulator system is analyzed, the link coordinate system of the manipulator is constructed and the parameters are determined, the kinematics calculation formula of the manipulator is deduced, the dynamic equation of the series rigid manipulator is deduced by using Lagrange Euler method, and its basic characteristics are analyzed. The nonlinear system model of the manipulator based on s function is established in MATLAB, and the dynamic model is transformed into the second order In the form of differential equation, the theoretical basis of neural network control algorithm is constructed.

In the third stage, the development and utilization of feed-forward neural network in manipulator system are studied, and RBF neural network algorithm is analyzed emphatically. A new manipulator fixed-point tracking control strategy with resistance to external interference and uncertainty is proposed, which can compensate the gravity term of manipulator and offset the approximation error of neural network. The transient performance and steady-state performance are taken as optimization indexes The trajectory tracking simulation of double joint rigid manipulator is carried out, and the adaptability of the control algorithm in convergence speed, tracking accuracy and anti-interference is obtained through the comparative analysis of the result data.

In the last stage, the simulation results are analyzed and summarized based on the dynamic performance index and practical application scenarios of the manipulator system.

5. CONCLUSION

In this paper, the traditional methods of manipulator trajectory tracking, including PID control, adaptive control, robust control and sliding mode variable structure control, are described. Based on the analysis of intelligent algorithm control, the technical route and experimental scheme of neural network control are proposed, which provides a certain reference for the realization of manipulator trajectory tracking smooth control.

ACKNOWLEDGEMENTS

Fund: Characteristic Innovation Project of Guangdong Provincial Department of Education in 2019: Research on Trajectory Tracking Control of Manipulator Based on Neural Network (Project ID: 2019KTSCX253).

REFERENCE

[1] Wang Chenguang. Research on trajectory tracking hybrid control algorithm of manipulator system [D]. Tianjin University of technology, 2013.

[2] Liang Weiping, Wang Jiarong. Simulation Research on trajectory tracking accuracy control of manipulator [J]. Computer simulation, 2015, 32 (10): 314-317.

[3] An Lingzhi. Research on adaptive fuzzy control method of manipulator [D]. Southwest Petroleum University, 2017.

[4] Cai Zhuang, Zhang Guoliang, Tian Qi. Trajectory tracking control of manipulator based on functional sliding mode controller [J]. Computer applications, 2014, 34 (01): 232-235.

[5] Gao Qiang, Wang Chenguang. Sliding mode trajectory tracking control of dual joint manipulator based on fuzzy gain adjustment [J]. Laboratory research and exploration, 2012, 31 (11): 78-81 + 110.

[6] Yuan Tianming. Research on trajectory tracking control method of manipulator based on neural network [D]. Dalian University of technology, 2015.

[7] Wang Liangyong, Yang Xiao. Trajectory tracking control of manipulator system with feedforward and neural network compensation [J]. Journal of electrical machinery and control, 2013, 17 (08): 113-118.

[8] Kong Mingyi, Xia Xingguo, Zhang Qingfeng, Wu Cailin. Trajectory tracking control system of manipulator based on fuzzy neural network [J]. Journal of Jianghan University (NATURAL SCIENCE EDITION), 2021, 49 (01): 66-73.

[9] Yan Qiang, Wu Liang, song Huijin, Wu Yan, ran qianglin. Structure and electrical control design of 5-DOF manipulator [J]. Journal of Chengdu University (NATURAL SCIENCE EDITION), 2020, 39 (03): 304-309.

[10] Mao run, Gao Hongli, song Xingguo. RBF neural network manipulator control based on fuzzy compensation [J]. Journal of Southwest Jiaotong University, 2018, 53 (03): 638-645.

[11] Lei Ge, Yin Fenglai. Application status and key technologies of intelligent manipulator [J]. Wireless Internet technology, 2019, 16 (04): 133-134.

[12] Zhang Xiaoming. Simulation of remote intelligent control method for 3-DOF mobile manipulator [J]. Computer simulation, 2017, 34 (03): 344-347.

[13] Wang Weiwei. A new garbage disposal manipulator system and its intelligent control method [J]. Development and innovation of mechanical and electrical products, 2015, 28 (04): 97-98 + 104.

[14] Zhang Xiaoming. Simulation of remote intelligent control method for 3-DOF mobile manipulator [J]. Computer simulation, 2017, 34 (03): 344-347.

[15] Liu lang. 5-DOF uncalibrated visual servo humanoid intelligent control of manipulator [D]. Chongqing University, 2015.

[16] Wang Liangyong, Chai Tianyou, Fang Zheng. Neural network control and application of manipulator considering dynamic driving system [J]. Acta automatica Sinica, 2009, 35 (05): 622-626.

[17] Wang Fang, Du Zhifa. Research on manipulator control algorithm [J]. Sci tech information, 2007 (10): 28 + 13.

An Analysis of *Cao Wenxuan: My Background Is China* Under the Domestication Method

Qi Chen
Guangzhou College of Technology and Business, Guangdong, 510000, China

Abstract: As a communicative tool, language's principal purpose is to deliver information in various linguistic environments. Literary works contain a rich variety of cultural background knowledge, which functions as an important means of learning a new language and promoting the communication and interaction between people living in different language environments, and in order to achieve this purpose, emphasis needs to be put on both meaning and style to make the translation as natural as possible for the target readers. Translating foreign literary works contributes not only to expanding the horizon of Chinese readers and helping them perceive foreign cultures, but also to improving readers' taste in literature and languages. With regard to international cultural exchange, translating foreign literary masterpieces can also advance a certain amount of international cultural exchanges.

Keywords: Domestication; Translation Strategies

1. INTRODUCTION

1.1 About the work

The translated text shall be published on the *English Square*, which is a magazine aimed at school students as their major readers. According to this requirement, the translated text shall be simple and easy to understand. Secondly, the original text is well organized and written; thus, this will greatly reduce the difficulty of the whole translating process. In another word, the translated text shall fell equivalent to the original text in many aspects, such as the type, the languages used and so on.

1.2 About Cao Wenxuan

Cao was the first Chinese writer to ever win and be shortlisted in the Hans Christian Andersen Prize, which is the highest international recognition given to an author and an illustrator of children's books.

The prize has been given since 1956 by the International Board on Books for Young People (IBBY), the leading international organization for the promotion of children's books, and is awarded every other year to a living author and illustrator whose complete works have made a lasting contribution to children's literature.

2.1 About domestication

Definition of domesticating method (or domestication) in Dictionary of Translation on Study: " A term used by Venuti (1995) to describe the translation strategy in which a transparent, fluent style is adopted in order to minimize the strangeness of the foreign text for TL reader ". Domestication and foreignization are strategies in translation, regarding the degree to which translators make a text conform to the target culture. Domestication is the strategy of making text closely conform to the culture of the language being translated to, which may involve the loss of information from the source text. Foreignization is the strategy of retaining information from the source text, and involves deliberately breaking the conventions of the target language to preserve its meaning. These strategies have been debated for hundreds of years, but the first person to formulate them in their modern sense was Lawrence Venuti, who introduced them to the field of translation studies in 1995 with his book The Translator's Invisibility: A History of Translation. Venuti's innovation to the field was his view that the dichotomy between domestication and foreignization was an ideological one; he views foreignization as the ethical choice for translators to make.

2.2 Major representatives in Domestication

Being a pioneer in the field of translation theory and linguistics, Lawrence Venuti broad the field on translation. According to him, every translator should look at the translation process through the prism of culture which refracts the source language cultural norms and it is the translator's task to convey them, preserving their meaning and their foreignness, to the target-language text. Every step in the translation process-from the selection of foreign texts to the implementation of translation strategies to the editing, reviewing, and reading of translations-is mediated by the diverse cultural values that circulate in the target language. Lawrence Venuti, in *The Translator's Invisibility, A History of Translation* analyses the motors and features of the foreignizing and domesticating strategy. He defines translation as: 'the forcible replacement of the linguistic and cultural difference of the foreign text with a text that will be intelligible to the target language reader.' He clearly states that is it generally expected for the translation product to be comprehensible to the recipient just as the original is to the recipient in the source language. The translator adapts the text in order to make it understandable for the readers, he modifies the elements to be perceived as familiar and recognizable. The translation has to match the cultural, social and political situation of the target readers. This is a strategy of domesticating a whole translated text by making it easily understandable for the reader through adapting it to the surrounding reality.

3. ACHIEVING EQUIVALENCE BY DOMESTICATION

According to Nida, a successful translation should be completely understood and culturally accepted by target readers. Therefore, when dealing with the cultural features in translation, translators may apply the techniques of domestication and foreignization to assist their target readers in experiencing exoticism and avoid puzzlement and misinterpretation.

According to Lawrence Venuti, the domesticating translation is defined as being “accustomed to fluent translations that invisibly inscribe foreign texts with target language values and provide readers with the narcissistic experience of recognizing their own culture in a culture other” (Venuti, 1995, p. 15). That is to say, the purpose of domestication in translation aims to minimize the strangeness of the source text for target readers. Thus, when doing with translation in this kind, translators could break away from some of the cultural features in source language and make the translation readable and accessible to target readers. The following examples can illustrate this theory:

Example 1

ST:All of my stories are set in China, all of them are Chinese stories of course, but at the same time, they are the stories of humankind.

TT:我写的所有的故事都是以中国为背景的，我讲了一个个地地道道的中国故事，但同时也是属于全人类的故事.

Analysis: In following functional equivalence, we shall not only consider readability and loyalty at literal level, but also at contextual level. Taking the example above as an example, it is a sentence said by Cao Wenxuan himself, therefore, it’s more suitable to translate *of course* as 地地道道, which could better transmit the information of the source text. 地地道道 is a four-character phrase rooted in Chinese culture. And it can be definitely understood by every Chinese language users. It means naturally and completely, which bears the same meaning with *of course*. The translator translates its meaning without making our target readers confused. So it is better to take domesticating method to translate it.

Example 2

ST: The jury said Cao was a unanimous choice for the writing prize, because he "writes beautifully about the complex lives of children facing great challenges".

TT: 曹文轩此次获奖得到了国际安徒生委员会的一致认可，认为他”用优美的笔触，描述了孩子们面对艰难挑战的多样人生.”

Analysis: In the above example, the translator chooses 用优美的笔触 as the translated text of *write beautifully*. If literal translation method is used here, it can be simply translated as 写得很优美, it seems to be some kind of rigid and may disturb the reading pace of Chinese readers. So it is abandoned here, instead, 笔触 is chosen. 笔触 is a traditional Chinese words, because we Chinese have calligraphy, and the word 笔触 means the outcome and the style of writing. So the translated text can fully carry the original meaning in a more grace and beautiful way.

Example 3

ST: My home village was well known for its poverty. Day in and day out, my family lived with deprivation.

TT: 我家乡的贫苦可谓远近闻名，我们家年复一年地过着揭不开锅的日子.

Analysis: In the original text, *deprivation* simply means poor, but in the previous translated text, 贫苦 has already exited. And according to the common practice in Chinese writing habits, it is not advisable to use the same word in the same sentence. So the translator chooses another word. 过着揭不开锅的日子 is used here. 揭不开锅 is an interesting idiom in Chinese culture, it can carry the meaning of poor, but is more vivid and expressive. The readers can know that at that time, Can Wenxuan led a very hard life.

Exaple 4

ST: Critics praised it for its meaningful story and Cao's lyrical prose.

TT: 文学评论家们认为<青铜葵花>是本意义非凡的作品，并对曹文轩的抒情散文交口称赞.

Analysis: the translator translates *praise* as 交口称赞. This four- character phrase used here let the readers know that the works written by Cao Wenxuan earns a lot of positive feedbacks even from those critics.

Example 5

ST: Several said on Sina Weibo that they had fond memories reading his books in school. "The simple memories of childhood, " commented one Weibo user, while another said: "His works were what our generation grew up reading, they were the books that accompanied us as we grew up."

TT: 大部分中国网民认为他实至名归.不少网民在新浪微博上说道，曹文轩的作品让他们想起了自己的学校时光.”童年简单美好的记忆如潮水般涌来，”一位微博用户评论道:”我们这代人就读过不少他的书，他的作品伴随着我们的成长.”

Analysis: the Chinese idiom 如潮水般涌来 is often used to symbolize that someone is reminded of something. By the using of domestication method, a bridge is built between two languages. Only with creative thinking can a translator attain his aim of letting the target audiences have an affectionately understanding of the source language culture.

4.CONCLUSION

According to Nida’s theory of functional equivalence, the criterion to evaluate whether a translation is successful or not should be decided by the impact exerted on the target language readers by the target text. If the impact is the same as that of the original text on the source language readers, then, it turns out to be successful. Functional equivalence puts the readers’ response above all the other factors. However, due to time and space constrictions together with other various reasons, it is quite impossible to achieve all absolute equivalence in translation and there is no exception to the translation. Therefore, it is vital that a translator adopt certain translation strategies like domestication, adjustment of expressions and conversion etc. Meanwhile, in order to convey the accurate meaning and aesthetic effects of the original text in an accurate, concise and natural way, they should also try to enhance the acceptability of the translated version.

REFERENCES

[1] Nida E.A Language, Culture, and Translating[M]. Shanghai: Shanghai Foreign Language Education Press, 1993.
[2] Nida E A. Language and Culture: Contexts in Translating [M]. Shanghai: Shanghai Foreign Language Education Press, 2001:86
[3] Nida E A. Toward a Science of Translating[M]. Shanghai: Shanghai Foreign Language Education Press, 2004:159.

Research on Development Status and Future Market Trend of New Energy Vehicles

Zhiwen An
Guangdong University of Science & Technology, Guangdong 523083, China

Abstract: Under the influence of reality, energy and resources are in crisis all over the world. At the same time, carbon emission has also become a hot topic all over the world. In this environment, the research of new energy electric vehicles is of great significance. With the development of modern science and technology, new energy vehicles have been urgently needed by the times, with the advantages of alleviating energy shortage, protecting the ecological environment, strengthening air quality and so on. Due to the influence of policies, marketing methods, performance and safety, the development of new energy vehicles is limited to a certain extent. However, China's new energy vehicles are still in the initial stage of the market, and the market scale is still small compared with traditional vehicles. It is necessary to study whether the new energy vehicles will be strongly supported in the support of national policies in the future, what factors will lead to the development of new energy vehicles, and how the market-oriented development prospect of new energy vehicles will be. For the above problems, this paper systematically summarizes the performance safety, government policies, charging facilities and market trends, and constructs the future development trend of new energy vehicles.

Keywords: New energy vehicles; Development status; Market trends

1. PREFACE

Automobile industry has become an important industry pillar of the national economy, and also plays an important role in the national economy. Due to the shortage of oil, energy and environment are also affecting the development of the world automobile industry, and the hot automobile industry has also encountered bottlenecks. Since the beginning of the new century, new energy vehicles represented by hybrid, fuel cell, alcohol vehicles and advanced diesel vehicles have become a powerful force. New energy vehicles are regarded as the "commanding heights" of today's automotive industry in the new era. The optimization and development of the industry has high economic and social benefits. The guidance of national policies makes the support of new energy vehicles steady and fast, and also has an extremely important driving force for the development of social economy. This paper focuses on this topic, first of all, a theoretical overview of the new energy vehicle industry, combined with a variety of social development direction as the basis, in the comparative analysis of the development advantages and industrial policies of automobile developed countries, and then carries out in-depth research on the development environment and policy promotion of China's new energy vehicle industry.

2. DEVELOPMENT STATUS OF NEW ENERGY VEHICLES

2.1 output of new energy vehicles in China

As shown in the figure, in 2016, the number of new energy vehicles in China reached 910000, accounting for 38.5% of the traditional fuel vehicles and 1.06% of the total number of vehicles in China. By 2019, the number of new energy vehicles has reached 5.23 million, with an increase of 4.32 million in four years, accounting for 76.8% of the traditional fuel vehicles. In the 18 years of the same year, the number of new energy vehicles in China is about 2.61 million, which is more than doubled. This shows the rapid development of China's economy, the increase of national government policies, and the strengthening of enterprises' investment in new energy vehicles. From this, it can be seen that new energy vehicles are rapidly rising in the state of rapid development and steady growth.

2.2 safety performance factors of new energy vehicles

At present, most of the new energy vehicles are limited to batteries, and a small part of them use hybrid new energy vehicles. The battery occupies the leading position of the car body. The coolant leakage or accident of the battery leads to the short circuit of the internal lines and parts of the car body. Some batteries lack protection design engineering, which will cause overheating and fire. Undoubtedly, consumers have doubts about this point and pay more attention to the main performance safety of the battery.

Most of the batteries in our country are lithium-ion batteries, but in the new energy vehicles, people's requirements for power are the same as those of the traditional fuel vehicles, which promotes the use of electric energy to drive the car body. When lithium is immersed in liquid, the discharge process is easy to be lively and flammable, and it will cause fire if it is squeezed. The domestic battery safety technology in the protection work needs to be lack, ignoring the quality of the product itself.

The fire accidents of new energy vehicles are mostly caused by overcharge. In the charging pile and underground garage, if overcharge leads to leakage, the final result will lead to fire. Due to the lack of charging knowledge of some engineers, overcharge and overdischarge will also cause great problems for new energy vehicles, especially for the protection of the car body and its own safety.

2.3 development strategy of China's new energy industry

Through the implementation of the "11th Five Year Plan" and "863 Plan", China has initially established a "three vertical and three horizontal" R & D layout of pure electric vehicles, hybrid electric vehicles and fuel vehicles. In the medium term, due to the limitation of technology level and the strength of domestic enterprises, it is difficult to break through the pure electric vehicle technology at present. Some foreign new technologies are introduced to fill this vacancy in China. The development focus of domestic new energy vehicle enterprises is to effectively improve the core technology research and development ability, and vigorously promote energy-saving and environmental protection new energy vehicles under the condition of cost control.

3.COUNTERMEASURES FOR MARKET TREND OF NEW ENERGY VEHICLES

3.1vigorously develop new energy industry and improve energy structure

The development of industry and the promotion of competitiveness are conducive to the improvement of the industrial chain and each link, and can analyze the effectiveness of industrial policy from each link. In accordance with the order of R & D, production, sales and use, the application of new energy industry technology patent data, product sales and business model data and other innovation indicators has been continuously improved to make the industry develop rapidly.

With the promotion of national policies, this aspect of talent training is indispensable. In a short period of time, we will vigorously promote the talent training of Vocational Colleges in the field of new energy vehicles, enhance the quality and quantity of students' employment, and improve the talent training in the market. At the same time, enterprises will select talents, conduct secondary training for employees, optimize the cost of human resources, increase the competitiveness of enterprises, and develop high-level new energy vehicles Automobile industry talents are more suitable for this post market service training goal.

3.2 formulate corresponding development path to realize energy conservation and emission reduction to the maximum extent

The Chinese government has successively issued such strategic objectives as the (2019-2020) energy saving and new energy vehicle industry development plan and the "12th Five Year" special plan for the development of electric vehicle technology to increase the realization of traffic emission reduction targets. One is the high efficiency of the motor, reaching more than 90% of the average efficiency; the other is the hybrid electric vehicle switching motor and engine work, using in the high efficiency area, to minimize energy emissions; the other is the realization of energy recovery technology. Improve the fuel consumption area, maximize the realization of "energy saving and emission reduction".

3.3 increasing government support

At the policy level, in April 2015, the four ministries and commissions jointly issued the notice on the financial support policy for the promotion and application of new energy vehicles in 2016-2020. In addition to the fuel cell vehicles, the subsidy standard for other models should be appropriately reduced, and the investment opening and subsidy for new energy vehicles should be increased. The subsidy should not be pilot in different regions, and should be provided to all provinces in the country. The emergence of this policy makes the country pay attention to the research and development and promotion of new energy vehicles, and does not require the local government to introduce relevant policies and measures on the purchase of new energy vehicles, bus operation, supporting facilities construction and other aspects. The subsidy is aimed at consumers (private and operating enterprises) all over the country, which will provide more space for enterprises and private enterprises with preparation and strength.Reducing and exempting taxes on new energy vehicles is an exemption from purchase tax. While reducing the cost of consumers, it can promote consumers' awareness of new energy vehicles. However, the main policy is for pure electric vehicles and plug-in hybrid vehicles, and fuel cell vehicles are not open for the time being. In the future, it can be expected that under the influence of government policies, the market will invest more power, and more and more products will be competitive. Some state-owned enterprises will expand from regional competition to national and even global competition, and various business models will be widely developed in various regions of the world.

4.SUMMARY

With the development of energy and environmental problems, new energy vehicles have become the main development trend of society. Compare the advantages and disadvantages of fuel vehicles and the defects of new energy vehicles. At the forefront of the era of automotive technology transformation, this paper also discusses the cultivation of new energy electric vehicle skilled talents. Starting from the post market demand of the development of new energy, this paper compares and analyzes the reduction of environmental pollution, economic applicability, technology maturity and resource storage. According to the principle of power generation, the trend of post market and the national policy, the state should focus on the problems of talents, safety performance and ideal technology, and gradually make efforts to "resource-saving and environment-friendly", and further promote the corresponding policies, which will greatly improve the professional knowledge and consumption philosophy of consumers. At that time, we will move towards the direction of improving the environment and reducing energy consumption Take a solid step.

REFERENCE

[1] Chen Liuqin. Policy support for the development of new energy vehicle industry [J], Chinese market, 2010, (20).
[2] Luo Shaowen. Research on the development strategy of China's new energy vehicle industry [D], Fudan University, 2008.
[3] Dong Benyun. Analysis on the development status and Countermeasures of new energy vehicles in China [J]. Management and technology of small and medium-sized enterprises (the first ten issues), 2015 (04).

The Research on Eexternal KM for the Future Development of the Bandon Group

Fangyu Zhou
Guangdong University of Science & Technology, Guangdong, 523083, China

Abstract: Querying organizational knowledge on a shared platform can provide solutions to problems. This paper will take Bandon group as an example, through internal and external knowledge management, management tools of ERP organizational management analysis and put forward constructive suggestions.

Keywords: Eexternal knowledge management; ERP mode.

1. INTRODUCTION

For the Bandon Group, knowledge management is the basis for continuous development and increased competitiveness. Thus, the report will briefly introduce the Bandon Group's organizational structure and approach. By evaluating the possible causes of failure, the factors used in the conflict and impact to explain the current dynamics of the organization. The aim is that focusing on the importance of knowledge management to analyze the development of the Bandon Group, and providing objective knowledge management tools and implementation recommendations.

2. THE ANALYSIS OF THE BANDON GROUP

An organization is best to maintain a decentralized system, but to ensure regular coordination and supervision of activities, it is also centralized. This section will outline the main reasons for business failure, possible conflicts in the business, and factors that need to be considered when adopting the technology. Taking into account the company's problems with the information systems used, this can provide insight into the precautions that need to be taken, which can lead to conflicts.

	Advantage	Disadvantage
Decentralization (External)	a)Decision making is more accessible because of less consultation did b)Easy and cost-effective coordination c)Senior managers relax their tasks, and the company can easily flow.	a)Cause repetitive tasks b)Lead to customer inconsistency, especially in different geographic locations c)Difficult to coordinate all small dispersed groups.
Centralized (Internal)	a)Lower operating costs, based on no change in business, fewer employees b)Adopt a unified service format c)Efficiently coordinate different branches	a)The self-command system has been working late for a long time. b)Limit attention to various tasks.

Bandon Group has grown into four departments and has dispersed the business of various departments. Bandon Group has already disbanded some operations and therefore adopted a hybrid operating system. It can be seen that there are currently two models for the Bandon Group both internally and externally. However, the use of both models has its advantages and disadvantages in the following table.

3. EXTERNAL OF KM

All activities related to a product are grouped. The general operations of all products are concentrated in one place, and the specific activities of each product are dispersed so that each product meets particular needs. This type of design allows professionalization on staff and financial basis because people are ready to make the best preparation for a product. The organization was able to budget for specific product needs and therefore paid attention and completed. It also allows the product to progress to meet the needs of customers (Wickert and Herschel, 2001). However, companies are involved in a large number of products will affect quality by trying to allocate funds to different products. It is difficult to coordinate because people are focused on different products, so rotation may be difficult to implement.

The organization also can be organized by location. The structure of the different branches running from the head to the structure within the branch. To make the operation that easier to manage and does not require information to move from one area to another to operate. However, many efforts are repeated through similar functions in each area (Beijerse, 2000). Therefore, an excellent way to group work is to use a hybrid grouping approach where the primary function must be completed in each area, such as marketing and accounting centralized in an area of the headquarters, and then assign the function. To a specific job or area dispersed to suit the operation of the area.

3.1 Factors that Cause Enterprise Failure(external)

Lack of commitment to business operations and insufficient customer satisfaction can lead to business failures. Each business and product experience a beginning, growth, maturity, and declining product life cycle. Strategies that ensure that businesses remain competitive and do not diminish include product diversification, or product enhancement and active marketing that make the same product more attractive to customers. If this is missing and other factors discussed below, business operations may fail which are:

System and structural issues	Machine and technology failures will cause the organization to fail.
Financial Management Failure	No Proper Capital Budgeting
Marketing and customer failure	Failure to adopt the proper marketing strategy
Management Failure	Conflict within the organization

3.1.1 By using ERP

Through the above analysis, the Bandon Group urgently needs to conduct comprehensive management through a complete knowledge management system. ERP is a high-level management model in terms of information and data. It will complete the integrated management of all aspects of the enterprise, and bring long-term economic and social benefits to the company (Chang et al., 2008). Obviously, in the SECI model, this tool belongs to the combination of internal and external management and belongs to the combination. All applications can be stored in the same database to avoid data duplication (Khaparde, 2012). Employees and institutions can access directly, and all modules have a consistent experience. Through the rapid introduction of mobile phone two-dimensional code, cross-site management and approval.

ERP establishes the flow chain management between the system, institutional structure, financial management, marketing and suppliers and customers. The company's market and financial plans can be based on marketing changes at any time. Through automatic approval, corporate logistics and supervision can also be conducted through ERP.

4.CONCLUSION

The company should only adopt technologies that suit its investment and reduce overall costs, such as incorporating innovative knowledge management tools. It is done by ensuring that a custom system is set up for everyone rather than setting up a system for each department or making reports from time to time.

REFERENCES

[1] Beijerse, R. (2000). Knowledge management in small and medium-sized companies: knowledge management for entrepreneurs. Journal of Knowledge Management, 4(2), pp.162-179

[2] Chang, H., Ok, S. and Park, K. (2008). Studies on the Interrelationship between Critical Success Factors of ERP Adoption. The Journal of Information Systems, 17(1), pp.113-130.

[3] Khaparde, V. (2012). Barriers of ERP while implementing ERP: a Literature Review. IOSR Journal of Mechanical and Civil Engineering, 3(6), pp.49-91.

[4] Wickert, A. and Herschel, R. (2001). Knowledge-management issues for smaller businesses. Journal of Knowledge Management, 5(4), pp.329-337.

Research on Internationalized Business Strategy of Enterprises under Green Supply Chain Management

*Dong Shizhu**, He Siyuan*
Guangdong University of Science & Technology, Guangdong 523083, China
**Corresponding Author.*

Abstract: Green supply chain management can help companies improve their own environmental performance, increase their competitiveness in the market, and improve their financial performance. With the development of economic globalization, many companies have begun to develop into the international market, and they have achieved greater success in transnational operations. Applying green supply chain management in enterprises can help enterprises gain advantages in international market competition.

Keywords: Green Supply Chain Management; International Market; Market Competitiveness

1. PREFACE

At present, the country is pursuing the sustainable development of ecological economy and green economy. In the international community, the work of environmental protection inspection is highly valued. If companies want to develop internationally, they need to develop green production. Applying the green supply chain management model in enterprises can promote the green and healthy development of enterprises, optimize the economic and social benefits of enterprises, continuously improve the market competitiveness of enterprises, and promote the international development of enterprises.

2.THE DEVELOPMENT PROCESS OF ENTERPRISE INTERNATIONAL MANAGEMENT

With the continuous development of enterprises, enterprises will certainly develop into the international market, and with the development of economic globalization, enterprises will also certainly enter the international market. At present, in the world, the idea of free market has also been developed a lot, and more and more countries have also accepted the idea of free market, which also provides opportunities for the development of enterprises in the international market, which also accelerates the speed of the company's international development. Many countries draw lessons from the advanced management and production technologies of developed countries, so the development trend of developing countries is becoming more and more obvious. Moreover, with the continuous improvement of the level of science and technology, the transportation cost has been continuously reduced, and the market has been further opened up. Not only can companies in their own country enter the international market, but also lower the barriers for companies from other countries to enter their country, which has led to the rapid development of market competition and accelerated the development of corporate international operations. In today's world, economic globalization is constantly developing. No matter what kind of company it is, if it wants to develop, it needs to participate in international competition. World trade barriers are gradually removed, many enterprises began to develop into the international market. With the rapid development of the world economy, the international operation of enterprises will also get rapid development and progress, which will further promote the development and progress of the world economy and deepen the development of the world's economic globalization. At present, the share of developed countries in the international market is gradually decreasing, while the share of developing countries in the international market is increasing, and the investment intensity of developed countries in the property of developing countries is also gradually increasing, which expands the scale of foreign investment of developed countries. Moreover, in the international market, some small and medium-sized enterprises will occupy the market share of large enterprises, and some large enterprises will gradually lose their competitiveness in the market due to lack of technological innovation. Therefore, some new types of enterprises will gain new opportunities in the international market development opportunities. Moreover, more companies recognize that companies not only need to carry out technological innovation, but also need to continuously strengthen their own localization efforts. If a company wants to develop in the international market, it must have a localization strategy. Only by ensuring the localization of the company can the company gain a place in the international market.

If an enterprise wants to develop continuously in the international market, it needs to be integrated with the international market environment. The state needs to guide the continuous development of enterprises, regulate the behavior of enterprises, improve relevant laws and regulations, and establish relevant regulatory mechanisms. The application of green supply chain management mode by enterprises can promote better development and progress of enterprises, help enterprises to manage their internal environment more efficiently, transmit environmental awareness among various departments of enterprises, and promote the green and healthy development of enterprises. The application of a green supply chain management model by an enterprise can promote its green innovation and improve its environmental performance. In the process of designing products, enterprises can reduce energy efficiency and material consumption, reduce the use of harmful substances, and increase the recycling rate of products. This can not only protect the environment, but also help enterprises in technological innovation. In the process of environmental management, the participation of consumers and enterprises can improve the performance management level of enterprises.

3.INTERNATIONALIZED BUSINESS STRATEGY OF ENTERPRISES UNDER GREEN SUPPLY CHAIN MANAGEMENT

(1)Formulate an overall development strategy for international operations

With the development of the green supply chain management model, companies need to combine strategic resources to formulate the process of formulating international business development strategies. The current international development of Chinese enterprises is still in its infancy, and it will take a long time before they can form their own competitive advantages and gain advantages in the international market. At present, the global scope is pursuing the development of green environmental protection, so domestic enterprises need to adapt to this development trend and apply the green supply chain management model to promote the green and healthy development of enterprises. At the primary stage of development of the international enterprise, it needs not only to the medium and long-term development strategy, but also to the development of the short-term strategy are introduced, and the green supply chain management mode, the combination of pushing the internationalization development stage of implementation, then gradually advances the strategy of internationalization, the internationalization of the enterprise development.

(2)Ensure that the product is compatible with the development strategy

As domestic companies continue to expand into the international market, domestic companies account for an increasing share of the international market. Enterprises need to combine the development trend of the international market. In the process of producing products, enterprises need to combine their own development strategies, meet the diversified demands of the international market, and improve the products produced by enterprises. Enterprises need to combine with the green supply chain management model to ensure green and environmental health in the production process, so that they can ensure that they meet the needs of the international market. Companies can also develop some new green products to meet the needs of the international market.

(3)Ensure that companies can enter the international market steadily

Enterprises need to adopt differentiated development strategies, through the export of their products and the integration of the international market, to establish overseas sales channels, and better conduct international operations. Domestic enterprises need to be integrated with their own products and integrated with international development paths. In the process of entering the international market, enterprises need to gradually enter the international market steadily, strengthen the organization of overseas markets, and continuously promote localized sales. Enterprises need to ensure the green and environmental protection in the production process, enhance the environmental protection in the production process, save resources, avoid resource waste, and increase the competitiveness of the company in the international market, thereby gradually moving into the international market. Domestic enterprises can apply the trade supply model, establish strategic partner alliances in the world, continuously penetrate into the world, and cooperate with more powerful local distributors to comprehensively cover key areas in the world. In this way, the company's share in the international market will continue to increase, and the company's competitiveness in the international market will be improved.

(4)Strengthen corporate employees' awareness of internationalization strategy

In the process of developing an international business, an enterprise needs to be integrated with its development strategy in the international market. Companies need to study the domestic and international markets, and establish overseas expansion departments. Let professional staff conduct research in overseas markets and understand key development areas in the international market. Enterprises should carry out relevant training for their employees to let them understand the company's strategic development goals in the international market, so as to establish an awareness of international development. And companies need to allow employees to establish a sense of green environmental protection and ensure green production in the process of international market development. Companies also need to build a human resource development team, introduce related professionals overseas, introduce international human resource management concepts, cultivate domestic professionals, and integrate with the current situation of the company to integrate itself in the international market. The advantages of the company will be clarified, so as to accelerate the development of the company in the international market. The specific situation is shown in Table 1.

Table 1 Internationalized business strategies of enterprises under green supply chain management

	International business development strategy	Details
Internationalized management of enterprises under the management of green supply chain	Formulate an overall development strategy for international operations	Companies need to combine the concept of green production and realize their sustainable development in the international market based on their own strategic resources.
	Ensure that the product is compatible with the development strategy	Product needs are combined with the needs in the international market. The current world pays more attention to green production, so companies need to meet the needs of green production in the international market.
	Ensure that companies can enter the international market steadily	When an enterprise enters the international market, it cannot develop blindly. It needs to continuously integrate the market environment and enter the international market.
	Strengthen corporate employees' awareness of internationalization strategy	Companies need to train their employees' international awareness, cultivate professional international and domestic talents, and better help companies develop in the international market.

4.CONCLUDING REMARKS

In summary, if a company wants to gain a firm foothold in the international market, it needs to integrate with its own actual situation and meet the needs of the international market. At present, the concept of green development is being promoted all over the world. In the process of production, enterprises should ensure green and environmental protection, so as to meet the demand for products in the international market, increase the competitive advantage of enterprises in the international market, promote the sustainable and healthy development of enterprises.

REFERENCES

[1] Wang Tao, Xu Haoyuan, Xiong Yun. An analysis of business operations from the perspective of supply chain[J]. Shangxun. 2021, (04): 122-123.

[2] Guan Qibei. Research on the logistics management path of petrochemical enterprises based on green supply chain management[J]. Fortune Today (China Intellectual Property). 2021, (02): 86-88.

[3] Mao Tao. The progress, dilemmas and countermeasures of green supply chain management practice [J], Environmental Protection. 2021, 49(02): 61-65.

Research on the Problems and Solutions of Green Logistics Development in the New Era

He Siyuan, Dong Shizhu*
Guangdong University of Science & Technology, Guangdong 523083, China
**Corresponding Author.*

Abstract: With the continuous development and progress of the times, the society pays close attention to the issues of green development in various industries. However, in China's logistics, the concept of green logistics has not been popularized. The development of green logistics can increase the competitiveness of the domestic logistics industry in the world, and promote the sustainable and healthy development of the logistics industry. The whole society needs to establish the concept of green logistics, introduce green logistics professionals, and promote the healthy development of the logistics industry.
Keywords: Logistics Industry; Green Logistics Concept; Healthy Development

1. INTRODUCTION

In today's society, the role played by the logistics industry is huge, but with the continuous development of logistics, the degree of environmental pollution in cities is also increasing, destroying people's living environment. Therefore, in this case, the concept of green logistics has emerged. Green logistics can not only suppress the harm caused by logistics to the environment, but also promote the sustainable and healthy development of the economy and increase the utilization rate of logistics resources.

2. THE SIGNIFICANCE OF DEVELOPING GREEN LOGISTICS IN THE NEW ERA

In today's society, the concept of sustainable development has been in-depth development, people pay more and more attention to the protection of the living environment, and more and more attention to all walks of life whether to save resources and protect the environment. Green logistics is in line with people's life needs in today's society, and helps to protect people's daily life environment. With the more and more rapid development of the logistics industry, people have to pay attention to the harm caused by the logistics industry to the environment. Establishing the concept of green logistics can promote the development of the entire logistics industry. Establishing a green logistics concept in the logistics industry can realize the coordinated development of the ecological environment and society, improve the efficiency of resource utilization, and increase the competitiveness of logistics enterprises in the international market.

3. PROBLEMS IN THE DEVELOPMENT OF GREEN LOGISTICS

(I)There is no clear concept of green logistics

At present, although people are constantly pursuing green consumption, and producers and operators also pay attention to the development of green products, they have not paid much attention to the concept of green. In the logistics industry, the concept of green logistics has not been popularized. The operation and management personnel and consumers of the logistics industry have not fully realized the importance of the concept of green logistics, Moreover, the relevant government departments have not planned for the green development of the logistics industry. They lack environmental protection and pay no attention to resource conservation, which leads to the serious harm of logistics to people's living environment. Only by fully attaching importance to the role of green logistics concept in the logistics industry can the healthy and sustainable development of the logistics industry be promoted.

(II)Lack of complete infrastructure

The current problem of logistics in terms of transportation by industry is the incoordination between the growth of transportation routes and the growth of vehicles. In the process of logistics transportation, serious traffic jams have occurred, and the traffic in the city is not convenient, which has a negative impact on the efficiency of the domestic transportation network. In today's world, a serious urban environmental problem is traffic congestion. It is difficult to coordinate transportation activities when carrying out logistics activities. The effect of the logistics system and transportation efficiency are severely damaged by the problem of traffic congestion. Moreover, the domestic transportation industry lacks complete infrastructure and equipment, and the level of logistics technology needs to be improved. The current logistics and distribution requirements cannot be met, resulting in the failure of the logistics industry to develop in a green and healthy manner.

(III)The utilization efficiency of logistics resources is relatively low

In the process of economic and social development, natural resources play a huge role, but China has a large population, so the per capita resources are relatively small. In the process of economic development, a large number of resources have been consumed, and there is a huge contradiction between resource protection and economic development. The shortage of resources has seriously affected the development of the domestic economy, and the role of the logistics industry in the process of economic development is very huge. With the continuous reduction of resources, the use cost of resources is also increasing, which increases the operation cost of the logistics industry and affects the healthy development of the logistics industry.

(IV)Lack of green logistics professionals

At present, the development of the concept of green logistics is severely restricted by the shortage of green logistics talents, leading to the concept of green logistics can not be in-depth development. At present, the education of green logistics in China is relatively backward, and there is a lack of research funds. Moreover, there are many problems of insufficient professional skills of logistics management personnel. Green logistics is still in the stage of continuous exploration. Therefore, the country needs to vigorously cultivate talents in green logistics, promote the development of green logistics concepts, and integrate the logistics industry. The green development goals are realized, and the specific conditions are shown in Table 1.

Table 1 Problems in the development of green logistics

	The problem	Details
Development of Green Logistics Concept	There is no clear concept of green logistics	Although people have realized the importance of green development, they have not paid much attention to green development, which has caused serious harm to people's living environment in the logistics industry.
	Lack of complete infrastructure	At present, there is a big problem of traffic congestion in China, which has a serious impact on the normal transportation of logistics. The technical level of logistics also needs to be improved, so as to meet the needs of logistics distribution.
	The utilization efficiency of logistics resources is relatively low	With the gradual shortage of resources, the domestic cost of resource usage has increased, which also increases the operating costs of the logistics industry, which has an impact on the green and healthy development of the logistics industry.
	Lack of green logistics professionals	At present, there is an extremely lack of professional talents in green logistics, which makes no one guide the green development of the logistics industry, which seriously affects the green and healthy development of the logistics industry.

4. SOLUTIONS TO THE PROBLEMS OF GREEN LOGISTICS DEVELOPMENT

(I)Formulate the development strategy of green logistics industry

If you want to promote the rapid development of green logistics, maintain sustained and healthy economic development, then there needs to be a policy to protect it. Government related department needs comprehensive green development of logistics industry as a whole, to make full use of all available resources, the concept of green logistics in nationwide promotion, exert the function of the national macroeconomic regulation and control, it can better promote green logistics concept, promote green and healthy development of the logistics industry. If you want to better develop green logistics, you need to improve the relevant legal system. Only by ensuring that the logistics industry's pollution to the environment is continuously reduced can the rapid development of the logistics industry be promoted. At present, the development of the domestic logistics industry is uneven and has a very serious problem of waste of resources. Therefore, the government needs to guide large logistics companies to help these companies develop green logistics and reduce the level of environmental pollution caused by the logistics industry. Continuously improve the efficiency of logistics enterprises' cargo transportation, thereby reducing logistics costs and promoting the green development of the logistics industry.

(II)Build a standardized logistics information system

The application of information technology such as electronic data exchange technology and global positioning system in logistics enterprises can improve the efficiency of resource utilization by logistics enterprises. Only when the logistics information system is continuously improved can the green and healthy development of the logistics industry be promoted. Therefore, relevant government departments need to provide assistance to logistics companies, allowing them to establish advanced information systems, so as to continuously improve the information management level of logistics companies, so as to better promote the green and healthy development of the logistics industry. Moreover, the government needs to establish a public network information platform and establish a national logistics network, so that logistics companies can share logistics information and better promote the development of the logistics industry.

(III)Train logistics talents

As the logistics industry’s pollution to the urban environment has become more and more serious in recent years, green logistics has gradually developed. Therefore, there are relatively few professional talents in green logistics, and the requirements for this talent are relatively high. The systematic logistics education system is not perfect. Therefore, it is necessary to train professional logistics talents and continuously improve the logistics education system. Only by establishing a perfect human resources education system can the logistics industry be able to ensure green and healthy development. However, in the process of cultivating logistics talents, it is necessary to combine with the actual situation of the society and the needs of enterprises to train comprehensive logistics talents, so as to improve the management level of the logistics industry. Therefore, it is necessary to set up logistics professional courses in colleges and universities, train professionals in the logistics industry, and improve the management level and overall quality of the logistics industry professionals, so that the level of green logistics development can be better continuously improved.

5. CONCLUSION

In summary, since China's economy is currently developing very fast and it occupies a certain position in the international community, it is necessary to accelerate the construction of green logistics. Logistics companies can only improve their competitiveness if they integrate and adjust faster. Therefore, it is necessary to improve the green logistics system, adjust the objectives and infrastructure of the logistics system, and better optimize the logistics system, so as to reduce urban environmental pollution and improve the level of logistics management.

REFERENCE

[1] LUO Yuping. Current Situation, Problems and Solutions of Green Logistics Development in China [J]. Business Information, 2019, (33):58-59.
[2] Chen Zhixin, Chen Ge. Analysis on the problems and countermeasures of green logistics development in China [J]. Business Information, 2019, (27):48.
[3] Wang Hao. Discussion on the Problems and Countermeasures of Developing Green Logistics in China [J]. Business Information, 2017, (13):280.

On Cultivating Students' Creative Ability in College English Teaching

Chen You
Foreign Language Department, Guangdong University of Science & Technology, Dongguan, 523083, China

Abstract: Nowadays, cultivating students' creative ability has become the main theme of educational reform. The formation of a person's innovative ability has a long process, and it is necessary to pay attention to the cultivation in the daily teaching. This paper discusses how to effectively cultivate students' creative ability in College English teaching.
Keywords: College English Teaching; Creative Ability; Cultivation

1. INTRODUCTION

Creative ability is the ability of human beings to break through old knowledge and old things, and to explore and create valuable new knowledge and new things. In the future, a large number of innovative talents are needed in the world, which requires that school education should pay attention to the cultivation of ability in the process of comprehensively promoting quality education. As an important tool discipline, English teaching aims to make students have solid basic knowledge of English and ability to use English communication initially, so as to form good learning habits and lay a good foundation for further learning. Therefore, in college English teaching, it is the duty for English teachers to pay attention to the cultivation of students' creative ability and to form good thinking and behavior habits.

2. UNDERSTANDING THE RELATIONSHIP BETWEEN ENGLISH TEACHING AND CULTIVATING CREATIVE ABILITY

As a tool of communication, English has its own development and evolution process, and the process of people learning it, mastering it and using it all reflects human intelligence and creativity. First, great changes have taken place in English since its inception. The development and change of language itself is a process of continuous innovation. In the process of its development, people constantly enrich its connotation, making it an integral part of human culture. Secondly, English is an effective tool for us to learn advanced ideas and cultures abroad. We can learn their innovative ideas and means while communicating with people from all over the world in English. The "New Culture" Movement (also called May Fourth Movement) in China's history is exactly the movement that we learn from the advanced western thought and advanced technology. Since the reform and opening up of our country, more exchanges of Chinese and foreign cultures and ideas have contributed to the continuous development of the whole social economy and the continuous progress of culture.

3. EXPLORING THE INNOVATIVE EDUCATIONAL MATERIALS IN COLLEGE ENGLISH TEXTBOOKS.

Many of the current college English textbooks (such as the teaching materials used by the author's school are New Horizon College English) are the most vivid innovative education materials. Teachers can seize the opportunity to guide students to develop and innovate in the learning process while guiding students to learn language knowledge. For example, in the textbook New Horizon College English-2, Unit one introduces "Language in Mission", Unit two introduces "College--the Ladder to Success", and Unit seven introduces "women: making a difference". Teachers can inspire and guide students to learn their good mind, hands-on and innovation spirit in teaching these classes. For this, teachers can make full use of these rich topics to let students actively discuss, train students' divergent thinking ability and seek all possible answers.

4. CULTIVATING STUDENTS' CREATIVE ABILITY IN THE CLASSROOM TEACHING

As we all know, only when the quantity reaches a certain extent, can there be a qualitative leap. So is the student learning English. First, English teachers should set up study plans carefully based on the double basis, so that students can learn the basic knowledge in books and lay the knowledge foundation, because the basic knowledge provides the possibility and foundation for the cultivation of thinking ability, that is, knowledge provides the original material of thinking.

4.1 Encouraging Students' Thinking of Seeking for Differences

The thinking of seeking for differences is the core of creative thinking. In the process of English teaching, teachers should guide and encourage students to break the thinking situation and dare to say no, so that students can think about problems from many aspects and perspectives. In classroom activities, teachers, as the organizers of teaching, should often use the form of classroom discussion, actively encourage students to be innovative and innovative, and answer the questions raised by teachers with their own unique opinions. For example, when we organize students to learn the content: Unit Six-Less is More in the textbook New Horizon College English-2, the teachers can let students express their opinions and discuss them warmly. We can praise students in time and encourage them to pay attention to understanding the meaning of language and dare to express their own opinions.

4.2 Guiding Students to Learn Language Creatively

Students often encounter conflicts between English and mother tongue in pronunciation, vocabulary and various expressions in the native language environment, which is the best starting point to guide students to consciously summarize the law of language learning. For example, in grammar structure teaching, college students are often confused about the structure “there be” and “have / has” that can all express “have” in Chinese. Teachers can use the opportunity to guide students to learn creatively and master the language rules. Teachers can ask students to collect examples with “there be” and “have/has” structures. The process of classifying them is the process of students’ autonomous learning. In this process, students will find that “have/has” means “own by oneself” and “there be” means in the process of “having” . And in phonetic teaching, some students find that “word, word, world, work” all have the phonetic symbol-[ə:], and they ask the teacher curiously if all the [or] would pronoun [ə:] just after [w]. As for this, the teacher can sell the pass at this time, and guide the students to find the answers by themselves through looking up the dictionary, find out the pronunciation rules of the words, and inspire students to think about their language phenomena, and summarize the language rules and the tips of English learning.

4.3 Changing Teaching Model

In the classroom, the main focus is various activities, and the teaching focus is to cultivate students’ ability to use English widely for innovation and exchange. Therefore, teachers should make full use of various teaching aids and teaching resources, and use listening, speaking, singing, playing, performing, displaying and other ways to impart the knowledge. Through gestures, performances, expressions, language description, slide recording, TV, multimedia and other means, the sound and image, language and situation are combined, and the sound and image are reflected in the eyes of students, and students are encouraged to participate actively, stimulate their desire to open up, and make bold and innovative expression in English in the activities. For example, when practicing words and sentence patterns, students are encouraged to play with freedom and organize language freely by oral performance or group evaluation. The scores of students or groups who perform well are encouraged. This not only avoids the boring of practice, but also promotes students’ participation consciousness and creative ability to use knowledge. Teaching in activities can train students in visual, auditory and action stimulation, which not only conforms to the curiosity and active nature of students, but also makes them feel that learning is very lively and interesting. The knowledge of textbooks is no longer abstract and boring, thus it is impressive and greatly stimulates their enthusiasm, initiative and innovation.

4.4 Cultivating Students’ Creative Ability through Extracurricular Activities

Extracurricular activities are significant ways for students to make full use of English to communicate and stimulate creative thinking. Teachers should stress on the cultivation of students’ innovation ability when guiding students to carry out extracurricular activities. In the activities, teachers can organize students to conduct various creative activities according to the existing level, so that students can realize the joy of learning English and the pleasure of creating in English. For example, teachers can let students improve their interest in English learning and their ability to use English through self-made English sketches, creative production of English tabloids and greeting cards, writing English book reviews, English speeches and other activities, so as to communicate in language and create in English.

5. CONCLUSION

For a long time, in college English teaching, because of ignoring the cultivation of students’ creative ability, they have made students practice exam-taking skills in a large number of questions, which leads to many students’ impotency in reading and fear of communication. As teachers, we should combine the theory of innovative education with the teaching of this subject closely, take English teaching as activities to cultivate students’ innovative consciousness and creativity, and actively explore new ways to implement innovative education in English teaching practice.

REFERENCES

[1] Li Huahua. The Cultivation of Students’ Speculative ability in College English Teaching-Taking Art Major as an Example[J]. Journal of Changsha University 2020 (11).

[2] Lin Miaofeng. Effective Strategies for Exploring the Innovative Thinking Ability of College English Teaching Students [J]. Journal of Jiamusi Vocational College, 2017 (5).

[3] Shi Wei. A Study on the Students’ Cultivation

Mode of the Innovation Ability in Higher Vocational English Teaching [J]. Journal of Liaoning Normal College (Social Sciences), 2020 (8).
[4] Zhao Xiaohong, Miao Ruiqin. New Vision College English Reading and Writing Course 2 (3rd Edition) [M]. Foreign language teaching and Research Press, 2017.
[5] Zou Bin. On the Strategies of Cultivating Students' Translation Ability in College English Teaching [J]. Overseas English, 2020 (12).
[6] Zhu Chun. Psychology of Foreign Language Teaching [M]. Shanghai Foreign Language Education Press, 1994.
[7] Zuo Huanqi. Foreign Language Education Outlook [M]. East China Normal University Press, 2002.

Teaching of English Speaking and the Cultivation of English Majors' Critical Thinking Ability

Liu Guoqing
Foreign Language Department, Guangdong University of Science & Technology, Dongguan, 523083, China

Abstract: This paper first makes a deep study on the significance and necessity of cultivating students' critical thinking ability in English speaking teaching, and then puts forward corresponding teaching strategies according to the focus of the teaching work, so as to effectively help to train English majors' critical thinking ability and strengthen the teaching effect of English speaking.
Key words: English speaking; English majors; critical thinking ability; cultivation

1. INTRODUCTION

Critical thinking refers to the ability of analysis, discrimination and persuasion, which contains a wide range of elements, such as thinking ability, logical analysis ability, language expression ability, etc., which belongs to a concept in philosophy. It indicates the use of logic derivation to carry out pure theory and thinking and debate on concept, which is mainly reflected in a way of logic deduction and a way of thinking. In English speaking teaching, the cultivation of critical thinking ability is an important teaching task. To finish the teaching work with high quality can improve the students' English learning level and strengthen their English speaking ability, so as to achieve the goal of high quality English subject learning. Therefore, it is necessary to carry out a comprehensive analysis and discussion, and analyze how to teach English speaking in detail in order to strengthen the effectiveness of teaching, students' ability of thinking should be cultivated in the course of study.

2.THE SIGNIFICANCE OF CULTIVATING STUDENTS' CRITICAL THINKING ABILITY IN ENGLISH SPEAKING TEACHING

For English speaking teaching, it is an important teaching contents. Through this teaching work, students can deepen their understanding of English language, and promote students to deepen the memory effect of various sentence patterns and grammar, and gradually form a good English language ability. In addition, English speaking is also an vital way of communication. It is widely used in the fields of politics, business and education. At the same time, under the background of the continuous advancement of the internationalization process, the weight of English speaking teaching will continue to improve. In practice, more and more occasions need to have the talents who are good at English speaking to express ideas, transmit ideas, strengthen communication and promote cooperation. Therefore, it is very important to actively carry out English speaking teaching. In English speaking teaching, the most important teaching content is to cultivate students' critical thinking ability, so that students' thinking is more acute and have stronger insight, and then organize language in a short time, and deliver the content of speaking accurately and quickly. Therefore, the importance of cultivating students' critical thinking ability in English speaking teaching is highlighted. Through this measure, students' ability to use English language can be strengthened, and the English professional level of students can be improved, and students can complete the learning process of English subject with higher quality, so as to meet the needs of English speaking and contribute to the socialist construction of our country.

3.THE NECESSITY OF CULTIVATING STUDENTS' CRITICAL THINKING ABILITY IN ENGLISH SPEAKING TEACHING

For English speaking teaching, it is of great significance to cultivate students' critical thinking ability, which is related to the formation of students' professional ability and the comprehensive use of English as a language. At the same time, the ability of thinking is also a universal and applicable ability of students in the learning of English subject. It can reflect the comprehensive ability of college students in English, and make them good at observation and thinking, and have the ability to solve problems, so as to show a good spiritual outlook in the learning stage of English subject. In addition, the cultivation of students' critical thinking ability in English speaking teaching can also make the students' comprehensive ability meet the development needs of the current internationalization process. For example, in Harvard University, students are encouraged to "be willing to discover and think", which also indicates that the cultivation of students' critical thinking ability has a wide recognition in the education, so it is necessary to give a speaking in English teaching, we should pay attention to the cultivation of students' thinking ability, make them have quick thinking and insight, strengthen their core English skills, and can use English as a language comprehensively, so as to achieve good learning effect, and promote students to grow into high-quality talents in socialist construction in China. After graduation, they will devote themselves to socialist construction, and set up a career to help the Chinese dream move forward.

4.The Teaching of English Speaking and the Cultivation of Students' Critical Thinking Ability

4.1 Fully Define the Training Direction of Thinking Ability

In order to effectively train students' critical thinking ability and to achieve each task with high quality, the first task is to clarify the direction of thinking ability training, so as to determine the goal of English speaking teaching. Then, the planning and design of teaching work based on the objectives are carried out to ensure the smooth transition between teaching links, In order to achieve a good education effect for students. In the practical education stage, teachers should pay attention to the training of students' thinking mode, make their thinking more agile, and be good at capturing key information in English learning, and think and judge the knowledge points they learn from a unique angle, and extract the key parts. This can have a positive impact on the exercise of students' thinking ability. In addition, the cultivation of students' critical thinking ability can be classified appropriately, such as education direction, business English direction, tourism English direction, etc., and each training direction will produce subtle changes according to the different fields to be used, and fully clear training direction can promote the cultivation of students' critical thinking ability to be more smoothly carried out, In order to achieve the goal of high quality English speaking teaching.

4.2 Take Diversified Education Measures

In order to effectively train students' critical thinking ability and complete all learning tasks in full emotional state during English speaking teaching, teachers should pay attention to the diversified educational measures to carry out various teaching processes in the teaching stage, so as to make English recognition ability teaching achieve better results and optimize the effectiveness of education work [5]. For example, teachers need to learn from each other, that is, to review and study the educational methods of excellent teachers in the industry, and pay attention to learning, learn from the teaching experience, learn the educational methods and educational ideas. Then, according to the characteristics, interests and professional cognition of the middle school students, we should take the measures to meet the needs of the students in this school The cultivation measures of sex can effectively train students' critical thinking ability and promote students to complete the learning process of English subject with high quality. In addition, teachers can also appropriately integrate the network information into the cultivation of students' critical thinking ability, such as: to carry out English speaking teaching in the form of micro class, to upload all the knowledge points involved in each class into small videos or pictures to the teaching sharing platform, so that students can download and watch independently, not only can they exercise their good autonomous learning ability, It is also conducive to cultivate students' learning habits, and then make students form good critical thinking ability in the continuous in-depth study and research.

5.THE TEACHING OF ENGLISH SPEAKING AND THE STRATEGIES OF THE CULTIVATION OF STUDENTS' CRITICAL THINKING ABILITY

5.1 The Essence of the Ability of Thinking

In English speaking teaching, teachers should first make a comprehensive analysis and Discussion on the essence of critical thinking ability, and take corresponding teaching countermeasures according to the actual learning situation of students, so that students can regulate and clearly carry out the English subject learning tasks, so as to achieve a good education effect. In addition, teachers should also pay attention to the teaching stage of English teaching to students to teach the way of thinking, analysis and discussion of the cultural connotation and cultural types behind the language, in order to deepen students' understanding of English subject, so as to gradually cultivate a good thinking mode of students, to help students to form the ability to think. For example, in the actual teaching, teachers should pay attention to the detailed communication and exchange with students in the classroom, and extend the content of the classroom knowledge appropriately. Each explanation of knowledge points can be inserted with some knowledge about English culture, so that students can gradually understand the spiritual culture represented by the English discipline and master rich European and American cultural content. This is a good way to improve the quality of English It is of great significance for students to deepen their cognition of English knowledge, and also help them to clarify the essence of their critical thinking ability gradually, thus showing a good spiritual outlook in the learning stage, achieving the goal of high-quality English speaking learning, and at the same time, forming a good critical thinking ability under the correct guidance of teachers.

5.2 Optimizing the Teaching Curriculum of English Speaking

In order to complete the process of English teaching with high quality, improve the level and timeliness of English teaching, and achieve the purpose of cultivating students' critical thinking ability, teachers should also pay attention to optimizing the curriculum setting of English speaking teaching, and promote the orderly progress of each course arrangement and achieve good education effect. In the practical education, teachers need to think and analyze the process of English speaking teaching, and analyze how to actively carry out the English critical thinking course teaching, so as to stimulate the students' enthusiasm and initiative in improving the quality and efficiency of students' learning, and ensure that the English curriculum is more scientific and reasonable, and achieve better teaching effect. For example, teachers should make comprehensive statistics and Analysis on the current English-speaking curriculum, and analyze the unreasonable points in the course design stage, and integrate rich English teaching knowledge into it to improve the quality and efficiency of teaching. Meanwhile, during the course setting, more English-speaking courses can be arranged appropriately to ensure that students have enough time to exercise their own critical thinking ability, improve their ideological cognition of English learning process and optimize teaching level.

5.3 Promoting the Reform of English Major Teaching Vigorously

It is also a key way to develop students' critical thinking ability to vigorously promote the reform of English speaking teaching, which has a crucial influence on the improvement of teaching quality and the optimization of teaching efficiency. Therefore, more efforts should be paid to the teaching reform, and the shortcomings in the current English speaking teaching should be analyzed and discussed in detail. The formation of students' critical thinking ability is also the key way to cultivate students' critical thinking ability The situation is to formulate teaching reform measures to help the English speaking course carry out in a clear and orderly way. For example, it can make a deep analysis and Discussion on the current teaching process and link of English speaking, and set up a certain teaching feedback link. That is, after each class is completed, it can be integrated into the two-way evaluation mechanism between teachers and students. Through the form of teacher-student two-way evaluation, teachers and students can find out their shortcomings and the improvement in the teaching process in time, and then they will be able to find out the shortcomings and the improvement in the teaching process We can take targeted measures to improve the teaching process of College English speaking, which can be used to provide students with better English teaching services, promote the reform of teaching and effectively achieve the purpose of cultivating students' critical thinking ability.

6.CONCLUSION

In conclusion, in the teaching of English speaking, it is an important task to cultivate students' critical thinking ability. Through this teaching measure, not only can the teaching work level be improved, but also the professional cognition of students can be effectively cultivated, the English level of students can be improved, and the students can make comprehensive use of English, which can train a continuous source of resources for the social construction and development of China Excellent talents.

REFERENCES

[1] Cui Junyuan, Cui ran. The critical thinking role of English debate speaking on English Majors [j]. Scientific research, 2015, 000 (049): p.62-62.

[2] Trishan. The effectiveness of English speaking teaching on the cultivation and development of students' critical thinking ability [j]. Journal of national network technology college, 2015, 18 (3): 63-66.

[3] Huang Jianmin, Wei Zhou. A study on the cultivation of critical thinking ability of English Majors in the framework of Chinese English proficiency rating scale [J]. Education and teaching forum, 2020 (10).

[4] Lei Yanyan. An analysis of the cultivation of the thinking ability of English majors and classics of English and American literature [j]. Journal of Hubei Economic College (HUMANITIES AND SOCIAL SCIENCES), 2020 (4).

[5] Ren Wen. Re discuss the "absent" or "presence" of the students' critical thinking ability of foreign language majors? And to integrate the cultivation of critical thinking ability into the process of foreign language major education -- Taking English speaking class as an example [j]. Chinese foreign language, 2013.

[6] Wang Jie. The teaching of advanced English based on the "output oriented method" and the cultivation of students' critical thinking ability [j]. Campus English, 2020 (2): 10-10.

[7] Wang Tuo. A study on the cultivation of critical thinking ability of English Majors Based on process teaching method -- Taking the course teaching of English writing as an example [J]. Journal of Ningxia Normal University, 2020 (11).

[8] Yan Chun Yang. On metaphor teaching and

the cultivation of students' critical thinking ability in English Majors of new undergraduate colleges and universities [j]. Educational research, 2020, 3 (5).

Research on The Promotion Effect of Modern Supply Chain System to High Quality Development of Regional Economy

Tingting Li[1], Dan Lv[2]
[1]Guangdong University of Science & Technology, Dongguan, 523083, China;
[2]Northeast Petroleum University, Daqing 163000, China

Abstract: Modern supply chain system is an important part of building a modern economic system and an important way to achieve high-quality economic development. Modern supply chain system includes supply chain strategy, supply chain management and supply chain services in three aspects, of which service is the foundation of supply chain and supply chain management is the key, serving the core of supply chain strategy together. Its goal is to achieve maximize the overall efficiency of modern supply chain system, and then promote the quality of economic development.
Keywords: Modern supply chain system; High quality development; Regional economy

1. INTRODUCTION

The Chinese economy has moved from a stage of high-speed growth to a stage of high-quality development. We are now in a crucial period of transformation of the growth model, improvement of the economic structure and change of growth drivers. Building a modernized economic system is an urgent requirement to cross the threshold and a strategic goal of China's development. As a new management strategic thinking and practical management tool, supply chain system can help improve the efficiency of enterprises, reduce the cost of enterprises, and then improve the overall economic benefits of the society. Modern supply chain system is an important part of China's modern economic system, which adapts to the trend of China's economic transformation from high-speed growth stage to high-quality development stage in the new era. It is the only way for China's economic transformation and upgrading and high-quality development.

2. MODERN SUPPLY CHAIN SYSTEM

The supply chain is an organization that takes customer demand as a guide, improving quality and efficiency as a goal, and integrating resources as a means to achieve an efficient and collaborative organizational form throughout the entire process of product design, procurement, production, sales, and service. It integrates the four flows of logistics, business flow, information flow, and capital flow, covers the entire industrial chain of the primary, secondary and tertiary industries and has six core characteristics of integration, innovation, collaboration, win-win, green, and openness.

Supply chain system is an organization structure which is connected successively based on information system, involving the value chain composed of suppliers, manufacturers, transportation and all members of the chain. It involves the concepts of strategic resources, business process, risk sharing and early intervention of suppliers in the development of new products. It can meet real-time demand, predict more accurately and have less inventory. The construction of modern supply chain system from the industrial level should include three modules: supply chain strategy, supply chain management and supply chain service.

2.1 Supply chain strategy

Supply chain strategy is the core of the entire supply chain system and the goal to be achieved by the entire supply chain. From the micro level, the supply chain strategy is to create value for customers, and on this basis, to achieve the balance and unification of the whole supply chain's service, experience, cost and efficiency, and finally to maximize the value of the whole supply chain. From the macro level, the supply chain strategy is to maximize the social, economic and ecological benefits of the whole supply chain system, and then achieve high-quality economic development.

2.2 Supply chain services

Supply chain services are the foundation of the whole supply chain system, including logistics service, capital flow service and information flow service. It integrates logistics resources, financial resources and other resources that provide services for the supply chain through modern information technology, virtualizes them and stores them in a cloud service platform, which builds a modern supply chain that integrates online and offline logistics, capital flow and information flow to provide cloud services for all entities in the supply chain, and realizes the just-in-time, large-scaled and synchronized operation of the three streams of the supply chain.

2.3 Supply chain management

Supply chain management is the key to the whole supply chain system, covering a wide range of content, involving supply chain operation, organizational structure design, process optimization, resource integration, model construction, collaborative mechanism design, risk control, performance evaluation and other aspects. Efficient supply chain management can optimize the organizational structure of enterprises, integrate internal and external resources, improve operational flexibility, reduce operational risks, and enable all organizations involved in the supply chain to realize resource sharing, risk sharing and benefit sharing, so as to improve the operational management efficiency and sustainable development ability of the whole supply chain.

3. THE PROMOTING EFFECT OF MODERN SUPPLY CHAIN SYSTEM ON HIGH QUALITY DEVELOPMENT OF REGIONAL ECONOMY

3.1 The promoting effect of supply chain strategy on the high quality development of regional economy

Supply chain strategy carries on the overall planning of supply chain from the strategic height, which breaks through the limitation that the general strategic planning only pays attention to the enterprise itself. By planning on the whole supply chain, it can achieve the purpose of obtaining the competitive advantage for the enterprise and promoting the overall development of regional economy. Therefore, the construction and implementation of a supply chain strategy can form a virtuous circle of industrial integration development, business environment improvement and economic green development, so as to promote the optimization of economic development motivation, economic development structure and economic development efficiency, and finally realizes the economic benefit, social benefit and ecological benefit of equilibrium, so as to realize high quality and economic development.

3.2. The promoting effect of supply chain service on the high quality development of regional economy

A high degree of supply chain cooperation service can promote the establishment of long-term cooperation and win-win relationship between partners, which is also the focus of the implementation of supply chain service. Between enterprises effective resource complementation and resource mobilization can be realized through the supply chain service module of the modern supply chain system, which promotes the further optimization of the distribution of elements and continuously enhances the core business capabilities of the supply chain node enterprises. It can create a good business environment, so as to deeply dig out the hidden profits in the industrial links, provide new momentum for economic development, achieve a win-win industry, and promote regional economic development.

3.3. The promoting effect of supply chain management on the high quality development of regional economy

Supply chain management can realize the integration and coordinated development among different industries, flatten the industrial organization form, improve factor productivity, and optimize the economic development structure. In addition, the supply system can constantly adjust and adapt to changes in demand, which to a certain extent realizes the precise matching of supply and demand, forming a new momentum for economic development. At the same time, supply chain management can also achieve a high degree of sharing of internal and external resources and process optimization, which is an important organizational form and important support for the realization of sharing economy, thus promoting high-quality economic development.

4. CONCLUSION

Modern supply chain system is an important part of building a modern economic system and an important way to achieve high-quality economic development. Modern supply chain system mainly includes three aspects: supply chain strategy, supply chain management and supply chain services. It optimizes development efficiency, development power and development quality by integrating and allocating resources and realizing industrial win-win situation, which has certain practical research value for promoting high-quality development of regional economy.

REFERENCES

[1] Li Dan. Research on the construction of modern supply chain system in circulation field -- Taking Taiyuan city of Shanxi Province as an example [J]. Journal of Yantai Vocational College, 2018, 24 (04): 24-27.

[2] Yu Yongze, Hu Shan. Realistic Dilemma and basic path of China's high quality economic development: literature review [J]. Macro quality research, 2018, 6 (04): 1-17.

[3] Zhang Jianjun, Zhao Qilan. Research on the high quality development mechanism of China's economy from the perspective of modern supply chain system [J]. Contemporary economic management, 2019, 41 (08): 15-20.

[4] Wang Shaofan, Wang Xiangyang. Research on resource integration mechanism and sharing path of supply chain collaboration among enterprises [J]. Social science front, 2020 (03): 259-263.

Research on The Application of Match Method in Tennis Teaching

Zhao Huali
Institute of Physical Education, Zhoukou Normal University, Henan, 466001, China

Abstract: In order to improve the quality of tennis teaching in colleges and universities in China, a comparative analysis was made by means of teaching experiments in this paper. The experimental group using the competition teaching method and the control group using traditional sequential teaching method were set up. Teaching hours were from September 1 to December 30th, 2016. There were 30 people in each group, with quite physique and the tennis skill level before the teaching experiment. Through the teaching experiment, it can be seen that the sequential teaching method is better than the competition teaching method in improving students' performance. However, in the ability to control the ball and the level of competition, the competition teaching method is better than the sequential teaching method.
Key words: Competition Teaching Method; Sequential Teaching Method; University; Tennis

1. INTRODUCTION

In order to further improve the physical quality of college students and enrich the sports events, many colleges and universities in our country have put the tennis sports into the public physical education curriculum, so that college students have more opportunities to understand and master tennis (Zhou, et al. 2014) [1]. However, after a long time of practice, many college students are difficult to stick to it after learning tennis, so that this course does not meet the teaching objectives. After a comprehensive study, it can be seen that the main reason for this situation is that the tennis itself is difficult to start. And it is also because of the backwardness of teaching methods and means of tennis in China (Jiang, et al. 2016) [2]. In the traditional teaching methods, first of all, teachers explain and demonstrate the process. After that, students carry out training and exploration repeatedly. The whole teaching process is boring, and to a great extent, the teaching effect is also restricted by the physical education of teachers. This kind of teaching method restricts students' creativity and imagination, so it is difficult to give full play to students' ability of autonomous learning (Hong, et al. 2016) [3]. Tennis is a sport that requires mutual coordination between athletes. Therefore, athletes need not only their own good technology, but also the cooperation with each other, as well as the ability to play their own level in the stadium.

Although our country has been through a number of physical education reform, and the application of computer aided technology has made some achievements, in the teaching of tennis, there is no real advanced teaching method of modern physical education (Liu, et al. 2016) [4]. For a long time, our country has always been adhering to the teacher led teaching methods. The promotion and cultivation of students' ability depend entirely on the teachers' teaching level, and so the process of accepting knowledge is passive. According to the characteristics of tennis, in order to achieve the purpose of tennis teaching, the new teaching methods should be explored and studied. Based on this, the contrast teaching experiment is carried out between the traditional sequential teaching method and the competition teaching method, and the two different teaching methods are compared and analyzed, so as to find a more suitable teaching method for college students' tennis and to enhance students' interest in learning. The appropriate teaching method can make students master the teaching knowledge, and really enjoy the happiness brought by tennis, thus to help students develop a lifelong habit of exercise.

2. STATE OF THE ART

At the beginning of the twentieth Century, W. Custer Roma, a famous sports teacher in Sweden, put forward the concept of physical education teaching method for the first time, having a profound impact on the global sports teaching (Pan, et al. 2016) [5]. With the development of the theory of education and teaching, the new teaching method, based on the combination of pragmatism and educational psychology, was more and more used in the teaching of physical education in colleges and universities. After the founding of new China, our country has carried out the reform of education and teaching many times, and has constantly updated and introduced new teaching methods. And according to the needs of China in the 20th century, a lot of sports teaching methods with Chinese characteristics have been established (Li, et al. 2016) [6]. No matter what kind of physical education teaching method, the definition is the same. In other words, any physical education teaching method is the way and means adopted by physical education teachers to achieve the goal of teaching in the course of physical education. From the definition of physical education teaching methods, first of all, it is set for the purpose of teaching. Teachers and students can be more closely linked, thus to achieve better teaching results. With the change of society, it can keep pace with the times. No matter what kind of physical education teaching method, its essence is to serve the teaching (Xiao, et al. 2016) [7].

Due to the influence of the core value orientation and historical thought, there is a big difference between the teaching methods in the western countries and our country. They not only pay attention to meeting the needs of the spiritual level, but also pay more attention to the positive attitude towards life and personality development (Wang, et al. 2016) [8]. Of course, there is also the tradition of Western society, including their attitude towards life.

When choosing the teaching method, the western countries focus on individual value orientation. The characteristics of the teaching methods can be summarized as follows: (1) there is a strong interest. The cultivation of students' interest is the key point of teaching. Students are encouraged to participate in the game. Using the game, the students' physical and psychological quality can be improved (Xin, et al. 2009) [9]. (2) The development of students' personality should be respected. Personality factors account for a large proportion in teaching methods. In the process of modern social teaching, the development of students' personality should be respected (Aziz, et al. 2010) [10]. (3) Students' independent ability should be cultivated. Modern physical education is often associated with daily life. Students' physique can be improved through teaching activities. In the western teaching concept, the ultimate goal is to make the knowledge and skills applied to daily life, so as to cultivate students' independent ability (Wang, et al. 2016) [11].

After decades of development, in the education method, the pursuit of sports teaching in our country is more standardized and strict. The key point of physical education is the teaching order (Zhang, et al. 2008) [12]. Since the reform and opening up, people have been exploring and reforming the new teaching methods, and have achieved remarkable results. In the process of learning, students are more afraid of teachers, and so there is no benign exchange. And students always strictly enforce the teacher's teaching content. In this teaching environment, students are forced to learn, and the minds are severely constrained (Geng, et al. 2016) [13]. In addition, the syllabus developed by the Education Department of our country has the characteristics of unified management. However, our country has a vast territory, and the students in different regions have great differences in basic quality and regional culture. If the unified syllabus is widely used, it is not conducive to the spread of outstanding culture.

For different sports, even with the same teaching methods, there are different teaching effects. For the same kind of sports, different teaching methods will produce different teaching effects. For example, in tennis teaching, similarly, the competition teaching method is adopted. In the teaching of skill proficiency, practicality and interest training, the results are also different (Wu, et al. 2016) [14]. However, no matter what kind of teaching methods and teaching skills are used, the ultimate goal is to achieve the same teaching. In the teaching of physical education, teaching methods are used to enable students to master and use sports skills. In the course of tennis in colleges and universities, compared with the traditional teaching methods, the competition method is more convenient for students to master the tennis skill. Students' ability to play tennis can be significantly improved, thus to develop a positive interest in teaching (Cheng, et al. 2016) [15].

3. METHODOLOGY

3.1 Research object

In this paper, the method of teaching experiment is adopted to analyze the application effect of the competition teaching method in college tennis teaching. The research objects are the college students in Beijing. These college students have never played tennis. Therefore, in the control group and the experimental group, students have no tennis foundation. The experimental group uses the competition teaching method, while the control group uses the traditional teaching method. In the teaching content, the experimental group and the control group are the same, and they are only different in the choice of teaching methods. The number of students in the control group and the experimental group is 30, and all are male. Before the teaching experiment, the students' physical condition is detected. The specific results are shown in table 1:

Table.1 The physical quality T test of the control group and experimental group

Name	Experience group	Control group	T test
The number of	30	30	
Gender	Male	Male	
Average height	172.3	172.6	P＞0.05
Height standard deviation	5.6	4.8	
Average weight	73.5	74.1	P＞0.05
Weight standard deviation	6.4	7.1	
4 × 10 reentry	10.6	10.4	P＞0.05
Push-up	22	23	P＞0.05

As can be seen from table 1, the indexes of the control group and the experimental group are similar. The average height and weight of the students are quite equal, and the physical conditions are basically the same. From the physical quality, the physical quality of the students in the control group and the experimental group are basically the same.

The sequential teaching method adopted in the control group is a common teaching method in physical education, which is often used in tennis sports teaching. Even in the single skill teaching, the sequential teaching method can be used. This is a process from simple to complex. The order of tennis teaching is: forehand and backhand hitting→volley→slice→serve. Among the specific individual skills, the order of forehand hitting is: shot in place→short shot→net shot→hitting on the ground. The emphasis of sequential teaching method is to lay a solid foundation for students. The key is to let students master the basic skills and to complete the training of talents through the basic education. In the teaching process, the stages of perception, understanding, and consolidation and application are included, according with the cognitive law of human sports. The sequential teaching method can better arrange the progress of learning, and so it is easier to set the teaching content and teaching difficulty. Therefore, this method is often used in the initial stage of many sports. And it also has some flexibility in the choice of students' age.

The teaching method of the experiment group is a kind of organized, conscious and strategic coordination training competition. This kind of teaching method can improve students' competitive ability and improve the quality of sports training. Compared with the traditional sports teaching activities, the purpose of this teaching method is to cultivate students' sense of competition, improve the tactics of sports, and train students' excellent psychological quality. In the existing college physical education teaching activities, the purpose of teaching is to develop students' interest in sports, and to stimulate the enthusiasm of students to exercise independently. People all want to be able to win, especially if they want to win the game. In the teaching activities, students can communicate with each other, improve the skills of the game, and can take the victory of the game as the purpose of teaching. This method can be more effective to stimulate the interest of students, which can also get different practical results without the form of competition. The specific operation procedure of the teaching method of tennis match is shown in figure 3. However, in the specific teaching of the game, the choice of the form of the game needs thinking and practice test, which plays a positive role in promoting students' skills.

3.2 Research method

The teaching experiment period is from September 1, 2016 to December 30, 2016. The control group and the experimental group have the same teaching conditions. The assessment method is the same. Students should do 40 backhand short distance moving ball and 10 linear and backhand slash the ball, respectively, including technical assessment score and standard scores. Two people are randomly selected from each group, and there are 6 chances. And the total number of rounds is sorted out. In the doubles match in the small field, 2 students are randomly selected in each class, and the "7 point system" is used. After statistical analysis, SPSS software is used for statistical analysis of the data to ensure the validity of the experiment.

In the design of teaching plan, it is necessary to refer to the relevant national policy basis. According to the teaching outline of physical education curriculum issued by the Ministry of education, the students' creative consciousness should be fully brought into play. In addition to the importance of teaching methods, self-learning and self-training should also be carried out. In the teaching process, different students have different physical and personality characteristics. The ability of students should be fully believed and played, to reflect the main position of students in teaching. The implementation of the competition teaching method needs to draw lessons from domestic and international teaching experience. Combined with the specific practice, it is constantly revised and perfected. The teaching objects are college students who can accept new things quickly. Therefore, higher requirements should be set in setting teaching goals. In order to encourage students, the development of teaching contents and methods should be based on students' self-will, and the teaching content also needs to be attractive enough. In the implementation of teaching programs, the enthusiasm of students must be fully mobilized, so that students can get more complete information in the process of learning. There is a high degree of inherent law in sports skills to follow, including a complete system of knowledge and skills. In the process of teaching, teachers should ensure the integrity of information, in order to avoid students' confusion because of the lack of information.

4. RESULT ANALYSIS AND DISCUSSION

Through the teaching experiment, in the experimental group and the control group, the results of pre-test and posttest and T test of forehand, backhand and underhand serve are obtained respectively. The test results of the experimental group are shown in Table 2, and the results of the control group are shown in table 3. In order to avoid the reliability of the test results is affected by the difference between the control group and the experimental group before the experiment, the three indexes are tested before the experiment. According to the data of Table 2 and table 3, it can be seen that the tennis level of the control group and the experimental group is relatively low before the teaching experiment. Through the analysis of three technical index data, it can be concluded that the technical level of the two classes is equal.

Table.2 Test results and T test before and after the experiment

Index		Forehand	Backhand	Underhand serve
Experimental group pretest	Average	8.92	6.65	3.09
	Standard deviation	2.45	2.34	1.59
Posttest in experimental group	Average	16.36	14.68	6.08
	Standard deviation	1.68	2.06	1.48
T test		P<0.05	P<0.05	P<0.05

Table.3 Control group before and after the test results and T test

Index		Forehand	Backhand	Underhand serve
Experimental group pretest	Average	9.02	6.59	3.07
	Standard deviation	2.54	2.62	1.42
Posttest in experimental group	Average	16.15	14.93	6.78
	Standard deviation	2.08	2.39	1.26
T test		P<0.05	P<0.05	P<0.05

After a semester of teaching experiment, it can be seen that compared with that before the experiment, the tennis skill level of the control group and the experimental group is significantly improved. And the average has been greatly improved. This shows that the two teaching methods can get better teaching effect. After comparing and analyzing the teaching experiment of the experimental group and the teaching group, the difference of scores can be seen. The experimental group's forehand, backhand and the average number of service are 16.36, 14.68, and 6.08, respectively, while the control group's forehand, backhand and the average number of service are 16.15, 14.93, and 6.48, respectively. It can be seen that the technical level gap between the experimental group and the control group is not large. In the forehand, the experimental group is slightly higher than that of control group. The other two indicators in the control group are higher. In conclusion, in improving students' backhand and serve, the sequential teaching method is better than the competition teaching method.

As can be seen from figure 4, the experimental group students' technical evaluation scores were lower than those in the control group. The scores of the students in the experimental group are concentrated at the medium level. It also shows that the sequential teaching method can achieve better teaching effect in the aspect of students' skill mastery.

The ability to control the ball is further analyzed, and the results are shown in table 4. As can be seen from table 4, the ability of controlling the ball in the experimental group is significantly higher than that of the control group. Because tennis is a competitive sport, the ability to control the ball on the playground is related to the outcome of the game. If the level is equal, the competition is more dependent on the ability to control the ball. It shows that the teaching method is better than the sequential teaching method in cultivating students' ability of controlling ball, competitive ability and interest.

Table.4 Significance test of the difference ability after the experiment

Experience group	Average	36
	standard deviation	1.72
Control group	Average	19
	standard deviation	1.68
T test		P<0.05

5. CONCLUSION

A teaching experiment was carried out on college students in Beijing from September 1, 2016 to December 30th, 2016. Teaching experiment group and control group were set up. The experimental group used the teaching method, while the control group used the sequential teaching method. Before the experiment, in the experimental group and the control group, students' physique and tennis skill level were similar. In the experimental group and the control group, forehand, backhand and the average number of service were tested. The experimental group's forehand, backhand and the average number of service are 16.36, 14.68, and 6.08, respectively, while the control group's forehand, backhand and the average number of service are 16.15, 14.93, and 6.48, respectively. It can be seen that in improving the students and serve on the backhand, the sequential teaching method is better than the competition teaching method. From the ability to control the ball, the experimental group is significantly higher than the control group. This also shows that the use of the competition teaching method can improve students' competitive level, and can make students more interested in tennis. Therefore, in the teaching practice, it is necessary to combine the competition teaching method and sequential teaching method. The research also needs further improvement. For example, the effects of these two teaching methods on college students' psychology and interpersonal communication need further studying.

REFERENCES

[1] Zhou J Q. An Empirical Study on the Competition Methods of Table Tennis Teaching[J]. Sport Science & Technology, 2020.

[2] Jiang R, Polytechnic C A. Application of Backhand Technique to Tennis Teaching[J]. Journal of Chengdu Aeronautic Polytechnic, 2020.

[3] Hong-Dan B I. Innovative methods of tennis teaching[J]. Heilongjiang Science, 2020.

[4] Liu Q Y, Yao D W. Self-efficacy theory in the applied research of the table tennis teaching in colleges and universities[J]. Journal of Science of Teachers College & University, 2020.

[5] Pan Zhong. Study on the application of competition teaching method in Basketball Teaching in Higher Vocational Education [J]. Neijiang science and technology, 2019, 37 (11): 120-121.

[6] Li Y, Jiang L, Zhang Y, et al. Development And Realization Of Organizational Management Software For Group Round-Robin And Dual Meet Competition Of Table Tennis[J]. Journal of Anhui Sports Science, 2019.

[7] Xiao Lei. The application and research of the competition teaching method in college basketball teaching [J]. contemporary sports science and technology, 2019, 6 (30): 46-46.

[8] Wang Jiaqi. Research on the application of game teaching method in the teaching of basketball elective course in Colleges and universities [J]. Journal of contemporary sports science and technology, 2019, 6 (7): 11-12.

[9] Xin-Lie X U. Applying Competition Method to Table Tennis Teaching[J]. Journal of Guilin University of Electronic Technology, 2019.

[10] Aziz Z, Hossain M A. A comparison of cooperative learning and conventional teaching on students' achievement in secondary mathematics[J]. Procedia - Social and Behavioral Sciences, 2020, 9(9):53-62.

Influence of Aerobics Exercise on Physical Fitness of Female College Students of Non-physical Education Major

Gaojie Zhang
Department of Physical Education, Zhoukou Normal University, Zhoukou 466001, China

Abstract: In order to understand the changes of physical fitness of non-sports major female college students before and after taking part in aerobics exercise, 100 non-sports major female college students in Zhoukou normal university were selected as experimental subjects, and they were trained for eight weeks three times a week. The data of balance test, vital capacity measurement and standing long jump before and after the experiment were compared and analyzed, and it was concluded that the results of physical health assessment of non-sports major female college students before and after taking part in aerobics exercise were significantly improved, and their cardiopulmonary function was significantly improved, which proved that aerobics exercise has a great influence on the physical fitness of non-sports major female college students.

Key words: Aerobics; Non-Sports Major Female College Students; Quality

1 RESEARCH PURPOSE

Nowadays, college students' physique is declining, especially female college students. Female college students are an important group, and their physical strength is directly related to the future of the motherland. Most of them have more theoretical courses, less physical activity and seldom physical exercise. Most girls don't like some competitive sports, such as basketball, football and so on, which girls usually have little contact with. Aerobics is an activity that is entertaining, highly ornamental, graceful, rhythmic and capable of expressing one's feelings. It is based on aerobic, characterized by health, strength and beauty, and is mainly based on basic gymnastics, with various styles and movements. Therefore, aerobics, as a fashionable and leisure sport, is one of the main courses favored by female college students in physical education at present. In recent years, aerobics has become more and more popular in China, especially for female friends, who are not only cheerful and energetic aerobics, but also elderly aerobics, such as the popular square dance aerobics, which is deeply loved by middle-aged and elderly people. Aerobics is a kind of sports that integrates gymnastics, fitness, music and dance. It is a new type of sports that achieves fitness by using bodybuilding equipment or exercising with bare hands. Following the beat of music, it can make people forget their worries, not only achieve the purpose of keeping fit, but also cultivate people's hearts, promote their interest in learning aerobics, and deepen their knowledge and understanding of aerobics in the learning process.

2 RESEARCH OBJECTS AND METHODS

2.1 research object

The research object of this paper is the research on the influence of aerobics on the quality of female college students, and the investigation object is the female students who have no aerobics training experience in non-sports majors in zhoukou normal university. 100 students who met the requirements were screened, and all the subjects volunteered to take part in moderate-intensity aerobics exercises three times a week with the help of teachers.

2.2 research methods

2.2.1 method of documentation

Through the China Knowledge Network and the library, the domestic literature related to the research is consulted and studied, which provides a certain theoretical basis for the topic selection and theoretical analysis of this research.

2.2.2 experimental method

With the help of teachers, 100 students who are screened out to meet the requirements will do moderate-intensity aerobics exercises for eight weeks three times a week, and record the measured values before and after aerobics exercises and analyze them.

2.2.3 measurement method

With the help of zhoukou normal university's equipment and tools, the female college students are measured and evaluated at different stages. It includes the measurement of standing on one foot with eye closure, vital capacity, standing long jump, grip strength, sitting forward flexion and 50-meter sprint.

2.2.4 mathematical statistics

Statistical software SPSS12.0 was used to statistically process the measured data, and three groups of data were recorded before, after and after the experiment.

3 RESULTS AND ANALYSIS

3.1 Influence on Balance Force

Table 1 Influence of Balance Force on Female College Students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Close your eyes and stand on one foot	20.32±4.34	21.794±.86	23.566±.59

If you want to analyze the influence of aerobics on balance force, you can react to balance force by closing your eyes and standing on one foot. When measuring, the subject closes his eyes, his hands droop naturally, and his body relaxes. Select the most powerful foot to stand on one foot, and start timing. If the subject is displaced, stop timing. This time period is the persistence time for the subject to close his eyes and stand on one foot.

Closing the eyes and standing on one foot is the main index to measure the balance of human body. Table 1 shows that after eight weeks of moderate-intensity aerobics exercise, the time for the subjects to stand on one foot after eye closure has been greatly improved on the original basis, indicating that the balance of female college students can be improved after aerobics training. After pairwise comparison, it is found that after four weeks of training, the time that the subjects can persist is obviously longer than that before training, and the effect after eight weeks of training is obviously higher than that after four weeks of training. After eight weeks of training, there is still a big difference between the time spent by the subjects and the time needed before training. It can be concluded that compared with before, during and after training, the effect of eight weeks training can improve the balance of the subjects. In order to better improve people's balance ability, we need to make unremitting efforts and exercise, and do some auxiliary exercises, such as Yan-style balance, leg-hooking upright, squat, etc., as long as we can pay attention to these methods subconsciously in our daily life.

3.2 Influence on Cardiopulmonary Function

To study the influence of aerobics on heart and lung function, we can measure vital capacity, step experiment and so on. In this test, we will choose the method of measuring vital capacity to reflect the influence on heart and lung function. 100 sterilized vital capacity blownozzles were selected. When measuring, the blownozzles were inserted into the measuring position of the vital capacity instrument, and the subjects took a deep breath and then blew as much as possible, so that the numerical range of vital capacity could be measured.

Table 2 Changes of vital capacity (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Vital capacity (mm)	2497.50±300.53	2518.56±317.26	2689.66±326.86

Vital capacity is the maximum ventilation capacity of one breath, which can reflect the potential ability of respiratory function in a certain sense. A person with large vital capacity generally has better cardiopulmonary function and healthier body, that is to say, the better the health, the greater the vital capacity. The vital capacity of an adult woman is generally about 2500-3000 ml. It can be clearly observed from Table 2 that the vital capacity indicator of female college students who participated in aerobics exercise for eight weeks has changed significantly. According to the survey data, with the increase of exercise time and number of exercises, the increase of vital capacity in the last four weeks is higher than that in the first four weeks. The results show that after eight weeks of aerobics exercise, the vital capacity of female college students is improved and the level of cardiopulmonary function is obviously increased, which indicates that regular aerobics exercise can have a good impact on the cardiopulmonary function of female college students.

3.3 Impact on explosive power

Aerobics can be divided into many types, including competitive aerobics, mass aerobics, performance aerobics and so on. In performing aerobics, it is necessary to show the audience the aesthetic feeling and the control of certain movements. To achieve this strength, it is necessary to have a certain explosive force, and the explosive force directly affects the aesthetic feeling of the whole set of aerobics. If the explosive force is weak, the whole aerobics dance gives people a soft feeling, which does not reflect the joy and music that aerobics should have.

Table 3 Changes of explosive force of female college students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Standing long jump(m)	1.58±0.12	1.63±0.15	1.66±0.18

Standing long jump is an index to reflect the strength and explosive power of lower limbs, which is mainly accomplished by waist and abdomen strength and the strength of legs to push the ground, which requires a certain degree of cooperation and coordination. This study shows that regular participation in aerobics can enhance muscle strength and improve the elasticity of tendons, ligaments and muscles, thus developing human strength and explosive power. Table 3 shows that after two months of aerobics exercise, the explosive power of the subjects has been improved. During the training period, the explosive power of the subjects is improved by practicing the basic steps of aerobics and quality training. Under the guidance of the teacher, after eight weeks of exercise, its explosive power has increased significantly.

3.4 Influence on Upper Limb Strength

In the process of aerobics exercise, sometimes some difficult movements are needed, such as lifting, right-angle support and so on. All difficult movements require a certain amount of arm strength. These require long-term and high-intensity exercise and professional training to present the difficult skill movements perfectly to the audience. This is also the need for us to persevere in aerobics exercise for a long time, from slow to fast, from easy to difficult, from simple to complicated, and during the training period, we also need to carry out physical training for the development of upper limb strength, in order to achieve the desired results.

Table 4 Changes of grip strength of female college students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
grip(kg)	26.10±2.58	26.13±2.67	26.14 ±2.54

Grip strength is mainly used to test the strength of people's upper limbs. Table 4 shows that after eight weeks of moderate-intensity aerobics exercise, there is no obvious change in the grip strength data of the three groups of data, which shows that the grip strength can not be improved obviously under short-time training. Without the help of external forces, aerobics has basically no effect on the strength of upper limb muscles, so it is possible to increase the practice of light equipment while practicing aerobics. Or do quality exercises after exercise, increase push-ups or squat exercises with hand-held cleaning equipment, so as to achieve the effect of upper limb strength exercise for female college students and develop the defect of insufficient upper limb strength.

3.5 Influence on Flexibility

Most sports require warm-up activities to make the body warm and improve the flexibility of the body. At the same time, it is also to prevent injuries and avoid causing injuries. The stronger the flexibility of the body, the more it can reflect the soft beauty of music and aerobics, and the more artistic charm.

Table 5 Changes of flexibility of female college students (N=100)

	Before the experiment	Four weeks later	Eight weeks later
Sit and reach(cm)	14.2±4.1	16.3±3.8	17.2±3.9

The flexibility of students is tested by testing the flexion of sitting body. The better a person's ligament is, the better his flexibility is, and the greater the range of movement of each joint is. In order to improve flexibility, we must first pull the ligaments. In aerobics, warm-up activities are very important. When the subjects get hot or sweat slightly during exercise, they should stretch each joint and lengthen the ligaments, which will play a positive role in coordinating the body, improving skills and preventing sports trauma. From the data in Table 5, it can be observed that the flexibility of the training effect after four weeks has made rapid progress, indicating that the female college students who did not exercise flexibility before exercise, as long as they exercise a little, there is still much room for improvement; However, after training for four weeks, aerobics exercises can still make progress, but the space for progress is obviously lower than that of the previous four weeks. From these data, it can be shown that during aerobics exercise, the ligament effect in the early stage will be obvious, but on the basis of training, there is progress but lower than that in the early stage, which requires us to pay time and effort before we can make some difficult movements such as horizontal split, vertical split and split leg jump. Therefore, we should often take part in physical exercise and practice aerobics, which can not only keep the flexibility of the body, improve the coordination ability of the body, but also ensure the health of the body and cultivate the temperament of female college students from the inside out.

4. CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

1) Aerobics can not only make our life colorful, but also promote the healthy growth of the body.

2) Aerobics has a wide range of applications, both young people and middle-aged and elderly people are loved by everyone, which lays a good foundation for promoting comprehensive fitness.

3) The all-round development of female college students is the yardstick of human liberation and progress, and female college students' participation in physical exercise is the basic content of promoting the all-round development of female college students. This paper makes a comprehensive analysis of female college students' participation in aerobics to improve their physical quality, and finds that the coordination ability and flexibility of contemporary female college students' body have increased after participating in aerobics exercise.

4) Exercise can improve their heart and lung function. Aerobics can obviously improve the explosive force, flexibility and balance of female college students, while the strength and speed of upper limbs have not improved significantly, indicating that aerobics elective courses still have shortcomings in the all-round development of the body.

5) Through the comparison and analysis of data, it can be clearly pointed out that aerobics exercise has a great impact on female college students' health, and aerobics exercise can also bring students a good mentality and relieve their worries, so as to better achieve the effect of entertainment.

4.2 Suggestions

1) The survey has clearly shown that aerobics is a very suitable sport for female college students, but due to the limitations of study and lack of suitable sports venues, most female college students cannot stick to it well. Schools should offer more aerobics courses, participate in aerobics associations or aerobics clubs and interest groups according to their own conditions, and hold various competitions to improve female college students' interest in learning.

2) Increase the input of sports funds, actively build some small venues, and set up aerobics halls and shape rooms in the gymnasium; Speaker, multiple mirrors; Provide a convenient and multifunctional exercise room for female college students.

3) It is suggested that in the teaching of aerobics, the physical grip strength of college students can be increased appropriately. For example, dumb bell exercises, push-ups, pull-ups, etc.

4) To strengthen the aesthetic education of female college students, aerobics exercise can not only achieve the effect of losing weight and shaping, but also exercise to ensure their health, which plays a great role in improving their physical quality. In addition, by exercising aerobics aerobic dance, it can also cultivate the temperament of female college students from the inside out, making students more confident.

5) To improve students' speed of 50-meter dash properly, we can make a certain plan and strengthen the training intensity through periodic and regular practice, which requires a certain degree of perseverance and hardship to persist and achieve the desired effect.

6) More small-scale aerobics competitions with rich contents should be carried out to promote the development of aerobics, so that more students can join in physical exercise and step into the ranks of fitness.

REFERENCES

[1] he Rui. the development trend of college physical education under the scientific concept of development [J]. journal of Harbin institute of physical education, 2009(1):48-51.

[2] Sun Jinlong. Unique effect of aerobics in improving mental health of female college students [J]. Journal of Harbin University, 2006, (2): 83-84.

[3] Luo yueping. experimental study on the influence of preparation activities on the physical health test results of college students [d]. master thesis of Beijing sport university, January 15, 2008.
[4] Qiu Peng. Cultural analysis of artistic expression of sports dance [J]. Shaanxi Education, 2013(7):141-144.
[5] Guo Yan. Experimental Research on the Influence of Mass Aerobics on the Physical Quality of College Girls [J]. Bilingual Learning, 2007.03.20.
[6] Wang Guang. Examining the content setting of college physical education curriculum from the perspective of sports culture [J]. Journal of China Institute of Labor Relations, 2013(2):122-125.
[7] Ge Hui. On the necessity of developing bodybuilding in colleges and universities in China [J]. Friends of Science (B Edition), 2008.10.10.
[8] Guo Yan. A real face study on the influence of mass health exercises on the physical quality of college girls [J]. Discipline Education, 2007.3.
[9] Chen Chen. Artistic value and aesthetic function of aerobics [J]. Art Education, 2012 (10): 215-216.

The Reform and Innovation of the Teaching Model in Physical Education in University Under the guidance of Reversing Class

Junjie Sun
Pingdingshan University, Pingdingshan, Henan 467000, China

Abstract: As the continuous development of Internet technology, the era of "Internet+" has come, which has brought many opportunities for the development of sports, and at the same time has brought some challenges to the reform and innovation of the sports teaching model in universities. Turning over the classroom teaching mode is a new teaching model under the" Internet+" era. This paper analyzes the reform and innovation of the university PE teaching mode and points out the advantages and strategies of the university PE teaching mode.
Keywords: Flip the Classroom; College Sports; Reform and Innovation

1. INTRODUCTION

For a university education, training high-quality people is the most important task. With the continuous development of the social economy, the demand for talented people is growing more and more, and the university as an important base for training talented people is becoming more and more responsible. In the course of college education, physical education is one of the important links, and it also plays an important role in training high-quality personnel [1]. At present, with the rise of overturning classrooms, the model of university physical education needs to be reformed.

With the further deepening of reform and opening up, the trend of national fitness entered the public field of vision, followed by the end of the physical education, quality education, health first and other concepts continue to highlight, promoting the progress and development of college physical education, but in the process of college physical education reform, students' physical health is still in crisis, and the function and function of sports are out of place and out of balance. So, more and more education researchers began to ask what are the main factors affecting the reform of college physical education. Therefore, we should focus on examining the main areas and evolution process of college physical education reform, and reflect on college physical education reform.

As the intermediate carrier connecting the guiding ideology of physical education and the setting of physical education curriculum, the physical education mode is not only the concrete and practical of the physical education system and teaching process, but also the comprehensive embodiment of the form and method of physical education teaching, or the middle factor affecting the reform of Physical Education in Colleges and universities. In the early period of our country, the traditional PE teaching mode centered on teachers was formed because of the following the education theory of the former Soviet Union. However, though it tried to take the guidance of physical education as the guide.

The change of thinking leads to the change of physical education teaching mode, but this teaching mode is still reserved and used by many teachers because of its good discipline and organization. Until the national school health sports work conference was held in 1979, many scholars began to criticize the deliberate standardization and unification of traditional teaching mode, and actively thought and tried to face the new model of physical education in Colleges and universities in the 21st century. Some scholars have put forward three types of physical education mode: regular, comprehensive and open from the perspective of students' sports attitude and sports behavior. However, such teaching mode is questioned because it pursues the interest cultivation of students excessively and neglects the pursuit of educational value. So Xu Yantian and others put forward the integrated teaching mode of teaching inside and outside the class which combines the educational thought, teaching content, teaching method and teaching method by combining experimental course, mathematical analysis and literature. Some people think that this mode can not combine the social and economic background and health needs, and put forward that we should build the interest oriented teaching mode for students from the essence and connotation of higher education, combined with the needs of lifelong sports and the national fitness. The construction of these teaching modes shows the prosperity of the reform of physical education in Colleges and universities. So far, the discussion on the teaching mode of physical education in Colleges and universities is still discussed In progress. In 2016, Wang Jian and others gathered four experiences of physical education teaching mode in China through in-depth research. It can be seen that the reform of PE teaching mode is constantly improved and developed in accordance with the requirements of various times. The physical education teaching mode in Colleges and universities in China can be the characteristic and creative achievement of each university combined with its own actual situation, or the continuation of history, and can form an integrated teaching system with the combination of primary and secondary schools. In general, the existing university physical education teaching mode is characterized by various characteristics, the teaching means are concentrated and the teaching content is diversified, which forms a diversified pattern of one school, one school and one characteristic. Therefore, researchers are more aware that the development of sports curriculum and teaching content is the most basic unit to promote the reform of college physical education.

2. ADVANTAGES OF INNOVATING THE REFORM OF THE UNIVERSITY'S PHYSICAL EDUCATION TEACHING MODEL UNDER THE GUIDANCE OF THE CLASSROOM

2. 1 More flexible teaching methods

Flip class means that the students learn the basic knowledge through video instruction, and then the teacher gives the class a specific explanation. Teachers no longer play a dominant role in class; students really achieve their main role. In university PE teaching mode, students will no longer listen to the teacher's instructions in class. Through modern information technology, students will learn sports theory and related sports skills. Their enthusiasm for PE learning will also increase. In this way, the teaching methods will be more effective.

2.2 Promoting Effective Communication Between Teachers and Teachers

In the course of university PE teaching, students can learn through video teaching resources first, and the teacher will explain the difficult knowledge in detail. By doing so, teachers will have a much greater chance of communicating with students in class, and they will have a much more intuitive understanding of their physical education. In addition to communicating in class, teachers and students can communicate with each other through Internet technology. Make up for the limitations of classroom communication time and improve the effectiveness of communication.

2.3 Improving the System of Evaluation of Physical Education Teaching

By using classroom flip-flops for physical education, teachers can focus more on the students' learning process than on their physical test scores. In the process, the teacher can get a intuitive understanding of the student's learning situation, and help the student to solve the difficult problem in the course of study. In this way, teachers can evaluate students more directly and comprehensively. In addition, turning over the classroom depends on Internet technology, which students learn during their studies. Data records will be kept, and teachers will be able to pass these data on as a review.an important basis for the price of a student, To improve the evaluation system of physical education teaching. [2]

3. INNOVATIVE STRATEGIES FOR THE REFORM OF THE SPORTS TEACHING MODEL IN UNIVERSITIES GUIDED BY THE CLASSROOM

3.1 Sufficient Preparation for Classroom

In the course of teaching and sports, if teachers use the teaching mode of turning over the classroom, the first thing to do is to set the goal of good teaching. Before class begins, teachers need to be well prepared to deal with students' problems in class. "Teachers need to map out the contents and plans of their classes so that they can proceed more smoothly in class. After that, they need to make videos of their teaching content for students to do self-study. "It can also be downloaded from the Internet, but make sure the video is clear. The content of the video should not be too difficult. It has to be within the reach of the students. In this way, students will not give up their studies because they are too difficult to learn, and under the guidance of their teachers, they will find difficulties in learning and then ask their teachers for advice in class

3.2 Building Effective Classroom Teaching

In the course of class teaching, the teacher has some difficulty in the knowledge, which is the key content of turning over the teaching pattern. In the course of self-study, the students already have a certain grasp of the knowledge, the teacher can comb and explain the difficult knowledge in class, can deepen the student's understanding of knowledge, at the same time, the student can ask the teacher any problems which do not understand, the teacher can solve these problems, help the students to better understand and build up the knowledge. effective classroom teaching. In this way, students will be able to master more sports. the ability to recognize and exercise, thus forming a more advanced level of knowledge. Good habits of physical exercise.

3.3 Appraisal of Teaching

In the course of university physical education teaching, the traditional evaluation method based on achievement can be turned into a more scientific evaluation mode. First, the teacher can put the students' learning status and performance in the course of physical exercise into the evaluation, and then make a comprehensive evaluation of the students' performance. In addition, teachers can let students participate in the evaluation process, so that students can evaluate teachers and understand themselves more easily.In the course of teaching, there are gaps in the teaching process, which can be further improved for students to add.In the evaluation process, you can also give in. Evaluation is more scientific [3].Through the common evaluation of teachers and students, teachers and students can constantly improve themselves in the process, thus improving the quality of PE teaching and promoting the development of PE teaching in universities.

4.CONCLUSION

In the course content, colleges and universities should strengthen the communication with primary and secondary schools in physical education, from materials to teaching materials, from teaching items to the selection of teaching content, they try to keep continuity as much as possible. However, it is not practical for colleges and universities to face national enrollment and frequent communication with primary and secondary schools nationwide, and at most, they are related schools in the local area. Therefore, colleges and universities should pay attention to the individual needs of students with their own advantages. Although the items can not be exhausted, PE teachers can expand their knowledge and skills as much as possible, maximize the selection of students, especially the sports events with high popularity, and open enough related sports courses. Secondly, we should pay attention to the development of traditional sports with national and folk characteristics, such as bamboo pole dance, high foot shoes and other contents, which can not only broaden the students' cognitive vision, but also guide students to transition between traditional sports and modern sports. The school-based curriculum development can also be carried out according to the common characteristics of students in various majors and the future vocational orientation. For example, for geology or civil engineering majors, the courses of Orienteering off-road and quality expansion can be offered, which can improve the judgment of the students on geographical terrain and direction, and also help to expand the basic survival skills in the field. In terms of sports load, we should pay attention to the individual differences of students, treat them differently, adhere to the principle of "one can not be less", so that students in different situations can get progress on their original physiological basis, rather than make the children with physical quality more "strong". It is true that the teaching time of physical education course in Colleges and universities is twice that of high school, and it can not be simply superimposed in calculating sports load. However, the teaching grade of physical education course in Colleges and universities is generally grade one and grade two. They have further development and improvement compared with senior high school students in all aspects. They can be used as reference in the range of sports heart rate and sports density, and they can be used as reference and appropriate for all aspects of course. Of course, it can be applied to all aspects The accuracy of the requirements, but also need a deeper level of evidence-based research.

The reform and innovation of the classroom in the mode of PE teaching in university can make the mode of PE teaching more flexible, also strengthen the communication and communication between teachers and students, and perfect the evaluation system of PE teaching. Turning over the classroom teaching mode is to make use of modern information technology to realize the combination of PE classroom teaching and outside class study, so that the efficiency of PE teaching can be further improved.

REFERENCES

[1] Tai Panpan. Turning sports in colleges and universities. We are looking forward to classroom teaching model the application of research education theory and practice, 38 (15) :63-64, Katrina.
[2] Wu Min. The United States Lee based on turning colleges and universities of the classroom building. sports mode of teaching reform of Confucianism and Taoism studies bulletin of sports science and technology literature. [J], 26, 26 (03): 16+142+152+162.
[3] Liang Qiang, Zhu Xiaomei. Britain and the body of the family of turning the study of classroom teaching model [J]. Fujian sports science and technology, 35, 35(03):46-47+58.

Study on The Causes and Countermeasures of The Marginalization of Gymnastics Curriculum

Kai Li
Pingdingshan University, Pingdingshan, Henan, 467000, China

Abstract: Gymnastics curriculum is one of the important contents of all kinds of school physical education, but in recent years, gymnastics curriculum is marginalized in both primary and secondary schools and colleges. This paper USES the method of literature and interviews to analyze the development status of gymnastics curriculum, the reason of gymnastics marginalization, and puts forward the corresponding countermeasures. According to the research, the difficulty of the movement is great, so the students seek the advantages and avoid the disadvantages. Lack of innovation; Relatively few related activities; The main reason for the marginalization of gymnastics curriculum is the lack of knowledge popularization. Suggestions: to improve the quality of gymnastics teacher training, improve the structure of the teaching staff, increase the innovation of the school gymnastics teaching content, improve the level of gymnastics required movements, enrich related gymnastics activities, strengthen the value of gymnastics curriculum publicity, improve the teaching quality of gymnastics curriculum.
Keywords: School Gymnastics; Gymnastics Lessons; Marginalization

1. INTRODUCTION

Gymnastics is one of the seven campus sports projects determined by the Ministry of Education. It refers to sports that can fully tap people's potential, fully express human control ability, and have certain artistic requirements by completing individual movements, combined movements or sets of movements of different types and difficulties through bare hands, holding light equipment or on the equipment. project. Gymnastics courses occupies an important place in the development of sports. Before 1982, the "National Physical Exercise Standards" listed gymnastics as a required test for students. With the promotion and implementation of "exercise standards", the proportion of gymnastics courses in school physical education has gradually increased, while the structure of gymnastics has become too simplistic. Gymnastics teaching has gradually become technical gymnastics teaching, thereby making the concept of gymnastics more competitive. The connotation has increased, but the extension has become smaller and smaller, resulting in a narrower scope and content of gymnastics courses. In 1982, the re-promulgation of the "National Physical Training Standards" cancelled gymnastics-related content, gradually shaking the status of gymnastics in school sports, and the phenomenon of marginalization of gymnastics courses intensified.

2. THE STATUS QUO OF MARGINALIZATION OF GYMNASTICS COURSES

2. 1 School teachers and students are not very active in gymnastics courses

Gymnastics-related content is rarely arranged in physical education classes in elementary and middle schools, especially competitive gymnastics. Relevant studies have investigated whether middle school teachers participate in the teaching of competitive gymnastics. The results show that more than 80% of teachers have never or rarely taught competitive gymnastics. According to actual interviews and surveys by some scholars, since the end of the 20th century, the status of school gymnastics in school sports in China has been on a downward trend. Primary and middle school students can learn skills, parallel bars, horizontal bars, support jumps and other movements at first. Up to now, apart from performing queue formations and broadcast gymnastics, he has hardly touched parallel bars, horizontal bars, support jumps and other items. Even in extracurricular activities, he has no idea of touching gymnastic equipment. School leaders and physical education teachers don’t pay enough attention to gymnastics courses, and they even have a mentality of "as long as there are no accidents". This phenomenon is more obvious in rural schools. Therefore, gymnastics courses show the phenomenon that schools do not approve of development, teachers are unwilling to teach, and students are unwilling to choose. The value of gymnastics is also easily overlooked. Various factors have caused school gymnastics to be gradually marginalized. Phenomenon outside of school sports.

2. 2 Gymnastics facilities need to be improved urgently

The "Standards for the Allocation of Sports Equipment and Facilities for Primary and Secondary Schools" issued by the Ministry of Education clearly stipulates the minimum standards for school gymnastics equipment and equipment. However, many schools and even key schools in developed areas have difficulty in equipping venues, equipment and facilities in accordance with standards. Some schools use gymnastics equipment as furnishings and have not actually put them into use. Schools in some underdeveloped areas are even less optimistic. Such sports facilities simply cannot guarantee the smooth development of gymnastics courses. Studies have shown that nearly half of teachers believe that with the increase in the number of students, venues and facilities cannot meet the needs of gymnastics teaching.

2. 3 School gymnastics teachers are poor

The strength of gymnastics teachers is the foundation and key of gymnastics teaching. At present, the lack of gymnastics teachers and the lack of in-depth understanding of gymnastics by other physical education teachers have greatly affected the development of gymnastics courses. Coupled with the lack of gymnastics courses for a long time, the gymnastic teacher's technique of gymnastics will gradually fade and the teaching ability will also decrease. Gymnastics events require close protection and assistance. When conducting gymnastics courses, teachers have insufficient teachers, and the number of students is too large, which makes it difficult to complete the course tasks and increases the risk factor.

3. ANALYSIS ON THE CAUSES OF MARGINALIZATION OF GYMNASTICS COURSES

3. 1 The movement is difficult, students seek advantages and avoid disadvantages

The departmental orientation of the education policy has led to a high degree of difficulty in gymnastics, coupled with the characteristics of high safety requirements for gymnastics, which makes people more inclined to choose easy-to-master and simple sports, which are difficult, high-quality requirements and high-security requirements. There is fear in gymnastics. The rapid development of various modern leisure sports has replaced the central position of gymnastics courses, and the rapid development of emerging sports, such as aerobics, street dance, cheerleading, line dance, sports dance, yoga, taekwondo, juli ball, etc. Rapidly develop and surpass gymnastics courses. The demand for gymnastics is accounted for by some expansion and fast-food sports.

3. 2 Lack of innovation

Over the years, the lack of development of sports equipment and content forms in gymnastics courses has interrupted its connection with national fitness. Gymnastics exercise forms, teaching materials and equipment used have been based on competitive gymnastics for many years, requiring athletes to have good physical fitness. While the number of class hours has dropped significantly, students with weak foundations should innovate and design suitable learning content, simple forms, low safety factors and interesting equipment.

3. 3 Less related activities

School gymnastics related activities and competitions are less. The Gymnastics Association of Guangzhou Institute of Physical Education was established in 2009. In 2010, 95 of the 100 students participating in the campus gymnastics competition organized by Guangzhou Institute of Physical Education passed the national second and third levels of gymnastics. Guangzhou Institute of Physical Education, Chengdu Institute of Physical Education, Shanghai Institute of Physical Education, Wuhan Institute of Physical Education, Beijing Sport University and other colleges and universities hold gymnastics competitions and award grade certificates to students with outstanding performances every year, which greatly stimulates the enthusiasm of students to participate in gymnastics. At present, the influence of elementary and middle schools and the society involved in gymnastics-related activities and competitions is still low. Less gymnastics-related activities and competitions will not arouse students' enthusiasm for gymnastics, and will reduce students' enthusiasm for gymnastics. As a result, fewer and fewer students will learn gymnastics. If there are fewer students, the more difficult it is to carry out activities. This vicious circle can make the gymnastics course on the right track.

4. Countermeasures for the Optimum Development of Gymnastics Course

4. 1 Improve the quality of gymnastics teacher training and improve the structure of the teaching staff

Strengthening teachers' gymnastics teaching ability is the key to promoting the development of school gymnastics. First of all, college physical education departments should establish a scientific, reasonable and efficient gymnastics system to encourage students to internalize gymnastics teaching knowledge and skills, overcome the decline in gymnastic skills caused by physical fitness and age, and strengthen gymnastics teaching capabilities for future gymnastics teaching Lay a good foundation. Teachers in elementary and middle schools should carefully study the teaching content, teaching methods, teaching methods, and teaching tasks of gymnastics courses in accordance with the particularity of the growth and development of young people, so as to promote the scientific development of gymnastics courses in elementary and middle schools. Through holding regular skill competitions, lectures, teaching and research activities and other forms to promote gymnastic teachers' gymnastic teaching and skill level. Establish an evaluation and incentive mechanism to mobilize the enthusiasm of gymnastic teachers, introduce high-level talents to improve the structure of gymnastic teachers' faculty, and carry out gymnastics education lectures to provide gymnastic teachers with a good learning environment.

4. 2 Increase the innovation of school gymnastics teaching content

In order to promote the enthusiasm of primary and middle school students for gymnastics, the difficulty of gymnastics should be appropriately adjusted according to the physical development characteristics of students in different periods, and the teaching purpose and characteristics of gymnastics should be firmly established. Various methods and methods should be used to continuously explore, innovate, and develop. Enrich gymnastics teaching content to extend the exercises of different difficulty, and enhance the universality of gymnastics teaching. Fully excavate students' pursuit of gymnastics art and beauty. When designing gymnastics teaching content, highlight the aesthetic characteristics of gymnastics items, and then stimulate students' interest in gymnastics courses. In the required movements of floor exercises in competitive gymnastics, add dance and music elements that students love to see and can do to enhance their autonomy in gymnastics learning and their ability to make movements.

4.3 Improve gymnastics level prescribed movements and enrich gymnastics related activities

American schools divide gymnastics into 8 levels of difficulty, which inspires students' enterprising spirit and fully enhances students' desire to learn. In 2006, by revising the required movements of gymnastics second and third level athletes and the corresponding rules of the competition, the students' enthusiasm for the study and training of gymnastics was improved, and the long-term development of gymnastics courses was promoted. Therefore, timely revision and improvement of gymnastics regulations, and regular school gymnastics competitions, comprehensively improve the overall level of school gymnastics, and promote the benign interaction between mass gymnastics, school gymnastics and competitive gymnastics. situation. In addition to holding regular gymnastics competitions, floor exercises in the form of music, dance, and plots will be added, or performances will be performed in the form of large-scale events or campus evenings using light equipment to stimulate students' understanding and yearning for gymnastics.

4.4 Strengthen the value propaganda of gymnastics courses and improve the teaching quality of gymnastics courses

Gymnastics teaching should get rid of the framework of competitive gymnastics, strengthen the propaganda of mass gymnastics and school gymnastics, and establish a teaching concept that combines professional knowledge education with comprehensive quality training, and pays equal attention to technology and theory. Gymnastics teaching has a higher teaching value concept. If students want to stimulate their interest in gymnastics and make students actively accept gymnastics courses, they should find the right focus and stimulate students' interest in gymnastics. Stimulating students' interest and enthusiasm in gymnastics learning should not only optimize gymnastics teaching methods, teaching content, etc. , but also enable students to have a deep understanding of gymnastics and deeply understand the value of gymnastics items and their movements. In view of this, in gymnastics teaching, teachers should strengthen the value analysis and teaching of gymnastics, and then improve students' awareness of gymnastics. In primary and secondary schools, according to the characteristics of the physical and mental development of students, a gymnastic content system with physical literacy and suitable for all levels is constructed.

5. CONCLUSION

Regarding the gradual disappearance of gymnastics courses in elementary and middle schools, the streamlining of gymnastics courses in colleges and universities, and the reduction of gymnastics courses, we should start to improve the dilemma of gymnastics courses from many aspects. Enhancing the strength of teachers, providing students with good teacher guarantee, and imparting high-quality gymnastics skills. In addition to imparting skills to physical education students, it is also essential to teach gymnastics teaching methods; strengthen the publicity of school gymnastics and enhance the value of gymnastics for teachers and students Awareness; enrich gymnastics-related activities and increase gymnastics competitions; increase the innovation of gymnastics curriculum content to enrich and diversify the rigid gymnastics curriculum. Break the vicious circle of marginalization of gymnastics courses.

REFERENCES

[1] Nie Yingjun, Lu Wangang, Wei Xubo, Zheng Xiangping, Wang Yuntao, Luo Yuanxiang, Liu Liang, Chen Yongqing, Hu Lei, Li Guiqing. Innovation and practice of "Gymnastics" curriculum construction[J]. Journal of Wuhan Institute of Physical Education, 2018, 52(03):96-100.

[2] Tong Zhaogang. Gymnastics[M]. Beijing: Higher Education Press, 2020, 7.

[3] Feng Guomin. Explore the Marginalization of Youth Leisure Sports: Dilemma and Outlet[J]. Journal of Guangzhou Sport University, 2020, 33(04):75-79.

[4] Yin Chao, Ma Li. Study on the Marginalization of Gymnastics Courses in Institute of Physical Education and Countermeasures--Taking Guangzhou Institute of Physical Education as an Example[J]. Journal of Guangzhou Institute of Physical Education, 2020, 34(06):113-116.

[5] Liu Jing. Challenges and countermeasures for gymnastics courses of physical education majors in colleges and universities[J]. Journal of Beijing Sport University, 2020(02):245-247.

[6] Liu Liang, Lu Wangang, Wei Xubo, Luo Yuanxiang, Zhai Tingli. From quality to sharing: practical exploration and enlightenment of the transformation and upgrading of "Gymnastics" curriculum[J]. Journal of Wuhan Institute of Physical Education, 2020, 50(09):56-62.

Discussion on College English Writing Teaching Model Based on Blended Teaching Philosophy

Qiu Yu
School of Foreign Studies, Lingnan Normal University, Zhanjiang 524048, China

Abstract: In order to accelerate the reform and innovation of teaching contents and methods of specialized courses, online course teaching based on online education such as MOOC, Microlecture, Flipped Classroom and SPOC began to effectively integrate with traditional classroom theoretical knowledge teaching and teaching mode with the rapid development of Internet information technology, big data and cloud service technology. Starting from the teaching of college English writing course, we analyzed the educational status of original English writing and reading theory and practical cases in this article. On the other hand, we discussed the problems faced by students in practical training of vocabulary, grammar and sentence patterns of English writing. Based on this, a program of blended online and offline writing teaching was proposed.
Keywords: Blended Teaching Philosophy; College English; Writing Teaching; Design

1. OVERVIEW AND MAJOR CHARACTERISTICS OF BLENDED TEACHING PHILOSOPHY

According to the objectives of training comprehensive quality talents, online education methods such as MOOC, Microlecture, and Flipped Classroom should be introduced into the teaching of college English writing course. At the same time, heuristic teaching situations that meet the needs of students should be created, and online courses such as extracurricular teaching contents, online writing tests, interactive communications and question inquiry should be added. In this way, students' autonomous learning awareness, writing and translation practice capabilities will be gradually improved.

1. Main Contents of Blend Teaching Philosophy

As a concept put forward by Jared M. Carman, an American educator, the blended teaching model that combines online and offline courses refers to a kind of blended professional curriculum teaching, including a combination of theories, resources, situations and methods of teaching. Guided by such documents as *Reform Outline of China's Medium and Long-term Education Development (2010~2020)* and *Ten-Year Development Plan for Education Informatization*, Chinese colleges and universities have also begun to introduce online course teaching models at present. During the period of the "Thirteenth Five-Year Plan", most colleges and universities offered MOOC courses. By 2018, however, hundreds of colleges and universities joined the construction of online professional courses such as "Valuable Courses". With the help of MOOC, Microlecture, Flipped Classroom, SPOC, online small-scale courses and other network means, for example, multimedia software, PPT courseware, extracurricular teaching cases and other factors were used to create teaching courseware that combined texts, images, video and audio, centering on students' learning status and individual needs. At the same time, "online + offline" professional classroom teaching activities were carried out for students, which not only could make up for the shortcomings of traditional "theoretical teaching", but also tested students' learning conditions and effects in blended classrooms. In this way, the task objective of professional course teaching can be achieved.

2. Characteristics Of Blended Teaching

The introduction of the blended teaching concept into classroom education activities is not only a reform and innovation to the transmission education model of traditional theoretical knowledge but also a supplement and improvement to offline classroom teaching. (1) The duration of blended teaching is not that much long with outstanding difficulties. Blended teaching, which is a combination of online and offline courses, usually takes about 10-20 minutes of online course teaching for different students' learning conditions, as well as the key and difficult knowledge of each unit or lesson. The purpose of this is to guide students to participate in the preview before class, the study of key and difficult theories in the classroom, as well as the exploration and practice of application cases of professional courses.

(2) Blended teaching is featured with quantified resources and diversified teaching methods. On the one hand, blended teaching will integrate and explain the content of existing course materials. On the other hand, it will also collect, screen out, classify and sort out quantified online teaching resources outside the classroom. A typical case is that teaching equipment such as multimedia software and PPT courseware are used to sort out and teach text, images, video and audio materials. In terms of the organization of teaching methods of network display classroom, however, the implementation links such as interactive teaching situations, important and difficult explanation of contents, online tests, interactive communication, teaching feedback and evaluation are usually included.

(3) The evaluation on blended teaching is objective and fair. Usually, offline classroom teaching and online interactive course teaching are completed, after which teachers will conduct a comprehensive evaluation of the theoretical knowledge and practical skills of the students for each unit or class of the course contents. In addition to

checking students' test scores in this process, teachers will also rely on online channels (such as MOOC and WeChat) to set up questions, with a view to making objective evaluations in respect of students' classroom questions and online tests.

II. RESEARCH AND ANALYSIS ON CONTENTS AND TEACHING MODE OF COLLEGE WRITING TEACHING-BASED ON LINGNAN NORMAL UNIVERSITY

1. Research Objects

Freshmen to junior students of Lingnan Normal University were selected as the respondents in this article, during which we selected 50 students of them whose scores of English writing courses are different. Therefore, they had extensive reference significance and can be used for investigation and analysis of writing teaching in terms of *Contemporary College English---Intensive Reading* and *A Basic Course in Writing*. Questionnaire survey, interview and other questionnaire survey methods were used as survey research methods. We distributed a total of 150 questionnaires. In the end, totally 148 questionnaires were taken back with the recovery rate of 98.67%.

2. Research Methods

With adoption of a quantitative research plan for different students' stratified teaching, we conducted quantitative statistics on attitude, needs, interest and ability of writing for College English. We used SPSS22.0 software to compare and analyze the effects of English writing courses of different grades. Pursuant to the questionnaire survey and interview methods above, tests on the contents of writing teaching, teaching methods, execution process and evaluation were conducted. In the end, we got the students' professional theoretical knowledge and learning status of practical expression skills during a semester.

3. Selection of Course Contents

In such textbooks as *Contemporary College English---Intensive Reading* and *A Basic Course in Writing* and other textbooks, different types of composition writing cases are involved, including "the most memorable thing...", "part-time job for college students", "kindness of strangers", "the most precious gift", "economic development and environmental protection". Generally, teachers choose and set up classroom teaching contents according to the reading texts of College English textbooks and different writing topics. For instance, with regard to the teaching of College English writing "travel", teachers only clarify the time, location and history of travel to students, covering words such as "last year" and "visited ××". But they rarely added contents about different cultures and perceptions of travel. The specific findings of questionnaire are shown in Table 1.

Table 1. Questionnaire Survey on Writing Teaching Contents of College English

Survey on the selection of writing teaching contents of College English	Findings		
The completeness of article structure in the theme-based teaching of English writing	Complete (76)	General (35)	Incomplete (39)
Vocabulary, grammar, and sentence patterns in and out of class of theme-based teaching of English writing	Complete (81)	General (49)	Incomplete (20)
Ideas, viewpoints and emotional expression content of theme-based teaching of English writing	Complete (52)	General (66)	Incomplete (32)

It can be seen from the findings of the questionnaire that College English writing course selection of teaching content in Lingnan Normal University, most teachers still focus on the teaching of textbooks of College English, adopting reading articles for each unit to explain to students. Regarding the arrangement of writing extracurricular vocabulary, grammar, sentence structure, etc. of College English, however, totally 81 students said that the entire teaching elements were complete. But opinions from 49 students showed it was normal, and a total of 20 students said it was incomplete. At last, for the teaching of ideas, emotional expressions, etc. in writing courses of College English, totally 98 students said that the teaching of writing topics lacked ideological connotation and emotional feeling, which made the knowledge system of the entire article insufficient.

4. Situation, Methods and Evaluation of Teaching

Generally, theoretical knowledge of offline classroom is taught to students, and the education of general English writing and applied writing content of each unit is conducted in the teaching of writing courses of College English. In Ningnan Normal University, the deployment of course teaching context and teaching methods still needs to be improved, although it has introduced a small number of online education methods such as MOOC, Microlecture, and Flipped Classroom. According to the questionnaires on *Contemporary College English---Intensive Reading* and *A Basic Course in Writing*, we set up the following questions. 1. Will the teacher assign classroom writing tasks in advance? 2. What is the proportion of blended online course teaching? 3. Does the teacher carry out online explanations on text reading and online composition tests? 4. Will the teacher interact with students on difficult vocabulary, grammar and sentence patterns in composition? 5. Does the teacher recommend essays and make objective teaching evaluations? The specific findings of the questionnaire are shown in Table 2.

Table 2. Survey on Situation and Methods of Writing Teaching of College English

Survey on situation and methods of writing teaching of college English	Findings		
Assignment of writing tasks in English writing class	Perfect(82)	Yes (30)	No (38)
Proportion of online blended teaching	≥70%(56)	50%(74)	< 30%(20)
Explanation of important and difficult points of online reading texts, and the status of online composition tests	Perfect (58)	General (70)	Imperfect (22)
Interactive communication of difficult problems, for example, vocabulary, grammar, sentence structure, etc. of English composition	Perfect (44)	General (75)	Imperfect (31)
Recommendation of English writing model essays and evaluation of objective teaching	Perfect (37)	Yes (89)	No (24)

Judging from writing semantic communication and translation expression training of College English, teaching context and teaching method settings of College English Writing are relatively small in proportion (about 50%) in online video teaching. In addition, the theoretical explanation of important and difficult points of text reading and online tests are not perfect. In terms of vocabulary, grammar, sentence pattern, etc. of the composition course of College English, a total of 106 students thought that these explanations were not perfect, including the problem of a lot of difficult vocabularies and lack of interaction between teachers and students.

In the end, they usually make a teaching evaluation for each unit or semester based on the students' English composition test scores, recommendations for College English writing model essays, and teaching evaluation. In fact, they did not evaluate students' online writing practices, applied writing practices, translation and writing abilities, etc. Therefore, the overall evaluation results are not that objective and fair.

III. MAIN DIFFICULTIES FACED BY THE REFORM AND INNOVATION OF COLLEGE ENGLISH WRITING TEACHING

1. Small Proportion of Writing Teaching to College English Course

In the teaching of *Contemporary College English---Intensive Reading* and *College English Extensive Reading*, different colleges and universities at present usually teach English listening, oral expression and reading as the top priority of professional English teaching. On the contrary, only less class hours are left for writing course of College English. There are two main reasons for this problem. The first is that both teachers and students neglect English writing in the cultivation of theoretical knowledge and practical expression skills od College English. The second is due to individual differences in learning conditions and writing skills of different students. Some students can only complete the learning of basic vocabulary, grammar, sentence structure, etc. of College English, in which case teachers will not add more additional practical teaching tasks of English writing. As a result, the proportion of writing course of College English is getting smaller and smaller, and the formalization of knowledge explanation of College English is extremely serious.

2. Lack of Intercultural Writing Practice in College English Course

For the writing teaching of College English, attentions should be paid to the integration of theoretical knowledge and practical application. However, the curriculum teaching based on traditional English theory instillation and explanation does not have the deployment and addition of cross-cultural writing and translation practices. The collection of extracurricular resources of English teaching, including related vocabulary, grammar, sentence patterns, reading cases, etc., is still subject to existing textbook syllabus, especially when the online and offline blended teaching is not perfect. Students tend to follow the constructivist learning theory, teachers also do not have any output drive and input to facilitate the implementation of the hypothetical process, which caused that both learning enthusiasm and teaching quality College English writing are poor.

IV. INNOVATIVE STRATEGIES OF COLLEGE ENGLISH WRITING TEACHING UNDER THE BLENDED TEACHING PHILOSOPHY

1. Formulation of Students-Based English Writing Teaching Philosophy and Objectives

Generally, traditional writing teaching of College English focused on instilling theoretical knowledge, which causes students to be less motivated to participate in classroom content learning. Therefore, it is necessary to establish a complete knowledge system of English writing education, as well as the deployment and setting of theoretical knowledge, practical application cases, etc. based on the contents of existing textbook outlines, as well as the individual needs of students and the requirements of social professional talents, in the process of implementing blended writing teaching of College English. Adhering to the student-centered and self-guided concepts, teachers guide students to participate in the learning and practical training of English writing in and out of class. In the end, the efficiency and quality of writing education of College English can be gradually improved.

2. Innovation of Teaching Contents and Methods of College English Writing

Writing theory and teaching of application practices of College English should be supported by online new media and big data cloud service platforms to set up online teaching processes such as MOOC, Microlecture, and Flipped Classroom. In this regard, the introduction of extracurricular teaching content of English writing, as well as the deployment and explanation of interactive English writing teaching programs are included. First of all, teachers are required to build a teaching theory system integrating English writing theory study and professional practice application based on the concepts of output drive and input facilitation hypothesis. On the other hand, teachers should also collect extra-curricular diversified multimedia software, PPT courseware and other resources, for the purpose of supplementing and improving existing teaching contents of English writing.

Thereafter, for the innovation of writing teaching methods of College English, online video teaching can be added on the basis of traditional teaching-style education, and interactive teaching situations, online tests, interactive communication, teaching feedback and evaluation and other curriculum links can be designed as well. While carrying out in-depth analysis around the important and difficult knowledge and interacting with students through WeChat and QQ after class, students could be urged to complete the learning task.

3. Enhancement of Practice Guidance and FAQ of College English Writing Teaching

Cultivating students' practical abilities in reading, writing and translation is the top priority of the teaching of English writing for different majors. In particular, efforts must be made to make the best of software apps such as Tencent Meeting, Rain Classroom, and Pigai Net to design network-guided education, interactive education, and self-inquiry learning process, facing continuous development of international economic and trade business and foreign translation activities. The writing practice education of textbooks such as *Contemporary College English---Intensive Reading* and *A Basic Course in Writing* should be strengthened with respect to students' online writing status and difficulties raised by them. Teachers should demonstrate the writing process to students in the web client APP. Alternatively, teachers should sort out existing writing and reading materials (including key vocabulary, grammar and sentence patterns, etc.) and upload them to the cloud service platform for students to search, browse and download. In this way, teachers and students can interact closely in the entire teaching process, and teachers can answer difficult questions that students put forward in a timely manner.

4. Emphasis on Comprehensive Objective Evaluation of College English Writing Teaching

While explaining the theory and practice of professional English, the blended teaching of writing course of College English should achieve a full range of teacher teaching and student evaluation. A typical case is that a portal for mutual evaluation between teachers and students should be set up, where teachers and students conduct mutual evaluations relying on the online writing teaching platform. First, teachers evaluate the learning of writing of College English for different students, including attendance, online writing test, discussion and communication, FAQ, test scores and other evaluation indicators. Teachers should try their best to complete the comprehensive assessment of students' practice expression and semantic translation of English writing. Second, students' evaluation of teachers' teaching should focus on guidance, interactive communication, and FAQ of the teachers. In other words, students should evaluate the implementation of online and offline courses as a whole. Only in this way can both tasks and learning objectives of College English writing teaching be achieved.

REFERENCES

[1] Liu W. *The Practical Research on Online and Offline College English Mixed Teaching* [J]. China Computer & Communication, 2019(03).

[2] Zhang M.L. *Research on the Mixed Community of College English Teachers' Professional Learning under the Guidance of Academic English*[J]. Journal of Chongqing University of Education, 2019(01).

[3] Liu Y. *Exploration on the MOOC-based O2O Blended Teaching Model for the Course of College English* [J]. Journal of Beijing City University, 2018(06).

[4] Liu X.Y. *A Study of a Teaching Mode for College English Writing Based on the Thoughts of Dynamic Assessment and PAD Class* [J]. Journal of Zhejiang International Studies University, 2017(01).

[5] Li Y. *Research on College Writing teaching Model Based on Piangai.com in the Era of Big Data* [J]. English on Campus. 2020(07).

Research on Henan's External Communication Strategy Under the Background of COVID-19

Chen Jie
Zhoukou Normal University, Zhoukou, Henan 466001, China

Abstract: In the context of COVID-19' s major public health emergencies, xinhuanet.com Henan channel, Henan radio, Dahe newspaper, Henan legal journal and other media platforms have been actively playing the good tradition of public opinion oriented and omnidirectional information dissemination, spreading the content of epidemic policy, collecting live news reports and epidemic prevention knowledge, and spreading to the general public. People convey the most vivid, true and objective anti epidemic content to complete the guidance and regulation of positive ideas and values, social network public opinion, and meet the needs of correct value orientation of external information dissemination.

key word: COVID-19; Henan; External Communication; Strategy

1. CHALLENGES FACED BY DIFFERENT INFORMATION CONTENTS IN COVID-19&APOS; S EXTERNAL COMMUNICATION

Introduction: the novel coronavirus pneumonia news before and after the Spring Festival in 2020 has spread rapidly in the domestic or international network platform, and even to some extent, it has caused some people' s panic. Under this situation, novel coronavirus pneumonia epidemic situation, government action and folk reaction are reported by selecting objective and accurate news or information reporting angles, which has become the focus of attention of different regions in radio, television and newspapers. Taking the response of Henan media to the public opinion of COVID-19 news reports as an example, this paper discusses the implementation strategy of information and news external communication with the help of new media under the network environment, so as to ensure timely clarification of COVID-19's false news and timely broadcast of accurate information.

1.Epidemic panic crisis caused by Internet information dissemination

2020In the process of the outbreak, the number of infected people increased to the gradual outbreak, the rapid spread of different news information in the network made the ordinary people panic about the epidemic itself and the development of the epidemic situation, and a variety of discussions and false rumors were rampant. First of all, western countries restrict the entry of Chinese tourists and social activities, and cancel China' s direct flights to other countries. Later, China also closed Wuhan City, requiring all people in China not to leave, which exacerbated the panic of the public. The main reason for this problem lies in the fact that the news media failed to convey accurate and objective COVID-19 information to the public in the shortest time.

2.Epidemic public opinion caused by malicious rumors or defamatory information

China's novel coronavirus pneumonia China is spreading all over the world, and the number of confirmed cases in the United States and Europe has been rising. China's stigma and rumors have been increasing. The spread of false information such as "Chinese virus origin theory" and "Wuhan pneumonia" not only reflects the western media's habit of violating occupation ethics, but also seriously damages China.The positive image of the international community has led to extensive discussions on COVID-19's opinion in the domestic network. Although these fabricated false rumors, malicious rumors, pseudo-scientific arguments and other information will not affect the domestic people's ideas, but make the whole network public opinion ecology gradually deteriorate, so we should take corresponding information control measures to stop them.

3.The communication dilemma of lagging epidemic information or news reports

With the control of novel coronavirus pneumonia in China, international COVID-19 has become a public health emergency of universal concern. Different media in China have begun to show a tendency toward normalization of epidemic information or news reports. However, due to the lag of some news media on COVID-19, the news dissemination has been restricted and negative news content has been spreading. Moreover, when most ordinary people do not know the truth, they may listen to the unreasonable double standards of the international community and their negative views on a united anti epidemic incident. For example, on April 7, 2020, China sent a medical rescue team to the UK, but it was abused and accused by the western media, and the spread of the epidemic "threw the pot" to China. However, the domestic news report on the epidemic lags behind, which makes the public opinion control and event interpretation of the epidemic deviate.

TWO, HENAN MEDIA COVID-19 INFORMATION OR NEWS EXTERNAL COMMUNICATION INNOVATION STRATEGY RESEARCH

1.Timely dissemination of authoritative COVID-19 news information with traditional media

Novel coronavirus pneumonia has been reported. Authoritative media such as the people's daily, Xinhua news agency, cctv.com and other news media have released the news about epidemic development and epidemic prevention and control in the first time. The news media in Henan also entered Wuhan in accordance with their superiors' requirements, and did not report on the spot interviews in the first place. On January 31, 2020, three special reporters from Dahe Daily rushed to Wuhan to interview and write the liveliest anti epidemic news at different times by implementing the 24-hour duty system, and then sent back to the operation and maintenance center of the provincial government through network channels to release authoritative information and real-time news about the epidemic situation to the outside world.

At the same time, Henan Legal Daily also set up the brand column of "live broadcast of law" to report the epidemic news in Henan and Wuhan by means of on-the-spot interview. For example, "my family is in Wuhan, focusing on the life of ordinary Wuhan citizens", "Henan epidemic prevention and control is further upgraded, and we go deep into the front line to inquire about the epidemic prevention status of the return expressway", and also broadcast every epidemic news conference held by the provincial government in the form of live video. Li Donghong, chief editor of Henan Legal Daily, also published articles on the Internet micro news client, such as "leading cadres should have the courage to take responsibility in the battlefield of" epidemic "and" building confidence in victory with noble and upright spirit ", reporting the advanced deeds of Party members and cadres in various regions, Red Cross Society and other main bodies, holding the feelings of their country and taking responsibility, as well as the news that the confirmed cases were discharged after diagnosis and treatment To enhance the determination and self-confidence of ordinary people to participate in epidemic prevention and control.

2.Using Internet media to clarify false news rumors and slander

The holographic, full effect and full range characteristics of the new media information dissemination on the Internet will help COVID-19's information or news release and respond to false rumors and false rumors in a timely manner. In February 12, 2020, Hubei novel coronavirus pneumonia case was newly diagnosed in 14840 cases, causing some regional public questions and panic: "why is the number of confirmed cases increased so much in 1 days?" After that, Zhengzhou radio station in Henan broadcast the media platform like WeChat public address and so on. What is the reason behind the official account explosion? Here comes the expert interpretation! "To explain the different ways of diagnosis to the public.

Foreign media, such as the United Kingdom, France, Germany, Italy and other countries, began to issue a series of false rumors with the titles of "there are super communicators", "super communicators have appeared", "the mode of infection and serious harm of super communicators". After the rumors came, the news media of Henan radio and TV station, elephant news client and other news media, the elephant news client issued the new national media platform, including micro-blog official account, WeChat public number and Tencent news, and released the "national Wei Jian committee": there is no news about the "super communicator" epidemic, which is in response to the general public's concern about the current development of the epidemic situation, and smash malicious rumors. Slandered untrue rumors.

3.The anti epidemic news and touching stories are mainly based on Chinese stories

The external communication of China' s "anti epidemic story" is an important channel to publicize positive values and spread a good national image. It is also a "window" to enhance China's international influence and let countries in the world understand China. Under the guidance of this value orientation of external publicity and communication, Henan media make full use of the communication form of Internet new media to tell the moving stories behind the fight against the epidemic through the combination of text, pictures, video and audio. They get a lot of watching, transmitting and comments on different platforms, and arouse strong resonance among the general public at home and the international community.

For example, Dahe Daily, Henan legal news, Henan Radio and television network clients, with the help of microblog, wechat, Toutiao, penguin and other third-party platforms, tell touching stories of front-line medical staff, police officers, as well as ordinary express brother, takeout brother and Breakfast owner in society. Among them, Dahe Daily launched the "face" feature column of Henan video, with the theme of "Henan man crying under the car to see off Wuhan wife, I love you!" Let people see the touching scene of Zhengzhou medical staff supporting the front line and rushing to Wuhan.The official account of Henan legal system published on the WeChat public address: "9 year old daughter wrote to my father, I am worried about you, but I can' t help you, because you are a people' s policeman". The special program of Henan radio and TV station, "campaign diary", was reprinted by the people's daily, cctv.com and other rights Witkey households, causing widespread reading and discussion of the netizens, and strengthening the common masses to overcome difficulties and epidemic. The self-confidence of Bing Sheng has greatly improved the credibility and influence of the official news media on the spread of anti epidemic.

EPILOGUE

The novel coronavirus pneumonia epidemic information dissemination proper response, requests the broad traditional media, the new media social channel, displays its immediate information interaction dissemination, the social public opinion guidance function. According to the network malicious rumors, international slander and other untrue information, Henan Radio, Henan Legal Daily, Dahe Daily and other mainstream media take the initiative to guide their own social public opinion and report the real news, and organize and disseminate the anti epidemic text, pictures, video or audio information, so as to realize the objective communication of correct ideas, values and epidemic news Out side broadcast.

REFERENCE

[1] Gao Xiaohong, Zhao Xijing. Responsibility and mission of mainstream communication in public health emergencies [J]. China editor. 2020 (z1): 4-9.
[2] Cao Xiqing, Sun Jun, Zhao Yi. Hubei Radio and

television: blow the assembly number and send out the strongest voice in the front line of "epidemic". Media. 2020 (05): 35-37.
[3] Chen Kai. The development strategy of music broadcasting under the all media communication system -- Taking Fuzhou music broadcasting as an example [J]. Journal of news research. 2021 (01): 255-256.

Explore the Role of Different Sports on the Psychological Adjustment of the Students Left Behind in Rural Areas

ZHAO Chun-Qi
Institute of Physical Education, Zhoukou Normal University, Henan 466001, China

Abstract: Using the Mental Health Scale survey the mental health status of middle school students left behind in rural areas in Henan Province. Using the factor analysis and linear regression methods analyze the psychological adjustment effects of different sports. The results showed that: Incidence of psychological problems was 46.26% on the junior high school students stay in the rural areas in Henan Province; they think that skills-led net separated antagonistic sports have a good effect of psychological adjustment; these students who have different psychological problems have a different understanding of the role of sports in the psychological adjustment.
Key word: Left-behind middle school students; Mental health; Middle school students' mental health scale

1. RESEARCH PURPOSE

The education of left behind children in rural areas has become a hot issue in China's education, because it is not only related to the healthy growth of a generation, but also related to the urban and rural economic development, the construction of a harmonious society and the future of the country, Therefore, Article 8 of the fourth chapter of the national medium and long term education reform and development plan (2020-2035) puts forward the goal of "establishing and improving the care service system and dynamic monitoring mechanism for rural left behind children led by the government and participated by the society". Rural left behind children are a new vulnerable group derived from the transfer of a large number of rural surplus labor force to the city in recent years. In relatively backward rural schools, the proportion of left behind children is as high as 41%. According to the data of the national 1% population sampling survey in 2020, there are about 58 million rural left behind children in China.

The emergence of left behind children has caused a series of basic education problems, The research of population and development research center of Renmin University of China shows that after entering the junior high school stage, the school rate of rural left behind children has decreased significantly, and the school rate of 14 year old left behind children is only 88%.; many research results in recent years also show that the mental health of left behind children is not optimistic, such as the mental health problems of left behind middle school students in Yueyang, Chenzhou and Xiangxi of Hunan Province The detection rate of psychological symptoms of left behind middle school students in Yudu County of Jiangxi Province is 57.14%, 44.5% [6] of left behind middle school students in Yudu County of Jiangxi Province, and 36.3% of left behind middle school students whose parents both go out to work in a County of Anhui Province. Therefore, how to face and deal with the problems of mental health education of left behind middle school students in rural areas in the new period has undoubtedly become an important issue to be solved.

At present, many research results have shown that physical exercise can not only enhance physical fitness, improve mood, have a positive impact on mental health, but also has an irreplaceable role in the prevention and elimination of mental diseases. So in carrying out the mental health education of rural left behind junior middle school students, how to select and actively intervene in different psychological problems and many sports? However, there is little research on whether different sports have different regulating and eliminating effects on different psychological problems of rural left behind junior middle school students, so it has become the key of this research.

This paper investigates the mental health status of rural left behind junior middle school students in Henan Province by using the mental health scale for middle school students. By analyzing the mental health status of rural left behind junior middle school students and the cognitive status of the regulation of different sports, this paper explores the regulation of different sports on the mental health of rural left behind junior middle school students, with a view to adopting effective measures in mental health education In order to give full play to the function and value of sports in the middle school mental health education in the new period, we should carry out positive psychological intervention with the items with better regulation effect, and provide beneficial reference for the sustainable development of the middle school mental health education in our country.

2. RESEARCH METHODS

2.1. Questionnaire survey method:

According to the specific purpose and content of this research, on the basis of relevant literature analysis and expert interviews, the questionnaire was designed by using the mental health scale for middle school students compiled by Professor Wang Jisheng. The mental health scale consists of 10 sub scales: compulsion, paranoia, hostility, interpersonal tension and sensitivity, depression, anxiety, learning pressure, maladjustment, emotional imbalance and psychological imbalance. A total of 60 items, using a 5-level scoring system, 1 for normal, 2-5 for unhealthy. Professor Wang Jisheng has tested the scale with a large sample, and the results show that the scale has good reliability and validity. There are 35 questions in the questionnaire outside the mental health scale. The test-retest method is used in the reliability test, with an interval of 15 days. The test-retest reliability is 0.91; the content validity test is used in the validity test, and 10 experts are invited to judge the content of the questionnaire design. After adopting experts' opinions, the questionnaire is modified to form the final questionnaire. Taking the left behind junior middle school students from two rural middle schools randomly selected from Zhoukou City, Sanmenxia City, Nanyang City, Xinxiang City, Zhengzhou City and other five cities in Henan Province as the survey objects, and the distribution and recovery of the questionnaire were carried out. Each school distributed 150 copies, 50 copies in each grade, a total of 1500 copies were distributed, 1500 copies were recovered, and the recovery rate was 100% 42 questionnaires, 1458 valid questionnaires were collected, and the effective recovery rate was 97.20%. Finally, the data were processed and analyzed by SPSS 11.5 statistical software.

3. RESULTS AND ANALYSIS

3.1 analysis of mental health status of rural left behind junior middle school students

Mental health problems are different from physiological diseases. They are caused by people's internal mental factors. To be exact, they are a series of problems caused by the central nervous system of the brain. They can indirectly change people's character, world outlook and emotions. The classification of psychological problems can be divided into four grades from health state to mental disease state: health state - bad state - mental disorder - mental disease.

Table 1 Statistical table of self-evaluation of mental health

Serial number	variable name	frequency	percentage	cumulative percentage
1	very healthy	354	24.3	24.3
2	relatively healthy	510	35.0	59.3
3	there may be a bad state in some aspect	385	26.4	85.7
4	bad state	164	11.2	96.9
5	there may be psychological disorder in some aspects	45	3.1	100.0
	Total	1458	100.0	

From the statistical results of self-evaluation of mental health of left behind junior middle school students, it can be seen that 14.3% of the students think that they have a bad state, and 40.7% of the students feel that they may have a bad state in one aspect. In addition, the existence of the bad state of left behind junior middle school students can also be confirmed by the scores of various factors in the mental health scale (see Table 2). It can be seen from table 2 that the average score of each subscale of mental health of rural left behind junior high school students is more than 2. Among them, the detection rate of mental health problems of left behind middle school students is 46.26%, mild mental health problems account for 35.32%, moderate mental health problems account for 7.18%, and students with severe mental health problems account for 3.76%. It shows that the mental health problems of left behind middle school students in rural areas of Henan Province are not very serious, but we should attach great importance to such groups when carrying out mental health education.

3.2 factor analysis of left behind junior high school students' cognitive status of sports psychological regulation

Studies have shown that moderate exercise has a very positive effect on controlling anxiety, depression symptoms and preventing mental diseases, especially aerobic activities of medium and small intensity, which have both short-term and long-term effects on mental health [12]. Due to the diversity of sports, and the influence of region, teachers and economic conditions on the development of various sports, this study only investigates and analyzes the psychological adjustment of 16 representative sports (see Table 3) which are easy to be touched by middle school students in their daily life, and uses factor analysis method to explore and study the psychological adjustment of rural left behind junior middle school students The cognitive status of psychological regulation of the same sports.

Table 2 rotation results of load matrix of various factors

Variable name	facto				
	1	2	3	4	5
Basketball	.003	.167	.021	.940	-.015
Volleyball	.818	.040	-.019	.123	.113
Football	.004	-.042	-.125	.960	-.068
Badminton	.918	-.011	.004	-.004	.012
Table tennis	.902	.009	-.007	-.046	-.033
Tennis	.979	-.004	.006	-.030	-.032
Shuttlecock	.949	-.016	.009	-.037	-.029
Aerobics	-.007	.501	.458	.142	.616
Taekwondo	.000	.172	.941	.000	.092
Martial arts routine	.018	-.164	-.126	-.001	.841
Sanda	-.002	.163	.943	-.004	.086
Sports dance	.009	.090	.102	-.122	.854
Sports games.	.005	.258	-.556	.245	.312
Cross country running	.019	.904	-.005	-.129	-.048
Wheel slide	.006	.933	.067	.053	-.051
Directional motion	-.007	.760	.151	.247	.127

Before factor analysis, kmo test and Bartlett ball degree test were carried out for the correlation between 16 sports items. The results showed that kmo value was 0.770, and the probability of accompany given by Bartlett ball degree test was 0.000, which were considered to be suitable for factor analysis. The five common factors extracted from the factor extraction result table can explain 82.649% of the original variables, so it is appropriate to select five factors.

From the results table of factor load matrix in Table 3, it can be seen that the meaning of each factor is also clearer. The first factor mainly reflects the sports of skill leading net blocking antagonistic items group, mainly including volleyball, badminton, table tennis, tennis, shuttlecock and other events. Variance contribution accounts for 26.15% of the total variance contribution, which is the most important factor; the sports items reflected by the second factor should be physical dominant endurance items, accounting for 16.90% of the total variance contribution, mainly including volleyball, badminton, table tennis, shuttlecock and other events The third factor accounts for 14.77% of the total variance contribution, mainly reflecting the recognition of the rural left behind junior high school students in the regulation of Taekwondo and Sanda, which should belong to the skill leading fighting resistance group; the sports items reflected by the fourth factor should be "physical leading similar field antagonism" Item group "mainly includes basketball and football, accounting for 12.50% of the total variance contribution; the fifth factor accounts for 12.32% of the total variance contribution, mainly including aerobics, martial arts routines and sports dance, which should be a skill leading category of performance of the difficulty of beauty.

The reason why the skill leading network-based antagonistic item group project has become the first factor and most regulated item group recognized by left behind junior high school students may be determined by the fact that such sports are mainly aerobic metabolism, easy to control the intensity of small and medium-sized sports, and also have the characteristics of strong interest and organization. In addition, the practice of such projects requires that practitioners have good time The ability of empty intuition, reflecting speed and concentration is conducive to the cultivation of good sense of daring and self-control. Therefore, the psychological regulation of these sports is recognized by the students most, and finally becomes the most favorable sport that can regulate mental health.

3.3 linear regression analysis of the scores of various factors and the recognition of sports regulation in mental health scale

Through the multivariate linear regression analysis of 10 factors (see Table 2, horizontal line 1) and the recognition of the regulatory effect of 16 sports items, we found that only five factors, such as compulsion, interpersonal tension and sensitivity, depression, anxiety and emotional imbalance, and 16 sports events, were the only factors that regulated the adjustment of 16 sports items There is a significant linear correlation between the recognition degree, and the sample regression effect is good, and the fitting degree of regression equation is also high. The other five factors and the recognition of the regulatory role of sports events are not suitable for multivariate linear regression analysis, and will not be described. All the methods used in the selection of independent variables are all introduced in linear regression analysis. The following is only explained by the establishment of regression model of forcing factors.

The results of the fitting degree test of the multiple linear regression equation of forcing factors show that the regression coefficient is 0.818, the judgment coefficient is 0.668, and the adjusted coefficient is 0.667, which indicates that the sample regression effect is better. The variance analysis results of the regression equation significance test of forcing factors also show that f value is 396.086 and the associated probability value $p < 0.000$, which indicates that the fitting degree of regression equation is high, and there is linear regression relationship between multiple independent variables and dependent variables.

Combined with regression coefficient analysis table 4, if the forcing factor is set to Y1, basketball, volleyball The recognition of the regulatory role of 16 kinds of sports such as Orienteering was set as x1, X2, X3 The multiple linear regression equation is as follows:

$y1=1.267+0.571x1+0.271x2\ldots +0.373x15-0.408x16$.

From the established regression equation, we can see that the sports that play an important role in the forced factor regression model are basketball (x1) and roller skating (x15), which shows that the students with higher scores of forced factor in the mental health scale of rural left behind junior middle school students think basketball and roller skating can play the most important role in psychological regulation.

In addition, multiple regression analysis was conducted between the scores of interpersonal sensitivity, depression, anxiety and emotional imbalance and the recognition of 15 sports events. It was found that if the four factors of interpersonal tension and sensitivity, depression, anxiety and emotional imbalance were set as Y2, Y3 and Y2 respectively The multiple linear regression equations between Y4 and Y5 and the recognition degree of 15 sports are as follows

$Y2=1.770+0.060x1-0.100x2\ldots +0.341x8\ldots 0.296x15+0.082x16$;

$Y3=0.865-0.070x1-0.344x2\ldots +0.341x9\ldots +0.285x16$;

$Y4=1.323+0.099x1-0.263x2\ldots +0.644x9\ldots +0.289x15-0.044x16$;

$Y5=-0.112 +0.267x1-0.231x2\ldots +0.525x12\ldots +0.211x16$

From the above regression equations, it can be seen that the sports that play an important role in regulating interpersonal sensitivity factors are aerobics (x6) and roller skating (x15); the sports that play an important role in regulating depression factors are Taekwondo (x9) and orienteering (x16); the sports that play an important role in regulating anxiety factors are Taekwondo (x9) and roller skating (x15) Roller skating (x16); sports dance (x4) and basketball (x1) play an important role in regulating emotional imbalance factors, which shows that the left behind junior middle school students with different psychological problems have different recognition of the psychological health regulation of sports. Therefore, in the active psychological intervention and exercise prescription formulation for left behind middle school students with different psychological problems, we must treat them differently, and try to select the sports that they are interested in and generally think have better psychological adjustment effect for education and guidance, so as to overcome and alleviate the psychological obstacles or bad psychological state caused by various reasons to the greatest extent.

4. CONCLUSIONS

4.1.40.7% of the rural left behind junior middle school students in Henan Province feel that they may have bad status in one aspect, and the detection rate of mental health problems of the left behind junior middle school students is 46.26%, which indicates that there are indeed more students with mild or above mental health problems in the rural left behind junior middle school students in XX Province, so we should pay great attention to such groups when carrying out mental health education.

4.2. The rural left behind junior middle school students generally believe that the mental health regulation of the sports which belong to the skill oriented antagonistic event group is the most important and effective. In carrying out mental health education, we should pay attention to creating more objective environment to carry out such projects, and seize the opportunity to induce and actively intervene.

4.3. The left behind junior high school students with different psychological problems have different recognition of the psychological health regulation of sports. The students with higher scores of compulsive factor, interpersonal sensitivity factor, depression factor, anxiety factor and emotional imbalance factor in the mental health scale think that basketball, aerobics, taekwondo, sports dance and other sports can play the most psychological role. In view of the different psychological problems that may appear in rural left behind junior middle school students, we should guide them to choose the best sports items for exercise to prevent and eliminate various psychological problems to the greatest extent when we carry out mental health education, whether it is to use sports entertainment therapy or to develop simple exercise prescription.

REFERENCE

[1] Tang Hongming. A study on the marginalization of physical education for rural left behind children [j]. Journal of Beijing University of physical education, 2019, 31 (5):660-662.

[2] Li Chunmei. The current situation of education of left behind students and the Countermeasures [j]. Sichuan Institute of technology, 2020, (2): 118-121.

[3] Zhang Xuezhen. The total number of left behind children in rural areas is about 58 million [n]. China Women's daily, 2018, 2, 28:a01.

[4] Nearly 58 million left behind children in China have more than 80% of the children left behind or temporary guardianship http://news.china.com/zh_cn/domestic/945/20201222/16305691.html

[5] Hu Kun. Investigation and Study on mental health of rural left behind children [j]. Chinese Journal of health psychology, 2020, 18 (8): 994-996.

[6] Huang Yongfei et al. Correlation analysis between extracurricular physical activities and mental health of left behind students in rural junior middle schools [j]. Journal of Shandong Institute of physical education, 2019, 25 (7):90-93.

[7] Cheng shaogui. Analysis of mental health status of left behind middle school students in a county of Anhui Province [j]. School health in China, 2018, 29 (5): 439-441.

[8] Tang Wenjie. The function of physical exercise in college students' depression [j]. Journal of Beijing University of physical education, 2020, 31 (11): 1534-1536.

[9] Yang Jian et al. Experimental study on promoting mental health of teenagers by different exercise methods [j]. Journal of Wuhan Institute of physical education, 2020, 39 (3):80-83.

Tennis Teaching in Universities Based on the Competition Teaching Method

Zhao Huali
Institute of Physical Education, Zhoukou Normal University, Henan 466001, China

Abstract: In order to improve the quality of tennis teaching in colleges and universities in China, a comparative analysis was made by means of teaching experiments in this paper. The experimental group using the competition teaching method and the control group using traditional sequential teaching method were set up. Teaching hours were from September 1 to December 30th, 2016. There were 30 people in each group, with quite physique and the tennis skill level before the teaching experiment. Through the teaching experiment, it can be seen that the sequential teaching method is better than the competition teaching method in improving students' performance. However, in the ability to control the ball and the level of competition, the competition teaching method is better than the sequential teaching method.

Key words: Competition Teaching Method; Sequential Teaching Method; University; Tennis

1. INTRODUCTION

In order to further improve the physical quality of college students and enrich the sports events, many colleges and universities in our country have put the tennis sports into the public physical education curriculum, so that college students have more opportunities to understand and master tennis (Zhou, et al. 2014) [1]. However, after a long time of practice, many college students are difficult to stick to it after learning tennis, so that this course does not meet the teaching objectives. After a comprehensive study, it can be seen that the main reason for this situation is that the tennis itself is difficult to start. And it is also because of the backwardness of teaching methods and means of tennis in China (Jiang, et al. 2016) [2]. In the traditional teaching methods, first of all, teachers explain and demonstrate the process. After that, students carry out training and exploration repeatedly. The whole teaching process is boring, and to a great extent, the teaching effect is also restricted by the physical education of teachers. This kind of teaching method restricts students' creativity and imagination, so it is difficult to give full play to students' ability of autonomous learning (Hong, et al. 2016) [3]. Tennis is a sport that requires mutual coordination between athletes. Therefore, athletes need not only their own good technology, but also the cooperation with each other, as well as the ability to play their own level in the stadium.

Although our country has been through a number of physical education reform, and the application of computer aided technology has made some achievements, in the teaching of tennis, there is no real advanced teaching method of modern physical education (Liu, et al. 2016) [4]. For a long time, our country has always been adhering to the teacher led teaching methods. The promotion and cultivation of students' ability depend entirely on the teachers' teaching level, and so the process of accepting knowledge is passive. According to the characteristics of tennis, in order to achieve the purpose of tennis teaching, the new teaching methods should be explored and studied. Based on this, the contrast teaching experiment is carried out between the traditional sequential teaching method and the competition teaching method, and the two different teaching methods are compared and analyzed, so as to find a more suitable teaching method for college students' tennis and to enhance students' interest in learning. The appropriate teaching method can make students master the teaching knowledge, and really enjoy the happiness brought by tennis, thus to help students develop a lifelong habit of exercise.

2. STATE OF THE ART

At the beginning of the twentieth Century, W. Custer Roma, a famous sports teacher in Sweden, put forward the concept of physical education teaching method for the first time, having a profound impact on the global sports teaching (Pan, et al. 2016) [5]. With the development of the theory of education and teaching, the new teaching method, based on the combination of pragmatism and educational psychology, was more and more used in the teaching of physical education in colleges and universities. After the founding of new China, our country has carried out the reform of education and teaching many times, and has constantly updated and introduced new teaching methods. And according to the needs of China in the 20th century, a lot of sports teaching methods with Chinese characteristics have been established (Li, et al. 2016) [6]. No matter what kind of physical education teaching method, the definition is the same. In other words, any physical education teaching method is the way and means adopted by physical education teachers to achieve the goal of teaching in the course of physical education. From the definition of physical education teaching methods, first of all, it is set for the purpose of teaching. Teachers and students can be more closely linked, thus to achieve better teaching results. With the change of society, it can keep pace with the times. No matter what kind of physical education teaching method, its essence is to serve the teaching (Xiao, et al. 2016) [7].

Due to the influence of the core value orientation and historical thought, there is a big difference between the teaching methods in the western countries and our country. They not only pay attention to meeting the needs of the spiritual level, but also pay more attention to the positive attitude towards life and personality development (Wang, et al. 2016) [8]. Of course, there is also the tradition of Western society, including their attitude towards life.

When choosing the teaching method, the western countries focus on individual value orientation. The characteristics of the teaching methods can be summarized as follows: (1) there is a strong interest. The cultivation of students' interest is the key point of teaching. Students are encouraged to participate in the game. Using the game, the students' physical and psychological quality can be improved (Xin, et al. 2009) [9]. (2) The development of students' personality should be respected. Personality factors account for a large proportion in teaching methods. In the process of modern social teaching, the development of students' personality should be respected (Aziz, et al. 2010) [10]. (3) Students' independent ability should be cultivated. Modern physical education is often associated with daily life. Students' physique can be improved through teaching activities. In the western teaching concept, the ultimate goal is to make the knowledge and skills applied to daily life, so as to cultivate students' independent ability (Wang, et al. 2016) [11].

After decades of development, in the education method, the pursuit of sports teaching in our country is more standardized and strict. The key point of physical education is the teaching order (Zhang, et al. 2008) [12]. Since the reform and opening up, people have been exploring and reforming the new teaching methods, and have achieved remarkable results. In the process of learning, students are more afraid of teachers, and so there is no benign exchange. And students always strictly enforce the teacher's teaching content. In this teaching environment, students are forced to learn, and the minds are severely constrained (Geng, et al. 2016) [13]. In addition, the syllabus developed by the Education Department of our country has the characteristics of unified management. However, our country has a vast territory, and the students in different regions have great differences in basic quality and regional culture. If the unified syllabus is widely used, it is not conducive to the spread of outstanding culture.

For different sports, even with the same teaching methods, there are different teaching effects. For the same kind of sports, different teaching methods will produce different teaching effects. For example, in tennis teaching, similarly, the competition teaching method is adopted. In the teaching of skill proficiency, practicality and interest training, the results are also different (Wu, et al. 2016) [14]. However, no matter what kind of teaching methods and teaching skills are used, the ultimate goal is to achieve the same teaching. In the teaching of physical education, teaching methods are used to enable students to master and use sports skills. In the course of tennis in colleges and universities, compared with the traditional teaching methods, the competition method is more convenient for students to master the tennis skill. Students' ability to play tennis can be significantly improved, thus to develop a positive interest in teaching (Cheng, et al. 2016) [15].

3. METHODOLOGY

3.1 Research object

In this paper, the method of teaching experiment is adopted to analyze the application effect of the competition teaching method in college tennis teaching. The research objects are the college students in Beijing. These college students have never played tennis. Therefore, in the control group and the experimental group, students have no tennis foundation. The experimental group uses the competition teaching method, while the control group uses the traditional teaching method. In the teaching content, the experimental group and the control group are the same, and they are only different in the choice of teaching methods. The number of students in the control group and the experimental group is 30, and all are male. Before the teaching experiment, the students' physical condition is detected. The specific results are shown in table 1:

Table.1 The physical quality T test of the control group and experimental group

Name	Experience group	Control group	T test
The number of	30	30	
Gender	Male	Male	
Average height	172.3	172.6	P > 0.05
Height standard deviation	5.6	4.8	
Average weight	73.5	74.1	P > 0.05
Weight standard deviation	6.4	7.1	
4 × 10 reentry	10.6	10.4	P > 0.05
Push-up	22	23	P > 0.05

As can be seen from table 1, the indexes of the control group and the experimental group are similar. The average height and weight of the students are quite equal, and the physical conditions are basically the same. From the physical quality, the physical quality of the students in the control group and the experimental group are basically the same.

The sequential teaching method adopted in the control group is a common teaching method in physical education, which is often used in tennis sports teaching. Even in the single skill teaching, the sequential teaching method can be used. This is a process from simple to complex. The order of tennis teaching is: forehand and backhand hitting→volley→slice→serve. Among the specific individual skills, the order of forehand hitting is: shot in place→short shot→net shot→hitting on the ground. The emphasis of sequential teaching method is to lay a solid foundation for students. The key is to let students master the basic skills and to complete the training of talents through the basic education. In the teaching process, the stages of perception, understanding, and consolidation and application are included, according with the cognitive law of human sports. The sequential teaching method can better arrange the progress of learning, and so it is easier to set the teaching content and teaching difficulty. Therefore, this method is often used in the initial stage of many sports. And it also has some flexibility in the choice of students' age.

The teaching method of the experiment group is a kind of organized, conscious and strategic coordination training competition. This kind of teaching method can improve students' competitive ability and improve the quality of sports training. Compared with the traditional sports teaching activities, the purpose of this teaching method is to cultivate students' sense of competition, improve the tactics of sports, and train students' excellent psychological quality. In the existing college physical education teaching activities, the purpose of teaching is to develop students' interest in sports, and to stimulate the enthusiasm of students to exercise independently. People all want to be able to win, especially if they want to win the game. In the teaching activities, students can communicate with each other, improve the skills of the game, and can take the victory of the game as the purpose of teaching. This method can be more effective to stimulate the interest of students, which can also get different practical results without the form of competition. The specific operation procedure of the teaching method of tennis match is shown in figure 3. However, in the specific teaching of the game, the choice of the form of the game needs thinking and practice test, which plays a positive role in promoting students' skills.

3.2 Research method

The teaching experiment period is from September 1, 2016 to December 30, 2016. The control group and the experimental group have the same teaching conditions. The assessment method is the same. Students should do 40 backhand short distance moving ball and 10 linear and backhand slash the ball, respectively, including technical assessment score and standard scores. Two people are randomly selected from each group, and there are 6 chances. And the total number of rounds is sorted out. In the doubles match in the small field, 2 students are randomly selected in each class, and the "7 point system" is used. After statistical analysis, SPSS software is used for statistical analysis of the data to ensure the validity of the experiment.

In the design of teaching plan, it is necessary to refer to the relevant national policy basis. According to the teaching outline of physical education curriculum issued by the Ministry of education, the students' creative consciousness should be fully brought into play. In addition to the importance of teaching methods, self-learning and self-training should also be carried out. In the teaching process, different students have different physical and personality characteristics. The ability of students should be fully believed and played, to reflect the main position of students in teaching. The implementation of the competition teaching method needs to draw lessons from domestic and international teaching experience. Combined with the specific practice, it is constantly revised and perfected. The teaching objects are college students who can accept new things quickly. Therefore, higher requirements should be set in setting teaching goals. In order to encourage students, the development of teaching contents and methods should be based on students' self-will, and the teaching content also needs to be attractive enough. In the implementation of teaching programs, the enthusiasm of students must be fully mobilized, so that students can get more complete information in the process of learning. There is a high degree of inherent law in sports skills to follow, including a complete system of knowledge and skills. In the process of teaching, teachers should ensure the integrity of information, in order to avoid students' confusion because of the lack of information.

4. RESULT ANALYSIS AND DISCUSSION

Through the teaching experiment, in the experimental group and the control group, the results of pre-test and posttest and T test of forehand, backhand and underhand serve are obtained respectively. The test results of the experimental group are shown in Table 2, and the results of the control group are shown in table 3. In order to avoid the reliability of the test results is affected by the difference between the control group and the experimental group before the experiment, the three indexes are tested before the experiment. According to the data of Table 2 and table 3, it can be seen that the tennis level of the control group and the experimental group is relatively low before the teaching experiment. Through the analysis of three technical index data, it can be concluded that the technical level of the two classes is equal.

Table.2 Test results and T test before and after the experiment

Index		Forehand	Backhand	Underhand serve
Experimental group pretest	Average	8.92	6.65	3.09
	Standard deviation	2.45	2.34	1.59
Posttest in experimental group	Average	16.36	14.68	6.08
	Standard deviation	1.68	2.06	1.48
T test		P<0.05	P<0.05	P<0.05

Table.3 Control group before and after the test results and T test

Index		Forehand	Backhand	Underhand serve
Experimental group pretest	Average	9.02	6.59	3.07
	Standard deviation	2.54	2.62	1.42
Posttest in experimental group	Average	16.15	14.93	6.78
	Standard deviation	2.08	2.39	1.26
T test		P<0.05	P<0.05	P<0.05

After a semester of teaching experiment, it can be seen that compared with that before the experiment, the tennis skill level of the control group and the experimental group is significantly improved. And the average has been greatly improved. This shows that the two teaching methods can get better teaching effect. After comparing and analyzing the teaching experiment of the experimental group and the teaching group, the difference of scores can be seen. The experimental group's forehand, backhand and the average number of service are 16.36, 14.68, and 6.08, respectively, while the control group's forehand, backhand and the average number of service are 16.15, 14.93, and 6.48, respectively. It can be seen that the technical level gap between the experimental group and the control group is not large. In the forehand, the experimental group is slightly higher than that of control group. The other two indicators in the control group are higher. In conclusion, in improving students' backhand and serve, the sequential teaching method is better than the competition teaching method.

As can be seen from figure 4, the experimental group students' technical evaluation scores were lower than those in the control group. The scores of the students in the experimental group are concentrated at the medium level. It also shows that the sequential teaching method can achieve better teaching effect in the aspect of students' skill mastery.

The ability to control the ball is further analyzed, and the results are shown in table 4. As can be seen from table 4, the ability of controlling the ball in the experimental group is significantly higher than that of the control group. Because tennis is a competitive sport, the ability to control the ball on the playground is related to the outcome of the game. If the level is equal, the competition is more dependent on the ability to control the ball. It shows that the teaching method is better than the sequential teaching method in cultivating students' ability of controlling ball, competitive ability and interest.

Table.4 Significance test of the difference ability after the experiment

Experience group	Average	36
	standard deviation	1.72
Control group	Average	19
	standard deviation	1.68
T test		P<0.05

5. CONCLUSION

A teaching experiment was carried out on college students in Beijing from September 1, 2016 to December 30th, 2016. Teaching experiment group and control group were set up. The experimental group used the teaching method, while the control group used the sequential teaching method. Before the experiment, in the experimental group and the control group, students' physique and tennis skill level were similar. In the experimental group and the control group, forehand, backhand and the average number of service were tested. The experimental group's forehand, backhand and the average number of service are 16.36, 14.68, and 6.08, respectively, while the control group's forehand, backhand and the average number of service are 16.15, 14.93, and 6.48, respectively. It can be seen that in improving the students and serve on the backhand, the sequential teaching method is better than the competition teaching method. From the ability to control the ball, the experimental group is significantly higher than the control group. This also shows that the use of the competition teaching method can improve students' competitive level, and can make students more interested in tennis. Therefore, in the teaching practice, it is necessary to combine the competition teaching method and sequential teaching method. The research also needs further improvement. For example, the effects of these two teaching methods on college students' psychology and interpersonal communication need further studying.

REFERENCES

[1] Zhou J Q. An Empirical Study on the Competition Methods of Table Tennis Teaching[J]. Sport Science & Technology, 2020.

[2] Jiang R, Polytechnic CA. Application of Backhand Technique to Tennis Teaching[J]. Journal of Chengdu Aeronautic Polytechnic, 2020.

[3] Hong-Dan B I. Innovative methods of tennis teaching[J]. Heilongjiang Science, 2020.

[4] Liu QY, Yao DW. Self-efficacy theory in the applied research of the table tennis teaching in colleges and universities[J]. Journal of Science of Teachers College & University, 2020.

[5] Pan Zhong. Study on the application of competition teaching method in Basketball Teaching in Higher Vocational Education [J]. Neijiang science and technology, 2019, 37 (11): 120-121.

[6] Li Y, Jiang L, Zhang Y, et al. Development and Realization of Organizational Management Software for Group Round-Robin and Dual Meet Competition of Table Tennis[J]. Journal of Anhui Sports Science, 2019.

[7] Xiao Lei. The application and research of the competition teaching method in college basketball teaching [J]. contemporary sports science and technology, 2019, 6 (30): 46-46.

[8] Wang Jiaqi. Research on the application of game teaching method in the teaching of basketball elective course in Colleges and universities [J]. Journal of contemporary sports science and technology, 2019, 6 (7): 11-12.

[9] Xin-Lie X U. Applying Competition Method to Table Tennis Teaching[J]. Journal of Guilin University of Electronic Technology, 2019.

[10] Aziz Z, Hossain M A. A comparison of cooperative learning and conventional teaching on students' achievement in secondary mathematics[J]. Procedia - Social and Behavioral Sciences, 2020, 9(9):53-62.

Development of Natural Ecological Resources and The Practice of Building Tourism Brand

Zhou Bingjie
Sanmenxia college of social Administration, Sanmenxia, Henan 472000, China

Abstract. Ecotourism is a new form of tourism developed on the basis of traditional tourism, which has rich connotation and strong vitality. Ecotourism is a new form of tourism developed on the basis of traditional tourism. It has rich connotations and has strong vitality. The emergence of eco-tourism is people's reflection on the environmental problems caused by traditional tourism, and reflects the idea of sustainable development. China's awareness of eco-tourism brands is relatively weak. Enterprises need to shape their brand image, create brand value, and improve their brand competitiveness, thereby affecting, cultivating, and satisfying marketing activities that meet specific consumer needs. By participating in observations and questionnaires, the article studies the development of ecotourism and brand marketing, and puts forward ideas such as strengthening brand management, improving marketing channels, and developing distinctive products to help tourism operators fully understand the consumption needs of ecotourism for tourism Product development and brand marketing strategy development provide useful guidance.
Keywords: Ecological Environment; Natural Resources; Consumption Demand; Brand Value; Feature Analysis

1.INTRODUCTION

The concept of "ecotourism" was introduced into China from abroad and gradually accepted. the national ecotourism demonstration zone construction and operation standard defines ecotourism as: "based on the concept of sustainable development, the premise of protecting the ecological environment, the principle of coordinating the harmony between human and nature, and relying on a good natural ecological environment and unique human and cultural ecological system, eco-friendly way is adopted to carry out ecological experience, ecological education, ecological cognition and obtain a physically and mentally pleasant tourism mode."

Judging from foreign studies, functional zoning is an important part of ecotourism planning. It is generally believed that the earliest zoning model is the concentric circle model advocated by American landscape architect Richard Forster (1973), which divides the National Park into core reserve, recreation buffer zone and intensive recreation zone from the inside to the outside (Goodwin, 1996). This model has been recognized by the World Conservation Union. On this basis, Co aogunn (1988) proposed a five circle National Park Tourism zoning model, which divides the park into key resource protection areas, low use areas of wilderness, scattered rest areas, intensive rest areas and service communities. Some scholars also discussed the principles of ecotourism rules and the delimitation of ecotourism zone boundaries (Campbell, 1999). For example, Edward Inskip (1997), consultant of the world tourism organization, once proposed the principles of ecotourism planning, such as strict protection, capacity limitation, local materials, control path, etc. (Scheyvens, 1999). Sheryl Ross and Geoffrey wall (1999) put forward a successful theoretical framework for ecotourism development. They believed that ecotourism development must coordinate the relationship among local communities, biodiversity and tourism, and the coordination of the relationship among the three depends on reasonable management (Wunder, 2000). They also put forward a series of ecotourism management strategies, such as making effective management plans implement monitoring (species, environment, number of tourists, community situation), formulate community participation plan, manage tourists (measure environmental capacity, control activities, scale, behavior of tourists), formulate relevant laws and regulations, etc. Stefan gossling (1999) believed that successful ecotourism should take comprehensive management measures such as education and control, and the number of tourists can be effectively limited by raising the threshold (Tobias et. al., 1991, Olive, 2005)

2.LITERATURE REVIEW

In January 1995, the first national ecotourism symposium was held in Xishuangbanna. After the symposium, articles on ecotourism research appeared frequently in various journals. Domestic scholars have discussed and studied ecotourism from different perspectives. In the aspect of theoretical research, it mainly discusses the concept, connotation and characteristics of ecotourism, the significance, strategy and goal of developing ecotourism, etc.; in the aspect of empirical research, it mainly includes the planning and design of ecotourism, the evaluation of ecotourism resource utilization, the change rules of tourism ecosystem, etc. Many experts in tourism, geography and forestry in China have studied the ecotourism planning and development of nature reserves (Belsky, 2009). For example, Kong Fanbin made a prospect on the particularity and future development trend of ecotourism in the reserve (Gunter et. al., 2017). Zheng Wenjun, et al. Set up a framework system of ecotourism planning for nature reserves, and discussed the specific embodiment of ecological concept in the tourism planning of nature reserves from the aspects of planning scope, nature positioning, functional zoning, etc. (Mendoza-Ramos et. al., 2017).

Ecotourism is a very important part of world tourism activities. From the perspective of tourism development, ecotourism is the fastest growing part of the world tourism industry in recent years, with an annual growth rate of 25% - 30%. Ecotourism has become the trend of world tourism

(Kusumoarto et. al., 2018). China's ecotourism is mainly based on the development of nature reserves, forest parks, scenic spots and other areas. At present, the form of China's ecotourism has developed from the original natural landscape to the semi artificial ecological landscape. The tourism objects include fields, glaciers, nature reserves, rural pastoral landscapes, etc. the form of ecotourism includes sightseeing, viewing, scientific research, exploration, hunting, fishing, rural picking and the main activities of ecological agriculture, showing a diversified pattern (Digun-Aweto et. al., 2018). At the same time, ecotourism has become a key industry for local governments to attract investment and a new supporting point for economic development (Frederico et. al., 2018, Rahakbauw et. al., 2017).

In the 12th Five Year Plan for national economic and social development, it is clearly pointed out that "comprehensively promote ecotourism" (Fatima et. al., 2017). In the outline of the 12th Five Year Plan for national tourism development, specific arrangements are made for the development of ecotourism. In order to promote the development of ecotourism, the National Tourism Administration and the Ministry of environmental protection jointly formulated the national ecotourism demonstration area construction and operation specifications, jointly issued the national ecotourism demonstration area management regulations and the implementation rules for the scoring of national ecotourism demonstration area construction and operation specifications (Nze-Nkogue et. al., 2017). The issuance and implementation of these documents will play an important role in speeding up the construction of ecotourism demonstration areas and improving the level of ecotourism in China.

3.THE INVESTIGATION AND ANALYSIS OF BRAND MARKETING OF ECOTOURISM IN CHINA

Questionnaire design and sample selection

This survey uses a self-designed questionnaire based on references. There are 18 questions in total: 13 single questions, 2 multi questions, 1 sorting question and 1 subjective question. A total of 240 questionnaires were sent out, of which 200 were valid.

The questionnaire is divided into three parts. The topics are as follows: the first part is about the statistics of the basic demographic characteristics of the research object: including the survey items of gender characteristics, age characteristics and average family income characteristics; the second part is about the statistics items of information sources and marketing channels. The third part is about the statistics of food, housing and transportation.

In this paper, the questionnaire is distributed to the people who choose ecotourism. In the tourism agency of the region, consumers are invited to fill in the questionnaire mainly in the form of questionnaire, and several tourists who have returned from ecotourism are investigated in-depth. Factors such as the independent completion of the questionnaire and the content of better geographical solutions are properly considered.

Analysis of questionnaire results

Analysis of basic demographic characteristics

According to the statistics of the filling in of the effective questionnaire, the following charts can be seen: in the 200 valid questionnaires, the proportion of women in the filling in accounts for about 54%; in terms of age, the most of them are over 45 years old, accounting for 55%; the proportion of those under 25 years old also accounts for 32%; the average family income between 5000-10000 yuan accounts for about 54%.

Brand consumption

According to the survey, in the consumption decision-making behavior of ecotourism, most tourists will choose the tourist area with brand rather than the unknown place. More than 85% of tourists think that the brand scenic spots will be more reassuring and the overall tourism level will be improved.

Among the subjective questions in the questionnaire survey, most people mentioned Shangri La, Jiuzhaigou, Wuyuan and other places, but few mentioned the areas. With the continuous improvement of consumer's cultural level, income level and consumption concept, consumer's brand awareness has been continuously enhanced, and they have more and more preference for well-known brands, and pay more and more attention to brand culture

Six elements of tourism consumption

In terms of consumption, many people's per capita consumption expenditure for travel is mainly concentrated in 1000-3000 yuan, accounting for about 45%; 3000-5000 yuan accounts for 20%; 5000- 7000 yuan accounts for 10%; 7000 yuan or more accounts for 10%. The consumption of ecotourism is slightly different from that of traditional tourism. The consumption of ecotourism is mainly reflected in: eating, living, traveling and traveling; entertainment and shopping are almost rare. Most of the ecotourism travel time is 3-7 days, accounting for 65%, 10% of 1-2 days, and 35% of more than 7 days.

In tourism, the six elements include "eating" -- dining choice, "living" -- accommodation choice, "traveling" -- Transportation choice, "traveling" -- tourism attraction resources choice, "shopping" -- shopping choice, "entertainment" -- entertainment choice. The following will be analyzed by survey:

(1) "Stay" -- choice of accommodation

From the analysis, we can see that "stay" occupies a very important position in the six elements ranking. From the survey, we can see that most of them choose hotel accommodation, with star hotels accounting for 64%. The safety and comfort of accommodation conditions are the first choice for everyone in tourism.

(2) "Travel" -- the best way to travel and tourism attraction resources

Choose to travel, of course, the elements of tourism are very important. When choosing the way to travel, 60% of the tourists choose self-help travel, which is quite different from the previous group travel. 20% of the tourists choose semi self-help travel; 16% of the tourists choose to travel with the group, which doesn't matter about 4%.

Tourism resources refer to all kinds of things and factors that can attract tourists, develop and utilize tourism, and produce economic, social and environmental benefits.

For people who like ecotourism, this tourism resource is particularly important, which is the reason to attract them here. Natural scenery, folk characteristics, authentic food and so on. And some places have strong seasonality, such as Wuyuan in April, which is very beautiful. It's a good choice for tourists to stay away from noisy cities and go to a quiet and peaceful town or field.

(3) " Walking" -- choice of means of transportation

" Walking" also plays an important role in tourism. In ecotourism, about 64% of people choose to drive by themselves, 10% choose aircraft as means of transportation, and 21% choose train.

(4) "Eat" -- dining options

"Eat" ranks fourth among the six elements, of which 65% are local snacks and 24% are medium and high-end specialty restaurants. It can be seen that "eat" focuses on taste, eating characteristics and unique taste experience.

(5) "Buy" -- shopping options

"Shopping" does not occupy a very high position in ecotourism, "shopping" is not the purpose of everyone to go to ecotourism. The preferences of shopping types are as follows: famous and special products, souvenirs, clothing, etc. Among them, the proportion of the first two is 96%, far higher than other.

(6) "Entertainment" -- entertainment choice

Entertainment is the last choice in the consumption of ecotourism. For the survey of places with entertainment nature such as clubs, bars, KTV, etc., 85% of them explicitly said that they would not go, 10% of them hold an uncertain attitude, and 5% of them said they would go. The overall image building of tourist destination is the core of the brand management of tourist destination, and its main work is the accurate positioning of the overall image and visual image. To build the overall concept of tourism destination brand, establish a simple, easy to understand, easy to identify, easy to remember, outstanding brand image, so that the tourism destination has distinctive local characteristics, industry characteristics. Give full play to the unique role of visual image in the overall image of tourist destination. Visual image is the first information that tourists can perceive. It has a strong cognitive appeal to tourists and can help tourists quickly and effectively perceive the overall image of the tourist destination.

Develop characteristic products.

The continuous charm of ecotourism is due to the richness and authenticity of ecotourism products' ecological flavor. Therefore, when developing ecotourism products, we must consider the past and the future, ensure the strong ecological flavor, at the same time, excavate its personality and characteristics, achieve deep and multi-directional development and design, enhance the attraction of ecotourism products, and improve market competitiveness. At present, the participation of ecotourism is also very important. To let tourists participate in ecotourism, enhancing tourists' experience is an important means to attract tourists, and also a way to retain tourists and extend their stay time.

Strengthen brand management.

The purpose of tourism brand management is to strive for famous brand and realize the long-term economic benefits of a tourism enterprise. The essence of tourism brand management is a process management, which should be long-term, phased and systematic. The implementation of dynamic management, in the dynamic process of enhancing brand value, accumulating brand assets, building a famous brand in a specific area, and achieving the strategic objectives of the enterprise, rather than focusing on brand building and ignoring brand management. Be good at analyzing tourists' psychological motivation and demand, and find out the brand positioning.

Improve marketing channels.

Build a publicity platform, display the brand image of ecotourism, and be good at using various ways and opportunities to target tourist market and carry out multi-level combined publicity and promotion. Specific methods: invite journalists from relevant media and travel agency personnel to experience on the spot; display the beautiful scenery and culture of ecotourism through photography works, advertisements, etc.; use relevant large-scale activities to publicize, such as tourism promotion meetings, etc.; release tourism advertising information through modern information means such as TV, Internet, journals, etc. Strengthen cooperation with travel agencies, expand the influence of ecotourism, and expand the market of ecotourism tourists. Maintain market order, provide funds for publicity, create a good market environment for ecotourism brand building, and encourage and guide social capital to participate in the brand building of ecotourism enterprises.

3.CONCLUSION

Ecotourism is a new form of tourism developed on the basis of traditional tourism, which has rich connotation and strong vitality. The emergence of ecotourism is people's reflection on the environmental problems caused by traditional tourism, which embodies the idea of sustainable development. China's brand awareness of ecotourism is relatively weak. Enterprises need to create brand image, create brand value, improve brand competitiveness, so as to influence, cultivate and meet specific consumer demand of marketing activities. Through participating in observation and questionnaire survey, this paper studies the development and brand marketing of ecotourism, puts forward the views of strengthening brand management, improving marketing channels, developing characteristic products, etc., to help tourism operators fully understand the consumption demand of ecotourism, and provide useful guidance for the development of tourism products and the formulation of brand marketing strategies.

REFERENCES

[1] Goodwin, H. (1996). In pursuit of ecotourism. Biodiversity and Conservation, 5(3), 277-291.

[2] Campbell, L. M. (1999). Ecotourism in rural developing communities. Annals of Tourism Research, 26(3), 534-553.

[3] Scheyvens, R. (1999). Ecotourism and the empowerment of local communities. Tourism Management, 20(2), 245-249.

[4] Wunder, S. (2000). Ecotourism and economic incentives -- an empirical approach. Ecological Economics, 32(3), 465-479.

[5] Tobias, D., Mendelsohn, R. (1991). Valuing ecotourism in a tropical rain-forest reserve. Ambio, 20(2), 91-93.

[6] Oliver Krüger. (2005). The role of ecotourism in conservation: panacea or pandora's box. Biodiversity & Conservation, 14(3), 579-600.

[7] Belsky, J. M. (2009). Misrepresenting communities: the politics of community based rural ecotourism in gales point manatee, belize1. Rural Sociology, 64(4), 641-666.

[8] Gunter, U., Ceddia, M. G., & Bernhard Tröster. (2017). International ecotourism and economic development in central america and the caribbean. Journal of Sustainable Tourism, 25, 43-60.

[9] Mendoza-Ramos, A., & Prideaux, B. (2017). Assessing ecotourism in an indigenous community: using, testing and proving the wheel of empowerment framework as a measurement tool. Journal of Sustainable Tourism (1), 1-15.

[10] Kusumoarto, A., & Ernawati, A. (2018). Ecological carrying capacity analysis of ecotourism objects in salak ii resort area, halimun salak national park. IOP Conference Series Earth and Environmental Science, 145(1), 12-18.

[11] Digun-Aweto, O., Fawole, O. P., & Saayman, M. (2018). The effect of distance on community participation in ecotourism and conservation at okomu national park Nigeria. GeoJournal(3), 1-15.

Adsorption Kinetics Study on Reactive Brilliant Red K-2BP by Modified Carbonized Pomelo Peel

Yonggang Zeng[1], Yang Zeng[1], Jin Huang[1,], Xuying Zheng[1], Lin Luo[2], Rui Lan[1], Xiao Luo[1], Yujuan Chen[1], Wenting Lin[1]*
[1]School of Architecture and Civil Engineering, Chengdu University, Chengdu 610106, China;
[2]Post Office in Chengdu, Sichuan province, Chengdu 610011, China
** Corresponding author: Jin Huang*

Abstract: With the promotion of dye industry and processing technology, new additive and dyestuff have been widely used in the printing and dyeing industry, resulting in more and more serious harm, among which reactive brilliant red is one of the most commonly azo dyes in production activities. Using the heating method to make carbonized pomelo peel that is the material in the experiment, then Zinc chloride, potassium hydroxide and sulfuric acid were respectively used for modification, lastly measuring the iodine adsorption value. The result shows that the best modified carbonized pomelo peel was $ZnCl_2$ modified activated carbon, whose iodine adsorption was 441.706 mg/g. The ideal adsorption conditions were got by orthogonal experiment, the efficiency of which is 71.9%. The time is 120min, the original concentration is 10mg/L, the dosage is 0.4g/L and pH=7. The adsorption kinetics of dyes with different concentrations were studied by using the pseudo-first-order model kinetic equation and the pseudo-second-order model and the diffusion equation in particles, and the whole adsorption process can be described by the pseudo second-order kinetic model.
Keywords: Carbonized pomelo peel; Reactive brilliant red K-2BP; Adsorption; Adsorption kinetics

1. INTRODUCTION

China is a huge producer of dyes. Dyeing wastewater mainly appears in textile, printing and other industries. In recent years, with the rapid development of dye industry and processing technology, new additives and dyes have been widely used in the printing and dyeing industry. The harm of dye wastewater has attracted more and more attention, and even these organic substances are carcinogens, which do great harm to human health [1]. Reactive Brilliant Red is one of the most widely used azo dyes. Reactive Brilliant Red K-2BP (reactive Brilliant TredK-2BP, dye index number CIR active Red 24) is mainly used in dyeing cotton products and viscous fibers. It is prepared by a series of physical and chemical processes using acid and cyanide as raw materials. The dye reactive brilliant red K-2BP production wastewater is produced in the filtration salting-out section [2].

The main effects of reactive brilliant red dyeing wastewater on the environment are: color pollution caused by dyes, obvious changes in water quality, high content of organic pollutants, high COD concentration, and difficult biodegradation [3]. There are mainly physical methods [4], chemical methods [5] and biological methods [6] in the treatment of azo dye wastewater such as K-2BP.

Among them, the reasons for the complicated follow-up work and high cost of using physical method. The initial investment of chemical method is large, and some unavoidable by-products will be produced in the treatment engineering. The presence of biotoxic organics makes biological treatment difficult to adapt. All of these reasons limit the wide use of these technologies. Therefore, to find a reasonable and effective way to treat dyeing wastewater and to improve the traditional treatment methods are the focus of solving public environmental problems.

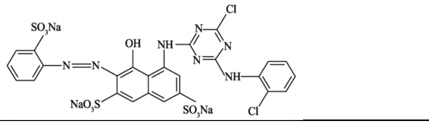
The edible or processed pomelo will produce agricultural waste of pomelo peel rich in cellulose [7]. This kind of material is originally a good biological raw material, but is often directly discarded and stacked, which will pollute the environment, occupy land resources and waste resources. Pomelo peel is a good carbonizing material, and the study of using carbonized pomelo peel as adsorbent to treat pollutants is more and more available for reference. Including the treatment of phenol [8], methylene blue [9] and methyl orange [10], the preparation of multi-stage porous carbon from cellulose is an efficient adsorbent for the removal of organic dyes from aqueous solution [11]. At the same time, some studies have found that grapefruit peel as an adsorbent for treating heavy metals is also very impressive [12]. Therefore, it can be seen that the full utilization of waste pomelo peel can achieve the effect of treating waste with waste and turning waste into treasure [13].

2. MATERIALS AND METHODS

2.1 Materials, Reagents and Instruments

Pomelo peel was taken from Chengdu, Sichuan. Zinc chloride, potassium hydroxide, iodine (GB/T 675), potassium iodide (GB/T 1272), sodium thiosulfate (GB/T 637), soluble starch (HGB 3095), potassium dichromate (GB 1259) and acetic acid were the analytical pure. Reactive brilliant red K-2BP was produced by Ji'nan Mingxin chemical factory, and its structure and molecular formula are shown in Table 1.

Table 1 Structure and molecular formula of reactive brilliant red K-2BP

Dye	Structural formula	Molecular formula	Molecular weight
Reactive brilliant red K-2BP		$C_{25}H_{14}Cl_2N_7Na_3O_{10}S_3$	808.48

Electric thermostatic air drying oven: DHG-9140, Shanghai Jinghong Experimental Equipment Co., Ltd. Visible light spectrophotometer: V-1200 Shanghai Mapoda Instrument Co., Ltd. Water bath oscillator THZ-032, Changzhou Gaode Instrument Manufacturing Co. Electronic Balance ESJ220-4, Shenyang Longteng Electronics Co., Ltd. PH meter PHBJ-260, Crystal. Standard inspection screen 20 mesh, 50 mesh, 100 mesh, Zhejiang Shangyu City Huafeng Hardware Instrument Co., Ltd. Digital display constant temperature water bath HH-4, Changzhou Aohua Instrument Co., Ltd. Universal Electric Furnace, DL-1, Beijing Zhongxing Weiye Instrument Co., Ltd.

2.2 Adsorption Experiment of Dye Wastewater

(1) Preparation of carbonized active pomelo peel

On the basis of the previous research [14-16], carbonized pomelo peel was prepared by chemical activation in this experiment. The main steps of the chemical activation method used are as follows: Clean pomelo peel with distilled water, dry it and cut it into 5 cm long strips. The dried raw materials are put into an electric thermostatic air drying oven, dried at 100°C, sealed and wrapped with tin foil, and then placed on a multi-purpose electric stove. Turn the power of the electric furnace to the maximum and carbonize for 15min. Cool to room temperature, remove and sieve for 50 mesh.

The selected carbonized pomelo peels were mixed with 3 mol/L $ZnCl_2$, 3 mol/L KOH, 37% H_2SO_4 and 2mol/L $FeCl_2$ in a 100mL tapered flask with a mass ratio of 1:3, and the bottle was capped immediately and oscillated in a constant temperature oscillating machine (temperature: 25°C, oscillation speed: 150 r/min, oscillation time: 120 min). After the vibration, the solid peel was firstly washed with 1:9 dilute hydrochloric acid solution (1 mol/L), then washed repeatedly with distilled water to neutral, and then dried to constant weight. After grinding, the activated carbon less than 200 mesh was screened out for later use [17].

(2) Determination of iodine in carbonized pomelo peel

In this experiment, the iodine value of the modified carbonized pomelo was determined by the national standard GB/T12496.8-1999 "Determination of Iodine Adsorption of Experimental Methods on Woody Activated Carbon" for the carbonized pomelo peel [18]. The calculation formula (1) (2) of iodine adsorption is as follows:

$$A = \frac{5(10c_1 - 1.2c_2V_2)\times 127}{m}\cdot D \qquad (1)$$

$$c_3 = c_2 \cdot V_2/10 \qquad (2)$$

where A is iodine adsorption of the sample (mg/g), C1 is concentration of iodine standard solution (mol/L), C2 is concentration of sodium thiosulfate standard solution (mol/L), V2 is consumption of sodium thiosulfate standard solution (mL), M is sample weight (g), 127 is Molar mass of iodine (g/mol), D is correction coefficient which can be obtained according to residual concentration C3 in the table.

(3) Configuration of reactive brilliant red K-2BP and standard curve determination and drawing

Wage a certain amount of reactive brilliant red K-2BP and put it into a beaker, add a small amount of distilled water and stir it with a glass rod at the same time, and then prepare reactive brilliant red K-2BP mother solution at constant volume with concentrations of 50 mg/L, 100 mg/L and 150 mg/L. A certain concentration of reactive brilliant red K-2BP solution was prepared, and the absorbance was measured at the maximum absorption wavelength with distilled water as the reference.

(4) Adsorption orthogonal experiment of modified carbonized pomelo peel on reactive brilliant red K-2BP

Table 2 Adsorption experiment orthogonal table

	A	B	C	D
Level	Adsorption time (min)	Raw reactive brilliant red concentration (mg/L)	Dosage(g/L)	Mixed solution pH
1	60	10	0.2	3
2	120	20	0.3	7
3	180	30	0.4	11

Four factors including: adsorption time (A), concentration of reactive brilliant red K-2BP (B), dosage of carbonized pomelo peel (C) and pH of mixed solution (D) were selected. Four factors and three levels orthogonal experiment was used to evaluate the best adsorption conditions in a certain range by measuring the absorbance and calculating the removal rate. The orthogonal factors are shown in Table 2.

In addition, the absorbance of 10 mg/L, 20 mg/L and 30 mg/L reactive brilliant red K-2BP was 0.22, 0.43

and 0.70, respectively. The original solution had a pH of about 7.

The main experimental operation steps of this experiment are as follows: Take 50 mL of the original reactive brilliant red solution with a certain concentration and put into a 150 mL conical flask with a capacity specification, and the carbonized pomelo peel is added according to a certain dosage (after zinc chloride treatment). After adjusting the pH of the solution (or maintaining the original pH), place the conical flask on the thermostatic water bath oscillator and oscillate for a certain time. The solution after vibration was filtered, and the absorbance of the filtered solution was measured with a spectrophotometer (each sample was measured three times, and the average value was taken and recorded, n = 3). According to the absorbance and standard curve before and after adsorption and the dosage, the removing rate of carbonized pomelo peel to the original reactive brilliant red was calculated. The calculation formula of removal rate [19] is shown in Equation (3) and (4).

$$R = (C_0 - C_e) / C_0 \times 100\% \quad (3)$$

$$q_e = (C_0 - C_e) V / M \quad (4)$$

where R is removal rate, Qe is adsorption quantity, C_0 is absorbance of the original reactive brilliant red solution, M is the added mass, C_e is absorbance of a mixed solution after adsorption.

(5) Adsorption kinetics analysis method for reactive brilliant red K-2BP from modified carbonized pomelo peel

The adsorption kinetics model is very effective for the analysis of adsorption kinetics and mass transfer process. Quasi-first order kinetic equation, quasi-second order kinetic equation and intra-particle diffusion equation are often used to describe and analyze the adsorption process in solution. The quasi - first - order and quasi - second - order models are widely used to describe adsorption kinetics based on the assumption that adsorption is a quasi - chemical reaction.

Adsorption kinetics is an in-depth analysis of the adsorption rate problem. Adsorption kinetics is used to fit the adsorption process to accurately describe the influence of modified carbonized pomelo peel on the adsorption rate of adsorbents.

Quasi-first-order kinetics model [20]: Quasi-first-order kinetics refers to the linear relationship between the reaction rate and the first power of the concentration of reactants in the system, which is expressed as follows:

$$\frac{dq_t}{dt} = k_1(q_e - q_t) \quad (5)$$

$$\ln(q_e - q_t) = \ln q_e - k_1 t \quad (6)$$

where q_t is adsorption capacity of reactive bright red at time t (mg/g), k_1 is first order kinetic adsorption rate constant ($g \cdot mg^{-1} \cdot min^{-1}$).

Quasi-second-order dynamics model [21]: The differential equation of quasi-second-order dynamics is expressed as follows:

$$\frac{dq_t}{dt} = k_1(q_e - q_t)^2 \quad (7)$$

$$\frac{t}{q_t} = \frac{1}{k_2 q_t^2} + \frac{t}{q_e} \quad (8)$$

where k_2 is second order kinetic adsorption rate constant($g \cdot mg^{-1} \cdot min^{-1}$).

$$h_0 = k_2 \cdot q_e^2 \quad (9)$$

where h_0 is initial adsorption rate($g \cdot mg^{-1} \cdot min^{-1}$).

As t approaches 0, the initial adsorption rate can be obtained according to the formula (9).

Morris-Weber diffusion model equation [22]: In the process of adsorbate transfer from solution to solid phase, intrapellule diffusion is the main process, so the intrapellule diffusion process is often the control step of adsorption rate. The linear expression formula of intra-particle diffusion is as follow:

$$q_t = k_p t^{0.5} + C \quad (10)$$

$$k_p = \frac{6q_e}{R}\sqrt{\frac{D}{\pi}} \quad (11)$$

where C is intercept, reflecting the thickness of the boundary layer, the larger the value of C, the greater the boundary layer effect; k_p is diffusion rate constant in particles, related to D, $g \cdot mg^{-1} \cdot min^{-0.5}$. R is the particle radius, cm^{-1}.

3. EXPERIMENTAL RESULTS AND DISCUSSION

3.1 Iodine Adsorption Test Results of Modified Carbonized Pomelo Peel

The influence of zinc chloride, potassium hydroxide and sulfuric acid on iodine adsorption is compared in the following Fig. 1.

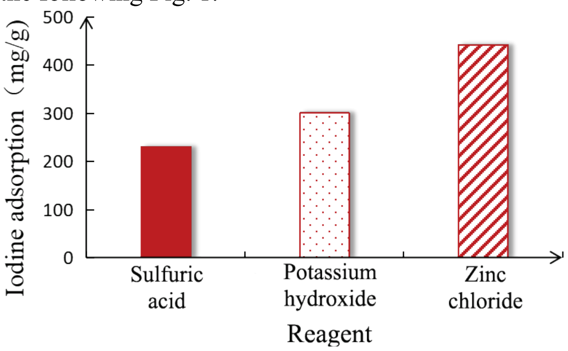


Figure 1 Iodine adsorption value of carbonized grapefruit peel

According to the analysis in the above table, it can be seen that the highest iodine value of carbonized pomelo peel of the three modification methods is that the activated carbon modified by zinc chloride has the best adsorption capacity for small molecular impurities. Therefore, the subsequent adsorption experiments are mainly carried out with activated carbon activated by zinc chloride.

3.2 Drawing Standard Curve of Reactive Brilliant Red K-2BP

According to the results of the absorbance measured at 535 nm for different concentrations of reactive brilliant red K-2BP, the Table 3 below is obtained.

Table 3 Absorbance determination values of reactive brilliant red K-2BP solutions at different concentrations

Concentration (mg/L)	0	4	8	12	16	20	24	28	32
Absorbance	0	0.084	0.169	0.23	0.357	0.43	0.592	0.62	0.653

As shown in Figure 2, the absorbance in the above table is taken as the abscissa and the concentration as the ordinate to draw the absorbance curve.

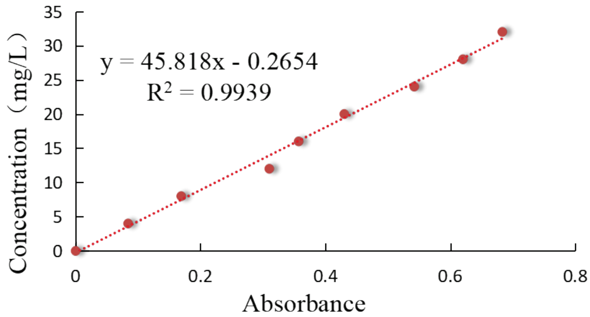


Figure 2. Standard concentration curve of reactive brilliant red K-2BP solution

3.3 Experimental Results and Analysis of Adsorption of Reactive Brilliant Red K-2BP by Modified Carbonized Pomelo Peel

Table 4 Adsorb orthogonal data table

Serial number	Adsorption time (min)	K-2BP (mg/L)	Dosage (g/L)	Mixed solution pH	Absorbance	Removal rate
1	1	1	1	1	0.132	39.6%
2	1	2	2	2	0.415	25.8%
3	1	3	3	3	0.36	46.6%
4	2	1	2	3	0.095	57.8%
5	2	2	3	1	0.38	11.1%
6	2	3	1	2	0.339	50.1%
7	3	1	3	2	0.062	71.9%
8	3	2	1	3	0.368	14.1%
9	3	3	2	1	0.409	39.3%
K_1	1.120	1.693	1.038	0.900		
K_2	1.190	0.510	1.229	1.478		
K_3	1.253	1.360	1.296	1.185		
R^*	0.063	1.183	0.258	0.578		

Note: $K_{1,X}$ is 123, add 147, add 168, add 159.$K_{2,X}$ is 456, you add 258, you add 249, you add 267. K_{3X} is 789 plus 369 plus 357 plus 348 plus. X represents four factors A\B\C\D. R_A is the difference between the maximum and minimum K under factor A, and Rx is the same.

In the orthogonal experiment, the degree of influence of the level changes of various factors in the range R* reaction of K on the experimental results. The larger the R* value is, the more important the influence of this factor on experimental results is [23].

The adsorption experiment of activated carbon was carried out by orthogonal experiment and simple contrast experiment. When the temperature was controlled as 25°C, the oscillation speed was 150 r/min and the solution volume was 50 mL, the dosage of activated carbon, pH value, oscillation time and concentration of the tested solution were determined by orthogonal experiment.The adsorption orthogonal data are shown in Table 4.

In this experiment, only the adsorption time (A), the concentration of reactive brilliant red K-2BP (B) and the dosage were considered (C) and pH of mixed solution (D), under the conditions of dosage (C) and pH of mixed solution (D), The order of removal rate is K3 (A)> K2 (A)> K1 (A), K1 (B) > K3(B) > K2(B) , K3 (C) > K2 (C) > K1 (C), K2 (D) > K3 (D) > K1 (D). Therefore, when the removal rate was taken as the standard, the optimal adsorption conditions were A3B1C3D2, that is, adsorption time of 120 min, reactive brilliant red K-2BP concentration of 10 mg/L, dosage of 0.4 g/L, pH of the mixed solution was 7.

According to the range R* of various factors at different levels, the concentration of reactive brilliant red K-2BP was the most important factor affecting the initial concentration, pH, dosage and oscillation time of reactive brilliant red K-2BP in the adsorption process.

3.4 Influence of Different K-2BP Concentrations on Adsorption Kinetics

Table 5 Adsorption data of reactive brilliant red K-2BP at different concentrations

Concentration		10 min	20 min	30 min	50 min	70 min	90 min	120 min	150 min
10	Absorbance	0.134	0.132	0.126	0.120	0.118	0.115	0.114	0.111
	Absorbing capacity (mg/g)	0.51	0.53	0.56	0.60	0.61	0.63	0.63	0.65

20	Absorbance Absorbing capacity (mg/g)	0.172 1.55	0.170 1.56	0.164 1.59	0.152 1.66	0.133 1.77	0.128 1.80	0.124 1.82	0.123 1.83

Table 6 The reaction rate equation fitting results under different concentrations of reactive brilliant red K-2BP

M (mg/L)	Pseudo-first-order equation		Pseudo-second-order equation			Intra-particle diffusion equation		
	k_1 (min^{-1})	R^2	k_2 ($g\ mg^{-1}\ min^{-1}$)	h_0 ($mg\ (g\ min)^{-1}$)	R^2	k_p ($mg\ g^{-1}\ min^{-0.5}$)	C	R^2
10	0.0195	0.9423	0.625	0.272	0.9994	0.0023	1.5436	0.8843
20	0.0319	0.9643	0.422	1.413	0.9993	0.0009	0.5262	0.8518

Firstly, the kinetic behavior of activated carbon adsorption of reactive brilliant red K-2BP was investigated by using quasi-first-order and quasi-second-order kinetic models.

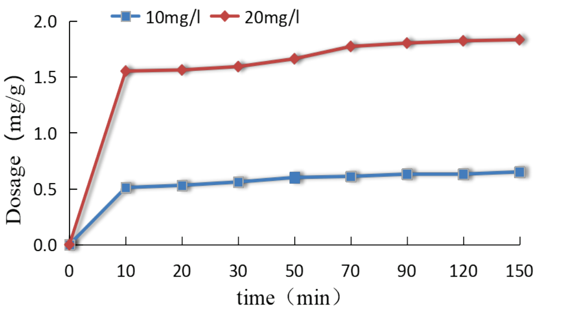


Figure 3 Adsorption kinetics curves of reactive brilliant red K-2BP with different concentrations

The results of Table 5, 6 and Figure 3 show that the adsorbents exhibit similar adsorption kinetics at different dye concentrations, s, each curve can be divided into two stages: Take the dye concentration of 20 mg/L as an example, the first section of the slope is very big, fast adsorption, the adsorption capacity changed greatly, so quickly adsorption is caused by van der Waals force between the adsorbent and the adsorbate [24]; In the second stage, the slope is small after 10min, and the increase of adsorption amount tends to be gentle and reaches equilibrium. After the adsorption time exceeds 70 min, almost all dye molecules are adsorbed, so the increase of adsorption amount is not large.

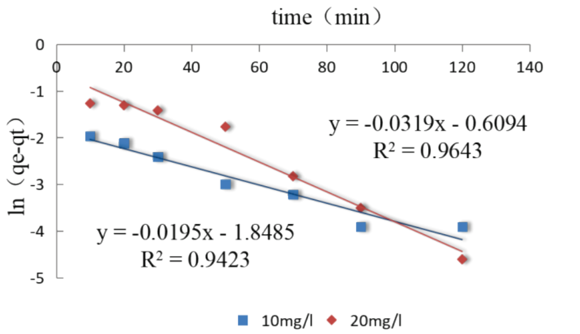


Figure 4 Quasi-first-order kinetic simulation curve of pomelo peel activated carbon adsorption process for reactive brilliant red K-2BP

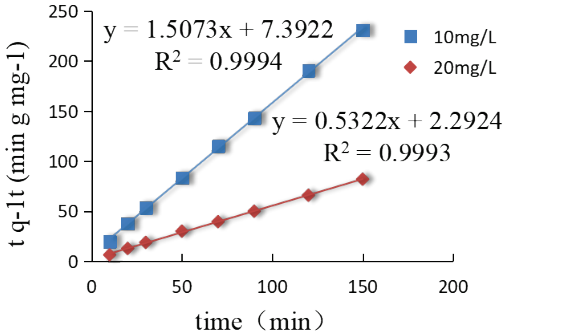


Figure 5 Quasi-second-order kinetic simulation curve of pomelo peel activated carbon adsorption process for reactive brilliant red K-2BP

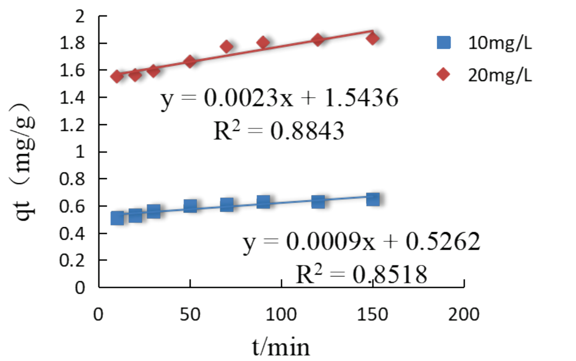


Figure 6 Particle diffusion simulation curve of pomelo peel activated carbon adsorption process for reactive brilliant red K-2BP

As can be seen from the quasi-first-order fitting curve (Fig. 4), with the progress of the adsorption process and the increase of the adsorption amount required, the actual adsorption data gradually deviated from the fitting curve. Therefore, the quasi-first-order kinetic equation of this adsorption test can only describe the adsorption process before reaching adsorption saturation.

As can be seen from the quasi-second-order fitting curve (Fig. 5), since the actual adsorption data fit well with the fitting curve and the R^2 value of the curve is all above 0.99, the quasi-second-order kinetic equation can very accurately describe the entire adsorption process in this experiment. As can be seen from the figure, with the increase of initial concentration C_0, the adsorption rate constant K_2 gradually decreases. This is because the higher the initial concentration of reactive brilliant red K-2BP is, the higher the probability of its molecular collision will be, so the longer the time required for reactive brilliant red K-2BP molecule to bind to the active site on the adsorbent is also longer [24].

According to the variance R^2 of the three kinds of curves (the result takes three decimal places), the order from the largest to the smallest is the quasi-second-order kinetic equation, the quasi-first-order kinetic equation, and the particle diffusion equation. The simulation curve of particle diffusion is shown in Figure 6. Therefore, the second-order kinetic equation has the highest fitting degree and can best describe the adsorption process, the quasi-first-order kinetic equation is the second, and the particle diffusion equation is the lowest. At the same time, according to the equation curve calculation, the actual measured maximum adsorption capacity q_e at 10 mg/L and 20 mg/L K-2BP is very close to the maximum adsorption capacity q_{e2} calculated by the quasi-second-order kinetic equation. For example, the experimental adsorption capacity at 10 mg/L is 0.65 mg/g, and the adsorption capacity calculated by the equation is 0.66 mg/L. Therefore, according to the above results, it is indicated that the adsorption of reactive bright red K-2BP from carbonized pomelo peel conforms to the quasi-second-order kinetic model. Therefore, the adsorption matrix diffusion is the limiting factor of the adsorption process, rather than the intra particle mass transfer resistance adsorption intra particle diffusion [25]. The intercept of the equation is not 0, but the origin curve shows that the adsorption process is not only the diffusion of adsorbate through the liquid interface to the liquid film diffusion of the adsorption interface, but also other diffusion methods [26]. Experimental analysis verified that the adsorption process could be divided into two stages [19]. The first stage was a rapid adsorption stage dominated by membrane diffusion. At the second stage, the adsorption rate gradually slows down, and the adsorption rate at this stage is dominated by both membrane diffusion and intra-particle diffusion. With the progress of adsorption, the membrane diffusion resistance increases and the membrane diffusion gradually disappears, and most of the adsorption is dominated by intra-particle diffusion, and the adsorption tends to be balanced [25].

4. CONCLUSIONS

By modifying carbonized pomelo peel with different modifiers, the adsorption performance of different modified carbonized pomelo peels was compared with the iodine adsorption as the index. Under three different activation conditions, the adsorption capacity of carbonized pomelo peel modified by zinc chloride is higher than that modified by the other two active agents. The iodine adsorption of carbonized pomelo peel modified by 3 mol/L $ZnCl_2$ is 441.706 mg/g. Through preliminary analysis, this is closely related to the activation mechanism of zinc chloride on fiber.

The activated carbon from pomelo peel was prepared by $ZnCl_2$ activation method. The adsorption factor that affected the decolorization rate of reactive brilliant red K-2BP was the initial concentration of reactive bright red K-2BP > pH >dosage>oscillation time. Under the measured conditions, the suitable adsorption conditions are as follows: pH = 7, adsorption time 150 min, initial concentration of reactive brilliant red K-2BP 10 mg/L, dosage of carbonized pomelo peel 0.4 g/L.

The activated carbon prepared by using pomelo peel as carbonization raw material and $ZnCl_2$ as modifier can effectively adsorb reactive bright red K-2BP dye on the carbonized pomelo peel within 180min can basically reach equilibrium, and the adsorption process is mainly physical adsorption. The adsorption process of activated carbon adsorbent for reactive brilliant red K-2BP can be well simulated by quasi second-order kinetic equation, and the correlation coefficient is 0.99. From the kinetic analysis, the adsorption process is mainly dominated by the diffusion of adsorbate through the liquid phase interface to the external diffusion of the adsorption interface. Of course, there are other diffusion modes.

Pomelo peel has a large yield and is cheap and easy to obtain. It has a good adsorption effect on reactive bright red K-2BP dye, and can be used as the waste pomelo peel as adsorption material to treat dye wastewater. Realize the effect of "treating waste with waste and turning waste into treasure".

ACKNOWLEDGEMENTS

This research was financed by the National Natural Science Foundation of China (No. 31600253), the Education Department Foundation of Sichuan Province (No. 18ZA0119) and the Meat Processing Key Laboratory Foundation of Sichuan Province (No. 18-R-17, No. 20-R-07).

REFERENCES

[1] Chen, W.H.; Li, G.; Xu, F.C.; Pan, X.; Wen, N.N. Research progress of dye wastewater pollution and treatment methods. Zhejiang Agric. Sci., 2014, (2): 264-269.

[2] Zhu, W.P.; Cang, Y.; Li, Z.H. Research on the utilization of activated brilliant red K-2BP wastewater. Water & Waste., 2001, 27(9): 46-48.

[3] Xia, J.F. Experimental study on the treatment of printing and dyeing wastewater by improved iron internal electrolysis. Hubei: Wuhan Sci-Tech. Univ., 2009.

[4] Teng, R. Preparation of Ce/chitosan/fly Ash composite adsorbent and its adsorption on direct dye. Inner Mongolia Norm. Univ., 2017.

[5] Zhang, W.W.; Yao, R.; Chen, L. Research progress in the treatment of dye wastewater by advanced oxidation technology. Water Pol. Treat., 2018, 6(04): 159-164.

[6] Gong, Z.Y. Water quality characteristics and treatment technologies of dyeing wastewater. Jiangxi Chem. Ind., 2017(04): 24-27.
[7] Hunag, Y.Y. Research progress of agricultural waste as biomass adsorbent for wastewater treatment. Appl. Chem. Ind., 2017, 46(2): 368-372.
[8] Yan, Y. Adsorption of phenol from carbonized pomelo peel. Jiangsu Agric. Sci., 2016, 44(08): 481-483.
[9] Hou, S.X. Adsorption properties of pomelo peels against methylene blue in dye wastewater. Adv. Chem., Mater. and Metal. Eng., Part 1. 2013: 173-176.
[10] Li, H.Z.; Sun, Z.B.; Zhang, L.; Tian, Y.X. A cost-effective porous carbon derived from pomelo peel for the removal of methyl orange from aqueous solution. Colloid Surface A, 2016, 489.
[11] Hao, Y.G.; Wang, Z.; Wang, Z.G.; He, J.J. Preparation of hierarchically porous carbon from cellulose as highly efficient adsorbent for the removal of organic dyes from aqueous solutions. Ecotox. Environ. Safe., 2019, 168.1.
[12] Yu, M.Q.; Yang, J.B.; Zheng, X. Pomelo peel adsorbent adsorption performance of Cr (VI). Fujian Norm. Univ., fuqing, 2011 (05): 52-56.
[13] Meng, F.Q.; Lu, D.F. Research progress of dyeing wastewater treatment technology. Environ. Dev., 2018, 30(2): 103-103.
[14] Zeng, Y.G.; Li, W.Y.; Huang, J.; Huang, Z.W.; Wang, J.; Qian, J.; Yuan, A.; Du, T.T.; Hu, Y.Q.; Li, D.G. Study on new rural domestic sewage treatment technology based on CASS and VBF. Bulgarian Chemical Communications, 2017, 49(1): 176-182.
[15] Zeng, Y.G.; Li, W.Y.; Wang, L.L.; Du, T.T.; Huang, J.; Huang, Z.W.; Wang, J.; Tang, J.L.; Wang, M.K.; Wang, J.M.; Jiang, C.Y.; Yang, P. Study on the Kinetics of the adsorption of reactive brilliant red K-2BP onto modified soybean straw activated carbon. Desalination and Water Treatment, 2018, (125): 302-309.
[16] Zeng, Y.G.; Li, W.Y.; Luo, L.; Du, T.T.; Yang, P.; Xu, Q.; Liu, J.J.; Shen, J.W.; Zeng, Y.; Li, X.; Chen, X.X.; Jia, R.X. Research on adsorption and mechanism of modified carbonized straw on wastewater containing Cr^{6+} by response surface methodology. Applied Ecology and Environmental Research, 2019, 17(6): 12985-12999.
[17] Yin, J.; Li, Y.L.; Zhang, S.J. Adsorption of methylene blue wastewater by activated carbon from peanut shell. Proceedings of 2013 annual meeting of Chinese society of Environmental Sciences, 2013, 3601-3605.
[18] General Administration of Quality Supervision. Inspection and Quarantine of the People’s Republic of China, Standardization Administration of China. Methods for determination of iodine adsorption value of wood activated carbon: GB/T 12496.8-2015.
[19] Zhang, D.; Zhang, H.; Lu, Y.Q. Adsorption of methylene blue on activated carbon prepared from pomelo peel modified with zinc chloride. Water Treat. Tech., 2014, 40(7): 67-70.
[20] Mckay, G. The Adsorption of basic dye onto silica from aqueous solution-solid diffusion model. Chem. Eng. Sci., 1984, 39(1): 129-138.
[21] Ho, Y.S.; Mckay, G. Kinetic models for the sorption of dye from aqueous solution by wood. Process Safe. Environ., 1998, 76(2): 183-191.
[22] Weber, J.R.; Morris, J.C. Kinetics of adsorption on carbon from solution. San. Eng. Div., 1963, 89(2): 31-59.
[23] Wang, C. Nanoparticles modified PVC and its high UV resistance. Qinghai: Qinghai Univ., 2015.
[24] Zhong, Q.Q.; Yue, Q.Y.; Li, Q.; Li, Y.; Xu, X.; Gao, B.Y. Kinetics of the adsorption of Reactive Brilliant Red K-2BP onto modified wheat residue. Shandong Univ., 2011, 41(1): 133-139.
[25] He, Z.J.; Lu, Y.Q.; Zhang, H. Adsorption of Congo red on activated carbon from pomelo peel. Guilin Univ. Tech., 2015, (1): 147-151.
[26] Khaled, A.; Nemr, A.E.; El-sikailyl, A. Removal of Direct N Blue-106 from artificial textile dye effluent using activated carbon from orange peel: Adsorption isotherm and kinetic studies. Hazard. Mater., 2009, 165(1-3): 100-110.

Teaching Design based on Tsinghua Online and "Rain Classroom": Take "High Voltage Technology" as an Example

Baina He, Guichun Huang, Yuanchao Hu, Yunzhu An, Fanyu Meng*
College of Electric and Electronic Engineering, Shandong University of Technology, Zibo, 255000, China
**Corresponding author: Baina He*

Abstract: According to the talent training objectives of electrical engineering and automation specialty in Shandong University of Technology, combined with the characteristics of knowledge point in high voltage technology course, the online and offline hybrid teaching design based on Rain Classroom is proposed. Different teaching designs are adopted for each knowledge point to stimulate students' interest in learning and improve their autonomous learning ability and practical application ability.
Keywords: Tsinghua Online; Rain Classroom; High voltage technology; Instructional design

1. INTRODUCTION

The course of high voltage technology is one of the key courses in electrical engineering. The content of the course is comprehensive. There is a development trend that professional knowledge is combined with practice and new technology or theory. Shandong University of Technology is one of the first batches of educational informatization pilot units of the Ministry of Education.

The course of high voltage technology has 48 hours, including 42 hours of courses and 6 hours of experiments. The course catalog mainly covers the electrical breakdown characteristics of various dielectrics, insulation experimental technology of electrical equipment, overvoltage and lightning protection of the power system. It is very important to carry out the teaching reform under the limited class hours, connect the teaching content with the hot spots of the subject, make the teachers explain and the students understand in parallel, ensuring the teaching quality.

The background of the development of emerging engineering education is taken as the starting point of this paper. Combined with the teaching characteristics of Shandong University of Technology, the Rain Classroom jointly launched by Tsinghua University and school online is used for teaching [1-3]. Rain Classroom skillfully integrates WeChat and teaching, realizing the push of teaching content by the WeChat [4]. Moreover, real-time answering and big data analysis functions can be added more creatively so that students can have a new participatory learning experience in every link from before class to after class [5-7]. In addition, through this new teaching mode, teachers and students can form complementary advantages, making it possible for teachers to master students' learning dynamics and learning feedback in time.

According to the key and difficult knowledge in the high voltage technology course and the characteristics of professional education, different teaching designs has been made by the teaching research group for each class that based on Rain Classroom platform.

2. SELF-STUDY BEFORE CLASS

In the stage of self-study before class, the teacher guides the students to preview the course content. Based on Rain Classroom, the self-study before class stage is established, including relevant learning materials uploaded by teachers, learning task list and self-preview and learning test. The monotony of students' independent preview under the traditional teaching mode is broken, improving teachers' participation in this stage.

Before the formal teaching, the relevant teaching materials are uploaded to Tsinghua Online comprehensive teaching platform by teachers. The course notice is issued on the online teaching platform. In addition, the students are reminded to check the course notice and download the learning task list of the network integrated teaching platform for preview before class, record the problems in the preview process, and complete the pre class learning test.

Learning guidance, learning tasks, puzzles and suggestions are included in the task list of autonomous learning, which provides a variety of channels for students to complete autonomous learning before class. Students can preview the knowledge to be learned in advance by self-study task list, so as to improve the efficiency of classroom listening further. After completing the self-study task, the queries in the preview process should be recorded in the "puzzle and suggestion module" of the task list of autonomous learning by students. Through the pre class learning test, the knowledge points that have not been mastered are found in the preview process. Therefore, a purposeful, focused and planned learning mode can be formed in the classroom.

3. GUIDANCE IN CLASS

The guidance in class aims to make the course content accurately be mastered by students. What's more, students' ability to analyze and solve problems is cultivated through face-to-face teaching and explanation between teachers and students.

First of all, QR code is shared to log into Rain Classroom, achieving automatic attendance. Teachers opens the bullet screen interaction, so that students' questions can be determined and answered in time

In the class, the function of impulse voltage generator to students be introduced by teacher and the real object of impulse voltage generator intuitively to students be shown by classroom video to realize the abstract and concrete dual mode teaching. Then the task requirements of designing an impulse voltage generator for a test institute are proposed, the design parameters are as follows.

(1) The voltage level of the test object is 220kV, test margin factor is 1.3;

(2) Impulse voltage generator equipment aging factor is 1.1;

(3) The efficiency index of impulse voltage generator is 85%;

After the course task is given out by the teacher through the Rain Classroom, the specific design steps are elaborated by showing the relevant design cases of impulse voltage generator. The design steps are as follows.

(1) Choose the structure of impulse voltage generator;

(2) According to the design requirements, charge circuit and discharge circuit are designed;

(3) Select the basic electrical components and parameters in each circuit;

(4) Check;

Through the discussion of teachers and students, the core of the design is the working principle of impulse voltage generator. By combining the working principle diagram of the impulse voltage generator with the text description in the textbook, the teacher explains the function and use of each component to the students. Then the working principle, technical characteristics and generation method of impulse voltage wave are put forward. Teachers and students discuss how to adjust the parameters of components to change the front and tail time of impulse voltage wave, the attention points of impulse high voltage test, and the means of measuring impulse high voltage. In the process of classroom teaching, students' questions are found by teachers at any time and answered one by one. After each knowledge point is explained, the online test questions are sent by the teacher in real time. Students are usually given one minute to answer. Online test can be used as a basis to check whether the students listen carefully and whether they master the knowledge points. Targeted discussion and training for common problems reflected in classroom tests. Teachers participate in class discussion, can carry on the targeted guidance to the common problems, so as to adjust the teaching strategy in time, check the deficiencies and make up for the omissions.

The working principle of impulse voltage generator is taken as the core of the design, and is introduced through the discussion between teachers and students. Teachers explain the working principle of impulse voltage generator and the generation method of shock wave through the schematic diagram of the impulse voltage generator and text description in textbooks. In class, the teacher discusses with the students about the design case of an impulse voltage generator and finds out the students' questions at any time and answers them one by one.

Through the previous learning link, the team members work together to complete the design report writing, PPT production, PPT report, and group members conduct the mutual evaluation. The evaluation is given by the teacher according to the students' report, suggestions for modification are given.

4. AFTER CLASS ASSISTANCE

After class is not only the students' review of the knowledge learned in this class, but also the teacher's summary of the classroom teaching content, so that student can truly master the classroom knowledge; The course structure and knowledge system are optimized by teachers through students' feedback after class, the realization of win-win between teachers and students is promoted by the mode of after class assistance.

According to the evaluation results in class, combined with the different mastery of professional knowledge in the course. The key and difficult points again can be learned by students through the network teaching platform, and the expansion task can be completed by the students who have spare power. According to the content, students who want to study more deeply can expand the task. The expanded content is as follows.

(1) Lightning impulse wave is produced by changing circuit parameters;

(2) The operation shock wave is generated by adjusting the wavefront and tail resistance;

(3) How to improve the efficiency of impulse voltage generator;

Students can purposefully carry out the study of impulse voltage generator according to their own situation and communicate their learning ideas after class with teachers through Rain Classroom. If students have innovative ideas on the structure and parameter design of the impulse voltage generator, they can try to design the impulse voltage generator after class and verify the feasibility of the design.

5. CONCLUSION

A new innovative and interactive autonomous learning mode was developed by the teaching design of high voltage technology based on web learning and Rain Classroom. The process of students' three-stage learning and teachers' double answering was formed by the autonomous learning mode, moreover, students' professional quality and innovation ability have been improved. Students' thirst and mastery of knowledge are improved by online and offline hybrid teaching design. Therefore, the teaching quality can be improved in the new situation of professional development. How to further integrate the high voltage course with web learning and Rain Classroom in combination with the professional teaching mode is the key content of the next teaching reform.

ACKNOWLEDGMENT
The research project supported by Shandong Province Graduate Education Quality Improvement Program (Serial number: SDYKC19103).

REFERENCES

[1] Shengyao Jia, Yanjie Wang, Hongyang Li. Reform and Practice of Classroom Teaching for Circuit Analysis based on the Software of Rain Classroom, Education Modernization, 2017, 4(28): 77-79.
[2] Liqian Wang, Peizhong Xie. Research and Reflection on Offline Teaching Methods Combined with Rain Classroom for the Course of Signal and System, Education teaching forum, 2020, (44): 260-262.
[3] Yanyan Li, Fei Ye, Chengzhu Liao, et al.. Teaching Reformation and Practice of Fundamentals of Materials Science Experiment Based on Micro-lecture and Rain Classroom., Guangdong Chemical Industry, 2020, 47(20): 185-186.
[4] Xiuzhen Wang, Fenmei Wang, Bin Pei. Construction of intelligent teaching mode based on rain class, Computer Education, 2018, (4): 139-142.
[5] Jun Jiang, Kai Wang, Chaohai Zhang, et al. Construction and Exploration of "High Voltage Technology + "Course Group of Electrical Engineering under the Background of Emerging Engineering Education, China Modern Educational Equipment, 2020, (399): 61-63.
[6] Damin Zhang, Yanchun Lin, Qiang Zhang, et al. On the Teaching Reform of High Voltage Technology from the Perspective of Engineering Education Professional Accreditation. Education teaching forum, 2020, (22): 212-213.
[7] Yan Shi, Gang Wei, Haiyan Zhang, et al. Application of case teaching in high voltage technology teaching. Science & Technology, 2020, (6): 153-154.

Research and Practice of the Task-driven Approach based on the OBE Concept in College English Teaching

Xiaoxia Dong, Fei Yan*
Beijing Union University, Beijing, 100012, China
*Corresponding author.

Abstract: Teaching ideas and teaching methods are of great significance to education and teaching. OBE concept stresses results-oriented, student-centered, and pays much attention to the cultivation of students' abilities. Task-driven approach focuses on the task, and teaching contents and task design should be related to the course objectives. Based on the OBE concept, the paper covers the design of college English course objectives according to students' graduation requirements, and the realization of the course objectives through the design of completion of each task.
Keywords: OBE concept; Task-driven approach; College English

1. OVERVIEW OF SOME CONCEPTS

With the continuous development of the education system, as the main institutions to cultivate higher talents, universities pay more and more attention to the research of teaching ideas and teaching methods. Teaching ideas are of great significance to teaching activities, and teaching methods are of great importance to the completion of teaching tasks, the realization of teaching objectives and the cultivation of qualified talents.

(1) OBE concept

OBE (Outcome-based education) refers to the concept and model of education based on outcomes and outputs, also known as results oriented education. OBE concept was first put forward by the United States and was very popular in American educational circles in the 1980s to the early 1990s. Spady, an American scholar, made an in-depth study of this model in his book *Outcome-Based Education: Critical Issues and Answers.* Under the OBE concept and model, teachers must have a clear understanding of the ability that students should achieve when they graduate, and then carry out curriculum design, syllabus design, teaching outcome evaluation or student learning outcome evaluation according to this ability [1]. Students' ability in their professional fields embodies their learning outcomes, but the learning outcomes mentioned here don't refer to students' academic performance. It is the ability to put what they have learned into practice, and the values and thinking they have formed in the process of effective learning. The core elements of OBE concept are student-centered, outcome-oriented, and the focus on continuous improvement. Under the concept of OBE, all educational activities and process, teaching and curriculum design must be carried out around students. Students are the object and subject of education and teaching. The ultimate goal of education is to enable students to have the ability to live and work.

(2) The task-driven approach

The task-driven approach, based on a lot of researches done by foreign scholars, has a history of nearly 40 years. When it comes to the task-driven approach, some questions will be discussed. For example, what is a task? What are its types and features?

What is a task? Breen defines task as "a range of work plans which have the overall purpose of facilitating language learning-from the simple and brief exercise type, to more complex and lengthy activities such as group problem-solving or simulations and decision-making. It has a particular objective, appropriate content, a specified working procedure, and a range of outcome" (Breen, 1987: 23) [2]. Breen's definition of task is from a point of language learning and emphasizes the didactical role of task in language teaching. Here the author suggests that a task is an activity in which learners use their existing knowledge of target language to achieve the goal that they can combine language learning and language applications naturally.

Types of tasks. From Willis' point of view (1996: 26-27), there are six main types of tasks. They are listing, ordering and sorting, comparing, problem solving, sharing personal experience and creative tasks. Teachers can design different tasks according to topics and materials. When teachers give lectures, or assign tasks to students, they can use one type of tasks or two or more types. Easy tasks can consist of only one type, but many tasks are a little more complex. One type is not enough to deal with these tasks, so several types are needed simultaneously.

Features of the task-driven approach. According to Feez (1998, cited in Richards & Rdogers, 2001), the main features of the task-driven approach include the following. The process is much more important than result. Tasks and activities are the primary things that stress contents; Students interact and communicate each other purposely to learn language; Activities can be real-life activities or designed to be conducted in the classroom; Activities and tasks in task-driven approach are carried out according to difficulty [2].

The task–driven approach is student-centered. Students' active participation in the classroom is promoted under the task-driven approach; cooperative learning is another important feature of the task-driven approach. In the task –driven approach, the classroom is student-centered, which needs the teacher to devote more and motivate students to learn. Thus, the teacher's role can be a participant, organizer, motivator, monitor, and evaluator.

The task-driven approach involves cooperative learning that requires the learner to work in pairs or groups. Everyone is a member of the group. The learner's performance affects the whole group's performance. Therefore, the learner cooperates with other members of the group to learn the target language. He does his utmost to communicate with others using the real-life language. Learners can benefit much from this kind of study and from other learners.

2. THE DESIGN OF COLLEGE ENGLISH COURSE OBJECTIVES BASED ON OBE CONPECT

OBE emphasizes the result. In order to design course objectives, we should first clarify the ultimate training objectives of students, then according to the training objectives, study the status and role of a course in the training objectives, and finally design the course objectives.

The training objectives of students can be reflected in the graduation requirements. Therefore, it is necessary to make clear the graduation requirements of students. According to the students' graduation requirements, the role of College English in the students' training objectives can be analyzed. Then teachers will have a clear cognition and conception of English ability that students should achieve through the study of this course. Thus, the course objectives of College English can be designed. Then the teaching goals of College English I, College English II, etc. are determined.

Take college English III as an example. By analyzing the graduation requirements of our students and the nature of this course, it is found that the graduation requirements that this course can support include communication, individuals and teams, professional ethics and lifelong learning. Communication refers to the ability to communicate complex professional issues with peers including writing reports and manuscripts design, making statements, clearly expressing or responding to instructions, and having a certain international vision to communicate and exchange in a cross-cultural context. Individual and team means that students can actively play the role of individuals, team members and leaders in different teams. Professional ethics suggests that students should have humanistic and scientific literacy, sense of social responsibility, and be able to handle the relationship between personal interests, unit interests and public interests, can understand and abide by professional ethics and norms in professional practice, and fulfill responsibilities [3].

According to the graduation requirements that College English III support, the objectives of knowledge and skill, process and method, emotion, attitude and value are set in the teaching design of this course [4]. The objective of knowledge and skill mainly refers to the ability to understand teaching in English, to grasp the main ideas of texts and key points, to be able to read articles related to the topics in English III, to make certain analysis and judgment. Listening, reading and translating skills can be appropriately used. The objective of process and method is that students can communicate with their classmates, discuss and cooperate with each other, complete group tasks, maintain their interest in English learning, and improve their self-directed learning ability. The objective of emotional attitude and values require students to pay attention to major events at home and abroad, enhance their sense of responsibility, advocate the concept of sustainable development, improve their enthusiasm for acquiring scientific knowledge and pursuing career success, form the awareness of lifelong learning and advocate the concept of peace and development.

Through the objective of knowledge and skill of College English III, the graduation requirements of communication can be achieved; through the objective of process and method, the graduation requirements of individual and team can be achieved; through the objective of emotional attitude and values, the graduation requirements of professional ethics and lifelong learning can be achieved.

3. USING TASK-DRIVEN APPROACH TO ACHIEVE COURSE OBJECTIVES

Effective teaching method is the key factor to cover the teaching content and achieve the course objectives. After having a clear understanding of the training objectives of each unit of College English, the next step is how to achieve the training objectives. In this process, it is necessary to use effective teaching methods. The task-driven approach has been studied and analyzed. The application of task-driven approach involves task design, implementation and evaluation [5]. According to the teaching contents of each unit of College English, combined with the teaching objectives of the unit, the teaching contents can be divided into several tasks. Students can complete the tasks through self-directed learning and cooperative learning to achieve the teaching objectives. The same type of tasks can be different in difficulty in order to meet the learning requirements of different students so that students can experience the sense of achievement and success in learning, establish self-confidence, and gradually develop interest in learning. It also can promote greater success in students' future learning, and finally help to realize the purpose of education.

Let's take the unit Caring for Our Earth as an example. According to the objectives of College English III and the topic of this unit, the learning objectives of the unit can be set as the following. Students should master and be able to use the words and phrases related to environmental change and global warming. They can summarize the main idea of the texts, analyze long and difficult sentences and explain the logical structure of the texts; they can express the causes and effects of global warming through independent learning and mutual discussion and put forward solutions; they can put the translating skills and writing skills in this unit into practice. The teaching contents of this unit include that lead-in mainly focuses on listening and speaking about environment; texts are about the global warming; writing is the composition of English paragraphs, including topic sentences, supporting sentences and closing sentences; translation part is to learn translation skills: extension of word meaning. According to the objectives and contents of this unit, teachers can design the tasks. For example, in the Lead-in part, the task type listing can be used to ask students to list the words and phrases related to the environment, and teachers can classify the words and phrases, which are necessary for all students to master, and which can be mastered by students who need to acquire more (knowledge and skills). Students can analyze the causes and effects of global warming through the study of the texts and mutual communication, and then put forward their own solutions. This task may be finished in the form of report. It can be set as the type of problem solving and creative tasks (process and method). Through the task type of sharing personal experience, students can share their own experiences about environmental pollution and environmental protection, which can enhance their sense of social responsibility (emotion, attitude and value). Through the design of implementation of such tasks, the course objectives of College English can be gradually achieved.

4. STUDENTS' LEARNING EFFECTS AND REFLECTION

The task-driven approach based on OBE concept is used in College English to make teaching objectives and tasks clear. The class is outcome-oriented and student-centered. It stirs the initiative of students, makes students participate fully in the class and become the subject of the class. Through the completion of tasks, students realize the acquisition and application of knowledge and their critical thinking ability is improved. Teamwork strengthens their cooperation and develops their team spirit.

OBE stresses the students' individual development. Due to the different English level of English, in order to meet the English needs of students of different levels, it is necessary to study and design more appropriate tasks, and improve the evaluation system.

ACKNOWLEDGEMENT

The paper is supported by the project from Beijing Union university: Research and practice of the task-driven approach based on OBE concept in the College English Teaching, project number: 12205561110-158.

REFERENCES

[1] Jiang Xueqing, Ding Yan and Zuo Yingjuan. An Introduction to OBE-based College English Curriculum of BJTU, College Foreign Language Teaching & Research, 2018, (00), 45-62.

[2] Dong Xiaoxia. A Study on Task-based Approach, Overseas English, 2017, 6(37): 247-248.

[3] English teaching and research core group of Beijing Union University, College English III Syllabus, BUU, 2019.

[4] Sun Xiaojia. College English Course Teaching Design and Practice Based on OBE model, Chinese Journal of Multimedia and Network Instruction, 2020, (08): 102-104.

[5] Yang Huaiyu, Li Donglin. Research on Guided Task-driven Teaching Approach, Education Teaching Forum, 2018, 6(23): 150-151.

Research on Talent Training Mode Based on “Integration of Specialty and Innovation”

Junyan Zhang
Jiangsu Union Technical Institute Suzhou Industrial Park Branch, Suzhou, Jiangsu, China

Abstract: To explore and develop a talent training mode based on “professional innovation integration”, taking industrial robot specialty as an example, “robot and intelligent manufacturing industry university research base” as a platform, relying on the school enterprise cooperation industry education integration project, skill competition, student associations, innovation and entrepreneurship competition, science and technology culture festival, entrepreneurship market and other activities, integrating professional education and innovation and entrepreneurship education To integrate innovation and entrepreneurship education with professional education, and to cross innovation and entrepreneurship courses with professional courses, so as to cultivate students’ professional skills and innovation and entrepreneurship practical experience in professional practice teaching. It aims to improve students’ innovation and entrepreneurship ability, consolidate professional skills and knowledge, and cultivate high skilled, high-quality, innovative and entrepreneurial talents.
Keywords: Professional innovation integration; Talent training mode; Innovation and entrepreneurship; Professional skills

1. INTRODUCTION

In today’s rapid economic development, economic restructuring and industrial transformation and upgrading, as well as the integration of industry and education, there is an urgent need for a group of excellent high skilled and high-quality comprehensive talents with innovation and entrepreneurship ability to keep up with the needs of economic development. Vocational colleges across the country respond to the spirit of policy, develop their own school running characteristics, reform the talent training mode, and constantly cultivate more talents More and more high skilled innovative talents to meet the employment requirements of enterprises and institutions. [1] The widely used talent training modes in China mainly include: the integration of teaching and doing, the integration of theory and practice, the school enterprise internship, the integration of production, study and research, CDIO, 1c (case) + 5p (project) semester project, learning by doing, learning by doing, etc How to realize the integration of professional education and entrepreneurship education? This paper takes the industrial robot major as an example to develop and explore the talent training mode based on “professional innovation integration”, aiming to cultivate more high skilled innovative and entrepreneurial comprehensive talents and quickly keep up with the development of talents in the new era It’s like this.

2. CURRICULUM SYSTEM REFORM OF TALENT TRAINING MODE OF “INTEGRATION OF SPECIALTY AND INNOVATION”

Based on the talent training mode of “integration of specialty and innovation”, the training idea will grasp professional knowledge, cultivate humanistic spirit, strengthen practical ability, carry out innovation and entrepreneurship practice as the basic content, take the training of creative thinking as the focus, run through the main line of “cultivating innovation consciousness - stimulating creative potential - practicing innovation process”, and put the cultivation of innovation and entrepreneurship ability of professional talents into practice It’s a matter of fact. In this paper, taking industrial robot as an example, the curriculum system reform of talent training mode is divided into two parts: professional knowledge and innovation ability training, comprehensive knowledge and entrepreneurial ability training. See Figure 1. In the training stage of professional knowledge and innovation ability, it integrates the knowledge system of public course platform and career planning course, professional basic course and innovation and entrepreneurship practice course, professional core course and entrepreneurship market and entrepreneurship Park project. The course is from simple to complex [2]. The course in this stage is completed within 2 years after students enter the school. In the training stage of comprehensive knowledge and entrepreneurial ability, the training of professional comprehensive knowledge and entrepreneurial ability is carried out, that is, the curriculum learning of innovation and entrepreneurship knowledge training platform, innovation and entrepreneurship skills and practical ability training platform, and innovation and entrepreneurship literacy training platform.

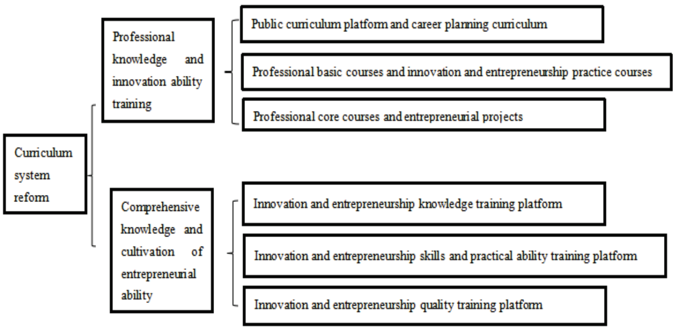


Figure 1 Curriculum system structure of talent training mode

3. EXPLORE THE TALENT TRAINING MODE OF "INTEGRATION OF SPECIALTY AND INNOVATION"

Explore the talent training mode of "integration of specialty and innovation"

(1) Form of four party linkage participation

Based on the platform of "robot and intelligent manufacturing industry university research base", relying on the school enterprise cooperation industry education integration project, domestic and foreign skills competition, student associations, innovation and entrepreneurship competition, science and technology culture festival, entrepreneurship market and other activity carriers, and in the main form of career planning and design book, civilized style competition, entrepreneurship and innovation knowledge competition, innovative works exhibition, etc., it integrates public culture courses and professional courses Skills course and win in three innovation courses are integrated, focusing on the combination of theory, practice, specialty, innovation and entrepreneurship, following the law of improving professional skills and innovation and entrepreneurship ability, centering on the "student" subject, combined with the form of four party linkage of government, school, industry and enterprise, as shown in Figure 2. (1) The government gives strong support in policy, fund, environment and so on. (2) The school is the bridge of school enterprise cooperation. Through school enterprise cooperation, school enterprise joint construction of enterprise college, make full use of resources, and make good use of the skills competition and innovation and entrepreneurship competition of education authorities, students' knowledge and skills can be tempered. (3) Industry enterprises are the wind vane of talent training mode [3]. Industry enterprises are at the forefront of scientific and technological development, and the talent demand of industry enterprises is the training goal of vocational education, so as to ensure that the students trained are closer to the needs of enterprises. Employing part-time teachers in enterprises to preach will maximize the role of teachers.

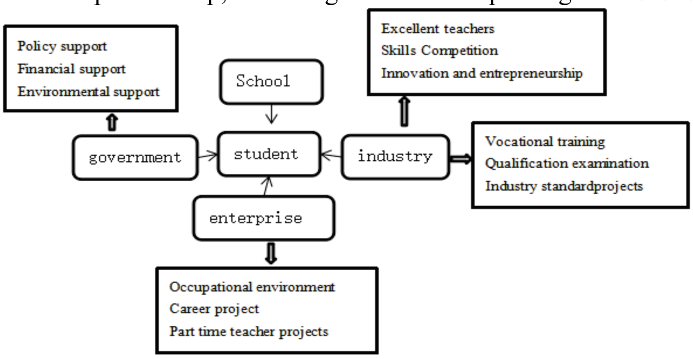


Figure 2 The form of four party linkage

4. IMPLEMENTATION PROCESS

Taking the professional training course of "installation and debugging of industrial robot" as an example, while learning professional skills, we should increase the theoretical knowledge of innovation and entrepreneurship, and carry out small production of innovation projects. In practice, there are not only professional skills training, but also innovation and entrepreneurship training, which are integrated with each other. In the professional core courses, innovation, entrepreneurship overall planning and innovation project overall plan are run through, focusing on cultivating students' professional skills and innovation and entrepreneurship ability. In the course of practical training, students are divided into groups (3-4), a total of 6 groups, with each group as a unit, each group completes the disassembly and assembly of 1-6 joint axis of industrial robot; students are trained to independently complete the installation, debugging, operation, maintenance and other work of industrial robot. At the same time of professional skills training, a small project production is completed in groups. The teacher issues the task requirements. [4] The groups make clear the division of labor, discuss with each other, think about each other in and out of class, give play to their own innovative design ideas, collect various materials of project production, summarize and sort out, and make clear the ideas. First, the project production report is displayed, and the existing resources and equipment of the school are used, complete the project work display of the team. At the end of the professional training, the professional skill assessment was professional skill knowledge standard (40%), completed the project small production display (40%), and the usual process assessment (20%). At the same time of learning professional skills courses, it runs through innovation project small production, innovation project design and other links, integrates professional education and innovation and entrepreneurship education, pays attention to the combination of professional theoretical knowledge and innovation and entrepreneurship theory, the combination of professional skills teaching and innovation and entrepreneurship practice, the integration of innovation and entrepreneurship education and professional education, and the intersection of innovation and entrepreneurship courses and professional courses [5] To cultivate students' practical skills of innovation and entrepreneurship in professional practice teaching, and to exercise professional skills in the process of innovation and entrepreneurship practice. Following the law of synchronous promotion of professional skills and innovation and entrepreneurship, we should adopt scientific and effective teaching means and methods to enrich students' extracurricular scientific and cultural life, expand students' innovative vision, enhance their innovation and entrepreneurship ability, consolidate their professional skills and knowledge, and maximize their innovative thinking and innovation ability. Through this "integration of professional and innovative" talent training mode, we can promote students' innovation and entrepreneurship Robotics major students often win awards in various professional skills competitions and all kinds of entrepreneurship and innovation competitions. The graduates are highly praised by enterprises. The outstanding graduates have won the provincial May 1st Labor Medal, and the government has awarded the title of "Golden Rooster Lake craftsman".

5. CONCLUDING REMARKS

Based on the talent training mode of "integration of specialty and innovation", following the law of improving professional skills and innovation and entrepreneurship ability, through the training, students have the characteristics of "enterprise professionals", technical standardization, standardization, skill hardening, innovative ideas, and have greatly improved their professional skills and innovation and Entrepreneurship ability, which are highly praised both inside and outside the school. In the process of implementation, we constantly sum up and reflect, constantly revise and improve our plan in practice, keep the outstanding effect of innovation and entrepreneurship ability training, discuss and modify the conflict content in the research group, and constantly improve the talent training mode of "professional innovation integration", so as to make students become real enterprise professionals [6]. In the process of implementation, students not only have the basic quality and excellent professional skills of professional people, but also have the ability of innovation and entrepreneurship. They become "excellent graduates" with high skills, high quality and innovation and entrepreneurship, and provide more high-tech and high-quality talents for building an innovative country.

ACKNOWLEDGMENT

(1) this paper is the phased research results of Jiangsu United vocational and technical college project "practical research on the organic integration of five-year higher vocational education and innovation and entrepreneurship education" (No.: B/2020/10/091)

(2) This paper is a phased research result of Suzhou Higher Vocational Colleges "integration of production and education, school enterprise cooperation" education reform research project "innovative implementation plan based on school enterprise cooperation to build Huibo robot enterprise College" (project number: JG2020010)

REFERENCES

[1] Xiao Hao, Bai Li. On the practical characteristics of innovation and entrepreneurship. Journal of South China Normal University (SOCIAL SCIENCE EDITION). 2015 (6).

[2] Cheng Yun, Feng Tao. Research on innovation and entrepreneurship education concept construction and talent training mode reform in Higher Vocational Education education research, February 2016.

[3] Lu Zhuo, Wang Hua. Exploration on professional training of entrepreneurial talents in Higher Vocational Colleges. China Vocational and Technical Education, 2013, (6): 30-34.

[4] Hu Jiliang, Chen Baowen. Exploration on the effectiveness of entrepreneurship education in Higher Vocational Colleges Based on curriculum project. Journal of Wuxi Vocational and Technical College of Commerce, 2014, (2): 44-46.

[5] Chai Jun. Research on the development and application of micro Curriculum under project task teaching mode mechanical vocational education, 2016, (2): 10-12.

[6] Mao Dandan. Project based curriculum development and practice in Higher Vocational Education Based on dual system. Journal of Nanning Polytechnic, 2016 (06): 57-58.

Research on the Development of Faculty in Smart Learning Environment

*Shanshan Wang[1, *], Sizheng Zhu[1], Dan Wang[1], Haiyan Cao[2]*
[1]Computer Center, University of Shanghai for Science &Technology, Shanghai, 200093, China;
[2]The Faculty Development Center, University of Shanghai for Science &Technology, Shanghai, 200093, China
**Corresponding author.*

Abstract: The development of campus informatization has provided great convenience for students' learning. A large number of smart classrooms, smart libraries, smart campuses and other projects have been built in various universities, and some of the projects have been put into use. The new learning environment not only gives students diversified learning methods and makes their learning more efficient. At the same time, it brings challenges and changes to traditional teachers' teaching methods. How to achieve efficient education in the context of the new smart learning environment and also make full use of new resources to promote the development of teachers themselves, which has become an urgent problem for college teachers. This article analyzes the characteristics of the smart learning environment and the status of the development of teachers in colleges. we found that in the smart education environment, teachers not only need to have good skills of how to impart knowledge to students, but more importantly, stimulate students' initiative in learning, allowing students to discover and create knowledge, to achieve the purpose of improving the quality of teaching by improving the learning effect of students, while the academic content of teaching needs to be continuously increased in teaching, and to provide more experience support for own academic research, so as to realize the mutual promotion of academic teaching and teacher development.
Keywords: Teacher development; Smart learning; Academic teaching; Teaching theory

1. INTRODUCTION

Faculty development in universities is a process for teachers to improve all aspects of themselves simultaneously with their teaching tasks, with the purpose of improving their research ability, teaching level and overall quality to better support teaching and society [1]. Smart learning is another major change after "digital learning", "mobile learning" and "ubiquitous learning" [2, 3], which is different from previous learning models in terms of learning environment, learning methods and evaluation. It is different from the previous learning models. In the new teaching environment, the development of teachers in universities is especially important. The development of teachers themselves to adapt to the teaching strategies in the smart learning environment is an essential requirement for the satisfactory implementation of smart learning. The teaching scholarship [4] is the scholarship of teaching and learning (SOTL), which emphasizes the integration of research, teaching, and student learning. It is not only an activity, but also a procedure of exploration, not only to study teachers' teaching, but also to study students' "learning". Pedagogy [5], also called pedagogy and teaching theory, consists of the status and role of teaching in the whole educational activity, the purpose and task of teaching, the essence and law of teaching process, teaching principles, teaching contents, teaching methods, teaching organization, teaching methods, teaching evaluation and so on. Therefore, the research of faculty development in the smart learning environment is a problem that must be researched and solved in the current university teaching innovation. In this paper, through the research on the physical characteristics, teaching characteristics and interactive teaching elements of the smart learning environment, we find ways to enhance the ability of college teachers to effectively change their teaching methods under the smart learning environment, and combine teaching scholarship and university pedagogy to research a new teaching and learning method featuring autonomy, inquiry and cooperation that can both give full effect to the leading role of teachers and highlight the main position of students, so as to The students' initiative, enthusiasm and creativity can be brought into full play, and the traditional classroom teaching structure can be fundamentally changed from a teacher-centered teaching structure to a teaching structure that integrates with students to adapt to the characteristics of teaching and learning in a smart learning environment.

2. CHARACTERISTICS OF A SMART LEARNING ENVIRONMENT

"The Development Plan for the New Generation of Artificial Intelligence "states that "intelligent technology is used to accelerate the reform of talent training mode and teaching methods, and to build a new education system that includes intelligent learning and interactive learning. Conduct smart campus construction and promote the application of AI in the whole process of teaching, management and resource construction". The research on smart learning environment includes its connotation and characteristics, macro system construction and micro function design of smart learning environment, which involves theoretical exploration, technology development, system design and other aspects. Chinese scholars have made a lot of meaningful discussions in these aspects. Professor Huang Ronghuai [6] believes that the basic functions of a smart learning environment include sensing learning situations, identifying learner characteristics, providing learners with suitable learning resources on this foundation, and realizing automatic recording of the learning process and comprehensive evaluation of learning achievements, with the ultimate goal of promoting effective learning for students. Smart learning is a product of technological development, and different stages of time have given rise to different ways of smart learning. Learning has been happening in all generations from ancient times to the present day, whether it is Confucius' "Apricot Lecture" or VR teaching now, they are all a way to achieve learning, in which there is a specific period of "smart", but the difference is only limited by the level of technology at the time. Smart Learning Environment should realize the integration of the physical environment and the virtual environment. In a smart environment, the perception, monitoring and regulation of the physical environment is enhanced further, and the application of technologies such as augmented reality enables the seamless integration of the virtual environment with the physical environment. The smart learning environment should better provide learning support and services that are adapted to students' personality characteristics. The smart learning environment emphasizes the process record, personality assessment, effect evaluation and content pushing for students' learning; according to the learner model, it plays a role in planning, monitoring and evaluating the development of their independent learning ability. The Smart Learning Environment supports both on-campus and off-campus learning, and supports both formal and informal learning. The learners here are not just on-campus learners, but also include all those who have learning needs at work. Accordingly, we consider a smart learning environment to be a learning place or activity space that senses learning situations, identifies learner characteristics, provides appropriate learning resources and convenient interactive tools, and automatically records the learning process and evaluates learning outcomes to facilitate effective learning by learners [6]. Smart learning environments are the high-end form of ordinary digital learning environments, which are the inevitable result of the development of educational technology. Smart learning has gone through several stages, including "modern pan-intelligent learning" and "digital learning" [7], and the development of smart learning has shown various characteristics so far.

(1) Various and complex dependency technologies

Research on smart learning support technologies mainly focuses on smart classrooms, smart learning systems, and learning analytics technologies, etc. Smart classrooms are currently a popular research topic in smart learning. Internet of things, cloud computing, big data, blockchain, ubiquitous network and virtual reality technologies are the core smart technologies supporting smart learning, which involve richer and more complex contents than any previous stages of learning. The construction and sustainable development of smart education cannot be achieved without the innovative application of smart technologies: Internet of Things technology enhances the perception of educational environment and teaching activities; big data technology improves the wisdom of educational management, decision-making and evaluation; cloud computing technology expands the sharing of educational resources and educational services; ubiquitous network technology enhances the connectivity of educational networks and multiple terminals [8]; virtual reality technology creates interactive and interesting learning situations for students, stimulates their interest in learning and accelerates their understanding of knowledge through their own exploration of knowledge.

(2) Various forms of learning

Compared with traditional classroom teaching, smart learning has more options, including online learning, field learning, simulation learning, simulated scenario learning, and customized learning. Independent learning plans can be developed according to each student's characteristics, and learning resources are pushed to each student in advance through big data in smart learning, and students can allocate learning time and select learning content according to their own learning progress. Through personalized learning strategies the traditional neat and uniform learning schedule is transformed into diverse and personalized learning. Smart learning is a higher-order stage of digital learning, and smart learning ability is also necessarily a further development and enhancement of digital learning ability. Based on the conceptual model proposed by the EU Digital Agenda, Wang You-mi et al. [9] argue that the conceptual model of digital competence in the 21st century should include three layers of instrumental knowledge and skills, advanced knowledge and skills, and applied attitudes of knowledge and skills, and map digital Bloom to the cultivation of learners' digital competence, opening up new ways for the cultivation of digital competence and also providing the development of smart learning competence. Around the definition of smart learning competency, Zhu Zhiting [10] pointed out that the goal of smart education for the cultivation of learners is expressed in the close integration of the three dimensions of thinking, creating and acting in terms of personality character, emphasizing the three core elements of thinking, creating and acting. Based on this, this study considers smart learning competency as a high-end form of digital learning competency, which is a collection of application, analysis, synthesis, and evaluation competencies required for learners to use smart tools and smart resources to carry out learning in a smart learning environment.

(3) Smart learning assessment focuses more on mind development

As the basis for the cultivation and development of smart learning ability, the evaluation of smart learning ability is the key to realize the smart learning system. At present, innovation and entrepreneurship education is strongly advocated in Chinese university education, and the evaluation method has been improved compared with the result-only evaluation, but from the current actual situation, the result evaluation still refers to students' academic performance to a large extent. The evaluation of smart learning is gradually changing from "outcome judgment" to "thinking development", and students are evaluated mainly in terms of intelligence and good moral character [11]. Since different students may have different strengths in language, logic, space, movement, social interaction, thinking, etc., it is impossible to accurately evaluate students' intelligence and good moral character. Smart learning can analyze the big data of the learning process, discover the deeper characteristics of students from the big data, build a learning evaluation path of "immediate evaluation - discover problems - reflect on countermeasures - take improvement actions - track feedback - evaluate again [12]", and form a learning evaluation feedback and improvement mechanism

3. FACULTY DEVELOPMENT IN UNIVERSITIES

University teachers study a variety of disciplines, but rarely study themselves. With the continued attention to university faculty development at both the governmental and societal levels in recent years, this phenomenon has gradually changed: not only has "university faculty development" begun to become an increasingly popular research topic, but at the practical level universities have also established faculty development centers to focus on the professional development of university faculty. Unfortunately, however, at both the theoretical and practical levels, "university faculty development" is still relatively narrowly defined-it focuses primarily on the professional development of university faculty, especially on the professional development of teaching. In fact, as modern universities move more and more toward the center of society, university faculty members carry more diversified responsibilities and roles: they bear the traditional responsibility of "teaching and learning", the ethical requirement of "being a teacher", and the task and spirit of various academic evaluation systems. They are burdened with the traditional responsibility of "teaching and learning", the ethical requirement of "being a teacher", and the targets and mental pressure of various academic evaluation systems [12]. Therefore, the development of university teachers is not only a single issue within education in terms of how to improve professional competence, but also a complex issue that is subject to and connected with the outside of education.

(1) The purpose of faculty development

Firstly, from the perspective of teachers themselves, the development of teachers can improve their own quality and ability, enrich their own knowledge reserves, keep up with the frontier of the times, push forward new ideas, and thus improve teaching. From the school's point of view, the development of college teachers is a powerful driving force to improve the overall quality of college teachers and a powerful guarantee to enhance the competition of colleges and universities, whether from the comparison of academic level of colleges and universities or the competition of comprehensive strength of colleges and universities, it is necessary to vigorously promote the development of teachers; from the students' point of view, high-level teachers are more welcomed by students, especially in postgraduate education, which requires teachers with stronger academic level, professional ability and comprehensive strength.

(2) Characteristics of Faculty Development and the Scholarship of Teaching in Universities

Scientific research, teaching service and social service are the tasks given to modern colleges and universities, as well as the missions of college teachers. The development of higher education teachers is different from that of ordinary teachers. In addition to teaching, higher education teachers need to conduct relevant academic research and social services. It can be roughly divided into the following four development directions: one is the research progression of intellectuals, the other is the research progression of academic profession, the third is the research progression of academic system, and the fourth is the research progression of survival status [12]. At present, different development strategies of colleges and universities in China are different, but combined with the specific national conditions and characteristics of the times in China, the research on the development of college teachers in the academic system approach should become an important direction in the future under the background of academic system change. The scholarly understanding of the connotation of teaching scholarship has undergone the transformation from "the scholarship of teaching" to "the scholarship of teaching and learning" [13], and has achieved rich theoretical results and practical experiences. In recent years, foreign scholars have explored new research questions, research methods, evaluation mechanisms, and practical strategies of the scholarship of teaching and learning.

(3) Faculty Development Center

Faculty Development Center is a department unique to universities, and its main function is to serve teachers, responsible for teacher training and development, education and teaching research, teaching resource sharing, teaching quality assessment and consultation as service contents, through coordinating teaching resources inside and outside the university, establishing a scientific and reasonable teaching development mechanism for teachers and introducing advanced education concepts, with the aim of improving teachers' education and teaching level and students' learning effect. Most of the faculty development centers focus more on the development of young teachers' ideological and moral character and the direction of teaching and research, and lack guidance for teachers' academic aspects. Teaching is the main job of teachers in colleges and universities, but teaching without scientific research and scholarship does not represent the superiority of college education. Therefore, while focusing on improving teachers' teaching level and students' learning effect, the guidance of teachers' scientific research and scholarship is also an essential task, especially in the environment of intelligent learning, which needs to go beyond the current model of pure teacher development and move towards the organic integration of students' learning and teachers' teaching development. In particular, the smart learning environment needs to go beyond the current model of pure teacher development to focus on the organic integration of student learning and teacher teaching development, and to take advantage of the positive impact of the smart environment on student learning and teacher teaching ability.

4. A SURVEY OF TEACHING AND LEARNING IN CURRENT SMART LEARNING ENVIRONMENTS

Figure 1 Students' comparative evaluation on the effect of online teaching and offline teaching

Our school built a smart classroom last year, and due to Covid19 in 2020, we made full use of the resources of the smart classroom to offer several online courses. We conducted a questionnaire survey on these courses in one semester, mainly to compare the effectiveness of online teaching using smart classrooms with regular offline teaching (the evaluation results were divided into five levels: much better, better, same, worse, and much worse). We received a total of 4219 responses that from the student survey results, 53.69 % of the students thought that online learning was better or the same as offline learning (see figure 1); 42.01 % of the teachers thought that online teaching was better or the same as offline teaching (see figure 2). Overall, students agree more with the effectiveness of online teaching, but from another perspective, nearly 50 % of students and 60 % of teachers are cautious about the effectiveness of pure online teaching.

Figure 2 Teachers' comparative evaluation on the effect of online teaching and offline teaching

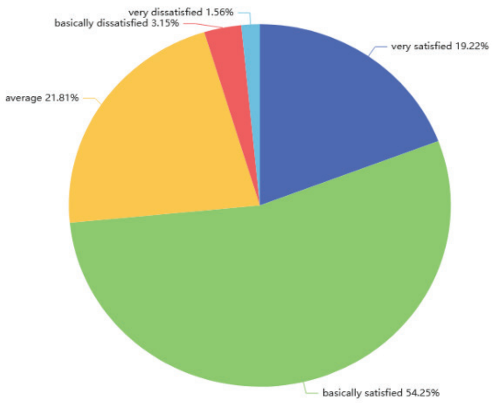


Figure 3 Students' satisfaction with teachers' online teaching

Students' satisfaction with the teachers' online lectures was categorized into "very satisfied", "basically satisfied", "average", "basically dissatisfied", and "very dissatisfied". Among them, 19.22 % were "very satisfied" and 54.25 % were "basically satisfied" (see figure 3). The survey results show that students are more satisfied with teachers' online teaching. Among the reasons for satisfaction, 86.8 % thought that "the learning time is free and you can play back what you did not understand", and 60.2 % thought that "online interaction is more convenient than offline interaction, and it can overcome the psychological barrier of speaking and asking questions in person". "60.2 %, "the teachers are well prepared, the teaching design is reasonable, and the classroom content is rich and full" accounted for 46.1 %; among the reasons for dissatisfaction, "the learning atmosphere of offline classroom teaching is not available" accounted for 50.25 %, and 43.35 % for "limited network and other hardware equipment".

The results show that teachers and students generally think that online teaching is less effective than offline teaching, and why with a good smart classroom, it is not as effective as traditional teaching methods, which is a problem that universities should pay attention to at present. We carefully analyzed the deep-seated reasons for this status and found several important issues, first of all, teachers do not fully utilize the equipment and resources in the smart learning environment. In addition, teachers' teaching philosophy is still relatively old, and the teaching style is always teacher-centered. Finally, students have some discomfort with the new teaching environment and need more time to adapt to the smart learning environment.

5. SUMMARY

First, the role of teachers in classroom teaching needs to be fundamentally changed from the traditional teacher-centered classroom teaching structure, in which teachers dominate the classroom, to the dominant-teacher-centered teaching structure, which gives full play to the teacher's leading role and also highlights the students' subjectivity. Secondly, in the environment of smart learning, college faculties should adapt their own development to the needs of smart learning, and the academic teaching can not only meet the needs of their own development, but also promote the college teaching in the smart environment, and in the practice of academic teaching, make full use of new teaching resources and teaching methods, so that teaching can be easy to understand and related to academic hotspots, and stimulate students' desire to know. In addition, students' learning is not only limited to the book, but also can be guided by the teacher to understand the direction of academic research on related knowledge. In conclusion, an excellent teaching curriculum needs to be constantly reformed and improved by teachers, and the teaching ability of excellent teachers needs to be constantly reflected and refined in teaching and academic research. Seeking academic frontiers in the smart learning environment, leading the intersection of academic research and teaching practice, finding strategies and methods to stimulate curriculum change, and making teaching scholarship help improve teaching quality require the joint efforts of the majority of university teachers.

ACKNOWLEDGMENT

The authors acknowledge the Projects of University of Shanghai for Science and Technology (Grant Nos. CFTD203062, 20HJ-DSDG-ZD-008, SH2020250)

REFERENCES

[1] Sui Xinhua. Implications and characteristics of university faculty development, The Party Building and Ideological Education in Schools, 2020, (7): 91-93.

[2] Sun Pin, Wang ping. Research on the Connotation and Evaluation of Students' Intelligent Learning Ability, Modern Educational Technology, 2020, 30(4): 118-121.

[3] Jing Mulan. The Research of Teaching Strategy on Smart Learning Environment, Inner Mongolia Normal University, 2019.

[4] Li Haixia. On the Academic Logic of Scholarship of Teaching, Contemporary Education Sciences, 2020 (2): 16-19.

[5] Ma Zhiying. Contemporary Curriculum and Pedagogy, Shanghai Jiao Tong University Press, 2020.

[6] Huang huairong, Yang junFeng, Hu yongbing. From Digital to Smart: The Evolution and Trends of Learning Environment, Open Education Research, 2012, 18(1): 75-84.

[7] Ai Xin, Zhao Ruixue. Smart learning in the context of future schools: connotations, characteristics, elements and generation, China Educational Technology, 2020, (6): 52-57.

[8] Yang Xianmin, Yu Shengquan. The Architecture and Key Support Technologies of Smart Education, China Educational Technology, 2015, (1): 77-84.

[9] Wang Youmei, Hu Wei. A study of digital competence development under digital Bloom's mapping, China Educational Technology, 2013, (5): 1-7.

[10] Zhu Zhiting, Wei Fei. Educational Informatization 2.0: Starting on a Journey of Intelligence Education Guided by Smart Education, e-Education Research, 2018, 39(9): 5-16.

[11] Zhou Dongdai, Sun Pin, Yu Wei. Smart Learning Environment Evaluation: What to be Evaluated and How to be Evaluated, Modern Distance Education Research, 2017, (3): 26-33.

[12] Chen XianZhe. Faculty Development: Research Approaches and Prospects, Fudan Education Forum, 2017, 15(3): 80-86.

[13] Chen Fei, Li Guang, Xu Tingxiao. The Development and Enlightenment of Scholarship of Teaching and Learning in Foreign Universities, International and Comparative Education, 2017, 39(10): 61-67.

The Influence of Goal Orientation on Deviant Behaviors in Physical Education Learning about Female College Students

Yuefeng Jin
Department of PE, Shanghai Sanda University, Shanghai 201209, China

Abstract: Based on the theory of social cognitive theory, exercise behavior theory and sports psychology, this paper investigates the comprehensive influence of goal orientation and the deviant behavior of female college students on physical education learning. Using the questionnaire of the task orientation and the self-orientation questionnaire in the exercise and the physical learning deviation scale of the female college students to investigate 1156 female college students in Shanghai (Age =19.93 + 2.067, Fresher: 624, Sophomore: 532). The results showed that: the deviation behavior of physical education learning was in the middle and lower level; the effect of goal orientation (task, self) on the deviation behavior of female college students was significant ($P < 0.01$), self orientation ($\beta = 0.370$) had a moderate and low effect on the deviation behavior ($0.3 < \beta < 0.5$), and task orientation ($\beta = - 0.551$) had a moderate effect on the deviation behavior ($0.5 < \beta < 1$), Conclusion: task orientation is a positive factor to avoid and reduce the deviant behavior of female college students in sports learning, self orientation is one of the factors to induce the deviant behavior of female college students in sports learning, and the creation of task orientation learning atmosphere can effectively avoid and reduce the deviant behavior of female college students in sports learning.
Keywords: Female college students; Goal orientation; Physical education learning; Deviant behavior

1. INTRODUCTION

On August 26, 2016, the audit of the meeting of the Political Bureau of the Central Committee approved the most strategic health guidelines in the history of China - the outline of healthy China 2030 plan, which made the health of the whole people as the core of healthy China strategy, and emphasized the strengthening of school health education and the establishment of school health education promotion mechanism [1]. College public physical education is a public compulsory course for college students to improve their physical fitness, health and physical literacy through physical education in class and extracurricular physical exercise. It is true that influenced by diversified and materialized social factors as well as individual physiological and psychological characteristics, a large number of female college students often have inner conflicts, contradictions, imbalances, and negative tendencies such as anxiety, low achievement expectation, and procrastination in the face of complex environment or pressure situation in Physical Education Learning [2], and even show tiredness, weariness, absenteeism, truancy and dishonesty (lying about life In order to avoid physical training), cheating in examinations and other deviant behaviors [3, 4]. This phenomenon not only blocks the cultivation of female college students' interest in sports learning, but also fetters the development of sports moral quality, and even leads to the life style of female college students against the health concept of "lifelong sports". To explore and correct the deviant behavior of female college students' physical education learning is helpful to improve their physical health, improve their social adaptability, and solve many potential problems in college physical education teaching. It is an important subject to be solved urgently under the strategic background of "healthy China".

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

Deviant behavior, also known as deviant or deviant behavior, refers to any thought and behavior judged by social members to be in violation of their social norms or values in a society, including those in violation of moral norms and social customs [5]. According to the social learning theory, when an individual encounters trouble and produces social maladjustment, mental disorder, physiological disease or demand deformity, and cannot adapt to and solve problems with existing experience and ability, he will often show deviant behavior [6, 7]. The deviant behavior in the field of education is regarded as a common problem behavior of teenagers that violates school rules and disciplines and deviates from moral norms [8]. In the situation of physical education learning, deviant behavior is mainly manifested in: violation of physical education classroom teaching routine, physical ethics, sports competition rules and so on. Compared with other education subjects, physical education, as a required course, has obvious statutory and mandatory; in addition, physical education learning needs to pay not only mental effort, but also physical strength, which leads to more deviant behavior in physical education learning.

When exploring the formation mechanism of learning behavior at home and abroad, it is found that different goal orientations make individuals show different learning behaviors [9]. Goal orientation is an internal cognitive orientation of achievement task, which is divided into task orientation and self orientation [10]. The goal orientation theory holds that: in the achievement situation, the individual with the concept of undifferentiated ability takes learning and mastery as the goal, regards ability and effort as the means to achieve the goal, and tends to attribute failure to effort, which is a goal orientation of task involvement [11]; the individual with the concept of differentiated ability takes highlighting high ability or avoiding low evaluation as the goal, and regards learning and mastery as achieving the goal It is a goal orientation of self involvement that the means are good at achieving self expectation through social comparison and tend to attribute the success or failure to their own ability [12]. According to social cognitive theory, people's cognition of an event can lead behavior decision-making and influence decision-making behavior [13]. Self oriented individuals pay too much attention to their own success relative to others, pay less attention to fairness and justice, and recognize deception and violence; task oriented individuals define their own success and ability by mastering new sports skills, and recognize fairness and justice more, showing a high moral standard [14]. The results show that: in sports situation, those with outstanding task orientation tend to be punctual and disciplined, and have positive characteristics such as effort, persistence and devotion in skill learning or physical exercise [15]; those with outstanding self orientation are vulnerable to external factors, and tend to adopt psychological self-defense to maintain self-esteem and self-worth [16], for example, due to lack of normative awareness, they are habitually late to participate in physical education, leave early, or often play with mobile phones in class; because they are afraid of fatigue, sun exposure, and sweating, they escape and avoid physical exercises, or even lie about physiological period/illness [17, 18]. Different goal orientations make the behavior and characteristics of individual sports participation different [17]. Female college students have certain particularity in physiology and psychology; for sports learning, they have the desire to achieve excellent results on the one hand, and the laziness of not willing to participate in activities on the other hand; in addition, compared with male students, they have a physiological period that can not be verified as an excuse. Therefore, they are more likely to produce a variety of deviant behaviors in the process of balancing their outstanding achievements with their efforts.

2. RESEARCH OBJECTS AND METHODS

2.1 Subjects

Based on the principle of stratified cluster random sampling, according to the requirements of the regulations on the work of physical education in Colleges and universities that physical education must be offered in the first and second grades [19]. Taking Shanghai as an example, this paper investigates the goal orientation and physical education learning of Female Freshmen and sophomores in four universities: Shanghai visual arts college, Shanghai Lixin Accounting and Finance College, Shanghai Normal University and Shanghai Shanda college. A total of 1250 questionnaires were collected from 120-150 female college students randomly selected from freshmen and sophomores of each university. According to the criteria of "the rate of response items is less than 85%, " regular answers "and" obvious problems with options ", 1156 valid scales were finally determined, with an effective rate of 92.48%. Among them, age (19.93 ± 2.067 years old); grade (624 freshmen, 532 sophomores); sports optional courses (195 action routines, 260 small balls, 303 big balls, 398 fitness and bodybuilding).

2.2 Measuring Tools

2.2.1 Target orientation scale

Revised J.L. Duda (1988) task orientation and self orientation questionnaire in sports [20]. It consists of 13 items in two dimensions of task orientation (7 questions) and self orientation (6 questions), such as: "when I work very hard" (task orientation), "when I am the best" (self orientation). At the time of revision, the guideline was changed to "my most successful feeling in sports learning is...". Using Likert 5-point method from "totally inconsistent (1)" to "completely consistent (5)", the total score of each dimension item indicates the target orientation degree of the subjects in this dimension. In this measurement, the absolute value of skewness is 0.443-1.351, the absolute value of kurtosis is 0.030-2.889, the minimum standard deviation is 0.838; exploratory factor analysis (EFA) KMO= 0.862, Bartlett spherical test (chi square = 8092.463, DF = 78, $P < 0.001$); confirmatory factor analysis (CFA) X2 = 339.136, DF = 64, X2 / DF = 5.299 ($P = 0.000$), GFI = 0.915, NFI = 0.873, IFI = 0.880, NNFI = 0.898, CFI = 0.879, SRMR = 0.0321, RMSEA = 0.075 ($n > 1000$); Cronbach's $\alpha = 0.876$, split half reliability 0.661; total correlation 0.516-0.717 ($P < 0.01$).

2.2.2 Scale of deviant behavior of female college students in sports learning

According to the existing theories and viewpoints [5-8], the scale of deviant behavior of female college students in physical education learning was compiled. Following the idea of "bottom-up", the first-hand information is obtained through the semi-structured interview with the representative subjects and the open questionnaire of qualitative research, the item pool is established, and the initial item is obtained through the screening and classification of prediction. The specific research steps are as follows:

(1) A semi-structured interview was conducted with 8 interviewees. (a) The respondents were asked to talk in the third person about the improper behaviors of other students who violated the teaching requirements

and norms in physical education, and 61 codeable and effective words were obtained. (b) By combining words with similar semantics, 44 core words are formed. (c) Then compare and merge the vocabulary again, and determine 26 core vocabulary, such as playing mobile phone, being tired of learning, being late, leaving early, dishonesty, cheating, making heavy makeup, etc. After many discussions and verifications by the members of the research group, it is found that these 26 words have the same connotation, clear organization and no overlap. (2) Through item analysis, 90 subjects were tested, and 15 items of the deviant behavior scale of female college students in Physical Education Learning (Table 1) were finally determined: (a) after the homogeneity test of variance for all items, the total score of the scale was ranked from high to low, and the highest / lowest score was 27% (the high and low 27% split points were 36 and 46 respectively) for independent sample t-test: 8 items of non significant items were removed (P > 0.05) , such as: do not care for the venue, equipment, absenteeism without reason, make-up, etc.); remove 4 items that are not significantly related to the overall (P > 0.05, such as: do not pay attention to sports safety; eat snacks, etc.), the remaining 15 items are related to the overall 0.308-0.585 (P < 0.05). (b) The absolute values of skewness, kurtosis and standard deviation of 15 items were 0.224-2.780, 0.178-2.410 and 0.571 respectively. (3) Two professors of psychology and three professors of physical education from Shanghai University were invited to test the validity of 15 items. The experts agreed that the connotation of the scale was consistent with the theoretical conception of female college students' sports learning deviation behavior. The Likert 5-point method was used to score 1-5 points from "never", "rarely", "occasionally", "often" and "always like this". The total score indicates the study deviation behavior of the subjects.

Table 1 Test Value of Item Analysis, and Correlation with Overall

Item	Levene-test			*T*-test			Questions relevant
		F	*p*	*T*	*df*	*p*	
1. late, early leave	Homogeneity of variance	27.650	0.000	-3.529	28	0.010	0.376^{**}
2. Play mobile phone (watch news, wechat, play games, etc.)	Heterogeneity of variance	25.877	0.000	-2.646	17	0.017	0.468^{**}
3. To be lazy (deliberately avoiding and exerting little effort)	Homogeneity of variance	0.108	0.745	-2.270	28	0.031	0.308^{*}
4. No sportswear (jeans, pumps, heels, etc.)	Homogeneity of variance	3.723	0.064	-2.430	28	0.022	0.393^{**}
10. Sloth (slackness of spirit, laziness)	Homogeneity of variance	0.088	0.769	-3.051	28	0.005	0.440^{**}
14. Exclusion of cooperation with people outside the group	Heterogeneity of variance	8.930	0.006	-3.646	16	0.002	0.379^{**}
15. Refuse to communicate with people who are not close to you	Heterogeneity of variance	12.606	0.001	-3.552	14	0.003	0.527^{**}
16. Unwilling to help unfamiliar people	Heterogeneity of variance	20.132	0.000	-2.694	14	0.017	0.448^{**}
19. Envy those who are better than themselves	Heterogeneity of variance	10.233	0.003	-2.543	17	0.021	0.469^{**}
20. To cover up the mistakes of one's companions (lie to help the absent students ask for leave, etc.)	Homogeneity of variance	2.497	0.125	-4.710	28	0.000	0.538^{**}
21. Delays in difficult or challenging tasks	Homogeneity of variance	0.092	0.764	-3.188	28	0.004	0.373^{**}
23. Avoid high intensity exercise (fear of tiredness)	Homogeneity of variance	0.002	0.962	-2.232	28	0.034	0.468^{**}
24. Avoid outdoor activities (afraid of sunshine)	Homogeneity of variance	3.106	0.089	-2.918	28	0.007	0.508^{**}
25. Overestimate oneself (overconfidence)	Heterogeneity of variance	14.567	0.001	-4.480	18	0.000	0.562^{**}
26. Exclude competitive (competitive) activities	Homogeneity of variance	0.258	0.616	-3.142	28	0.004	0.585^{**}

Note: $^{**}p < 0.01$, $^{*}p < 0.05$

In this measurement, the absolute value of skewness of each item is 0.565-1.054, the absolute value of kurtosis is 0.030-1.442, the minimum standard deviation is 0.621; exploratory factor analysis (EFA) KMO= 0.894, Bartlett spherical test (chi square = 6365.452, DF = 105, P < 0.001); confirmatory factor analysis (CFA) X2 = 585.72, DF = 90, X2 / DF = 6.508 (P = 0.000), GFI = 0.926, NFI = 0.932, IFI = 0.935, NNFI = 0.918, CFI = 0.935, SRMR = 0.0384, RMSEA = 0.049 (n > 1000); Cronbach's α = 0.874, split half reliability 0.783; total correlation 0.824-0.908 (P < 0.01)

2.3 Measurement Process

According to the principle of convenient sampling, from April 20 to May 20, 2019, the paper and pen survey method was adopted, and the data were collected by collective unified measurement, and the time for filling and answering the questionnaire was 5 minutes. Before the test, explain the instructions of the questionnaire, guide the subjects to fill in the questionnaire truthfully, and recycle it on the spot. The general demographic data such as age, grade and courses were obtained during the test.

2.4 Data Acquisition and Analysis

Import the data into spss24.0 software. After processing the effective data with reverse questions and centralization, the basic situation and internal relations of female college students' goal orientation and deviant behavior were investigated by using the conventional statistical analysis methods (descriptive statistics, correlation analysis, regression analysis, etc.).

3. RESULTS

3.1 The Result and Analysis of the Deviant Behavior of Female College Students in Sports Learning

The basic situation of female college students' sports learning deviation behavior (Table 2) shows that the current situation of female college students' sports learning deviation behavior (m ± SD = 2.67 ± 0.793) is in the middle and lower level. The top four sports learning deviant behaviors of female college students are: “playing mobile phones in class (watching news, wechat, playing games, etc.), ” rejecting competitive (competitive) activities “, ” delaying when encountering difficulties or challenging tasks “and” avoiding outdoor activities “. The last two are “unwilling to help unfamiliar people” and “envious of those who are better than themselves”.

Table 2 The basic situation of female college students’ deviant behavior in sports learning

Observation variable	*M*	*SD*	Sort
02. Play mobile phone (watch news, wechat, play games, etc.)	3.08	0.947	1
15. Exclude competitive (competitive) activities	3.03	1.097	2
11. Delays in difficult or challenging tasks	3.01	0.896	3
13. Avoid outdoor activities (afraid of sunshine)	2.99	1.043	4
12. Avoid high intensity exercise (fear of tiredness)	2.96	0.978	5
03. To be lazy (deliberately avoiding and exerting little effort)	2.77	0.801	6
05. Sloth (slackness of spirit, laziness)	2.76	0.802	7
07. Refuse to communicate with people who are not close to you	2.62	0.936	8
14. Overestimate oneself (overconfidence)	2.62	0.820	9
10. To cover up the mistakes of one’s companions (lie to ask for leave, etc.)	2.45	0.740	10
04. No sportswear (non sportswear such as jeans and high-rise shoes)	2.43	0.810	11
06. Exclusion of cooperation with people outside the group	2.42	0.759	12
01. Late or early leave	2.36	0.621	13
08. Unwilling to help unfamiliar people	2.32	0.652	14
09. Envy those who are better than themselves	2.31	0.641	15
Totality	2.67	0.793	

Table 3 Correlation coefficient of task orientation, self orientation and deviant behavior

Variable	Task orientation	Self orientation	Deviant behavior
Task orientation	1		
Self orientation	-0.442**	1	
Deviant behavior	-0.551**	0.370**	1

** It indicates that the correlation is significant at 0.01 level (two tailed).

3.2 Direct Influence of Task Orientation and Self Orientation on Deviant Behavior

Bivariate bilateral correlation coefficient test showed that (Table 3): task orientation ($r = -0.551$), self orientation ($r = 0.370$) were significantly correlated with various indicators of deviant behavior ($P < 0.01$). In comparison, the negative correlation between task orientation and deviant behavior was relatively close, and reached a moderate level ($0.40 < R < 0.6$).

3.3 Regression Analysis of Task Orientation and Self Orientation on Deviant Behavior

Taking deviation behavior as the dependent variable, self orientation and task orientation as independent variables, regression analysis was carried out by forced entry method (Table 4): task orientation ($f(11154) = 502.828$) and self orientation ($f(11154) = 183.536$) had significant regression effect on deviation behavior ($P < 0.001$). Further analysis showed that self orientation ($\beta = 0.370$) had a moderate effect on deviant behavior ($0.3 < \beta < 0.5$), and task orientation ($\beta = -0.551$) had a moderate effect on deviant behavior ($0.5 < \beta < 1$).

Table 4 Regression analysis of self orientation and task orientation on deviant behavior

Variable	*B*	*SE*	*β*	*SD*	*p*
Task orientation	-1.241	0.055	-0.551	5.787	0.000***
self orientation	0.784	0.058	0.370	6.155	0.000***

Note: *** means P reaches the significant level of 0.001, ** means P reaches the significant level of 0.01, * means P reaches the significant level of 0.05.

4. CONCLUSION

4.1 Current Characteristics of Female College Students’ Sports Learning Deviation Behavior

The deviation behavior of female college students in physical education learning is in the middle and lower level (2.67 ± 0.793). In many deviation behaviors, it has become a habit of female college students to watch and play mobile phones frequently in class. As we all know, with the development of society and technology, mobile phone has become an indispensable part of people’s daily life, and it is a habit of “addiction”. It is undeniable that the emergence of mobile phones has changed an era and brought many conveniences to people’s study, work and life. However, how to use mobile phones reasonably and deal with the relationship between learning and “playing with mobile phones” correctly, for female college students, it is still necessary to strengthen their self-control and self-management ability under the correct guidance and constraint conditions, otherwise it is very easy to be in sports learning Make deviation behaviors that violate classroom norms and requirements. In addition, in the deviant behavior of sports learning, “the activities that exclude competitive (competitive) nature” are second only to “playing mobile phone”, and second, the reasons are as follows: on the one hand, female college students tend to take part in quiet and gentle sports activities because of their gentle and quiet personality, while they relatively exclude those competitive (competitive) activities that have physical confrontation and contact On the other hand, the surrounding partners lack the atmosphere and interpersonal relationship to participate in competitive (competitive) activities, resulting in the lack of support for individual participation, and thus lack of enthusiasm or resistance to this kind of sports activities. The survey also found that female college students were reluctant to participate in outdoor activities (afraid of sun exposure). Influenced by the traditional aesthetic concept, people always take "white" as the beauty. When they take part in outdoor games, they are exposed to the wind and the sun. They are very easy to turn their skin color black and affect their white and beautiful image. In fact, outdoor activities can wake up the activity of cells in the body, make the exhaust gas in the body exchange with the fresh natural air, accelerate the discharge of toxins and promote metabolism. It can be seen that guiding female college students' correct aesthetic cognition, social cognition and sports cognition, improving their self identification ability, or effectively avoiding their frequent deviant behaviors in sports learning.

4.2 The Influence of Goal Orientation (Task, Self) on Female College Students' Sports Learning Deviant Behavior

Goal orientation can predict and explain sports behavior through exercise motivation [21]. The behavior of goal orientation in sports learning is mainly reflected in the purpose of participating in sports activities, the reason for efforts and the attribution of failure [22]. Task orientation is a positive factor to avoid and reduce the deviant behavior of adolescent students in sports learning. Self orientation is one of the factors to induce female students to have deviant behavior in sports learning. Two kinds of goal orientation have different characteristics and forms in sports learning. Female college students with outstanding task orientation are keen to learn and master sports skills, and tend to complete sports learning tasks through their own efforts; they will show strong persistence when encountering difficult or uninterested tasks; they can show a positive motivation mode in the face of failure, so their deviant behaviors are less. There was a significant negative correlation between task orientation and deviant behavior ($r = -0.551$; $P < 0.01$). Based on the need of self-protection, self-directed individuals will try their best to avoid the adverse evaluation of ability, which is easy to generate anxiety and shame, resulting in learning burnout [23]. Self directed individuals avoid challenges and give up once they fail, which is always associated with negative adaptive behaviors [24]. Female college students with outstanding self orientation tend to be late and leave early, dress casually, play mobile phones in class and other behaviors in PE class; they will lie about their physiological period or delay the exam in the face of outdoor physical training; they will show low mood and tired of being lazy about the content of PE class they don't like; but in order to surpass others or avoid low ability evaluation, they will take improper measures Even violate the rules and regulations, so the deviation behavior is more obvious. There was a significant positive correlation between female college students' self orientation and deviant behavior ($r = 0.370$; $P < 0.01$). In order to meet the needs of education or self needs in a specific period, individuals can flexibly adjust their own goal orientation [23]. In the process of teaching, we can establish measures to improve motivation and learning process, propose possible interaction effects of different goal orientations to students, and build reasonable goal orientations [25]. Based on this, it is suggested that the task oriented learning atmosphere should be created in the physical education teaching, and the level of effort, learning attitude and progress in the process of physical education learning should be taken as the standard to inspect the physical education achievements, so as to improve the enthusiasm and participation of female college students in physical education learning, and then correct their deviant behavior in physical education learning.

REFERENCES

[1] Central Committee of the Communist Party of China. The State Council issued <the outline of "healthy China 2030" plan>. [2016-10-25]. http://www.gov.cn/zhengce/2016-10/25/content_5124174.htm.

[2] Wang Shouheng. On the adverse effect of cognitive bias on physical education and its correction. Journal of Chengdu Institute of physical education, 2001, 27(2): 37-39.

[3] Sun Kaihong, Wang Kun, Chen Zuosong. Research on the relationship between multiple goal orientation and destructive behavior in Physical Education Learning. Education theory and practice, 2017, 37(36): 60-62.

[4] Dong Baolin, Zhang Huan, Zhu Leqing, et al. Research on the behavior mechanism of female college students' physical exercise. Journal of Nanjing Institute of Physical Education (SOCIAL SCIENCE EDITION), 2013, 27(6): 91-98.

[5] K V Petrides, Frederickson N, Furnham A. The role of trait emotional intelligence in academic performance and deviant behavior at school. Personality & Individual Differences, 2004, 36(2): 277-293.

[6] Akers R L, Krohn M D, Lanza-Kaduce L, et al. Social learning and deviant behavior: A specific test of a general theory. US: Springer, Contemporary Masters in Criminology, 1995: 636-655.

[7] Allen J P, Porter M R, Mcfarland F C, et al. The two faces of adolescents' success with peers: adolescent popularity, social adaptation, and deviant behavior. Child Development, 2005, 76(3): 747-760.

[8] Li Yajun, Chen Fumei, Lu Furong, et al. The influence of Internet bullying on deviant behavior and the moderating effect of self-control. Chinese Journal

of clinical psychology, 2015, 23(5): 896-900.
[9] Pintrich P R. Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. Journal of Educational Psychology, 2000, 92(3): 544-555.
[10] Meece J L, Blumenfeld P C, Hoyle R H. Students' goal orientations and cognitive engagement in classroom activities. Journal of Educational Psychology, 1988, 80(4): 514-523.
[11] Nicholls J G. Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. Psychological Review, 1984, 91(3): 328-346.
[12] Dweck C S, Leggett E L. A social-cognitive approach to motivation and personality. Psychological Review, 1988, 95(2): 256-273.
[13] Gao Jie. The influence of online academic mood on learning engagement -- from the perspective of social cognitive theory. Open education research, 2016, 22(2): 89-95.
[14] Fu Xubo, Wu Mingzheng. The relationship between goal orientation, moral identity, moral detachment and antisocial behavior of college athletes. Applied psychology, 2014, 20(01): 40-48.
[15] Granerogallegos A, Gomezlopez M, Rodriguezsuarez N, et al. Importance of the motivational climate in goal, enjoyment, and the causes of success in handball players. Frontiers in Psychology, 2017, 8(2): 1-15.
[16] Hao Fang. Research and application of goal orientation theory in sports psychology. Journal of Capital Institute of physical education, 2002, 14(2): 88-90.
[17] Zhu Xun Tao, Zhai Chun. The relationship between exercise needs, goal orientation and physical behavior of female college students. Journal of Chengdu Institute of physical education, 2014, 40(12): 85-90.
[18] Du Zhaojun. On the causes and elimination methods of female college students' fear of middle and long distance running. Educational exploration, 2008 (6): 136-137.
[19] National Education Commission. Regulations on the work of physical education in schools. [1990-03-12].
http://www.moe.gov.cn/srcsite/A02/s5911/moe_621/201511/t20151119_220041.html.
[20] Duda J L. The relationship between goal perspectives, persistence and behavioural intensity among male and female recreational sport participants. Leisure Sciences, 1988, 10(2): 95-106.
[21] Hu Xiaoyong, Guo Yongyu. The promotion and action process of executive intention on goal achievement. Progress of psychological science, 2013, 21(2): 282-289.
[22] Luo Wenfeng. Analysis of the relationship between students' interest in sports learning and achievement goal orientation. Teaching and management, 2010 (6): 117-118.
[23] Shi Lei Shan, Gao Feng Qiang, Wang Peng, Chen Ying min. The Influence of achievement goal orientation on learning burnout: the mediating effect of academic self-efficacy. Psychological science, 2012, 35(6): 1393-1397.
[24] Research group of "development of learning potential", a key project of the Ministry of education in the Tenth Five Year Plan of national education science. Learning to learn (2000.1-2004.11). Shanghai Education and research, 2004 (S1): 2-80.
[25] Fan Liheng, sun Qifan, Ma Jing. Process intervention of poor students' self regulated learning in hypertext learning environment. Open education research, 2013, 19(1): 95-101.

Research on Optimal Detection Method of Stored Grain Quantity Based on Unbalanced Data

Cheng Cong[1, 2], Zhang Dexian[1, 2], Deng Mianlei[1, 2], Zhang Miao[1, 2]*
[1]College of Information Science and Engineering, Henan University of Technology, Zhengzhou 450001, Henan, China;
[2]Key Laboratory of Grain Information Processing and Control, Ministry of Education, Zhengzhou 450001, Henan, China
[*]Corresponding Author.

Abstract: Grain is one of the country's three strategic resources, which is related to the national economy and people's livelihood. The security of the quantity of grain storage is an important material basis for ensuring the stability of the country. When using pressure sensors to obtain grain quantity detection samples, there are often a large amount of unbalanced data. This paper proposes a pressure selection and removal algorithm for unbalanced data samples, and builds a grain storage quantity detection model based on unbalanced data. The experimental results show that the detection of different grain varieties and different types of granaries can meet the national requirement that the detection error does not exceed 3%.
Keywords: Pressure Sensor; Imbalance Data; Optimization Algorithm; Detection Accuracy

1. INTRODUCTION

Due to the huge quantity of grain and low price, the online detection of grain pile quantity is required to have high detection accuracy, while meeting the characteristics of low cost, simplicity and convenience. In the process of grain storage, there is an imbalance in the distribution of pressure detection values, which will inevitably affect the accuracy of the detection of the amount of stored grain. To solve this problem, this paper proposes an optimization method for the detection of the amount of grain in storage based on unbalanced data [1-3].

2. Experimental data analysis

(1) Granary sensor layout model

The single-story warehouse used in the experiment is 9m long, 4.2m wide, and has an area of 37.8m2. C_B/A_B Is 0.698. The diameter of the silo is 6m and the area is 28.26 m2, C_B/A_B Is 0.67. Both types of granaries are small granaries. Compared with the actual granaries, C_B/A_B relatively bigger [4-8].

Figure 1 and Figure 2 are the schematic diagrams of the sensor layout of the silo and silo in the granary pressure distribution detection experiment. The pressure sensor on the bottom of the warehouse is arranged in 2 circles, with 16 measuring points on the outer ring, numbered 1#-16#, and 6 measuring points on the inner ring, numbered 17#-22#. 8 measuring points are evenly arranged at the side wall of the warehouse at a height of 1 meter, 3 are evenly arranged on each of the two 9-meter walls, and 1 is arranged in the middle of the 4.2-meter wall, numbered 23#-30#. The silo pressure sensor is arranged in 2 circles, 12 in the outer ring, numbered 7#-18#, 6 in the inner ring, numbered 1#-6#. 6 measuring points are evenly arranged at a height of 1 meter on the side wall of the silo, numbered 19#-24#.

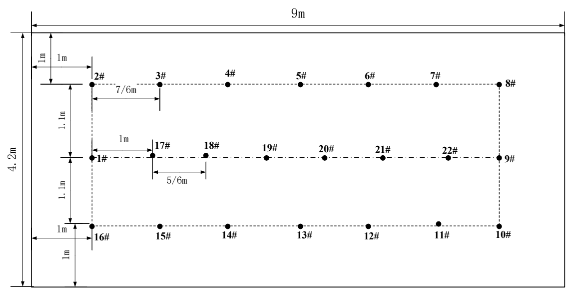


Figure 1 The layout of the pressure sensor in the single-storey warehouse

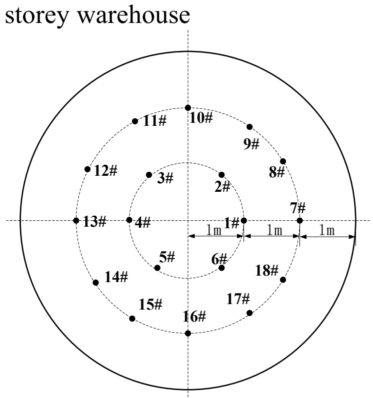
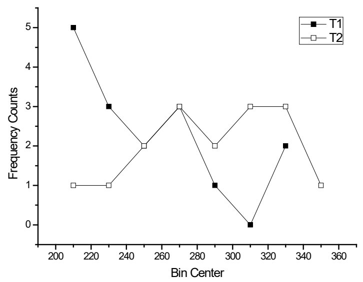


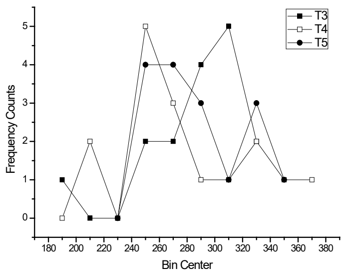
Figure 2 Layout of silo pressure sensor

(2) Wheat experimental data analysis

Figures 3 and 4 show the frequency statistics of the pressure sensor measurements on the inner and outer rings of the wheat silo at a height of 6 meters in each experiment. Figures 5 and 6 show the pressure sensor measurements on the inner and outer rings of the wheat silo at a height of 8 meters in each experiment. Frequency statistics results. From these results, it can be seen that, except for the case where the side friction of the wheat bunker is large, since the grain feeding method of each experiment is basically the same, there is a certain similarity in the frequency statistical results of the inner and outer ring pressure sensors of each experiment, and As the number of pressure sensors increases, this similarity will increase. At the same time, it can be seen that there is a peak in the frequency distribution of the measured value of the pressure sensor in the inner and outer rings, and the peak is obviously biased to the larger value area, and the frequency distribution in the smaller value area is obviously unbalanced. In order to improve the consistency of the bottom surface pressure detection, the measured value of the smaller area of the inner and outer ring pressure sensors should be removed reasonably[9-12].



(T1-T2)



(T3-T5)

Figure 3 The frequency statistics of the measured value of the outer ring pressure when the wheat warehouse is full for 5 trials

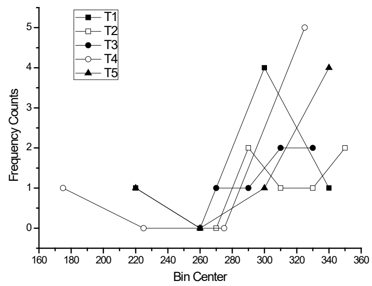


Figure 4 Frequency statistics of the measured values of the pressure in the inner ring when the wheat silos are full for 5 trials

(3) Frequency statistics of the measured value of the pressure sensor in the inner and outer ring of the rice grain silo

Figures 7 and 8 show the frequency statistics of all the measured values of the pressure sensor in the inner and outer rings of the five experiments when the rice silo is at a height of about 6 meters. Figures 9 and 10 show the frequency statistics of all the measured values of the pressure sensors on the inner and outer rings of the rice silo at a height of about 8 meters in 5 experiments. From these results, it can be seen that because the grain feeding method of each experiment is basically the same, there is a certain similarity in the frequency statistics of the inner and outer ring pressure sensors in each experiment. The frequency distribution of the inner and outer ring pressure sensors is unbalanced, and the peak value Obviously biased towards the larger value area. These results are similar to the experimental results of the wheat silo, and the measured value of the smaller area of the pressure sensor in the inner and outer ring should be removed reasonably.

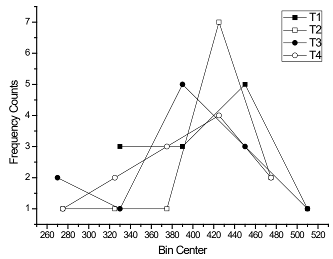


Figure 5 Frequency statistics of the measured value of the outer ring pressure when the wheat silo is full in 4 tests

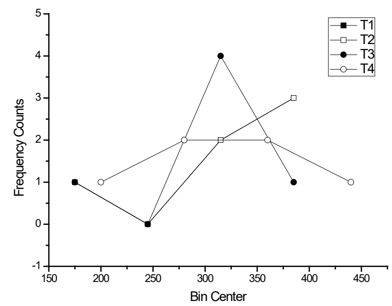


Figure 6 Frequency statistics of the measured values of the pressure of the inner ring when the wheat silo is full in 4 tests

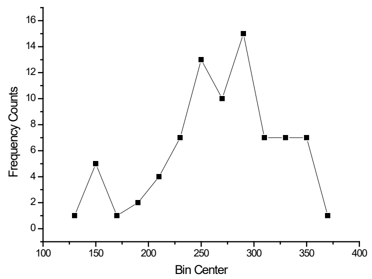


Figure 7 The frequency statistics of all pressure measurements in the outer ring when the rice silo is full for 5 trials

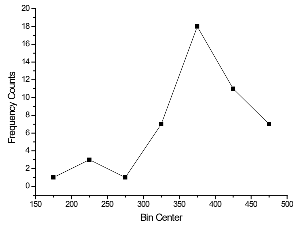


Figure 8 The frequency statistics of all pressure measurements on the outer ring when the rice silo is full

for 4 tests

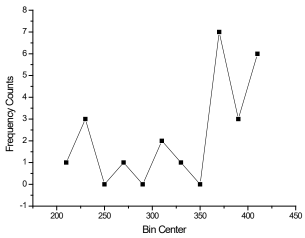


Figure 9 Frequency statistics of all pressure measurements in the inner ring when the rice silo is full for 4 tests

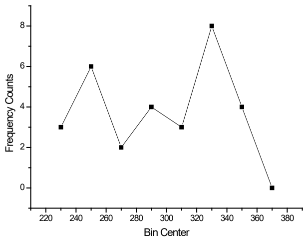


Figure 10 The frequency statistics of all pressure measurements in the inner circle when the rice silo is full for 5 trials

3 theoretical basis

(1) Theoretical model

Through the force analysis of the grain pile, it can be concluded that the weight of the grain bin and the pressure distribution of the grain bin has the relationship shown in the following equation

$W = \int_{S_B} Q_B(s)\, ds + \int_{S_F} f_F(s) Q_F(s)\, ds$ (1)

among them, WIs the weight of the grain pile;$S_B \backslash S_F$They are the bottom and side of the grain pile;$Q_B(s)$ $\backslash Q_F(s)$ Respectively the bottom of the grain pile S_B And sideS_F in$s$Point pressure;$f_F(s)$ For the bottom of the grain pileS_B And sideS_F The coefficient of friction between. Discretely divide the bottom surface of the grain pile inton_BSmall areas of equal area, each area isΔA_B, The pressure at the center of gravity of each area is$Q_B(s_i), i = 1, \dots, n_B$; Discretely divide the side of the grain pile inton_FSmall areas of equal area, each area isΔA_F, The pressure at the center of gravity of each area is$Q_F(s_j), j = 1, \dots, n_F$, Assuming that the average side friction coefficient isf_F, Then

$\widehat{W} = \Delta A_B \sum_{i=0}^{n_B} Q_B(s_i) + \Delta A_F f_F \sum_{j=0}^{n_F} Q_F(s_j)$ (2)

among them, $\widehat{W}$ Estimate the weight of the grain pile. From equation (1) and equation (2), let$K_c = C_B / A_B$, Then the grain weight detection model for grain storage is

$\widehat{W} = A_B[\bar{Q}_B(s) + K_c f_F H \bar{Q}_F(s)]$ (3)

among them, A_BIs the area of the bottom surface of the grain pile, C_BIs the perimeter of the bottom surface of the grain pile;HIs the height of the grain pile;f_FIs the average friction coefficient between the side of the grain pile and the side of the granary;$\bar{Q}_B(s)$ Is the average pressure of the bottom surface of the grain pile, $\bar{Q}_B(s) = \frac{1}{n_B} \sum_{i=0}^{n_B} Q_B(s_i)$, $\bar{Q}_F(s)$ Is the average pressure on the side of the grain pile and has$\bar{Q}_F(s) = \frac{1}{n_F} \sum_{j=0}^{n_F} Q_F(s_j)$. make

$\bar{P}_f(s) = f_F \bar{Q}_F(s)$ (4)

$\bar{P}_f(s)$ It is the average friction force per unit area on the side of the grain pile. Then there is

$\widehat{W} = A_B[\bar{Q}_B(s) + K_c H \bar{P}_f(s)]$ (5)

Obviously, the weight of the grain pile and only the average pressure of the bottom surface of the grain pile$\bar{Q}_B(s)$ \Average friction per unit area of side$\bar{P}_f(s)$ And the height of the grain pile$H$related. Therefore, the core of grain storage grain quantity detection based on pressure sensors lies in$\bar{Q}_B(s)$ $\backslash \bar{P}_f(s)$ with$H$ Detection and estimation of three parameters.

(2) Unbalanced data optimization algorithm

i Calculation of the mean and standard deviation of the output value of the inner circle sensor

In order to avoid the influence of the randomness of the output value of the small and large value area, the output value sequence of the inner circle sensor$Q_B(s_{Inner}(i)), i = 1, 2, \dots, N_I, N_I$Is the number of inner circle sensors. Sort the output value sequence by size and find the median point. Take the median point adjacent to the leftN_{LM}Output value points, which are adjacent to the right of the median pointN_{RM} Output value points, forming a sequence of sensor output values near the median value$Q_{Med}(s_{Inner}(i))$. In this article, generally take$N_{LM} = 2 - 3, N_{RM} = 2 - 3$. Find the output value sequence of the selected sensor$Q_{Med}(s_{Inner}(i))$ Mean of$\bar{Q}_{Med}(s_{Inner})$.

$\bar{Q}_{Med}(s_{Inner}) = \frac{1}{N_{LM}+N_{RM}} \sum_{i=1}^{N_{LM}+N_{RM}} Q_{Med}(s_{Inner}(i))$ (6)

Sequence of output values from the inner circle sensor$Q_B(s_{Inner}(i))$ And mean$\bar{Q}_{Med}(s_{Inner})$ Calculate the standard deviation of the output value of the inner circle sensor$SD_{Med}(s_{Inner})$.

$SD_{Med}(s_{Inner}) = \sqrt{\frac{1}{N_I - 1} \sum_{i=1}^{N_I} (Q_B(s_{Inner}(i)) - \bar{Q}_{Med}(s_{Inner}))^2}$ (7)

among them, $\bar{Q}_{Med}(s_{Inner})$ It is the mean value of the adjacent output value points on both sides of the inner circle median point.

Then the output point removal rule of the inner circle sensor is

If $|Q_B(s_{Inner}(i)) - \bar{Q}_{Med}(s_{Inner})| \geq T_{SD} SD_{Med}(s_{Inner})$, Then remove $Q_B(s_{Inner}(i))$ Point (8)

among them, T_{SD}The threshold coefficient is removed for the sensor points of the inner circle, which can be adjusted reasonably according to the change of the error of the grainquantity detection model in the grain storage.

The output value point removal rule of the inner circle sensor shown in formula (8) is based on the average value of the adjacent output value points on both sides of the median point. $\bar{Q}_{Med}(s_{Inner})$ Standard deviation $SD_{Med}(s_{Inner})$, In order to eliminate the influence of the randomness of the output value of the smaller and the larger value area, and realize the adaptive adjustment of the inner circle sensor output value point removal threshold, the standard deviation$SD_{Med}(s_{Inner})$ Larger, the output value point removal threshold increases, and vice versa; At the same time, the inner circle threshold coefficient based on the error change of the grain storage grain quantity detection model is introducedT_{SD}, In order to realize the reasonable adjustment and optimization of the removal threshold of the output value of the inner circle sensor. Figures 11-14 are based on the output value point removal rule of the inner circle sensor shown in formula (8). Before and after removing the smaller and larger unbalanced data points, the output value of the pressure sensor in the inner circle of the rice and wheat bungalows depends on the magnitude Distribution after sorting. It can be seen that the regional output values of smaller and larger values are reasonably removed.

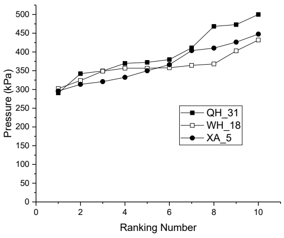


Figure 11 Typical distribution of the output value of the pressure sensor in the inner circle of the wheat warehouse

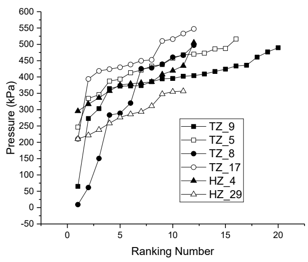


Figure 12 Typical distribution of the output value of the pressure sensor in the inner circle of the rice silo

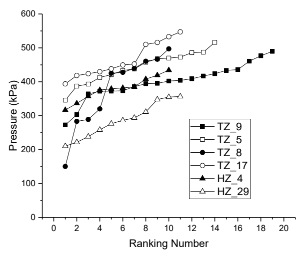


Figure 13 The output value distribution of the pressure sensor in the inner circle of the rice barn after selection

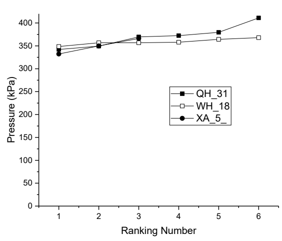


Figure 14 The output value distribution of the pressure sensor in the inner circle of the wheat warehouse after selection

For inner circle sensor output value sequence$Q_B(s_{Inner}(i)), i = 1, 2, \ldots, N_I$, According to the inner circle sensor output value point removal rule shown in formula (17.2.1-3), after removing the sensor output value points that meet the rule, the removed inner circle sensor output value sequence is formed $Q_{BS}(s_{Inner}(i)), i = 1, 2, \ldots, N_{IS}, N_{IS}$ It is the number of sequence data of the output value of the inner circle sensor after removal. Then the average output value of the inner circle sensor$\bar{Q}_{BMed}(s_{Inner})$ for

$$\bar{Q}_{BMed}(s_{Inner}) = \frac{1}{N_{IS}} \sum_{i=1}^{N_{IS}} Q_{BS}(s_{Inner}(i)) \quad (9)$$

Equation (7) is the calculation formula for the standard deviation of the output value of the inner ring sensor, and equation (9) is the calculation formula for the average value of the output value of the inner ring sensor. The main feature of this inner circle sensor output value average and standard deviation calculation method is to reduce the randomness of the sensor output value to the inner circle sensor output value average and standard deviation calculation by removing the smaller and larger value regional output value points. influences.

ii Calculation of the mean and standard deviation of the output value of the outer ring sensor

Using the same method, for the output value sequence of the outer ring sensor$Q_B(s_{Outer}(i)), i = 1, 2, \ldots, N_O, N_O$Is the number of sensors in the outer ring. Sort the output value sequence by size and find the median point. Take the median point adjacent to the leftN_{LM} Output value points, which are adjacent to the right of the median pointN_{RM} Output value points, forming a sequence of sensor output values near the median value$Q_{Med}(s_{Outer}(i))$. Find the output value sequence of the selected sensor $Q_{Med}(s_{Outer}(i))$ Mean of$\bar{Q}_{Med}(s_{Outer})$.

$$\bar{Q}_{Med}(s_{Outer}) = \frac{1}{N_{LM}+N_{RM}} \sum_{i=1}^{N_{LM}+N_{RM}} Q_{Med}(s_{Outer}(i)) \quad (10)$$

Sequence of output values from the outer sensor$Q_B(s_{Outer}(i))$ And mean$\bar{Q}_{Med}(s_{Outer})$ Calculate the standard deviation of the output value of the outer ring sensor$SD_{Med}(s_{Outer})$.

$$SD_{Med}(s_{Outer}) = \sqrt{\frac{1}{N_O-1} \sum_{i=1}^{N_O} \left(Q_B(s_{Outer}(i)) - \bar{Q}_{Med}(s_{Outer})\right)^2} \quad (11)$$

among them, $\bar{Q}_{Med}(s_{Outer})$ It is the mean value of the adjacent output value points on both sides of the median point of the outer circle. Then the output value point removal rule of the outer circle sensor is

If $|Q_B(s_{Outer}(i)) - \bar{Q}_{Med}(s_{Outer})| \geq C_{TSD} T_{SD} SD_{Med}(s_{Outer})$, Then remove $Q_B(s_{Outer}(i))$ Point (12)

among them, C_{TSD}Remove the threshold coefficient for the outer sensor point, T_{SD} The threshold coefficient is removed for the sensor points of the inner circle, and the two coefficients can be adjusted reasonably according to the change of the error of the grain quantity detection model in the grain storage. Adopted here$C_{TSD}T_{SD}$Remove the threshold coefficient as the output point of the outer ring sensor to facilitate the coefficientC_{TSD}Selection and optimization. Figure 16-19 shows the output value point removal rule of the inner circle sensor based on equation (12). Before and after removing the smaller and larger value imbalance data points, the output values of the pressure sensor in the outer circle of the rice and wheat bungalows are sorted by size. After the distribution. It can be seen that the output value of the region with smaller and larger values is effectively removed.

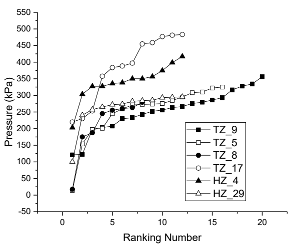


Figure 16 Typical distribution of the output value of the pressure sensor on the outer ring of the rice silo

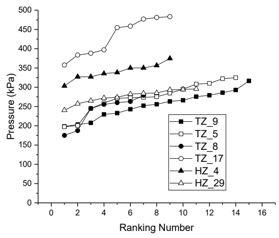


Figure 17 The output value distribution of the pressure sensor on the outer ring of the rice barn after selection

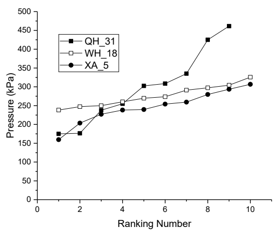


Figure 18 Typical distribution of the output value of the pressure sensor on the outer ring of the wheat warehouse

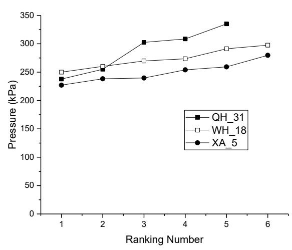


Figure 19 The output value distribution of the pressure sensor in the outer ring of the wheat warehouse after selection

For outer sensor output value sequence$Q_B(s_{Outer}(i)), i = 1, 2, \ldots, N_O$, According to the output value point removal rule of the outer ring sensor shown in equation (12), after removing the sensor output value points that meet the rule, the removed outer ring sensor output value sequence is formed $Q_{BS}(s_{Outer}(i)), i = 1, 2, \ldots, N_{OS}, N_{OS}$ It is the number of sequence data of the output value of the outer circle sensor after removal. Then the average output value of the outer ring sensor$\bar{Q}_{BMed}(s_{Outer})$ for

$\bar{Q}_{BMed}(s_{Outer}) = \frac{1}{N_{IS}}\sum_{i=1}^{N_{IS}} Q_{BS}(s_{Outer}(i))$ (13)

Equation (11) is the calculation formula for the standard deviation of the output value of the outer ring sensor, and equation (13) is the calculation formula for the average value of the output value of the outer ring sensor.

4 Detection model

(1) Detection model and modeling method

The average output value of the inner circle sensor shown in equation (9) is adopted$\bar{Q}_{BMed}(s_{Inner})$, The average output value of the outer ring sensor shown in equation (13) $\bar{Q}_{BMed}(s_{Outer})$ Polynomial construction $\bar{Q}_B(s)$ \$\bar{P}_f(s)$ with$H$Is estimated to be

$$\hat{\bar{Q}}_B(s) = \sum_{m=0}^{N_B} b_B(m)\bar{Q}_{BMed}(s_{Inner})^m \tag{14}$$

$$\hat{H} = \sum_{j=0}^{N_H} b_H(j)\bar{Q}_{BMed}(s_{Inner})^j \tag{15}$$

$$\hat{\bar{P}}_f(s) = \sum_{n=0}^{N_F} b_F(n)\bar{Q}_{BMed}(s_{Outer})^n \tag{16}$$

among them, $b_B(m)$ \$b_H(j)$ \$b_F(n)$ Respectively$\bar{Q}_B(s)$ \ H with $\bar{P}_f(s)$ The coefficient of the estimated term, $m = 0,\ldots,N_B$, $j = 0,\ldots,N_H$, $n = 0,\ldots,N_F$, N_B \ N_H \ N_F Respectively $\bar{Q}_M(s)$ \ H with $\bar{P}_f(s)$ Estimated polynomial order. Substituting formula (14) to formula (16) into formula (3), we have

$$\hat{W} = A_B\{\sum_{m=0}^{N_B} b_B(m)\bar{Q}_{BMed}(s_{Inner})^m + K_c\{\sum_{j=0}^{N_H} b_H(j)\bar{Q}_{BMed}(s_{Inner})^j\}[\sum_{n=0}^{N_F} b_F(n)\bar{Q}_{BMed}(s_{Outer})^n]\} \tag{17}$$

Organizing formula (17), and restricting $\bar{Q}_{BMed}(s_{Inner})$ The maximum order of the term is N_B, limit$\bar{Q}_{BMed}(s_{Outer})$ The maximum order of the term is N_F, You can get

$$\hat{W} = A_B\{\sum_{m=0}^{N_B} a_B(m)\bar{Q}_{BMed}(s_{Inner})^m + K_c\sum_{n=1}^{N_F}\sum_{m=0}^{N_B} a_F(n,m)\bar{Q}_{BMed}(s_{Outer})^n\bar{Q}_{BMed}(s_{Inner})^m\} \tag{18}$$

among them, $a_B(m)$ \$a_F(n,m)$ Is the coefficient of the estimated term, $m = 0,\ldots,N_B$, $n = 1,\ldots,N_F$, N_B \ N_F Respectively $\bar{Q}_{BMed}(s_{Inner})$ \ $\bar{Q}_{BMed}(s_{Outer})$ The order of the term. Obviously, the total number of terms in the first term of formula (18) is$N_B + 1$, The maximum order is N_B; The total number of items in the second item is $(N_B+1)N_F$, $\bar{Q}_{BMed}(s_{Inner})$ versus$\bar{Q}_{BMed}(s_{Outer})$ The maximum order sum of the product terms is N_B+N_F. In order to limit the degree of nonlinearity of the detection model shown in equation (18), the maximum order sum of the product term in the second term should be controlled. Therefore, in order to facilitate the optimization of the total number of terms in the model, formula (18) is arranged, and the second term is $\bar{Q}_{BMed}(s_{Inner})$ versus $\bar{Q}_{BMed}(s_{Outer})$ Sum of order of product terms

N_{n+m} Sort in ascending order, N_{n+m} Press when the same$\bar{Q}_{BMed}(s_{Outer})$ The order is sorted from low to high, then there are

$$\hat{W} = A_B\{\sum_{m=0}^{N_B} a_B(m)\bar{Q}_{BMed}(s_{Inner})^m + K_c \sum_{N_{n+m}=1}^{N_F+N_B}\sum_{m=m_b}^{m_e} a_F(N_{n+m}-m,m)\bar{Q}_{BMed}(s_{Outer})^{N_{n+m}-m}\bar{Q}_{BMed}(s_{Inner})^m\} \quad (19)$$

among them, N_{n+m} In the second item of the detection model$\bar{Q}_{BMed}(s_{Inner})$ versus$\bar{Q}_{BMed}(s_{Outer})$ The sum of the order of the product term, the value interval is [1, N_B+N_F];m_b\$m_e$The values are shown in the following two formulas.

$$m_b = \begin{cases} N_{n+m}\text{-}1 & N_{n+m} < N_B \\ N_B & \text{otherwise} \end{cases} \quad (20)$$

$$m_e = \begin{cases} N_{n+m} - N_F & N_{n+m} > N_F \\ 0 & \text{otherwise} \end{cases} \quad (21)$$

Obviously, the total number of product terms in the second term of formula (19) is $(N_B+1)N_F$, The total number of model items N_{Term} The maximum value is $N_B + (N_B + 1)N_F + 1$. In order to limit the degree of nonlinearity of the model, you can start from the tail of the model (section$N_B + (N_B + 1)N_F + 1$Beginning with the product term), remove several product terms to reduce the total number of model termsN_{Term}. Equation (19) is based on the proposed $\bar{Q}_{BMed}(s_{Inner})$ \ $\bar{Q}_{BMed}(s_{Outer})$ Multinomial grain storage grain quantity detection model.

5 Modeling experiment

(1) Modeling of sample data of wheat real warehouse

For the three wheat silos in Shandong Qihe Grain Depot, Wuhan Grain Depot, and Guangdong Xin'an Grain Depot, the weight of stored grain is 2222.53 tons, 4441 tons and 3236 tons, respectively. Select 351 samples from the test data. Take 240 samples at the same time as multiple regression samples and item maximum order selection samples, and the others as test samples. For equation (19) based on $\bar{Q}_{BMed}(s_{Inner})$ \ $\bar{Q}_{BMed}(s_{Outer})$ For the multinomial grain storage grain quantity detection model, the optimized modeling parameters are shown in Table 1, and the obtained parameters are shown in Tables 2 and 3. The calculation error of the grain storage grain weight of the modeling sample is shown in Figure 20, and the calculation error of the grain storage grain weight of all samples is shown in Figure 21. From these results, it can be seen that the calculation error of the grain storage grain weight of the modeling sample and the test sample is less than 0.249%.

Tab. 1 The modeling parameters optimized

T_{SD}^*	C_{TSD}^*	N_B^*	N_F^*	N_{Item}^*
0.7	0.7	4	4	14

Tab. 2 Model coefficient$a_B(m)$

m	$a_B(m)$
0	2236
1	-66.31
2	0.4253
3	-0.00102
4	8.453E-7

Tab. 3 Model coefficient$a_F(n,m)$

m	$a_F(n,m)$	
	$n = 1$	$n = 2$
0	315.4	-0.0877
1	-2.372	-9.831E-4
2	0.00656	2.47E-5
3	-1.294E-5	
4		

Tab. 3 (Cont) Model coefficient$a_F(n,m)$

m	$a_F(n,m)$	
	$n = 3$	$n = 4$
0	8.206E-4	9.098E-6
1	-2.639E-5	

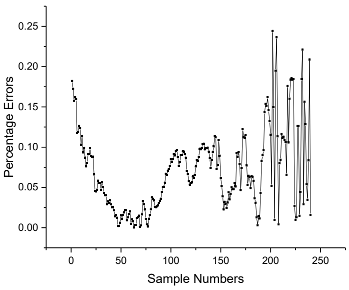


Figure 20 The calculation error of the grain storage grain weight of the modeled sample

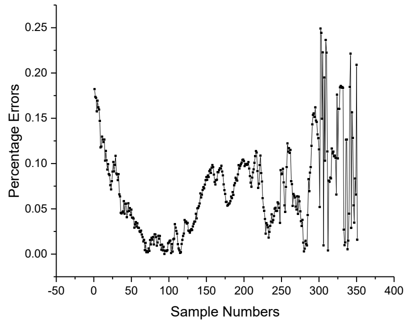


Figure 21 The calculation error of grain weight in grain storage for all samples

(2) Modeling of sample data of rice real warehouse

For the four rice grain silos in Tongzhou Grain Depot and the two rice grain silos in Hongze, the weight of stored grain is 6, 450 tons, 4, 420 tons, 3215 tons, 64, 500 tons, 2, 455.6 tons, and 2099.9 tons, respectively. 1231 samples were selected from the long-term testing data. Select 922 simultaneous multiple regression samples and item maximum order selection samples, and the others as test samples. For equation (19) based on $\bar{Q}_{BMed}(s_{Inner})$ \$\bar{Q}_{BMed}(s_{Outer})$ For the multinomial grain storage grain quantity detection model, the optimized modeling parameters are shown in Table 4, and the obtained parameters are shown in Tables 5 and 6. The calculation error of the grain storage grain weight of the modeling sample is shown in Figure 22, and the calculation error of the grain storage grain weight of all samples is shown in Figure 23. It can be seen from these results that the calculation error of the grain storage grain weight of the modeling sample and the test sample is less than 0.538%.

Tab. 4 The modeling parameters optimized

T_{SD}^*	C_{TSD}^*	N_B^*	N_F^*	N_{Item}^*
1.35	0.8	5	4	19

Tab. 5 Model coefficient$a_B(m)$

m	$a_B(m)$

0	-4092
1	40.06
2	-0.1456
3	2.283E-4
4	-1.173E-7
5	-2.312E-11

Tab. 6 Model coefficient$a_F(n,m)$

m	$a_F(n,m)$	
	$n=1$	$n=2$
0	115.3	0.4146
1	-1.548	0.00648
2	0.00287	-4.108E-5
3	8.122E-6	9.985E-8
4	-3.227E-8	

Tab. 6 (Cont) Model coefficient$a_F(n,m)$

m	$a_F(n,m)$	
	$n=3$	$n=4$
0	-0.0052	4.03E-7
1	2.586E-5	1.594E-8
2	-7.951E-8	

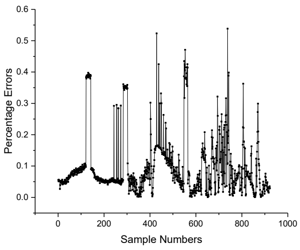


Figure 22 Grain weight calculation error of the modeled sample

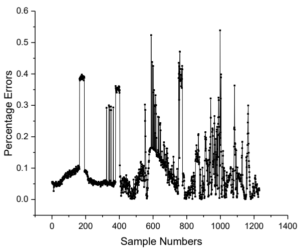


Figure 23 Calculation error of grain weight in grain storage for all samples

6 CONCLUSION

The method for optimizing grain storage quantity based on unbalanced data in this paper overcomes the shortcomings of unbalanced distribution of pressure detection value, and effectively solves the problem of poor detection effect caused by sample imbalance. The detection results of different grain varieties and different types of granaries show that the method has high accuracy and meets the national requirement that the detection error does not exceed 3%.

REFERENCES

[1] Ren, Zheng-xiao. Transaction in the warehouse inventory inspection. Beijing: China Commercial Publishing House, 2007.

[2] Li Lei; Fei Xuan; Dong Zhuoli; Yang Tiejun; Computer vision-based method for monitoring grain quantity change in warehouses [J]. Grain & Oil Science and Technology Volume 3, Issue 3. 2020. PP 87-99.

[3] Fan Chao, Zhang De-xian, Fu Hong-liang. Design of the Measurement Node of the Grain Quantity Monitoring System Based on the CAN-bus. International Conference on Challenges in Environmental Science and Computer Engineering, Vol.1:211-214, 2010.

[4] Fan Chao, Zhang Yuan, Zhang De-Xian. Research on the Monitoring System of the Grain Quantity Based on the CAN-bus. 2nd nternational Conference on Computer Engineering and Technology, Vol.1:458-460, 2010.

[5] Dexian Zhang, Tiejun Yang, Hongliang Fu, etc., An on-line detection method of granary storage quantity based on pressure sensor [J], Journal of the Chinese Cereals and Oils Association, 2014(4):98-103, 112.

[6] Dexian Zhang, Tiejun Yang, Hongliang Fu, etc., An online detection model of granary storage quantity [J]. Acta Automatica Sinica, 2014(10:2213-2220.

[7] Lumin Wang, Yongchao Liu, Qikeng Xu, etc., Research on site measurement of base pressure of bulk grain pile [J]. Journal of Henan University of Technology (Natural Science Edition)2013(4):1-4.

[8] Zhang DX, Zhang M, Zhang Q H, et al. Online grain weight measurement model based on SVR[J]. Eectronicjournals, 2018, 46(5):1179-118.

[9] Zhang D X, Zhang M, Zhang Q H, et al. Silo reserve estimation method based on bottom pressure[J]. Journal of Agricultural Engineering, 2017, 33(10):287-294.

[10] Meysam Alizamir, Sungwon Kim, Ozgur Kisi, Mohammad Zounemat-Kermani. A comparative study of several machine learning based non-linear regression methods in estimating solar radiation: Case studies of the USA and Turkey regions[J]. Energy, 2020, 197.

[11] Ma E P, Cai J M, Lin J, Guo H, Han Y, Liao L W, . The spatial and temporal evolution of the global food security pattern from 2000 to 2014and its influencing factors[J]. Journal of geographical, 2020, 75(02):332-347.

[12] Huseyin Duysak, Enes Yigit. Machine learning based quantity measurement method for grain silos [J]. Measurement, Volume 152, 2020.

Analysis of the Influence of CNC Machine Tools on Machining Process Regulations

Ye Weiwen
Guangdong University of Science & Technology, Guangdong, 523083, China

Abstract: The country's reform and opening up began, and the construction of all walks of life has been improving rapidly. In the process of construction and development of the machinery industry, machining is the process of using machine tools to change the size, length, individual shape, object location, and surface quality of the blank through a predetermined processing technology to form parts that meet the requirements of the drawing. Since most of the parts formed by machining are not used alone, they have to assemble multiple parts together and form products for specific purposes. Therefore, the accuracy of machining not only affects the implementation of assembly, they also have a great impact on assembly accuracy. With the rapid development of the machinery manufacturing industry, the requirements of CNC machine tools for machining accuracy have also been greatly improved. However, ordinary machine tools are the basis of the machinery manufacturing industry and they are widely used in the country and the world.
Keywords: CNC Machine Tools; Machining Process Regulations; Influence

1. INTRODUCTION

With the accelerated development of the country's society and economy, the advanced technology represented by CNC machining technology. With the development of modernization, it has become an important symbol of the modernization and transformation of the machining industry, and it has obtained a wide range of industry value benefits, met the needs of modern industrial production in the country, and better responded to the challenges of economic globalization. This article discusses the application value of CNC machine tools in machining, analyzes the influence of CNC machine tool processing centers on process regulations, and focuses on analyzing and discussing the strategies of CNC machine tools for machining efficiency programs [1].

2. THE APPLICATION VALUE OF CNC MACHINING

Numerical control processing technology is more and more widely used in our country. In many fields, traditional hardware assembly control technology has been completely replaced by numerical control processing technology. Such as industrial production, machine tool manufacturing, automobile industry, CNC machining technology has promoted the machining industry into a new stage. In a relatively complex industrial production environment, it is not easy for traditional manual operations to penetrate directly into the working position [2]. This type of problem can be effectively solved with CNC machining technology. While perfecting industrial production, the personal safety of operators has been greatly protected. The important equipment for machining is the machine tool, which has the characteristics of slow manufacturing speed and low machining accuracy. The application of CNC machining technology has further improved the production speed and accuracy of traditional machinery and equipment, allowing the factory to achieve higher economic value output. At the same time, the new digital management model based on the application of CNC machining technology has greatly liberated the labor force, reduced the cost of the enterprise and improved the efficiency of the enterprise. A lot of practical experience has shown that the value of CNC machining technology is multifaceted in the application of machining. It is an inevitable choice to improve the control of machine tools, meets the needs of online monitoring, fault self-diagnosis and automatic alarm, reduces hidden safety hazards and prolongs the service life of the equipment. At the same time, the use of numerical control processing technology in mechanical processing has significantly improved production efficiency, meeting the needs of energy saving and consumption reduction, and its intelligence meets the needs of modern industrial development. Therefore, the use of CNC machining technology as a typical representation of the modernization transformation of machinery manufacturing industry. It is an important guarantee for its better participation in modern market competition, helps to enhance the competitiveness of the entire industry, and it is of great significance to meet the global economic integration[3].

3. THE INFUENCE OF CNC MACHINE TOOL PROCESSING CENTER REGULATIONS

First, the machining center is established on the basis of parts such as lathes and boring machines. The automatic tool change equipment is reasonably set up so that after the workpiece is clamped, it can directly complete many processing tasks. For example, drilling and boring require multiple machine tools. The traditional work that has been completed can be directly completed after the machining center participates, only through the machining center, which is a machine tool. Therefore, the characteristics of the centralized process of CNC machine tools are produced. Second, the machining center has an exchangeable processing table, which enables the workpiece to be operated on one table, and after the platform is exchanged, other workpieces can be automatically loaded and unloaded at the loading and unloading position. Through the machining center, the efficiency can be improved on the basis of ensuring the normal processing of the workpiece. Through the above description of the machining center, we can see its advantages [4]. In practical applications, the machining center can reduce the time required for workpiece clamping, so that the workpiece handling and storage time is continuously shortened, and the machine tool can be improved. Utilization rate, and achieve higher machining accuracy and efficiency of CNC machine tool technology.

4. IMPROVE THE MACHINING EFFICIENCY OF CNC MACHINE TOOLS

(1) Use advanced machine tools

According to the internal data statistics of the machining industry association, the proportion of metal-cutting CNC machine tools in the total number of CNC machine tools is quite large. The improvement of the processing machinery efficiency of metal-cutting CNC machine tools is of great significance to the development of CNC machine tool efficiency. In order to improve the efficiency of CNC machine tools, it is mainly to reduce the idle running time of machine tools and the overall planned cutting time to further improve the basic utilization efficiency. In the process of machine tool operation in the industry, in the production process of different types of small batch products, the actual operation of the machine tool has only a small amount of time for cutting, and most of the remaining time CNC machine tools are in a stagnant state. From the overall mechanism of mechanical machine operation and the actual operation of the situation can be seen, reduce the time spent on mechanical maintenance can increase the time of mechanical cutting work, so that the work efficiency will be improved. In most cases, the significance of improving the work efficiency of CNC machine tools is to allow CNC machine tools to cut more products and process a variety of parts at a specified time. Under the normal basic ratio, the cutting efficiency of CNC machine tools is mainly composed of the product of the basic cutting speed and the feed. With reference to this formula, it can be accurately concluded that as long as the cutting speed and feed rate are increased, the cutting efficiency can be improved. The high-strength machining environment has become more and more demanding for the cutting tools of CNC machine tools. In this environment, tools with high temperature resistance and cutting force are required. In order to meet the requirements more, hard alloy materials or ceramic blades are generally used, and their basic wear resistance is obviously better than that of ordinary highly rigid tools, which will have a great impact on the quality and accuracy of some products. Since the use of such tools increases costs, it is an ideal choice to use different tools at different stages, which can reduce unnecessary expenses for enterprises and save costs as much as possible in production. In order to better guarantee the stable performance of CNC machining, it is very important to choose suitable tools. The position and sequence of the tools must be studied in depth, and the tools of the machine tool should be selected reasonably according to different processing conditions. In the practice of the operation process, the use of new technology can be very good to improve the operating efficiency, the use of some high-performance tools and special metal materials or the use of new CNC tools, CNC mechatronics, digital, intelligent level has been further improved. In addition, improve the advanced management level of cutting tools, make the quality development of cutting tools to a higher level, and make the overall machining of machine tools run smoothly.

(2) Strengthen production management

In the actual operation process of CNC machine tools, the basic performance can fully play a big role by making use of its strengths and avoiding weaknesses. The biggest benefit is the development of processing efficiency. Since the reform and opening up, CNC machine tools have developed rapidly, and they have great advantages over ordinary machine tools in terms of function and cost performance. On the one hand, CNC machine tools can produce general parts, and on the other hand, they can also realize mass production. For some complex parts, in the actual operation process, due to the single processing of ordinary parts or the program interruption during the work of complex parts, it will cause the loss of the machine tool and cause unnecessary waste. In the actual operation to avoid such operations, so that its performance to get the maximum play. During the processing operation, the card is installed first, and then the processing operation of the pentahedron is completed. This series of processes has a good guarantee for the accuracy and efficiency of the parts. After some companies complete part of the scribing and punching work in the machining center, they immediately transfer to other machines for cutting, drilling and other processes, which greatly reduces the processing efficiency. According to related investigations, the occurrence of this phenomenon is very common in actual operation, and it should be fully considered. The above situation is mainly due to the lack of understanding of the operating principle of the machine tool, and the relatively shallow grasp of its specific process. Aiming at the unreasonable layout, only through continuous adjustments can the machining efficiency of CNC machine tools achieve leapfrog development.

CONCLUSION

In short, the machining of CNC machine tools directly affects the economic benefits of my country's machining enterprises. However, mechanical processing involves a wide range of factors, and the industry faces many factors, so it is difficult to solve it. Only the reasonable use of CNC machine tools, give full play to its advantages, seriously maintain good equipment, frequent inspection and timely troubleshooting, strengthen the management of equipment and reasonable production scheduling, so that we can improve the processing efficiency of CNC machine tools to a new platform.

REFERENCES

[1] Zhang Wen. The influence of CNC machine tools on machining process regulations. 017.
[2] Yin Xiangyang, Li Hui, Zhou Can. On the application of numerical control technology in the field of machining [J]. Science and Technology Innovation, 0 0 (0): 14-15.
[3] Han Yanfei. Analysis of methods to improve machining efficiency of CNC machine tools [J]. Enterprise Technology Development (Academic Edition), 015, 30 (08): 9 -93.
[4] Jing Zhuangcun, Lu Yi. Talking about ways to improve the machining efficiency of CNC machine tools[J]. Equipment Manufacturing Technology, 015 (0): 15-153, 175.

Analysis on Sister Carrie's American Dream in the Context of Consumer Culture

Shan Yee
Guangdong University of Science & Technology, Guangdong, 523083, China

Abstract: *Sister Carrie* is the first naturalist novel of Theodore Dreiser and enjoys a high reputation in American literature. In this paper, the heroine Sister Carrie and her growth will be studied in the context of consumer culture. She keeps pursing a better life to satisfy her needs at her different life stages. Her American dream changes from the pursuit of materials to love and to self-actualization as the development of her economic situation. However, she loses her purity when hankering after upper class identity and feels solitary even though surrounded by countless presents and love letters. Thus, it is of significant to analyze how consumer culture exerts an influence on Sister Carrie and her dream.

Keywords: Sister Carrie; American Dream; Consumer Culture

1. INTRODUCTION

Theodore Dreiser's first novel *Sister Carrie* receives heated discussions upon its publication. The heroine Sister Carrie, a poor country girl, is full of dreams and desires. She wants to experience the metropolitan life and achieve her American dream of being a city girl. "As the American society went through a great change from a production-dominated one into a consumption-dominated one" (Jiang, 2000:91). Consumption has become a popular social manner in order to meet different needs. With the consumer culture being widespread, Carrie considers her beauty and youth as her precious property paying special attention and putting into practical investment to make her American dream come true.

1.1. Introduction to Theodore Dreiser and His Masterpiece *Sister Carrie*

As a pioneer of naturalism in American literature, Theodore Dreiser is good at describing the dark side of life and probing into social problems, which makes a great contribution to the liberation of American novels. Charles C. Baldwin (1919) praises Dreiser as the greatest American novelist, unique as well as greater in spirit and more proficient as a writer than English novelists.

Dreiser, the nineth child of the 13 children in the Dreisers who emigrates from Germany to America, could deeply perceive the hardship of the poor people, for he has a miserable childhood and has to move constantly from one place to another. At fifteen years old, he goes to Chicago by himself and has done various jobs to make a living. When working as an apprentice in several news agencies, he is trained to write articles and has the chance to learn the evolutionary theory of Charles Darwin, which cultivates his literary style to a great extent. At the same time, Dreiser experiences the rapid change of American society with the development of industrialization and urbanization and witnesses the huge gap between the rich and the poor. From his perspective, man is the product of social evolution and believes that only the fittest can survive.

It is in 1899 that Dreiser starts to write his first naturalist book *Sister Carrie* telling the story of a country girl who is not satisfied with small town life and comes to Chicago for a better life. In fact, the antitype of Sister Carrie is Dreiser's second sister Emma Wilhelmina who hates her rural life and leaves for Chicago to pursue a great life. With great difficulty, Dreiser succeeds in getting his novel published. Nowadays, readers and scholars from different countries study the novel and make lots of comments on Dreiser and his writings.

Sister Carrie tells a story about an 18-year-old girl named Carrie longing for city life. Carrie leaves for Chicago and happens to know Drouet on the train, a travelling salesman who is attracted by her natural manner and beauty. Soon after arriving in Chicago, Carrie begins to work in order to earn a living. However, the reality shatters her city dream for she is sacked for being ill so that she must decide whether to return home or not. The travelling salesman Drouet comes to rescue Carrie and shelters her from cold and hungry. Thus, Carrie decides to live with Drouet. Later, Drouet introduces Carrie to his friend, Hurstwood, a respectable bar manager who has an unhappy family life. Acquainted with Carrie, Hurstwood is infatuated with her beauty and youth. Meanwhile, Carrie notices Hurstwood is richer and more attractive than Drouet concerning his good manners and decent behavior. Thus, they start to date each other privately.

After their love affair is revealed, Hurstwood decides to leave Chicago and tricks Carrie into a train first to Canada, then settle down in New York after embezzling a large amount of money. However, the life in New York doesn't live up to Carrie's expectations. Hurstwood fails in his new business and is unable to survive in the big city. Carrie has to work to make money and eventually achieves success with her own efforts. As a result, Hurstwood commits suicide while Carrie becomes popular but feels lonely and empty.

1.2. Introduction to American Dream

American Dream receives much popularity in the

American culture and literature, for it encourages Americans to hanker after a good life and motivates people to achieve their dream. It also stimulates writers' mind and provides them sources to create new works as well.

As James Truslow Adams explained in his book *The Epic of America*, the American Dream is:

That dream of a land in which life should be better and richer and fuller for everyone, opportunity for each according to ability or achievement. It is a difficult dream for the European upper classes to interpret adequately, and too many of us ourselves have grown weary and mistrustful of it. It is not a dream of motor cars and high wages merely, but a dream of social order in which each man and each woman shall be able to attain to the fullest status of which they are innately capable, and be recognized by others for what they are, regardless of the fortuitous circumstances of birth or position. (Adams, 1931:214-215)

Regarding those people who pursue success and fame, they are entitled to have the equal opportunity to achieve their dream and live a better life. However, with the development of American society and industrial revolution sweeping the world, American dream has been changing along with the passage of time and exerting positive and negative influence on people's life. On the one hand, American dream has become a belief that people can have the opportunity to realize his dream despite their gender, race, and class. On the other hand, the connotation of American dream is filled with the temptation of desire and money, which can narcotize people and find no way out of the material wall. The rich become richer and the poor are still poor.

1.3. Significance of the Paper

Since entering consuming society, "Consumerism is used in reference to the anthropological and biological phenomena of people purchasing goods and consuming materials in excess of their basic needs, which would make it recognizable in any society including ancient civilizations."[1] People are driven by the desires of consumption in modern society. Therefore, it is important to analyze the influence of consumer culture comprehensively on Carrie's American dream. By studying the process of Carrie's growth in the context of consumer culture, it is of practical significance to make a considerate decision when encountering the problems as Carrie has met in the consuming society and to make better use of the advantages and avoid the disadvantages of the influence of consumer culture.

2. LITERATURE REVIEW OF *SISTER CARRIE*

In recent years, scholars both abroad and at home have studied *Sister Carrie* from different perspectives, such as naturalism, feminism, consumerism, and need hierarchy. More and more critics doubt Dreiser's identity as a naturalist, for the distinction between realism and naturalism in American literature is not as clear as that in other countries. Some regard him as the realist writer because he reveals the darkness of American society. Others think his works are based on the naturalism. In a word, Dreiser's works have exerted a profound influence on American literature.

2.1. Studies of *Sister Carrie* Abroad

Sister Carrie has been discussed by many scholars. Norris tells that "*Sister Carrie* was the best novel I have read in M.S. since I have been reading for the film, " and stresses that "it pleased me as well as any novel I have read in any form, published or otherwise" (Riggio, 1987:33). H.L. Mencken claims that "such a novel as Sister Carrie stands quite outside the brief traffic of the customary stage. It leaves behind an inescapable impression of bigness, of epic sweep and dignity. It is not a mere story, not a novel in the customary American meaning of the word; it is at once a psalm of life and a criticism of life" (Mencken, 1965:37). However, Dreiser's way of handling human sex gives a shock to American readers at that time. "American tradition had never made it human. It had only made it either sacred or vulgar" (Kazin, 1942:44). It is hard to accept the way of how Dreiser reveals the truth of sexual beings and boldly challenges the American tradition in the early 20th century. Many scholars find that Dreiser's emphasis is put on the importance of instinct and the insignificance of human beings in many of his works. "His novel makes the volatility of the period concrete, vivid, and unforgettable by registering its effect on individual lives. Among the most sweeping changes registered in the novel are the economy's shifting from an agricultural to an industrial base, the erosion of traditional values following the Darwinian revolution, and the changing relations of men and women." [2] Thus, Dreiser is considered as a naturalist writer and plays an important role in American naturalism.

2.2. Studies of *Sister Carrie* at Home

Early in the 1930s, Qiubai Qu, a great scholar in China, first introduces Dreiser and his works to China. However, *Sister Carrie* doesn't catch much attention of Chinese readers and critics mainly because Carrie's moral values are different from Chinese traditional ideology. Until entering the 21st century, because of the speeding-up process of industrialization, urbanization and globalization, more and more Chinese people have changed their ethnical evaluation and become more interested in *Sister Carrie*. Many critics have analyzed it from various theoretical and critical angles. Some deem Carrie as a new woman with feminist consciousness and think it is reasonable for Carrie to live with suitable men to meet her fundamental needs and to pursue her happiness. Hezheng Zhang studies the naturalism in *Sister Carrie*, Daochao Jiang analyzes the novel from the perspective of consumer culture. Wenhui Xu thinks Carrie a typical

---

1 http://en.wikipedia.org/wiki/Consumerism

2 http://iipdigital.usembassv.gov/st/english/publication/2011/04/20110428150452suQ

representative of women who attempts to escape her original family and pursue economic independence. While Daochao Jiang has different point of view toward Carrie, he thinks Carrie is immoral and indulged into hedonism and consumerism. Yan Ma explains the reasons why Carrie has changed from a naive country girl to a popular star in New York. She holds the opinion that Carrie is influenced by consumer culture of America and she wants to acquire high social status and achieves her material success. Xiaocong Han points out that Carrie has double identities that she is not only a free consumer but also a private commodity for Drouet and Hurstwood when it comes to the study of consumer culture and identity construction.

3. THE INFLUENCE OF CONSUMER CULTURE ON SISTER CARRIE'S AMERICAN DREAM

In the book *the Consumer Society Myths and Structures*, Jean Baudrillard (1998) says that the modern society has become a consumption society and consumption transforms from object consumption to sign consumption and picture consumption. A commodity is considered as a sign which can provide its owner with fame and social status. Thus, consumer culture has penetrated the lives of people.

3.1. Sister Carrie's Pursuit of Materials

Sister Carrie wants to escape her poor country life so she crowds into big cities, full of illusions and desires. She is described as "a half-equipped little knight" by Dreiser. Her luggage "consisted of a small truck, a cheap imitation alligator-skin satchel, a small lunch in a paper box, and a yellow leather snap purse, containing her ticket, a scrap of paper with her sister's address in Van Buren Street, and four dollars in money" (Dreiser, 1981:1). When she meets the travelling salesman Drouet on the train, Carrie is impressed by his good dressing and gives him her address. Although coming from a poor country family, Carrie wants to have fancy clothes, exquisite food, decent houses, and large sum of money deep inside of her, which is her American dream at first.

In Chicago, Carrie lives with her married sister Minnie, her brother-in-law Mr. Hanson, and a little baby in a small flat. She doesn't have a warm feeling for Minnie and Mr. Hanson show no sincere care and are too busy with earning basic living allowance, let alone go to the theater or go shopping with her.

As Ferrell (1989) states that money plays a significant part in the novel *Sister Carrie*. If there is no money in realistic society, the story will lose its meaning and appear far-fetched. Carrie finds a job and starts to make money by working in a shoe factory with low salary. Due to the cruelty of the real society, she gets sacked for being ill and becomes unemployed. Struggling to survive in the big city, she has no choice but receives Drouet's financial support- "two soft, green handsome ten-dollar bills". She couldn't resist the temptation of money, especially under such an emergent situation. "Now she would have a nice jacket! Now she would buy a nice pair button-shoes. She would get stockings too, and skirts, and, and-until already, as in matter of her desires, twice the purchasing power of her bills" (Dreiser, 1981:51). It is at that moment that her pursuit of material is stirred up. She moves to a cozy house as Drouet's mistress and has bought many nice clothes. "She did not even seem aware that she was sinning. She simply did what she had to do to make life more tolerable, to gain a little good fortune with the only gifts at her command" (Rubinstein, 1988:266-267).

At a small gathering, Carrie is introduced to Drouet's friend, Hurstwood. She unconsciously found that "His clothes were particularly new and rich in appearance. The coat lapels stood out with that medium tidiness which excellent cloth possesses…What he wore did not strike the eye as forcibly as that which Drouet had on, but Carrie could see the elegance of the material…" (Dreiser, 1981:78). Carrie knows that Hurstwood has a higher social status than Drouet. Later, she elopes with Hurstwood to New York and dreams to have a luxurious life there. Eventually, she gains stardom in Broadway and becomes rich that she can purchase prettier clothes and jewelry, living an exquisite and luxurious life.

3.2. Sister Carrie's Pursuit of Love

According to Maslow's need hierarchy, except the needs for security and basic physiology, higher satisfaction will be met. Despite of having beautiful clothes and delicious food, Carrie craves for warmth and love all her life. When living with the Hansons, she feels no warmth and often wanders along the street without any companion. Mr. Hanson is a common worker, As the family's breadwinner, he struggles to survive in the competitive city. Oppressed by the pressure of living, Mr. Hanson is "a morbid turn of character" (Dreiser, 1981:41). Thus, the Hansons couldn't offer neither material help nor care to Carrie. When living with Drouet, she has more pleasure for she never has such a considerate treatment before. She starts to make friends with her neighbor to get rid of her loneliness when she is left alone at home. Although Carrie is often invited by Drouet to expensive restaurants and shopping malls, she finds that Drouet is less clever than her, and he loves her more for her beauty instead of her feelings as time drops in decay. More importantly, it is difficult for Drouet to perceive Carrie's loneliness and sadness while Carrie aspire to be loved and cared by him.

Compared with Drouet, Hurstwood is gentler and shows more care and respect to Carrie. "He paid that peculiar deference to women which every member of the sex appreciates. He was not overawed; he was not overbold. His great charm was attentiveness… In a pretty woman of any refinement of feeling whatsoever he found his greatest incentive. He was mild, placid, assured, giving the impression that he wished to be of service only-to do something which would make the lady more pleased" (Dreiser, 1981:82). Therefore, Carrie prefers Hurstwood over Drouet to an extent.

With the further improvement of Carrie and Hurstwood's relationship, Carrie shifts her love to Hurstwood and gets married when they arrive in New York. The reason why Carrie chooses to leave for New York is that her dream has changed from becoming wealthy to be loved and her love needs are playing the leading role. After marriage, Carrie feels settled for the first time and "somewhat justified in the eyes as she conceived of it. Her thoughts were merry and innocent enough" (Dreiser, 1981:239). Unfortunately, "whatever a man like Husrtwood could be in Chicago, it is very evident that he would be but an inconspicuous drop in an ocean like New York" (Dreiser, 1981:322). Suffering from the decline of his business, Hurstwood pays less attention to Carrie's emotional needs. What's worse, they have to move house from time to time. Living in a worn-out house, Carrie is afraid of falling back into the miserable life so she decides to work to earn money. She finds a job in a theater and becomes more and more popular while Hurstwood gets no job and becomes scruffy. Carrie couldn't live with Hurstwood any more so she decides to leave him and give him 20 dollars to end their relationship.

At the end of the story, Carrie wins fame and becomes a mature city girl who can purchase what she wants and have self-educated grace in dressing and manners. She is not a timid and ignorant county girl any more. Now she is successful in her job career but lack of love and care, only to receive care and presents from her fans. She sits in the rocking chair, travelling in her dreams. Although her living condition gets better and better, she doesn't satisfy her love needs.

3.3. Sister Carrie's Pursuit of Self-actualization

In Abraham H. Maslow's book *Motivation and Personality*, Maslow defines self-actualization as "man's desire for self-fulfillment, namely, to the tendency for him to become actualized in what he is potentially" (Maslow, 1999:45). Practically speaking, self-actualization is more difficult to achieve for people's needs for esteem are endless. Owing to dream and desire, working as the motivation of people's action, people will move forward and take actions to meet higher needs.

The first job Carrie finds in Chicago is to work in a shoe factory in Chicago. The job is hard and dirty, and "she felt as though she should be better served, and her heart revolted" (Dreiser, 1981:33). Her American dream is like a magnet to trick her into ethnical traps. When Carrie first meets Drouet, she notices that he wears a business suit and is "a type of the travelling canvasser for a manufacturing house-a class which at that time was first being dubbed by the slang of the day 'drummers'" (Dreiser, 1981:3), or "masher". Carrie feels shame on herself for her shabby clothes and instantly knows he is beyond her class level. As to Hurstwood, Carrie instinctively feels that Hurstwood is richer than Drouet. They are what they wear. The clothes are the symbol of the social status so Carrie manages her clothing and manners by self-educating in a delicate wat in order to improve her social identity.

Besides, she enjoys imitating the expressions and manners of the upper class in order to identify herself as an upper class. She spends much time learning how to speak and act more appropriately. To be a famous actress is Carrie's dream because everything in the theater, such as the splendid stage, the fancy clothes, the colorful lights and so forth, is enchanting. The reason why Carrie is infatuated with theater is that in the consuming society, theater is one of the important entertainments for the wealthy people. By virtue of Drouet's recommendation and her efforts, she succeeds in the play "Under the Gaslight" and gains much confidence from the play. She satisfies her self-actualization needs based on her excellent imitation and wonderful performance.

Speaking of being an actress, the stage is the place she desires to show her ability and seek her dream. Carrie has a strong sense of empathy as well as potential in performance. She is born with a passive personality and quick in imitating and indulging in the imaginary world. She knows that "her mind delighted itself with scenes of luxury and refinement, situations in which she was the cynosure of all eyes, the arbiter of all fates" (Dreiser, 1981:126). She wants to live a respectable life and gain respect from others. Therefore, she educates herself into a sophisticated city girl by developing a learning mode towards consumption and cultivating her own lifestyles through books, newspapers, and other mass media, which lays a solid foundation for her acting career. Thanks to her talent of performing, Carrie finally becomes a popular star in Broadway. As for her, the process of realizing her self-actualization can make her fulfilled for she has achieved her dream and become an upper class by herself.

4. THE DISILLUSION OF SISTER CARRIE'S AMERICAN DREAM

In the society full of desire and consumption, human body, especially women's body, is often deemed as an object, which can be invested as capital and dressed as model. At this point, human body likes a type of consumable object and beauty is a supplement to commodities. During the period of living in big cities, Carrie has made her American dream come true. But she couldn't find happiness from her stardom and possessions but loneliness and helplessness because she has been objectified and her consciousness weakened by the coldness of the society.

First coming to Chicago, Carrie is poor but young and beautiful. When Drouet meets Carrie on the train to Chicago, he finds something incredible in her and arouses a lively interest in her. Unemployed and Desperate as Carrie is, she resorts to accepting Drouet's help in the big city. Her living situation getting better, Carrie pays more attention to shape herself and tries to behave like a city girl. When she puts on her new skirt, she feels confident. "The mirror convinced her of a few things which she had long believed. She was pretty, yes, indeed" (Dreiser, 1981:63). Beauty, as her private property, becomes a serious and sacred thing. However, Drouet shows few respect and care to her. He is willing to pay for her but only regards her as a finest consumed object deserving a certain number of investments to show off and to satisfy his desire.

Carrie's second lover Hurstwood is attracted by her youth and beauty as well. Hurstwood works as a chief manager in a respectable bar, but leaves his family for Carrie and elopes with Carrie to New York. Owing to many mishaps, Hurstwood ends up an impoverished person and commits suicide. Carrie, on the contrary, makes use of her beauty and has gained much popularity in Broadway. She is so clever that she knows how to invest and promote herself. She seems to have reached the peak of her career, while "In the fine raiment and elegant surroundings, man seemed to be contented; hence, she drew near those things. Chicago, New York; Drouet, Hurstwood; the world of fashion and the world of stage-these were but incidents. Not them, but that which they represented, she longed for. Time proved the representation false" (Dreiser, 1981:381). The consuming society has commercialized her body and ended her love dream.

At last, Carrie is alone, sitting in the rocking chair and travelling in her dream, which indicates Carrie couldn't have happiness as she expects. As Mc Aleer concludes, "Once she acquires these commodities, she does not find the values she has expected and desires for more objects; consequently, this process incessantly continues. Dreiser states that Carrie does not long for the world of theatre and fashion, but for the things they represent and at last she comes to understand that these are all false signs leading to nothing" (Mc, 1968:79).

Therefore, the reason why Carrie lacks happiness and has disillusioned dream is that she has insatiable desires and wants to get more. Unlike her sister Minnie, Carrie has huge ambition and desires to entertain herself regardless of her poor situation when she is eighteen years old. Living in a cozy department and dressed in fancy clothes, Carrie is not content with the life with Drouet for she thinks she deserves a better person than him. She never satisfies with Drouet and Hurstwood and abandons them when they are useless. Even though surrounded by endless flowers and invitations, she feels solitary and unhappy. The other reason for her disillusion is the commercialized society leading Carrie to go to the abyss and making her dream shattered. As the economy grows rapidly, the gap between the poor and the rich becomes larger and larger. Some are lucky to be a millionaire one night while some work day and night to earn daily allowance. The economic development changes people's moral values so that some country people who come to big cities will gradually lose their purity and traditional belief. Consumer consciousness exerts negative influence on people, especially beautiful and young girls, making them become slaves of the commodity. Therefore, it is unavoidable that Carrie ends up a rich but lonely star.

5. CONCLUSION

Sister Carrie is Dreiser's well-known novel. It tells Carrie's growth from a young county girl who wants to escape poor life to a famous star having considerable possessions. Carrie keeps pursuing her dream and satisfying her needs. Although she can support herself and meet her physiological and safety needs, she doesn't obtain true love and care. In the context of consumer culture, Carrie identifies herself as an upper class by dressing up herself beautifully. She has high purchasing power considering her social status and has achieved her American dream in a way. While she fails in satisfy her spiritual needs. To sum up, life is full of opportunities and traps, like the glamor of the fancy world and the vanity of fashionable clothing. Through analyzing Carrie's American dream and her growth, it is helpful to know how to keep the balance between the material and spiritual needs. As to live a better life in a consuming world, it is important to have an inner peaceful and objective mind.

REFERENCES

[1] Abraham Harold Maslow. Motivation and Personality[M]. Beijing: China Social Sciences Publishing House, 1999.

[2] Aleer Mc. Theodore Dreiser: An Introduction and Interpretation[M]. New York: Holt, Rinehart and Winston, Inc. 1968.

[3] Alfred Kazin. On Native Grounds[M]. New York: Reynal & Hitchcock, 1942.

[4] Henry Louis Mencken. "The Dreiser Bugahoo" in The Stature of Theodore Dreiser[M]. Bloomington: Indiana University Press, 1965.

[5] James Truslow Adams. The Epic of America[M]. Greenwood Press. 1931.

[6] Jean Baudrillard. The Consumer Society Myths and Structures[M]. London: SAGE, 1998.

[7] Jiang Daochao. Insurmountable Culture Assumption-Sino-US Research Review on Theodore Dreiser in the 20th century[J]. Journal of Shenzhen University (Humanities & Social Sciences), 2000.

[8] T. Annette Rubinstein. American Literature Root and Flower Significant Poets, Novelists & Dramatists 1775-1995 VolumesI&IIBound in One[J]. Beijing: Foreign Language Teaching and Research Press, 1988.

[9] Theodore Dreiser. Sister Carrie[M]. Beijing: Foreign Language Teaching and Research Press, 1981.

[10] Thomas P. Riggio. Dreiser Mencken Letters[M]. Philadelphia: University of Pennsylvanian Press, 1987.

Evaluating the Level of Awareness on Sustainable Construction Practices: A Case Study

*Dong Runrun, Sharka J. Zoker**
School of Civil Engineering, Henan University Technology, Zhengzhou, China.
**Corresponding Author.*

Abstract: Rethinking the need to embrace sustainable construction by developing countries generally has not grown as the urgency of the situation to be environmentally, socially and economically sustainable. This situation cannot be unconnected with a high level of unawareness among construction stakeholders. Due to the huge gap in Literature on studies relating to sustainable construction (SC) in Sierra Leone, this paper seeks to examine the level of awareness on sustainable construction practices among professionals in the Western area of the country. Getting awareness in motion will pave a way for implementation. This research employed a quantitative approach by means of a questionnaire survey. The questionnaire contained seventeen (17) sustainable construction practices (SCP) which were evaluated using a 5-point Likert type scale. The findings revealed a miserable level of awareness among stakeholders on emerging practices changing the narratives in the field construction. Based on their mean score, the top-ranked items were Education and training, conduct frequent materials audits, Construction Waste Management, Protection of the environment and Install whole-house ventilation systems. More than half of the 17 items were below the mid-level of the scale which is “moderately aware”. The need for future studies in order to delve into the aspects of implementation and possible barriers cannot be overemphasized.

Keywords: Sustainable construction (SC); Awareness; sustainable construction practices (SCP); construction industry; Sierra Leone.

1. INTRODUCTION

Given the rising call to increase consideration to sustainability issues, construction practitioners must be willing to change their behavior in exploring new territory and willing to adopt new products, ideas and practices (Ofori et. al., 2000). Such change in traditional practices by professionals in the construction industry, particularly in a developing country like Sierra Leone can only be achieved by starting from the embryo stages, which is ensuring increase awareness-raising on sustainable construction. The focus should not just be limited to the economic aspect which is the primary interest of most construction stakeholders but should encompass both the environmental (for Sierra Leone in particular based on the recent environmental hazards over the years) and the social aspects. Even though Adam (2006) cautioned that all three dimensions of SC practices should be equally focused upon; economic concerns far outweigh the environmental concerns in reality. Hence, this paper considers practices that are geared towards tackling all three dimensions of sustainable construction.

In developing countries, the construction industry is a vital sector providing mainly new infrastructure in the form of roads, railways, airports as well as new hospitals, schools, housing and other buildings (Khan, 2008). Due to the huge importance the industry carries, Opoku and Ahmed (2013) postulated that, as a key sector in the delivery of a sustainable built environment, the construction industry needs to have a clear understanding of the sustainability concept in order to fully play such an important role.

The level of awareness and the level of implementation and practice are closely linked. The effort put into action and adoption towards the concept of sustainability and green building application depends on the awareness, knowledge and an understanding of the consequences of key individual actions (Zainul A, 2010). Hence, this research seeks to examine the level of awareness among stakeholders on SC and draw attention to the concept because there is currently an immense gap in the literature on SC in Sierra Leone. It is also hoped to help improve SC in Sierra Leone.

2. SUSTAINABLE CONSTRUCTION PRACTICES (SCPs)

All buildings, including houses, hospitals, schools, offices and factories, and other forms of construction such as civil engineering including infrastructure, must be designed, built, maintained and adapted in ways that meet the many and changing needs of society (Reffat, R. 2004). According to Watuka and Aligula (2002), Sustainable construction (SC) can be defined as a process by which a profitable and competitive industry delivers built assets; building structures, supporting infrastructure and immediate surroundings, which:

- Enhance the quality of life of people and offer customer satisfaction,
- Provides flexibility and supports desirable natural and social environments,
- Maximise the efficient use of resources while minimizing wastage.

SC can also be explained as, the integration of environmental, social and economic considerations into construction business strategies and practices. It is the application of the principles of sustainable development to the comprehensive construction cycle from the extraction of raw materials, through the planning, design, and construction of buildings and infrastructure, until their final deconstruction and management of the resultant waste (Tan at el, 2011).

The goal of sustainable construction practices cannot be realised if there isn't a thorough awareness of the subject globally. According to Du Plessis (2007), the sustainability movement can only be set into motion if awareness and knowledge are in place. Other authors, Abidin, N.Z. (2010) described the implementation of sustainable construction as a process that starts with awareness coupled with interest which leads to gaining knowledge. Acceptance of the knowledge gained will lead to increased demand and this results in implementation.

From the above definitions from various researchers, it is very clear that sustainable construction projects impact various stakeholder groups based on their economic, social or environmental interest in a project, hence, the need for construction stakeholders to embrace sustainable practices in the industry is highly required.

3. THE SITUATION IN SIERRA LEONE

Sierra Leone like any other developing nation is currently undergoing rapid construction as a result of the huge deficit in both housing and other necessary infrastructures like roads, schools, bridges and many more. Again, with the rapid urbanization happening in the developing world, concomitant with increased construction activities (Shi, Ye, Lu & Hu, 2014), carbon emission is envisaged to increase (UNEP, 2009). In Sierra Leone, the urban population increased by 41 percent in 2015 reaching 3, 295, 182 in 2018 and comprising just 732, 263 households. This surge in the population coupled with the skyrocketing cost of rent on a yearly basis has caused high increase construction as many people now prefer having their own house. Sierra Leone's legislative framework for housing and regional/urban planning is weak and there are no standardized building regulations. In terms of regional/urban/local planning, the legal provision is the Town and Country Planning Act, Cap 81 of 1946. This legislative framework is outdated, considering the socio-economic changes since the enactment of these Acts.

Economically, according to the world bank country review 2019, construction is one of the key drivers that is enhancing economic growth in Sierra Leone, it is projected to rebound to 4.8% in 2019 down from 3.5% in the previous year. The construction sector is a very significant contributor to the country's GDP and also one of those with the highest employment rate.

The construction industry is a very high consumer of natural resources like forest, stones and water, but the need to protect the built environment in the face of infrastructural development has been the objective of many nations, regardless of their economy. Concerted efforts are being made by Government agencies to counter the negative impact of human activities on the environment. In recent years the country has seen many environmental hazards due to the impact of climate change. The massive flooding in 2015 and the mudslide in 2017 that destroyed many lives and properties shows more need to be done.

It is against these highlighted backdrops, coupled with a lack of studies on sustainability in the construction sector that the author sought to carry out this research in order to contribute towards raising awareness among construction stakeholders in Sierra Leone.

4. RESEARCH METHODOLOGY

This paper aims at evaluating the awareness of sustainable construction practices in the Western part of Sierra Leone. In order to realize this objective, this work employed the use of a quantitative research approach. Rigorous literature review on sustainable construction practices was employed at the initial stages, thereafter, 17 sustainable construction practices were obtained as listed in Table 1. The 17 SCPs were snapped up in research papers, articles, and open internet sources. The survey targeted a population of fifty (50) construction stakeholders, but forty-one (41) respondents filled and submitted, which represented a return rate of 82%. Among the 41 respondents, no invalid was recorded as all required sections were completely filled. The survey targeted primarily construction stakeholders with more than a year of work experience.

A questionnaire that contained two sections was formulated and distributed to selected stakeholders in the construction industry in Sierra Leone. The first section obtained demographic information of the respondents such as Sex, Organisation, work experience, educational qualification, and Position/work while the section part covered the primary objective of the research. Most of the distribution was done by sending the questionnaires via email to the identified stakeholders. However, a few questionnaires were distributed via media applications like WeChat and WhatsApp. A 5-point Likert type scale (not at all aware, slightly aware, moderately aware, aware and extremely aware) was used in section two to access the level of awareness. A statistical computer software, IBM SPSS Statistics 25 was used to analyze the survey data. The 17 selected practices were coded as SCP1, SCP2, SCP3…SCP17 for convenient usage in SPSS. The mean score and standard deviation computed were used to rank the 17 SCPs.

Table 1. Sustainable Construction Practices

SCP		CODE
1	Construction Waste Management	SCP1
2	Technology & innovation	SCP2
3	Education and training	SCP3
4	Building Information Modelling (BIM)	SCP4
5	Protection of the environment	SCP5
6	Conduct frequent materials audits	SCP6
7	Appropriately dispose of waste water on site	SCP7
8	Using Alternative energy supplies (e.g. solar panels)	SCP8
9	Use bio-based products or materials	SCP9
10	Install whole house ventilation systems	SCP10
11	Using recycled materials	SCP11
12	Industrialized Building System (IBS)	SCP12
13	Lean construction	SCP13
14	Construction ecology	SCP14
15	Use of low or no VOC emitting paints & adhesives	SCP15
16	Cradle to Cradle design	SCP16
17	Use of harvested rainwater during construction	SCP17

5. FINDINGS AND DISCUSSION

5.1. Reliability of questionnaire

According to (Bryman, 2008), reliability refers to the internal consistency of a measure of a concept. The reliability statistics output of the instrument used in the survey gave a Cronbach's Alpha value of 0.895 which is greater than the least acceptable value (≥0.60) for most questionnaire surveys with more than 10 items. This gives high confidence to the result obtained in this work.

5.2. Demographics of the respondents

As the construction industry has always been a male-dominated industry, this research work proved the same. The socio-demographic results obtained from the sample indicated that 28 respondents were male, representing 68% and the remaining 13 were female, representing 32% (Figure 1). The construction stakeholders/professionals filled in the name of 30 different organisations as their place of work which was grouped into two; private and Government organisations. Again, as it has been proven by many pieces of research that the construction highly private driven, the research reaffirmed, the private sector registered a frequency of 34 (83%) while only 7 (17%) was obtained for the Government sector.

FIGURE 1. GENDER

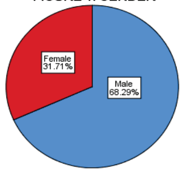
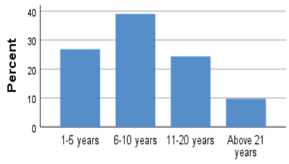


FIGURE 2. WORK EXPERIENCE



Given in Table 3. Is the position/work distribution of the respondents. Engineers were the highest number of construction stakeholders that took part in the survey as recorded by the frequency of 14(34%), followed by senior engineers 7 (17%), project supervisor 5 (12%) …and technical supervisor 1 (2%). Regarding their educational, 22 out of the 41 professionals are holders of a Bachelor's degree, which represents more than 50% of the sample and 15 are Master's Degree holders. Others included one Ph.D. holder and 3 HND holders. The distribution of the working experience of the respondents is shown in Figure 2. clearly indicates that the majority of the professionals have relatively good work experience and the questionnaire had no provision for individuals with less than a year of work experience. 28.8% had between 1-5 years' experience, 39% had 6-10years, 24.4% had 11-20 years and 9.8% had above 21 years.

Table 3. POSITION/WORK

	Frequency	Percent	Cumulative Percent
Engineer	14	34.1	34.1
Senior Engineer	7	17.1	51.2
Architect	3	7.3	58.5
Quantity Surveyor	3	7.3	65.9
Project supervisor	5	12.2	78.0
Construction manager	5	12.2	90.2
Project manager	3	7.3	97.6
Technical adviser	1	2.4	100.0
Total	41	100.0	

5.3. Awareness of SCPs

From the analysis of the result, as shown in Table 2, the top-ranked practices in descending order were SCP3 (Education and training), SCP6 (Conduct frequent materials audits), SCP1 (Construction Waste Management), SCP5 (Protection of the environment), and SCP10 (Install whole-house ventilation systems) scoring 3.88, 3.66, 3.63, 3.63 and 3.39 respectively. The top five ranked practices showed that environmental (SCP5&SCP1), economic (SCP6) and social (SPC2&SCP3) which are the three organs of sustainable construction as agreed upon by many researchers, had some level of awareness among respondents but just at an average level. SCP9 (Use bio-based products or materials), SCP15 (Use of low or no VOC emitting paints & adhesives), SCP11 (Using recycled materials), SCP12 (Industrialized Building System) and SCP4 (Building Information Modelling) with a mean score of 2.98, 2.66, 2.59, 2.41 and 2.32 respectively obtained measured at the "slightly aware" level which is below the midpoint of the scale. This is others indicated poor awareness of the respondents on practices that are both environmentally and economically sustainable. Three of the items were totally very strange to most of the respondents as shown by their mean score in the table. Their mean score remained at the level of 1, which scale value is "not at all aware".

The combined mean of the 17 practices evaluated in this research gave a mean score of 2.93, which is below the "moderately aware" level of 3 as depicted by the Likert type scale used in the work. As shown in Table 2., Eight out of the 17 variables are just at the "moderately aware", which indicates that more than 50% of the variables were averaged below the midpoint of the scale. The findings of this research are in conflict the with the research of Akindo T. et al. (2018) and Ayodeji O. et al. (2019). Their researches showed good and average level of awareness respectively in different countries but in the same Africa.

TABLE 2. AWARENESS ON SUSTAINABLE CONSTRUCTION PRACTICES

SCP	Mean Score	Std. Deviation	Rank
SCP1	3.63	0.92	3rd
SCP2	3.39	1.07	5th
SCP3	3.88	1.12	1st
SCP4	2.32	1.06	13th
SCP5	3.63	1.04	3rd
SCP6	3.66	1.35	2nd
SCP7	3.05	1.00	7th
SCP8	3.02	0.85	8th
SCP9	2.98	0.96	9th
SCP10	3.44	0.98	4th
SCP11	2.59	1.00	11th
SCP12	2.41	0.84	12th
SCP13	1.90	0.83	15th
SCP14	1.98	0.85	14th
SCP15	2.66	0.99	10th
SCP16	1.88	1.00	16th
SCP17	3.32	1.21	6th

6. CONCLUSION AND RECOMMENDATIONS

Like in many developing countries, this study unearthed a huge gap of unawareness of sustainable construction practices among construction stakeholders in the western area of Sierra Leone. The result of this study revealed that only 8 out of the 17 practices had an average level of awareness among respondents. This implied that 53% of SC practices were either not aware of or at a low level of awareness. Although professionals showed moderate awareness of innovation and technology generally, but low awareness of Building Information Modelling (BIM) which is one of the most effective sustainable practices changing the dynamics greatly is a concern.

Based on the revelation, it is advised that the importance of SC be prioritized by all relevant actors in the construction industry by means of ensuring massive awareness of its practices. Without the much-needed awareness among construction stakeholders in developing countries with a low economy, in particular, the switch to proper implementation of SC will always remain a far-fetched reality.

In order to get an in-depth of the situation in Sierra Leone generally, future research is required on a national scale to thoroughly evaluate not just awareness but also implementation and possible barriers.

REFERENCES

[1] Tan, Y., Shen, L., Yao, H., 2011. Sustainable construction practice and contractors' competitiveness: a preliminary study. Habitat Int. 35 (2), 225 – 230.

[2] Watuka, J. and Aligula, M. (2002) Sustainable Practices in the Kenyan Construction Industry: the need for a Facilitative Regulatory Environment, www.buildnet.csir.co.za. [Accessed 2003]

[3] Khan, R. A. (2008). "Role of Construction Sector in Economic Growth: Empirical Evidence from Pakistan Economy", First International Conference on Construction in Developing Countries. Pakistan, 279-290.

[4] Sylvester Gabianu. 2019 Housing Finance Yearbook: Sierra Leone profile housingfinanceafrica.org/app/uploads/V12-SIERRA-LEONE-2310.pdf

[5] Statistics Sierra Leone (2015). Population and Housing Census: Summary of Final Result. https://www.statistics.sl/images/StatisticsSL/Documents/final-results_2015_population_and_housing_census.pdf (Accessed 25 August 2019). Pg. 1

[6] Reffat, R. (2004) Sustainable construction in developing countries, in the Proceedings of First Architectural International Conference, Cairo University, Egypt.

[7] Du Plessis, C. (2007). A strategic framework for sustainable construction in developing countries. Construction management and economics, 25(1), 67

[8] Abidin, N.Z. (2010). Investigating the awareness and application of sustainable construction concept by Malaysian developers. Habitat International, 34(4), 421-426.

[9] Ofori, G, Briffett, C, Gang, G and Ranasinghe, M (2000) Impact of ISO 14000 on Construction Enterprises in Singapore. Construction Management and Economics, 18, 935 – 947.

[10] Bryman, A., Social Research Meth od s. 3rd. ed 2008: Oxford; New York: Oxford University.

[11] Zainul Abidin, N., Investigating the awareness and application of sustainable construction concept by Malaysian developers. Habitat International, 2010. 34(4): p. 421-4 26.

[12] OPOKU, A. & AHMED, V. 2013. Understanding sustainability: a view from intra-organizational leadership within UK construction organizations. Int J Archit Eng Constr, 2, 133-143.

[13] UNEP (2009). Building and climate change: summary of decision makers. Paris, France.

[14] Shi, L., Ye, K., Lu, W., & Hu, X. (2014). Improving the competence of construction management consultants to underpin sustainable construction in China. Habitat international, 41, 236-242.

[15] Sierra Leone rapid damage and loss assessment of august 14th, 2017 landslides and floods in the western area.

[16] Ayodeji, o., Douglas, A., Clinton, A. & Chanda, M. (2019). Drivers of sustainable construction practices in the Zambian construction industry. Energy Procedia 158 (2019) 3246-3252.

[17] Nathan, K. & Apollo, T. (2016). Enhancing sustainable construction in the building sector in Uganda. Habitat International 57 (2016) 64-67.

[18] Akindo, T. F., Olabosipo, I. F., Lekan, M. A. & Afolabi, A. (2018). Data set on sustainable construction of foreign and indigenous construction firms. Data in Brief 20 (2018) 812-818.

A Study on the Characteristics of Chinese Communication in Southeast Asian Countries

Xiaoyan Zeng
School of Foreign Languages, China University of Petroleum- Beijing, Beijing, China

Abstract: Southeast Asia is the region with the best effect of Chinese communication in the world, but there are few studies on the characteristics of Chinese communication in Southeast Asia, or at least no systematic research results. This paper conducted a more comprehensive and systematic exploration on the characteristics of Chinese communication in Southeast Asia , put forward seven characteristics, including the subjectivity of Chinese immigrants, the similarities in the history of the development of Chinese education, the high maturity of Chinese education, the strong inheritance of Chinese culture, folk motivation, the mixed development model of Chinese education, various types of transmission way, significant national difference and so on.
Keywords: Southeast Asia, Chinese Communication, Chinese Culture, Chinese Language Education, Chinese Language School

1.INTRODUCTION

At present, the academic community is rich in internal research on Chinese teaching and national case study, but weak in overall, regional and systematic research. The research on Chinese communication in Southeast Asia can be divided into two aspects: first, there are many internal studies on Chinese teaching, involving the three important questions of Chinese teaching, the comparison between Chinese and foreign languages, the acquisition of Chinese as a second language and other fields. The second is the study of external problems in Chinese teaching, such as Chinese language planning, [1] comparison among different countries, [2] the theory or model of communication, [3] the current situation of Chinese teaching, [4] and overseas Sinology.[5] Although the research fields are expanding and the research perspectives are diverse, the research results of systematic analysis on the characteristics of Chinese communication have not yet been found. Under the background of the promotion of "Chinese cultural soft power" and the implementation of "The Belt and Road" initiative, it is of both theoretical and practical significance to discuss the characteristics of Chinese communication. In this paper, the characteristics of Chinese communication in Southeast Asia are comprehensively sorted out and seven main communication characteristics are summarized, which can not only provide reference for the top-level design of Chinese communication in Southeast Asia in the future, but also provide reference for Chinese communication in countries or regions along the “Belt and Road”.

2. OUTSTANDING SUBJECTIVITY OF CHINESE IMMIGRANTS

Chinese immigrants are the main body of action to promote the spread of Chinese language. They make continuous efforts for the inheritance of Chinese language and Chinese culture, making them an important motivation for the spread of Chinese language in Southeast Asia. "As a carrier of language, immigrants export language resources to foreign countries through transnational migration, and realize language inheritance and dissemination in the immigration country."[6].
Chinese immigration to Southeast Asia has a long history, and there have been four waves of large-scale immigration. Besides, there is also high density of Chinese population. These conditions have a far-reaching impact on the spread of Chinese in Southeast Asia. As early as the Han Dynasty, there are records of a small number of Chinese immigrants to Southeast Asia. Because of the active support of the Song and Yuan dynasties for Chinese merchants expanding their trade overseas, the Chinese language permanently took root in foreign countries as Chinese immigrants migrated across the sea via the Maritime Silk Road. In the 15th century, with the development of the Maritime Silk Road after Zheng He's voyages to the Western Seas, Chinese people emerged from the sea and formed maritime trading circles in Southeast Asia. Some Chinese settled in the important port areas of countries along the Southeast Asia for a long time due to the development of trade.As a result of long-term maritime trade exchanges, the Chinese community gradually formed, and the Chinese language community was also established. Therefore, Chinese language and Chinese culture were spread to Southeast Asia along with Chinese businessmen engaged in maritime trade. In the late Ming Dynasty, a large number of Chinese began to "go down to the South China Sea", and gradually formed a certain degree of Chinese society in the South China Sea where the four countries of the South China Sea are located, such as Singapore, Malaysia, Indonesia and Brunei, on the basis of which a certain scale of Chinese community was formed.

2.1 The scale and quantity of immigrants are the prerequisites for the proliferation and development of Chinese immigrants

The scale and quantity of immigrants are not only the precondition for Chinese immigrants to become the subject of diffusion, but also the key factor for the preservation and inheritance of mother tongue. There were four waves of Chinese emigration to Southeast Asia: the first, from the beginning of the 17th century to the middle of the 19th century, was dominated by the interaction of immigration and trade. As European colonists carried out large-scale colonial development in Southeast Asia, they were in urgent need of a large number of labors. Amid years of war and famine in southern China, there was the first mass migration to Southeast Asia, known as the

"Nanyang". The 17th century was the beginning of massive Chinese emigration to Southeast Asia[7]. Chinese language and Chinese culture are widely spread in Southeast Asian countries along with the footsteps of Chinese immigrants. The second wave of immigration, from the middle of the 19th century to the beginning of the 20th century, mainly included Chinese indentured laborers. The emergence of indentured Chinese workers as a result of the notorious Chinese coolie trade was another wave of Chinese emigration to Southeast Asia. The third wave, from the beginning of the 20th century to the beginning of the 1950s, was dominated by autonomous immigrants. The development of Chinese businesses required the employment of large numbers of Chinese immigrants, thus ushering in a new wave of Chinese migration to Southeast Asia. The fourth, 1980s to present, new immigrants become the fourth wave of immigration.[8] Since 1978, China has implemented the national policy of reform and opening up, witnessed the re-emergence of large-scale exchanges between China and foreign countries, and the worldwide allocation of capital, science and technology, industries and human resources in the era of globalization. This has prompted another large-scale wave of overseas migration in China.[9] These four waves of immigration had a profound impact on the spread of Chinese in Southeast Asia.

2.2 The formation of a relatively stable Chinese-speaking community is the basic condition for the development of Chinese immigrants' subjectivity

Long periods of mass migration have made Southeast Asia the region with the highest concentration of Chinese in the world. According to Zhu Guohong's statistics, the number of overseas Chinese in Southeast Asia was 106.32 million in 1956. According to Zhuang Guotu's estimate in 2009, the overseas Chinese in Southeast Asia "totaled about 33.486 million, accounting for about 6% of the total population in Southeast Asia and about 73.5% of the 45.43 million overseas Chinese in the world".[10] After 53 years of development, the overseas Chinese in Southeast Asia have increased by 22.854 million, with the growth rate of about 68.2%. In 2018, according to the Overseas Chinese Affairs Office of the State Council, the number of overseas Chinese worldwide has reached over 60 million, of which over 50 million are overseas Chinese.[11] The total number of Chinese in Southeast Asia also increased in tandem.Today, the overseas Chinese in Southeast Asia are characterized by large number, sound organization, developed economy, strong strength, concentrated talents and elite gathering.[12] It is these characteristics that promote the spread of Chinese language in Southeast Asia. The subjectivity communication of Chinese immigrants is a phenomenon that accompanies the behavior of Chinese immigrants. There is no prior planning, and there is no absolute correspondence with the strength of national hard power. From the perspective of synchronic and diachronic, it is found that this kind of language communication contains four stages and one communication system, which we call the four-stage-one system of Chinese immigrants' subjectivity communication.

2.3 The four stages of the subjective development of Chinese immigrants

The subject development of Chinese immigrants can be divided into four stages: first, the stage of population flow. Chinese immigrants migrated across borders to settle in the immigration country by different means, such as trade, indentured Chinese workers and independent immigrants. The second is called "maintain and development stage". Chinese immigrants in the different language and cultural environment through the way of intergenerational transmission to achieve language maintenance and development. And then independently formed a relatively stable Chinese community; The third is "fractal and development stage". Chinese immigrants integrate into local life, will appear in the process of the evolution of the characteristics of fractal, due to the different time or the change of region, language contact after mother tongue use successively will appear a variety of forms, young and old, people in different areas or different dialects choose to use different way to complete communication. Fourth, the stage of integration and development. Influenced by the national conditions, people's conditions, local conditions, language conditions and other complex factors, Chinese immigrants gradually integrate (including active integration and passive integration) into the language environment and cultural environment of their host countries, and realize the diffusion and development of their mother tongue in the process of language and cultural contact.

2.4 The subjective development of Chinese immigrants has formed the characteristics of "complex - dynamic - systematic"

"Complex" means that there are many reasons for Chinese migration.The living environment in the country where the Chinese settle down is complex and diverse. For example, individuals or groups affected by the history, customs, folk customs, living habits, behavior habits, moral views, social conventions, way of thinking and value orientation of the host country to different degrees and levels.

"Dynamic" means that the Chinese population is constantly moving. With the development of immigrant society, language contact will occur in a multi-ethnic and multi-lingual country, and the addition of heterogeneous elements will promote the deconstruction and reorganization of the original language community.

"Systematic" refers to the long-term settlement and life of large-scale immigrants in the host country, gradually forming a relatively stable Chinese immigrant community with its own system, which realizes the inheritance of mother tongue and Chinese culture through family member exchange and school education.

3. HIGH SIMILARITY OF THE HISTORY OF DEVELOPMENT IN CHINESE EDUCATION

The number of Chinese-language schools established in Southeast Asian countries is correlated with the Chinese population. Chinese schools in Southeast Asia have a long history of Chinese education, there are a large number of Chinese learners and a complete form of Chinese teaching. Chinese immigrants have inherited Chinese language and Chinese culture from generation to generation, making them a region with a good spread of Chinese language in the world.

The number of Chinese-language schools established in Southeast Asian countries is positively correlated with the number of Chinese populations in the countries where they are located[13]. From the 1940s to 1960s, the number of Chinese schools founded in Southeast Asian countries can be divided into three levels. The first level is the countries (Indonesia and Federation of Malaya) where the number of Chinese schools is over 1, 000. The second level is the countries (Thailand, Vietnam, Burma, Cambodia and the Philippines) where the number of Chinese schools is between 100 and 1, 000. At the third level are countries with fewer than 100 Chinese schools (Laos and Brunei). From the perspective of the distribution of the overseas Chinese population, the countries with an overseas Chinese population of more than one million are Thailand, Malaya, Indonesia and Vietnam; the countries with an overseas Chinese population of more than one hundred thousand are Myanmar, Cambodia and the Philippines; the countries with an overseas Chinese population of less than one hundred thousand are Brunei and Laos.[14] It can be seen that the number of overseas Chinese population in each country is almost the same as the number of Chinese schools in the country. Obviously, the number of Chinese schools is positively correlated with the number of Chinese population in the country.[15]

In the first 60 years of the 20th century, the Chinese education in Southeast Asia developed rapidly. Although the scale of Chinese education varies greatly from country to country, its development trajectory is almost the same. Under the influence of the political changes in China, the patriotic enthusiasm and nationalism of the Chinese in Southeast Asia are rising, which drives the rapid development of Chinese language education.

4. THE MATURITY OF CHINESE EDUCATION IS HIGH AND THE CULTURAL INHERITANCE IS STRONG

The Chinese school started early, has a large scale and high maturity. Southeast Asian countries were the first to establish Chinese schools in the first decade of the 20th century, accounting for about 67%. This was the first period of rapid growth of Chinese schools. Such as the Philippines Chinese and Western School in 1899, the Chinese school in Indonesia in 1901. In 1904 and 1905, the Straits Settlements established the (Penang) Chinese School, (Singapore) Chongzheng School and Yangzheng School In 1904, Myanmar founded the Chinese Volunteer School (later renamed the Chinese Academy), in 1907 Vietnam founded the Minzhang School, and in 1909 Thailand founded the Huayi School.. Cambodia, Laos, and Brunei also established Chinese schools one after another. For example, Cambodia founded Ruihua School in 1914, Brunei founded Yucai School in 1918, and Laos founded Overseas Chinese School in 1929.

In Southeast Asia, Chinese schools are an important pillar for the inheritance of Chinese culture and a cultural fortress for the Chinese people. It is an effective way to carry forward Chinese culture, which is provided by a well-organized system that can systematically educate the mother tongue and mother culture according to the age characteristics of children and adolescents.

Southeast Asia has made great efforts to spread Chinese. For example, Malaysia is the only overseas country with a well-preserved Chinese education system. Singapore is the only overseas country that has adopted Chinese as its official language. If Southeast Asia is the region with the best development of Chinese education in the world, Malaysia is the country with the best development of Chinese education. The Chinese education system in Malaysia consists of relatively independent kindergartens, Chinese elementary schools, independent high schools, and universities. Chinese has always been the medium of instruction. The inheritance of Chinese culture is mainly manifested in five aspects[16]:

First, the school's philosophy and purpose emphasize cultural inheritance. The Chinese school is shouldering the important task of developing the education of the Chinese mother tongue and inheriting the Chinese culture.

Second, the name of the Chinese school reflects the cultural heritage. The school name is mostly related to the word "Hua"(meaning “China”).Such as Kuala Lumpur Chinese Independent High School, Klang Hing Wah High School, Klang Chinese Independent High School, Klang Kuang Wah Independent High School, Klang Bin Hua High School, Alor Setar Jihua Independent High School, Kluang Chinese High School, Batu Pasha Huaren High School, New Wenlong Chinese High School, Furong Chinese High School, Port Dickson Chinese High School, Jiangsha Chonghua Independent High School, Manjong South China Independent High School, Taiping Hualian High School, Kelantan Chinese Independent High School, Penang Binhua Independent Girls’ High School , Tawau Bahua High School, Li & Fung Kong Peihua Independent High School, Muar Chung Hwa High School, Kuching Chung Hwa No. 1 Middle School, Kuching Chung Hwa No. 2 Middle School, Kuching Chung Hwa No. 3 Middle School, and Kuching Chung Hwa No. 4 Middle School. Some Chinese school names are related to Chinese culture, mostly from Chinese classics, such as New Mountain Kuanrou(tolerant and gentle) Middle School, Kuala Lumpur Zunkong(respecting Confucius) Independent High School, Kuala Lumpur Xunren(following human nature) Middle School, Perak Yucai(cultivating talents) Independent High Schooll, Jinbao Peiyuan(cultivating vitality) Independent High School, Sabah Chongzheng(advocating righteousness) Middle School, Meili Peimin(educating the people) Middle School, BintuluKaizhi(inspiring wisdom) Middle School, etc.

Third, the name of the class reflects the cultural heritage. Take the Chinese Independent School in Kuala Lumpur, Malaysia as an example, each grade of the school adopts the names of loyalty, filial piety, benevolence, love, faithfulness, righteousness, peace, courtesy, honesty, wisdom, diligence, honesty, morality, sensitivity, respect and bravery.

Fourth, the medium of Chinese language teaching embodies the cultural heritage. The schools insist on using the Chinese language as the main teaching medium and teaching materials.

Fifth, the content of Chinese textbooks reflects cultural heritage. The content of cultural textbooks has integrated a lot of Chinese culture and national consciousness.

5. NONGOVERNMENTAL PUSH IS POWERFUL

Non-governmental promotion of development refers to the promotion of Chinese education by non-governmental forces represented by overseas Chinese associations, private Chinese education institutions, fellow villagers' associations, and youth associations. Chinese education organizations or institutions play an important role in the spread of The Chinese language, and at the same time gather the strength of all sides of the society. The multi-participant humanities exchange mechanism has cultivated professionals in this field for the sustainable development of Chinese education. There are mainly two ways for Southeast Asian countries to promote the spread of Chinese among the people:

First, the non-governmental driving force represented by the overseas Chinese associations

Overseas Chinese societies play an important role in spreading Chinese culture. Whenever Chinese traditional festivals are held, overseas Chinese societies in Southeast Asia will organize traditional Chinese cultural activities such as lion dance, singing, clan sacrifice and so on. The Malaysian Chinese community is the main non-governmental force in Chinese education. It is Dong Jiaozong(United Chinese School Committees' Association) who directly leads the Chinese education. Its members include the Association of Chinese School Directors and the Association of Chinese School Teachers in various regions. Established on May 24, 1991, the Center for Chinese Education in the Philippines is an academic research and administrative coordination organization serving Chinese language education and Chinese language teaching units throughout the Philippines. As a professional non-governmental organization in the Philippines, The Chinese Education Center has established close cooperative relations with Philippine government agencies, such as the Ministry of Education, The Higher Education Commission, the Immigration Bureau, etc., to jointly promote the Chinese language education of the Philippine Chinese community and the mainstream society's Chinese language teaching.[17] The main force of Chinese teaching in Burma is the folk force, and the Chinese are the main force to promote the spread of Chinese. Many Chinese businessmen in Burma have long donated money to help Chinese schools survive and develop. The Chinese education organizations "North Burma Huawen(overseas variants of Chinese)/Chinese Language Teaching Promotion Association" and "North Burma Huawen Education Association" are non-profit non-governmental organizations formed by Chinese schools in North Burma.

Second, Non-governmental promotion model of Chinese education in Thailand: private mode drives the development of public mode

Based on the response of the people, the spread of Chinese in Thailand has gradually formed a good situation in which all kinds of schools at all levels offer Chinese courses one after another. The Chinese language became popular (Chinese craze) in Thailand started in 2003. Yunnan Normal University of China was commissioned by the Private Education Committee of Thailand to send 23 Chinese teachers to teach in private schools in Thailand.[18] Under the influence of these famous private schools, some public primary and secondary schools began to offer Chinese courses in 2004. Due to the lack of qualified teachers, the Basic Education Committee of the Ministry of Education of Thailand began to entrust Yunnan Normal University to send a batch of Chinese teachers to teach in Thai public primary and secondary schools. In the following two years, the demand for Chinese language teachers continued to grow. From the beginning of the selection of teachers from Yunnan Normal University, the Hanban (NationalChinese Promotion Office) commissioned domestic universities to participate in the selection of volunteers to work in Thailand.

6. CHINESE TEACHING PRESENTS A MIXED DEVELOPMENT MODEL

Chinese teaching in Southeast Asian countries presents a mixed development model of Chinese as a foreign language teaching and as a national language teaching. The dual-track approach is adopted to promote Chinese teaching in various countries, which can promote Chinese as a foreign language teaching into the national education system of the host country, and can also support and encourage the ethnic Chinese to run schools, inheriting Chinese language and traditional Chinese culture.

According to the objects of Chinese teaching in Southeast Asian countries, the Chinese education can be divided into Chinese education for Chinese students and Chinese education for non-Chinese students: first, Chinese education for Chinese students. Malaysia has the most complete Chinese education system in the world, with 61 independent secondary schools and 1, 298 primary schools. Singapore Special Assistant Plan School, 15 primary schools and 11 secondary schools. The main features of Chinese language education can be summarized into four aspects. First, Chinese language education shoulders the responsibility of developing Chinese language education and carrying forward Chinese culture. Second, the origin of students is basically made up of children of Chinese descent; Third, the implementation of the unified examination system; Fourth, Chinese is the medium of instruction for all courses except the national official language or the general language course. Second, Chinese education for non-Chinese students. In the past decade, as more and more non-Chinese students have been enrolled in Chinese primary schools, Chinese education for non-Chinese students has become increasingly popular, with the most prominent performances in Sabah, Sarawak and Kedah of Malaysia. According to statistics, the total number of non-Chinese students in Malaysia has reached 15.48% in 2015[19]. According to the survey, the number of non-Chinese students in some schools has exceeded 50% and few has exceeded 80%. It is understood that new non-Chinese students do not have the basic ability to listen and speak

Chinese, but the school still carries out various teaching activities in accordance with the traditional Chinese education model, resulting in the lower academic performance of this group of students.

Chinese can be taught as either a foreign language or a national language, depending on whether it is native or foreign. First, Chinese is taught as a foreign language. Chinese teaching in Vietnam, Indonesia and Thailand belongs to foreign language teaching. Vietnam offers Chinese courses or Chinese majors in colleges and universities. Although Indonesian Mandarin exists in the education system at all stages of the country, it can only be taught as a foreign language due to its legal status as a foreign language under the policy of language education. Second, Chinese is taught as a national language. Most of the primary and secondary schools in Singapore, the national-type secondary schools in Malaysia, the Chinese Schools in Brunei, Thailand and the Philippines all teach Chinese as a national language.

7. THERE ARE VARIOUS WAYS OF SPREADING CHINESE LANGUAGE

There are various ways of spreading Chinese in Southeast Asia, including immigration, school education, newspapers and periodicals, Buddhism, and Chinese training institutions.[20] With the establishment and development of the China-ASEAN Free Trade Area and the proposal and implementation of “The Belt And Road" initiative, personnel exchanges between the two sides have become more frequent and cooperation has been deepened. In this context, in addition to traditional ways of Chinese communication, there are also emerging ways of communication in Southeast Asian countries, such as cultural communication, tourism, film, social media and mixed media.[21] These ways of Chinese communication are not fixed in each period, but constantly changing with the emergence of new things, and they are developing towards the direction of high speed, high efficiency, high quality and precision.

It is noteworthy that with the rapid development of new media technology in recent years, social networking platform and mixed media have gradually become a new way to spread Chinese language. Especially as the fast update of smart phones, tablets and other mobile terminal equipment, the popularity of the Internet, the development of instant messaging software (such as Facebook, YouTube, WeChat, QQ, Skype, Twitter, Line, etc.), as well as the emergence of "Internet +", "artificial intelligence", "VR technology", "AR technology" and "5G", the development of Chinese education is no longer restricted by time and space, and language contacts have become more frequent, which has accelerated the development of Chinese education to a certain extent. When the audience learns Chinese and Chinese culture through radio, only the auditory channel plays a major role. When the audience learns Chinese and Chinese culture through TV and computer, visual and auditory channels play a major role. When the audience learns Chinese and Chinese culture through AR or VR, in addition to the visual channel, auditory channel, tactile channel and other sensory systems, it also has man-machine interaction functions. Under the action of different elements at different times and places, these transmission routes will produce different modes and processes of transmission, resulting in different results of transmission and presenting different characteristics of transmission.

8. SIGNIFICANT NATIONAL DIFFERENCES

The environment of Chinese communication in Southeast Asian countries is full of needs and requirements, opportunities and restrictions, exclusion and invitation, permission and restriction.[22] Just as philosopher Heraclitus said that “One cannot step into the same river twice.” The spread of Chinese in Southeast Asia is the same. In terms of bilateral relations, different countries have different national conditions, people's conditions and local conditions. Affected by factors such as politics and diplomacy, economics and trade, education policies and systems in different periods, the development of Chinese education cannot produce exactly the same development methods, development processes, and development effects. The country-specific differences in the development of Chinese education in Southeast Asia can be summarized into the following three aspects:

8.1 There are differences in the status of Chinese in Southeast Asian countries

First, the status of Chinese in the national education system of different countries is different. In Thailand, the Philippines, Vietnam, Laos, Indonesia, Singapore, Cambodia and Brunei, Chinese has entered the national education system of all countries and can be taught as a formal course. While Chinese teaching in Burma has not yet gained legal status. Second, from suppressing Chinese to supporting Chinese. Indonesia and Thailand had the most severe suppression of Chinese education before the 1980s, but the policies introduced since the 1990s have provided the greatest support for Chinese education. In Indonesia, the status and function of Chinese is a foreign language, not a national language or local dialect within Indonesia. Third, the official status of the Chinese language is quite different from the actual status of the society.. The political status of Chinese in Singapore is high, but it is not real. Although Chinese was identified as the official language along with English, Malay and Tamil, its status in Singapore was gradually marginalized compared with English, the administrative language. In Singapore, Chinese is only used in communication with the Chinese community, while English is in a dominant position in school education, job hunting and other aspects. After the founding of Singapore, the national language policy resulted in the declining status of Chinese, and for many young Chinese people, Chinese is changing from a first language to a second language. Chinese status of Malaysia is the opposite of Singapore's. Although Chinese is not a high status or official language in Malaysia, it is highly valued in social life and Chinese society.

8.2 There are country differences in the integration path of Chinese language education in Southeast Asian countries

The integration path of the development of Chinese education in Southeast Asia can be summarized into three types. The first is government-folk-led model represented by Thailand. The second is the government-led model represented by Singapore. The third is the folk-led model represented by Malaysia and Vietnam which push the government to carry out Chinese policy reform.

8.3 The development effect of Chinese education in Southeast Asian countries has country-specific differences

Thailand and Indonesia are emerging countries with Chinese language craze, especially Thailand, which is worthy of reference for other countries in promoting Chinese language teaching and Chinese cultural transmission. The Chinese schools in Laos and Malaysia have a relatively complete Chinese education system, which is different from the Chinese education in other Southeast Asian countries. The Chinese schools in Laos provide an education system from kindergarten to senior high school, and implement an "all-inclusive" education system, effectively avoiding the loss of students. The Chinese education system in Malaysia is composed of relatively independent kindergartens, primary schools (Chinese primary schools), secondary schools (independent secondary schools) and universities. In this system, Chinese has always been the medium of teaching in both primary schools and universities. In recent years, these Chinese schools have been losing students because of the differences in the size of the school at different stages. The development of Chinese language education in Burma is unbalanced between North and South. Due to the influence of history, politics, economy, geography and other aspects, the number of Chinese schools and students in Northern Burma is large, and the level of teacher education is also very high. The most typical ones are Kokang, Lashio, Shan state, Wa State and Taunggyi, among which the number of Chinese schools accounts for about 90% of the total number in Burma. Chinese schools are established in the name of Buddhist sutras and Confucianism, but have not yet entered the national education system. The Chinese schools in southern Myanmar are small in scale and low-level, and profit-making private tuition classes are more popular. Although the ban on Chinese teaching in Burma has been lifted for many years, its overall level is still relatively backward compared with other Southeast Asian countries. The target of Chinese teaching is mainly confined to the Chinese community, and the teaching methods have been mainly in the form of training and tutoring, instead of entering the mainstream society of the country.

9.CONCLUSION

Southeast Asia is not only the region where the Chinese immigrated early and formed the Chinese community, but also the region where the spread of Chinese language is the best. This paper put forward the subjectivity of Chinese immigrants in Chinese communication, the similarity of the development of Chinese education, the high maturity of the development of Chinese education, strong cultural heritage, folk motivated, Chinese teaching with mixed development model, various types of transmission way and national difference. The characteristics of Chinese communication in Southeast Asia is not confined to these seven aspects. With the passage of time, under today's international political, economic and trade relations, cultural exchanges, language policy, science and technology, there will be more new transmission characteristics. With a long history, large population and high density, Chinese immigrants in Southeast Asia have become the subject of Chinese communication in Southeast Asia, and are characterized by complexity. The development track of Chinese education in different countries is comparatively similar. The effectiveness of the spread of Chinese language can be judged from three aspects: first, creating opportunities for local people to change their lives through the Chinese language, skills, qualifications, education, arts and culture; Second, to fully build trust and increase trust and understanding between the Chinese people and Southeast Asian people. Third, to build stronger cultural ties between Chinese and Southeast Asians.

ACKNOWLEDGEMENT

This work was supported by the National Social Science Fund of China (No.18CYY027).

REFERENCES

[1] Guo Xi. Chinese Planning Theory [J]. Language Application, 2009(03):45-52.

[2] Wu Yinghui, He Hongxia. A Diachronic National Comparative Study on the Influence of Policies of Southeast Asian Countries on Chinese Communication [J]. Language Application, 2016(4):80-92.

[3] Wu Yinghui, Yang Jichun. Research on the Rapid diffusion Mode of Chinese in Thailand [J]. World Chinese Language Teaching, 2008(4):125-132+4.

[4] Zheng Tongtao, Jiang Youjing, Chen Ronglan. Annual Report on Chinese Teaching in Southeast Asia: One/two/three/Four [J]. Overseas Chinese Education, 2014 (1)/(2)/(3)/(4).

[5] Zhang Xiping. Progress and Prospect of Chinese Overseas Sinology (Sinology) Research since the Reform and Opening up (1978-2019)[J]. Foreign Social Science, 2020(01):60-71.

[6] Han Xiaoming. Research on the Influence of Chinese Immigrants on The Spread of Chinese language in Southeast Asia [D]. Doctoral Dissertation of Minzhu University of China, 2019.

[7] Zhuang's Land. On the Four Waves of Chinese Immigrants to Southeast Asia [J]. Research on The Nanyang Problem, 2008(1):69-81.

[8] Zhuang Land. Maritime Silk Road and Chinese Overseas Migration [J]. People's Forum, 2016(08):244-246.

Journal of Xiamen University (Philosophy and Social Sciences edition), 2009(3):62-69.

[9] According to the Report on the Protection of The Rights and Interests of Overseas Chinese delivered by Xu Yousheng, director of the Overseas Chinese Affairs Office of the State Council, at the second Session of the 13th NPC Standing Committee on April 25, 2018.

[10] Wang Jiashun. Research on Shared values and their communication under "One Belt And One Road" Beijing: A case study of overseas Chinese in Southeast Asia [A]. Overseas Chinese research report (2017) [M]. Beijing: social sciences academic press, 2017:19.

[11] Han Xiaoming. Research on the Influence of Chinese Immigrants on The Spread of Chinese in Southeast Asia [D]. Doctoral Dissertation of Minzhu University of China, 2019.
[12] Zhu Guohong. Overseas Migration in China: A Historical Study of International Migration [M]. Fudan University Press, 1994:349.
[13] Chen Tianlai. Study on The Independent Middle School of Chinese Language in Malaysia and the International Communication of Chinese Culture [R]. The third Asean International Symposium on Chinese Language Teaching, Kuala Lumpur, Malaysia, 2019-8-10/11.
[14] Chinese language education [EB/OL]. http://www.hwjyw.com/info/content/2010/04/23/5886.shtml, 20190130.
[15] zhang shengwen. With One Belt And One Road, Chinese education will be professionalized [N], sin chew daily (Malaysia), 2017-2-17.
[16] Zeng Xiaoyan, Wu Yinghui, Gou Shiyu. Research on the Types of Chinese transmission Routes in Southeast Asian countries [J]. Chinese University Teaching, 2020(1) : 84-88.
[17] Zeng Xiaoyan, Zheng Tongtao. Theory of availability and research and development of nationalized Chinese textbooks [J]. Chinese international journal, 2016, 7(01):1-12.
[18] Li Rulong. On the Nationalization of Chinese International Education [J]. Language Teaching and Research, 2012(5):11-17.
[19] Zhuo Yuyou, WU Ying-hui. Influence of the legal status of Indonesian Chinese on Chinese teaching [J]. Research on Nanyang Issue, 2018(4):72-83.
[20] Li Zhiling. "Adaptation" and "Cooperation" in Chinese International Communication -- An Empirical Analysis based on Chinese Communication in Southeast Asia [J]. Language Application, 2016(4):100-107.
[21] Luo Huarong. Chinese education in Laos is unique [N]. Overseas Edition of People's Daily, 2006-8-18 (006).
[22] Zheng Tongtao, Jiang Youjing, Chen Ronglan. Annual Report on Chinese Teaching in Southeast Asia [J]. Overseas Chinese Education, 2014(3):227-246.

On the Three Characteristics of Smart Library

Zhou Yang
Library of Guizhou University of Finance and Economics, Guizhou, Guiyang 550025, China

Abstract: With the rapid development of information technology in China, many industries are developing in the direction of informatization, digitization and intellectualization, among which the traditional book field is gradually changing. For example, the development of Smart Library not only realizes the characteristics of book interconnection, convenience and efficiency, but also speeds up people's attention to the development of Smart Library. Therefore, in this paper, the author analyzes the meaning of Smart Library, and expounds the three characteristics of Smart Library: interconnection, convenience and efficiency.
Key words: Smart Library; Characteristics; Analysis; Elaboration

1. INTRODUCTION

In the information age of the 21st century, any industry wants to deepen the development needs the combination of Internet technology, in which the construction of Smart Library is to better meet the development of the new era, so the relevant staff need to keep pace with the times, and carry out in-depth analysis of the three characteristics of the Smart Library, and this kind of digital library has been widely used It has become the development trend of the future library, so according to this situation, we must further study and explore the development of the smart library.

2. THE INTERCONNECTION CHARACTERISTICS OF SMART LIBRARY

2.1 Comprehensive perception of Library

Library comprehensive perception mainly refers to the comprehensive information coverage of library information. This comprehensive new coverage is an effective combination of scattered information in the process of library development, which can not only effectively connect users, librarians, library front desk and other contents, but also realize the construction of Library Networking, intelligence and informatization [1]. Through this form, the information content of the library can be classified and managed according to the size, book title and other contents. And with the support of Internet technology, the smart library service management platform can effectively realize the connection between the real environment and the virtual environment, because the smart library is effectively connected through infrared sensors, laser scanners, global positioning system and other content in the management process, which can not only realize the independent service management of the library, but also reasonably optimize the university management At the same time, it can automatically locate the library resources.

2.2 Three dimensional Internet Library

The three-dimensional internet library can span all departments, industries, fields and countries for three-dimensional interconnection. This three-dimensional interconnection is mainly manifested in layers of interconnection, regional interconnection, machine interconnection and other ways. Through this way, not only can the library no longer be limited by time, space and other aspects, but also the whole service scope can be broader. For example, users know about the borrowing situation of related books through the library system, which can also reduce the trouble and conflict of book borrowing to a certain extent.

2.3 Realize the sharing and collaborative management of Library Information Resources

Information sharing is an important feature in the development and construction of Smart Library, because information sharing can not only strengthen the effective connection between all kinds of libraries, but also improve the construction effect of library management [2]. Moreover, the construction and development of Smart Library also greatly strengthen the connection of environment, management and service, so as to create a smart book management platform that can be monitored, supervised, controlled and operated.

3. CONVENIENCE CHARACTERISTICS OF SMART LIBRARY

3.1 Wireless ubiquitous library

In the development process of the 21st century, the management, collection and sharing of library information resources are in a state of constant change, and at present many book users have higher requirements for the application and management of library resources. Therefore, the construction of Smart Library can not only help users obtain book content with the help of advanced technology, but also improve the quality and efficiency of library services. For example, the construction of wireless book management mode and three-dimensional multimedia library are the integration of traditional book resources and digital resources of Smart Library with the help of the latest information technology, so as to better realize the comprehensive management and integrated management of information.

3.2 Personalized interactive Library

In addition, the construction of personalized interactive library not only needs to highlight the high-quality service quality of the library, but also needs to provide advanced information retrieval means for users [3]. In addition, during the Shanghai World Expo, Shanghai Library cooperated with several libraries and set up several self-service kiosks in the Expo Park. This kind of kiosk can not only consult the information according to users' own needs, but also realize the transmission and sharing of literature. In addition, you can also use the mobile app to read and occupy seats. Readers only need to use the mobile phone to book the reading position.

3.3 Smart information library

Finally, the increase of the information processing capacity of the smart library not only makes the library develop in the direction of fast, smart and convenient, but also provides more support and help for the sharing and utilization of resources. At the same time, the virtual community platform created by the majority of users through app can not only attract more users to enter it for communication, but also show some information one-to-one communication, so as to improve the efficiency Both sides make progress and grow together.

4. THE CHARACTERISTICS OF HIGH EFFICIENCY OF SMART LIBRARY

4.1 Flexibility and agility

Due to the increasing number of libraries, the development and construction of Smart Library has become the key assessment content of relevant departments, not only because the construction of Smart Library can realize the integration of various information elements, but also plan the rational use of library information. Moreover, with the development of the 21st century, all kinds of new libraries have developed rapidly. For example, the use of elevators in the library is very convenient and fast, but due to the situation of the elevator itself, it is easy to have problems in the use process. Therefore, the smart library needs to monitor the elevators in real time to ensure the stable operation of the elevators Obstacles.

4.2 Development of energy saving and low carbon

Environmental protection is one of the important ideas of the current global economic development, which is also the key consideration in the construction process of the smart library. Therefore, in the construction and development process of the smart library, we should adhere to the green principle and focus on low-carbon environmental protection, such as the rational use of solar energy resources and strengthening the wooden construction of the library, so as to make the library energy saving and low-carbon development.

4.3 Integration cluster

The collaborative concept of Smart Library and the construction of information sharing platform can not only make users' reading more convenient, but also realize the reasonable optimization of resources. Therefore, the resource application of Smart Library should reflect the concept of integration cluster [4]. For example, the Smart Library strengthens the sharing of various kinds of information resources through online lectures, so that users can get more information resources without going out. For example, the establishment of one card in one city is an important foundation for the integration of library cluster development. This kind of construction of geographical scope and urban zoning can further develop the public culture of the library. At the same time, it also implements the integration of independent library resources one by one. At the same time, it also makes all kinds of facilities resources, literature resources and human resources of the library fully developed In recent years, the emergence of integration cluster alliances such as online lectures and online exhibitions in smart libraries has not only made the smart library develop in an all-round way, but also made the resources and information of the Smart Library integrate and apply to the greatest extent.

5. CONCLUSION

To sum up, with the rapid development of information technology and Internet, the library will gradually develop in the direction of intelligent, efficient, convenient and other intelligent libraries, which also shows that the future library must be a multi-functional and intelligent library. In this paper, the author makes a brief analysis of the three characteristics of the smart library, and expounds the characteristics of interconnection, efficiency and convenience in detail.

REFERENCE

[1] Wang Wenning. On the three characteristics of Smart Library [J]. Sino foreign exchange, 2017, (34): 37.

[2] LAN qiaobin. On the three characteristics of Smart Library [J]. Digital users, 2017, 23 (39): 144.

[3] Yang Yuchen. On the three characteristics of Smart Library [J]. Enterprise guide, 2016, (8): 197-197.

[4] Pei Yanling. On the three characteristics of Smart Library [J]. Science and technology style, 2016, (10): 154.

Reform and Practice of Stratified Teaching in Higher Vocational Colleges

Jihong Duan
Hubei Vocational College of Bio-technology, Hubei, 430070, China

Abstract: The rapid development of vocational education has trained a large number of talents for the society. Under the background of the development of modern education towards personalization and intellectualization, higher vocational colleges should also reform teaching methods and education ideas, and implement hierarchical teaching in combination with the needs of students' individualized development and the changes of talent needs of employers. This paper first analyzes the necessity of hierarchical teaching reform in higher vocational colleges, and on this basis, puts forward the path of hierarchical teaching used in higher vocational college teaching reform.
Keywords: Layered teaching; Higher vocational colleges; Path

1. INTRODUCTION

As an important part of China's modern education system, vocational education has trained a large number of skilled talents for the society. The main content of education is the knowledge, skills and professionalism that students must have in their future career. Despite the rapid development of Higher Vocational Education in China, the employment problem has been plagued by many higher vocational graduates, and the phenomenon of difficult recruitment for enterprises has always existed, which is related to the separation of higher vocational education and teaching from the needs of employers, and the reform of personnel training in higher vocational colleges is needed. Each student in higher vocational colleges has a different foundation. If the teaching knowledge is too simple or too difficult, it will be difficult to achieve the ideal effect, and even reduce the students' interest in learning. Stratified teaching is a kind of teaching method based on the differences of students' knowledge, skills and so on. It plays an important role in the teaching reform of higher vocational colleges [1-2].

2. THE NECESSITY OF HIERARCHICAL TEACHING REFORM IN HIGHER VOCATIONAL COLLEGES

On the one hand, the source structure of higher vocational college students is complex, including ordinary high school students and students of segmented training projects. These students have obvious differences in basic knowledge reserve, learning ability, memory and so on. If we adopt a unified teaching method and management method, it is difficult to use a complex student group [1]. In order to improve the quality of personnel training and provide more high-quality skilled talents and compound talents for the society. Higher vocational colleges need to introduce the concept of hierarchical teaching in the teaching reform, according to the differences of cognitive ability and cultural foundation, and adopt the optimal teaching management mode for students at different levels. On the other hand, the interests of students in higher vocational colleges are diverse, and hierarchical teaching method is needed. Higher vocational colleges not only have the characteristics of vocational education, but also undertake the important task of higher education to cultivate high-quality talents. The dual attributes of higher vocational colleges make higher vocational students have different reasons for enrollment. Some vocational college students enter school to learn a living skill, get a diploma, and get a satisfactory job in the future. Some vocational college students are enrolled to improve their academic qualifications and employment competitiveness through the channels of "upgrading from college to university". Some vocational college students believe that higher education can help them better integrate into the society, and help themselves better adapt to the society through practice inside and outside the school. Because there are great differences in the interests of students in higher vocational colleges, it is necessary to introduce the concept of hierarchical teaching in teaching to provide corresponding services for students' development and promote their growth.

3. THE PATH OF HIERARCHICAL TEACHING IN TEACHING REFORM OF HIGHER VOCATIONAL COLLEGES

3.1 Grasp the method of reasonable stratification

In order to better manage students, some teachers in higher vocational colleges will conduct a thorough examination soon after enrollment, and classify students according to the results. However, higher vocational students have experienced a big test in their life before they enter school. It is not necessary to carry out the stratified test soon, and the single written test result is difficult to reflect the comprehensive situation of students. Therefore, when schools and teachers stratify students, they can use the scores of college entrance examination or the comprehensive evaluation results of last semester as the basis, and the students can self declare and the teachers can inspect and group the students. Taking the stratification of Public English teaching as an example, schools and teachers can make students self declare according to the scores of college entrance examination, and then teachers can inspect students' listening and speaking face to face to adjust the students' level.

Stratification of students is a dynamic process in stratified teaching, which needs to be adjusted periodically. It can be adjusted once a semester. The last few students who fail to meet the standard of the final comprehensive evaluation of the middle level and high level will go to the next level in the next semester. The low-level assessment of outstanding students in the next semester up a level, which can play a role in urging students' learning, but also can meet the needs of students' personalized learning.

3.2 Teaching methods vary from person to person

For different levels of students, schools and teachers should also adopt different management and teaching methods according to the needs of different levels of students and the actual situation, so that students at different levels can be developed in learning. High level students have higher learning consciousness, stronger understanding ability and memory, and higher learning interest than other students. Therefore, in classroom teaching, teachers should not only pay attention to the teaching of basic theories and skills, but also pay attention to the cultivation of students' innovation ability. For example, cooperative inquiry or case analysis can be used in the classroom to cultivate high-level students' autonomous learning and cooperative inquiry ability. Middle level students have a solid grasp of basic knowledge, but their learning consciousness and enthusiasm are general. Most of them are in a passive learning state in the traditional classroom. This kind of students need teachers or other students to guide their learning in the process of classroom learning. Therefore, cooperative inquiry can be used in teaching to create a good learning atmosphere. The basic knowledge of low-level students is relatively weak, their learning initiative is weak, their interest in learning is generally not high, and even they are obviously tired of learning some courses. Therefore, the classroom teaching of such students needs to mobilize their interest in learning and master the basic knowledge. Therefore, situational teaching method, game teaching method and other teaching methods can be used in the teaching of such students.

3.3 Pay attention to the differential assessment

Since there are obvious differences in basic level and learning ability of higher vocational students, teachers and teaching managers are required to not adopt unified standards to assess students, but should conduct the examination on students by scores, so as to evaluate the learning effect in students more objectively. First, the assessment and evaluation of students should be changed from the result to the process of emphasis. The daily performance of students is evaluated by the indicators of daily attendance, class discussion participation, and homework completion after class, and the proportion of daily assessment in the final evaluation is increased [2]. On this basis, students are evaluated from different aspects, for example, some middle school students have better English recitation and oral English ability. Teachers can provide some wonderful English speech drafts to students at home and abroad before class, so that students can choose and practice according to their own interests, and then give lectures to the students and teachers in class. In addition, teachers should also adopt different evaluation methods, such as student self-evaluation, team evaluation and so on..

3.4 Encourage teachers to improve themselves

The implementation of layered teaching also depends on the teaching level of teachers to a large extent, so we should pay attention to improving teachers' teaching ability. Therefore, higher vocational colleges should strengthen the training of hired teachers, adopt the methods of centralized learning and learning exchange to update the educational concept of higher vocational teachers, encourage teachers to actively learn the excellent experience of others and improve their teaching ability. Higher vocational colleges can also integrate the learning of teachers' self-study into the performance evaluation system of teachers, encourage teachers to use the free time to study independently, and promote teachers to invest in teaching with greater enthusiasm and higher ability.

4. CONCLUSION

Under the background of the complicated structure of higher vocational students and the diversified demands of students' interests, it is necessary for higher vocational colleges to introduce hierarchical teaching into the teaching reform. Higher vocational teachers should grasp the reasonable hierarchical method, pay attention to the differentiated assessment, flexibly adopt different teaching methods according to different levels of students, pay attention to self-improvement, and promote the implementation of hierarchical teaching.

ACKNOWLEDGEMENTS

Reform and practice of stratified teaching in Higher Vocational Colleges (2020 year).

REFERENCE

[1] Sun Yu. Application of hierarchical teaching in badminton teaching reform in Higher Vocational Colleges -- Taking badminton teaching in a higher vocational college in Nanjing as an example [J]. Sports science and technology literature bulletin, 2019, 27 (10): 97-99.

[2] GUI Fangma. Research and Practice on Hierarchical Teaching Reform of information technology course in Higher Vocational Colleges [J]. Innovation and practice of teaching methods, 2020, 3 (11): 88.

Multimodal Discourse Analysis of Foreign Language Micro Lecture

Haili Feng
Schoold of Foreign Languages, Qiongtai Normal University, Haikou, Hainan 571100, China

Abstract: In the process of College Students' learning, in order to strengthen students' understanding and mastery of foreign language courses, teachers should change teaching methods appropriately, and improve teaching effect by mastering and using multimodal voice. This paper analyzes the multimodal discourse of foreign language micro class, expounds the practical application of multimodal discourse method in foreign language curriculum, analyzes and explores the learning efficiency of students, and understands the importance of multimodal discourse teaching method, aiming to provide useful reference for relevant staff.
Keywords: Foreign language; Micro-class; Multi-modal discourse

1. INTRODUCTION

In modern teaching, the application of information technology in teaching can effectively improve the actual efficiency of classroom teaching. In online teaching, through the use of network technology to explain the teachers and various forms of information displayed in the classroom. We should make full use of multimodal discourse to effectively improve the teaching efficiency of online courses, so that students can better grasp the relevant foreign language knowledge..

2. ADVANTAGES OF APPLYING MULTIMODAL DISCOURSE IN MICRO LECTURE

In college foreign language teaching, when using micro class for teaching, teachers should design the whole classroom more carefully. The use of multimodal discourse can provide students with a more easy way to understand and learn, and improve their learning effect. In teaching, we should make use of online class to break the barrier between network and reality, improve the ability of listening, speaking, reading and writing, so as to realize the mastery of foreign language. In the use of multimodal discourse in micro class teaching, on the one hand, we can use language, action, graphics, video and other ways to integrate, build a suitable foreign language teaching method for students, improve their learning habits, and improve students' enthusiasm and initiative. On the other hand, under the influence of online class and multimodal discourse, it can better construct learning situation for students, make them understand the practical application of foreign language through immersion learning, exercise their oral expression ability, and improve learning efficiency.

3. THE PRACTICAL APPLICATION OF MULTIMODAL DISCOURSE IN FOREIGN LANGUAGE MICRO TEACHING

3.1 Course design

In the design of foreign language online course, we should plan the content reasonably according to the actual goal of college curriculum, and design the online course according to the main content of the course [1].

First, introduce the background of the course. Make use of the convenience of online class, choose appropriate pictures or videos to attract students' attention, and introduce the actual teaching objectives of this course. Due to the students' understanding of the meaning of the language, and the course content is not rich enough, teachers should use multimodal discourse to build a new teaching method, enrich the teaching content and enhance the learning interest.

Secondly, according to the teaching objectives to put forward the corresponding problems, problems according to the degree of difficulty to set, at the same time, the content of the problem should be reasonable planning and design, make it related to the course content and knowledge points. Use electronic courseware to show students different questions.

Thirdly, through the teacher's explanation or video explanation and other ways to tell the students about the knowledge content related to the problem, students need to learn and summarize by themselves. In this stage of learning, multimodal discourse is used to tell the students the relevant foreign language knowledge, improve the learning effect, and give the corresponding answers.

Finally, create a situational model for students to encourage them to exercise their oral expression ability. According to the teaching content, teachers use a variety of discourse modes, such as voice, picture, video and so on, to construct the corresponding situation for interaction, to help them experience the influence of different modes. In the situation, dialogue and learning are carried out to improve students' mastery of relevant knowledge and the overall learning efficiency.

3.2 The application of multimodal discourse

Multimodal discourse contains different forms of expression, which can be used in text, pictures, animation, limb movements, etc. In the online teaching, teachers should be proficient in teaching courseware and body language, and constantly improve the application of multimodal discourse, and then improve the students' learning effect on foreign languages.

First, the use of words. The expression of words is more formal, which can play an important role in expression. In the micro class teaching, we use words to indicate the key learning contents and objectives of the class, and use relatively short words to mark the course contents, so as to improve students' understanding. Or the text can be integrated with other ways of discourse to improve the overall understanding effect.

Secondly, the application of pictures. Picture is a very important way of discourse, which can arouse students' rational and perceptual cognition through different types of pictures, so that they can better understand the actual meaning of pictures, and then master the relevant foreign language knowledge. For example, teachers can choose pictures related to the teaching content of the course or use pictures related to the teaching objectives. In the learning and understanding of different forms of pictures, students' understanding ability can be improved, and the classroom content can be enriched. The combination of words and pictures enables students to pay more attention to words and pictures, so as to improve their understanding of foreign languages.

Thirdly, the application of video animation. The playing of video and audio is helpful to build the scene of learning comprehension for students and show the answers to the questions in the course. With the help of audio-visual teaching resources to enrich the classroom form, improve students' application of foreign language.

Finally, body language is used to teach. In the online class, teachers can interact with students through the network, and improve the expression effect through body movements and language tones, so that students can understand and remember more easily. For example, it is more important for teachers to use certain gestures to express the current knowledge points and guide students to deepen their memory.

3.3 Optimization of teaching resources

Multimodal discourse is used to optimize and reorganize the existing educational resources, so as to show a new mode of expression and improve students' understanding and learning efficiency. For example, when explaining the problems in teaching, we should choose the teaching resources according to the content of the problems. If the problem is related to the geographical environment, you can choose the video related to the region as the teaching resources, re adjust and edit the video, and use foreign language to translate the introduction in the video. When organizing sentences, we should integrate the key grammar and sentence patterns into them, so that they can show the key knowledge in the foreign language course while having a certain attraction, so that students can take the initiative to learn and watch the content [2]. Through video training foreign language listening and understanding of foreign language ability, make students' memory more profound, and can effectively improve the learning efficiency.

Strengthen the use of graphics, sound and painting, create new learning resources for students. In the teaching of micro lecture, the visual and auditory characteristics of students are mainly used to integrate the two senses, which can improve the practical application effect of multimodal discourse. In the actual online class, teachers can transform their own image into animation image to attract students' attention. When explaining the course, teachers can use the image to guide the content of the course. At the same time, teachers can adjust their own voice to adapt to the animation image, and then through the integration of sound, picture and text, improve students' attention to the course and strengthen the understanding effect of knowledge points.

4. CONCLUSION

In the online teaching of colleges and universities, the use of multimodal discourse can not only attract students' interest, but also simplify the knowledge and content of foreign language, and improve the teaching efficiency. In the use of a variety of discourse forms, we should create a good classroom atmosphere, improve the practical role of teaching resources, and then improve the students' learning effect, so as to improve the efficiency of the classroom.

REFERENCE

[1] Liu yanru. Multimodal discourse analysis of foreign language micro lecture [J]. JOURNAL OF SHENYANG AGRICULTURAL UNIVERSITY (SOCIAL SCIENCE EDITION), 2019, V.21; No.108 (04): 111-114.

[2] Zhang Yuanjun. Multimodal meaning analysis of foreign language micro class -- Taking the special prize works of the 4th China foreign language micro class competition as an example [J]. Think tank era, 2019000 (045): p.180-180.

Analysis of Deep Learning Application Mode in Blended Learning Environment

Yueying Huang
ZhanJiang Preschool Education College, ZhanJiang, GuangDong 524300, China

Abstract: In the mixed learning environment, students' learning tends to be superficial, while deep learning can help students form complex cognitive structure, which is conducive to students' construction of knowledge system. Based on this, this paper analyzes the connotation of blended learning and deep learning, and puts forward three deep learning application modes: inquiry learning, cooperative learning and reflective learning, hoping to promote the occurrence of deep learning in the blended learning environment.

Keywords: Blended learning environment; Deep learning; Knowledge system construction

1. INTRODUCTION

With the wide application of the Internet in the field of education and teaching, blended learning environment is gradually formed, which can help students build a complete knowledge system by integrating online learning and classroom teaching resources. According to the constructivist learning theory, the construction of knowledge system requires students to actively explore and discover the significance of the knowledge they have learned, and to achieve a deep learning state, so as to improve the quality and efficiency of learning. Therefore, in the blended learning environment, we should strengthen the application mode of deep learning to ensure that students can effectively construct the knowledge system.

2. CONNOTATION ANALYSIS OF BLENDED LEARNING AND DEEP LEARNING

The so-called blended learning is actually an organic combination mode of online learning and classroom learning, which can rely on different media and information transmission methods to promote learning. Instead of pursuing the simple superposition of online and classroom learning environment, blended learning requires giving full play to their advantages to create good conditions for learning. It needs to reasonably select and optimize the elements of "teaching" and "learning", so as to ensure that the teaching content and learning needs (objectives), teaching methods and learning styles (contents) can be consistent one by one. However, at present, most blended learning fails to achieve the unity of "teaching" and "learning", and lacks a clear mixed goal, resulting in teaching becoming mere formality and learning becoming mere surface. The so-called deep learning is proposed by relatively shallow learning, which emphasizes the use of a variety of learning strategies, such as integrating resources and exchanging ideas, to realize the internalization and transfer of knowledge, acquire knowledge through autonomous and critical learning, and form persistent skills through the use of knowledge [1]. Therefore, the application of deep learning can solve the problems of blended learning, ensure that learners really understand, absorb and use all kinds of learning materials, transfer knowledge to new situations, strengthen the ability training, and finally achieve the effective construction of a complete knowledge system.

3. DEEP LEARNING APPLICATION PATTERNS IN MIXED LEARNING ENVIRONMENTS

3.1 Exploratory learning patterns

The inquiry learning mode is adopted to realize the application of deep learning, and the dominant position of students in knowledge construction is emphasized. Using network analysis and other technologies, we can interpret the content and text of students' learning through the Internet, seek learning resources suitable for students' development through qualitative and quantitative analysis, create real or virtual learning situations in a mixed environment, and provide support for students to explore relevant content and carry out deep learning [2]. In cyberspace, students can consult relevant information independently through computer, carry out individual learning activities, acquire knowledge through the surrounding cognitive situation, tools and objects, and promote the deepening of students' cognition. According to this idea, teachers should complete the pre evaluation of students in teaching, understand the students' prior knowledge, learning methods and styles through investigation, reasonably arrange online tasks and create classroom learning situations according to the needs and teaching purposes, so that students' interest in learning can be fully stimulated and quickly enter the best learning state. Studying the process of students' knowledge construction and understanding how to establish contact with learning objects in online and classroom learning environment can provide effective learning materials and create meaningful situations. Relying on the situation to establish the connection between the new and old knowledge, awaken the students' existing experience, make the students complete the knowledge transfer in the inquiry, and achieve in-depth learning. In a good learning atmosphere, students can also perceive self-learning efficacy, actively explore the best way of learning, maintain a positive emotional attitude, and successfully help students overcome various learning obstacles and achieve learning goals at different levels.

3.2 Cooperative learning model

Cooperative learning mode requires students to have a clear division of responsibilities and complete common learning tasks through mutual learning. Using this model, teachers can arrange learning tasks on the Internet, release learning materials and other relevant information, and then carry out cooperative research around students' learning outcomes in class, and finally form complex cognition and deep learning outcomes. In the blended learning environment, students can carry out cooperative learning anytime and anywhere. For example, they can interact with students and teachers through wechat, forums and other channels, and deeply understand knowledge in dialogue and sharing, forming a knowledge practice community, and achieving the goal of deep learning together in the process of solving problems. In classroom teaching, teachers can divide students into several cooperative groups according to different problems raised by students in the early stage of learning, so that students can complement each other through knowledge, complete knowledge transfer and innovative application, obtain rich learning experience in practice, and realize deep processing of knowledge. During the cooperation and exchange, students need to complete the integration and application of different information to form high-level abilities such as communication, cooperation, thinking criticism and creative application. Through online channels, students can also get help and feedback from others, and get strong support of deep learning. According to the results of each group cooperation, we can introduce different evaluation methods, such as self-evaluation, mutual evaluation and teacher evaluation. Through in-depth communication and timely feedback online and offline, students can master their own advantages and disadvantages in learning and realize self-improvement. In depth evaluation of learning outcomes can also bring more enlightenment to students, obtain higher learning enthusiasm, and ensure that follow-up learning achieves ideal results.

3.3 Reflective learning patterns

To carry out deep learning, students are required to learn to reflect and think independently while listening to others' suggestions. Through continuous reflection, integration and transfer, we can not only get deep learning experience, but also achieve the expected goal in deep learning. Therefore, after classroom learning activities are carried out, students should reflect on problems offline, summarize their own experience and achievements in previous learning activities, reflect on the causes of learning problems, solve problems from the root, put forward suitable learning methods, form personalized learning style, and effectively improve the consciousness of learning. When communicating with students online, we can conduct comparative reflection, strengthen comparison from learning attitude, emotion, progress, knowledge and other aspects, so as to achieve in-depth reflection, learn from others' advantages and gradually eliminate our own disadvantages. In addition, we can strengthen the communication with experts through the network, consult the problems that cannot be solved by ourselves, listen to the opinions or suggestions of experts, and improve the problems through reference and imitation. In the mixed learning environment, students tend to feel confused, resulting in students unable to make an objective and rational judgment of their own learning situation. The application of reflective learning mode can help students reflect on their own problems through comparison, consultation and other ways, help them make scientific judgment of knowledge value, point out the direction and provide methods for students to effectively carry out deep learning activities, and finally improve the learning effect.

4. CONCLUSION

To promote students' deep learning in the blended learning environment is helpful for students to have the attitude, emotion and ability to actively construct the knowledge system, and can provide guarantee for students to carry out effective learning activities. In practice, we should organize students to carry out inquiry learning, cooperative learning and reflective learning activities, be able to explore, communicate and think independently, form the ability of problem analysis, solution and knowledge application, and truly achieve deep learning.

ACKNOWLEDGEMENTS

ARCS motivation model construction and application in blended learning, 2020KTSCX352.

REFERENCE

[1] Zhang Jing, long Fang. Construction and application of precision teaching mode of primary school mathematics in blended learning environment [J]. Digital education, 2020, 6 (05): 59-64.

[2] Ma Jing, Zhou Qian. Dimensions of College Students' learning engagement in mixed environment and its empirical research [J]. Education development research, 2019, 39 (z1): 54-65.

Discusses on How English Translation Teaching in Colleges and Universities Can Improve Students' Cultural Language Skills

Xiyin Jiang
Lanzhou Jiaotong University Bowen College, Lanzhou, Gansu, 730100, China

Abstract: In today's College English teaching, the pragmatic competence of college students has always been a problem attracting people's attention. The cultivation and improvement of pragmatic competence needs more advanced and scientific methods. In the process of teaching, college teachers should cultivate students' cultural pragmatic awareness, broaden their knowledge and improve their communication ability. Based on the analysis of the current situation of students' language application ability in College English translation teaching, this paper puts forward some reasonable teaching measures, aiming at improving the English translation level and pragmatic ability of college students in China.

Keywords: English translation in colleges and universities; Subject education; And cultural language skills

1. INTRODUCTION

Language is one of the unique symbols of culture. If you want to learn a language well, you must first understand the deep connotation of its culture. Starting from the construction of etymology, sociology, linguistics and other disciplines, this paper explores the culture of language extension. In the process of language learning, students should pay attention to the cultural characteristics of language and its inherent cultural content. Therefore, if students want to learn pure English, they should master the characteristics of English language and cultural background. Cultural pragmatic competence refers to students' ability to use language, especially their communicative competence. How to improve students' pragmatic competence scientifically and reasonably is an important problem that colleges and universities are facing.

2. THE CURRENT SITUATION OF COLLEGE STUDENTS' LANGUAGE APPLICATION ABILITY

Pragmatic competence refers to the ability to use language and the ability to organize output. The former refers to the ability of external behavior and social connection, while the latter refers to the learners' own quality and cultural knowledge. Chinese English educators believe that pragmatic competence consists of two parts: linguistic competence and pragmatic competence. Linguistic competence refers to the content and form of language, such as grammar and phonetics. Pragmatic competence refers to the use of language, including language analysis ability, language use strategy and so on. From the above statements, we can conclude that pragmatic competence is to respond with the right words under the correct understanding of the meaning and context of others' words. With the general strengthening of the trend of political, economic and cultural globalization, mastering foreign languages is a necessary condition for cultivating comprehensive talents. But at this stage, students are affected by the exam oriented education system, only pay attention to English answers, not the use of oral English. With perfect theoretical knowledge to cope with the English language test, there is no way to communicate with foreigners, or in the case of correctly expressing the language, it can not be combined with the context to communicate. So far, there are two specific problems in college students' English language: first, for English translation, students can not effectively improve their pragmatic ability. Most students have received at least six years of English education before entering the University. However, in the process of English translation teaching, many teachers find that students' English translation level is not high, There is a lack of accuracy in translation. The reason is that in the middle school stage, students' thinking is mainly limited in the exam, teachers and students pay attention to English reading and writing, and fundamentally ignore the training of listening and speaking. After entering colleges and universities, students should have used a lot of time to strengthen their listening and speaking. However, some college students blindly return to the strange circle of only focusing on examination because they pursue the passing rate of CET-4 and CET-6. Second, in the process of English communication, due to the different cultural backgrounds between Chinese and English, the meaning of some words is different in the context of Chinese and English, which easily leads to students' misunderstanding of some words in the process of English translation [1-2].

3. STRATEGIES FOR CULTIVATING COLLEGE STUDENTS' PRAGMATIC COMPETENCE IN THE PROCESS OF ENGLISH TRANSLATION

3.1 Changing the idea and method of English Teaching

In the current society, it is very important for college students' English pragmatic ability and English translation ability. Coupled with the rapid popularization and growth of the Internet, it has a great impact on the translation teaching in traditional English teaching. Therefore, it is necessary to reform the teaching form of College English. More attention should be paid to students' English pragmatic ability, and their translation ability will also be improved. With the rapid development of today's information technology, the density and frequency of communication between people are also constantly strengthened. Social platforms and tools such as microblog and Wechat also emerge as the times require, which can effectively shorten the communication distance between people and reduce the time cost of communication. English teachers can use Wechat as an important platform for English translation teaching and English pragmatic competence training. We should also pay attention to the introduction of English video, audio and other new forms into the teaching work, combined with Wechat and other platforms to strengthen the teaching effect of English translation. In addition, in the process of English translation teaching, English teachers can use Iqiyi, Youku, windstorm video and other video websites to send the content suitable for students' translation to the class group with corresponding notes. After that, the students' translation results are evaluated and checked in Wechat group, and reasonable communication is conducted with students in an equal tone. The most important thing is that students can have a deep understanding of video and audio clips without obstacles. The translation function of Wechat can also help students translate sentences, which is of great significance to the elimination of cultural differences between Chinese and English.

3.2 Attach importance to practical teaching of English translation

Although the current college English teaching syllabus clearly puts forward the students' English translation level, it still focuses on the improvement of students' listening and speaking ability, and does not point out the clear teaching content and teaching form. Translation, as a kind of English pragmatic competence, has not received due attention in Colleges and universities. Therefore, in the teaching of English translation in Colleges and universities, teachers not only need to teach students in theory, but also pay attention to the cultivation of students in practice. In the process of performance test, they should increase the score of translation test to enhance students' attention. In the process of translation teaching, we should pay attention to the organic unity of content, form and effect, and combine theory with practice. Translation is a process of processing and transforming external ideas and words. In the process of teaching, teachers should abandon the idea of only speaking one book in a semester, and really pay attention to the cultivation of students' translation ability, so that students can understand the background of the text and achieve exquisite translation at the same time. In addition, College English teachers should provide students with corresponding practice platforms, such as part-time translation on the Internet, part-time foreign translation and other projects, which can not only promote students' interpretation and translation level, but also improve students' self-confidence in translation [2].

3.3 Using the advantages of network to carry out teaching

In recent years, with the rapid development of science and technology and economic level, international cultural exchanges will rely more on the network. College graduates will get more opportunities to participate in international cultural exchanges. Undoubtedly, it will greatly improve the students' English pragmatic competence. Compared with the traditional single language learning environment, e-learning environment will have more obvious advantages in cultivating students' pragmatic competence. Therefore, it is a very important means to cultivate students' pragmatic competence and translation level through the Internet. It can be carried out in the following ways: Students' translation and pragmatic level can be enhanced through the Internet. Due to the lack of language communication experience, most students are lack of English translation and pragmatic competence. In order to deal with this situation, College English teachers can use the intelligence and freedom of online learning to train students' English translation ability and pragmatic ability, urge students to understand the importance of English translation level and English pragmatic ability, and make students actively participate in the learning process.

4. CONCLUSION

To sum up, the improvement of English translation and pragmatic competence is a gradual process. As the base of cultivating comprehensive talents, colleges and universities should pay attention to the improvement of English translation ability and English thinking, improve students' comprehensive quality and thinking, and make the talents themselves more in line with the trend of social development. In the process of teaching, we should teach students in accordance with their aptitude according to their differences in translation level and pragmatic competence, so as to stimulate students' learning motivation and better complete the teaching.

REFERENCE

[1] Sun Yanhua, Shen liming, Huadong. How to cultivate students' cultural pragmatic competence in College English Translation Teaching [J]. Intelligence, 2020 (17): 215.

[2] Zeng Youmei. Strategies of cultivating students' translation ability in College English Teaching [J]. English Square, 2020 (02): 16-17.

Analysis of The Path of Building A Smart Campus in Colleges and Universities Based On 5G Technology

Yuwei Liang
South China business College Guangdong University of Foreign Studies, Network Information Center, Guangzhou 510545, China

Abstract: With the rapid development of information technology, China has entered the 5g era. The popularization of 5g technology makes people's daily life more convenient and intelligent, and it also brings a positive impact on the development of other fields. This paper will analyze and explore the construction path of smart campus in Colleges and Universities Based on 5g technology, so as to promote the construction of smart campus in Colleges and universities, and lay a solid foundation for the future development of colleges and universities.

Keywords: 5G technology; Smart campus; Building system

1. INTRODUCTION

The development of information education has an important impact on modern education. The construction of smart campus in Colleges and universities is based on the further development of information education. The construction of smart campus in Colleges and universities will reform and innovate the original teaching system, information management system and intelligent security system, and the advantages of 5g technology will also provide some help for the construction of smart campus in Colleges and universities.

2. CONSTRUCTION OF INTELLIGENT TEACHING SYSTEM IN COLLEGES AND UNIVERSITIES

The construction of teaching platform. With the popularization of 5g technology, colleges and universities can reform and innovate the original teaching methods through the Internet and artificial intelligence algorithm. In Colleges and universities to create a data-based learning platform for teachers, students and staff to provide a more convenient way of learning, and students as the main body, to provide content and platform for standardized teaching, differentiated teaching, personalized learning and collective learning.

Using network marking. Based on the big data evaluation of university teaching, the paper scans and reviews the examination papers inside and outside the university through 5g technology, and establishes a test paper reading platform according to the marking content of the examination papers, so as to provide reference materials for students in terms of marking results, analysis of examination results and analysis of knowledge difficulties. This method can not only improve students' academic performance and personalized development, but also provide effective data support for teachers' teaching methods and teaching focus according to the actual situation of students.

Provide curriculum resources. The main purpose of establishing the curriculum resource center is to collect and manage the teaching resources of colleges and universities through the classroom recording and broadcasting system. In order to improve the teaching means, teaching environment and teaching system that are missing in the process of establishing teaching resources in Colleges and universities, and improve the teaching content, teaching experience and teaching methods of teachers.

Create a smart classroom. Taking the medical specialty of some universities as an example, because many teaching contents of medical specialty need to use animals for anatomy teaching, and some universities can not provide enough anatomy materials for students. Therefore, the traditional classroom mode can be changed by creating a smart classroom. VR technology can make students practice animal anatomy and surgery repeatedly. This can not only make students clearly see the teaching content of teachers, eliminate the communication barrier between teachers and students, but also improve the teaching efficiency of teachers and the learning quality of students [1-2].

3. CONSTRUCTION OF EDUCATIONAL RESOURCES SYSTEM IN COLLEGES AND UNIVERSITIES

The construction of resource education system in Colleges and universities can enable teachers to share the teaching content in the classroom to all parts of the country and spread the latest knowledge and technology. Colleges and universities can also develop their own real projects, develop real projects with campus characteristics, and make clear the future development direction of colleges and universities through real projects. Colleges and universities can use 5g technology to strengthen the educational resources on campus, and provide high-quality learning platform for teachers, students and staff in Colleges and universities. In addition, in the traditional teaching mode, colleges and universities can introduce some advanced teaching methods through 5g technology to increase the teaching effect of teachers. And it can help teachers to observe students' classroom situation, judge students' learning effect according to students' behavior, so as to improve students' learning quality and learning efficiency.

4. CONSTRUCTION OF UNIVERSITY INFORMATION MANAGEMENT SYSTEM

The educational administration management system management system. Efficient educational administration management system can use 5g technology for information management of relevant data, information management of university student status management, curriculum management, teaching plan, curriculum arrangement and examination results, etc. on this basis, it can provide convenient and fast information query system for university teachers, students and administrators.

Administrative management system. Efficient administrative management system is a comprehensive information application system for schools, teachers and staff. The administrative management system not only includes the student status information and teachers' career information, but also includes the school asset management, information flow, document sorting and management and other related information. Using the advantages of 5g technology, colleges and universities will change the traditional work mode, and use the intelligent office mode to liberate the school staff from the traditional office mode. At the same time, it can also be transparent to the working mode and links of colleges and universities, so that teachers and students can understand the working mode and links of colleges and universities, and improve and upgrade the office mode of colleges and universities. The information management of the administrative management system in Colleges and universities not only reduces the work intensity and difficulty of the management personnel, reduces the human and financial resources of the administrative management in Colleges and universities, but also strengthens the connection between various departments and units in Colleges and universities, so as to improve the work quality and efficiency of the management personnel.

Student management system. With the expansion of the enrollment plan of colleges and universities, the enrollment of most colleges and universities is also increasing rapidly. However, the development of 5g technology provides great opportunities for the development of information management in Colleges and universities, and also brings great challenges to the staff of colleges and universities. The information management of students is an important work for colleges and universities. Because the information management of students is a complex, tedious and basic work, the staff of colleges and universities need to deal with this work seriously. In the era of rapid development of information technology, colleges and universities can deal with students' information management by building student management system, providing a convenient information management platform for teachers, students and staff, so as to improve the management quality and efficiency of staff, and lay a solid foundation for the development of colleges and universities [2].

5. CONSTRUCTION OF INTELLIGENT SECURITY SYSTEM IN COLLEGES AND UNIVERSITIES

Colleges and universities can set up high-definition video surveillance in the school gate, crowded places on campus and important infrastructure. 5g technology is used to provide network transmission for the content captured by video surveillance, and provide larger storage space and stronger content data analysis system for the content captured by video surveillance. According to the images, sounds, people, vehicles and license plates captured by video surveillance, the system can quickly give an intelligent alarm at the critical moment.

Based on 5g technology and combined with the actual situation of the campus, colleges and universities can establish an intelligent perception system to collect the relevant data of people, vehicles, roads, buildings and infrastructure in the campus, so as to grasp the situation in real time. In addition, the security intelligent UAV can also be used to set the computing power of the security intelligent UAV to the cloud with the fast speed of 5g technology. On this basis, the security intelligent UAV is used to inspect the blind spots of the campus video surveillance, and to identify the campus environment, people, foreign vehicles and other information. When an emergency occurs on campus, the security intelligent UAV can quickly arrive at the scene and capture the scene video, and finally transmit and save the collected scene video through 5g technology.

6. CONCLUSION

In a word, 5g technology provides effective help for the construction of smart campus in Colleges and universities, as well as the construction of smart teaching system, educational resource system, information management system and intelligent security system in Colleges and universities. 5g technology can be widely used in the construction of smart campus in Colleges and universities, so that college students, teachers and staff feel the charm of 5g technology, and experience the convenience of 5g technology.

ACKNOWLEDGEMENTS

2017 Liao2522earch project: Study 4567868756sm and arc lkuyfjhydjgff ggf of heating surface in boiler, project number: LYB20582728535.

REFERENCE

[1] Zeng Xiangju, Niu Sixian. Research and practice of campus network construction based on 5g technology -- Taking Baise University as an example [J]. Management and technology of small and medium sized enterprises (first issue), 2020 (10): 94-96.

[2] Jiang Bo. Discussion on the application of 5g technology and WiFi 6 technology in the construction of smart campus in Colleges and universities [J]. Digital technology and application, 2020, 38 (04): 28-30.

Research on The Utilization and Implementation of Preschool Children's Family Education Environment

SuLing Ma
Central Philippine University, College Of Education Jaro, Iloilo City, Philippines

Abstract: Family education plays a key role in the education of preschool children, which will directly affect the quality of daily life of preschool children. Family education can affect preschool children's mental health and personality development, and also has a certain impact on preschool children's behavior development. It plays a key role in the future students' academic development. With the continuous change of economic development in various regions, the education level of parents is also improving, which also provides favorable conditions for family education. Therefore, this paper analyzes the use and implementation of family education environment for preschool children. This paper first expounds the problems of preschool children's family education, and then enumerates the solutions of preschool children's family education, hoping to help the relevant people.

Keywords: Preschool children; Family education environment; Utilization and implementation

1. INTRODUCTION

The influence of family on preschool children is greater than that of school and community, and the proportion of family education is very large, so family plays a very important role in the growth of children. Preschool children's family education is not only determined by their parents' personal income, but also affected by their parents' educational level. The family's personal income is only an auxiliary role. The content of family education for students of different ages is also different. Many families have preference for boys. However, in terms of education, the education of girls in most families is more strict than that of boys, and the promotion of family education can well cooperate with the communication between preschool teachers. Therefore, governments at all levels should actively promote the implementation of family education and give corresponding policies.

2. PROBLEMS IN PRESCHOOL CHILDREN'S FAMILY EDUCATION

2.1 Only pay attention to children's intellectual education, ignore other aspects of education

With the continuous development of China's modern economy, affected by various factors and cultural development, most kindergartens begin to pay attention to family education. Parents will take the initiative to send children to kindergartens for education. Family education can improve the relationship between parents and teachers, it can improve the communication ability between parents and teachers, under the analysis of big data, in the communication between kindergarten teachers and parents, we can find that most parents of preschool children pay attention to children's intellectual development. Most parents attach great importance to children's academic performance, from two aspects, one is the selected kindergarten, the other is children's learning content. In the choice of kindergartens, parents will carefully consider that the most important thing parents care about is preschool education. On this basis, there will be some extra-curricular content added. After the children enter the kindergarten, they not only need to observe the children's behavior in the kindergarten, but also need to make a series of comparisons between the children's behavior and other children's activities [1-2].

2.2 Most of them preach in language, but lack of leading by example

Parents are the first guardians of their children and are responsible for educating them. However, due to the limited educational level and personal conditions of parents, there are various kinds of education for children. Different parents have different forms of education, and different educational methods produce different educational effects. Children's age is relatively small, most of the learning is based on imitation, but also very good at imitation, so parents must set a good example in this process, can't show their bad side to children, children will imitate these bad language or action, so parents must control their own language and behavior, to make a good example for children. But in real life, many parents have no way to set an example. More education for their children is in the form of preaching, which can not play any role for children, because it is preschool children, which can not play any role in the way of preaching education, so parents must do their own education well.

2.3 The time of accompanying children is not stable

Enough time is the main basis for parents to educate their children. The company of parents can give good education to children. Many parents because of the influence of life or other factors, it is difficult to give children sufficient company time, the most common situation is that when children get up, most parents have already gone out to work, at night when children go to bed, most parents did not go home. Some parents go home late because of socializing or going out with friends, and some parents go home late because of work, which leaves a lot of work to grandma and grandfather. Most of the education forms of the older generation are doting, which will have a bad impact on children's education.

3. THE DEVELOPMENT COUNTERMEASURES

OF PRESCHOOL CHILDREN'S FAMILY EDUCATION

3.1 Changing parents' concept of good and bad

Good education concept can bring good education practice to students. The reason why our parents want children to receive education is to let their children learn some knowledge and enrich their cultural connotation. But the problem of good and bad grades has deeply affected the parents' judgment ability. The theory of good and bad grades has seriously affected the parents' play. The parents' Association has always believed that only good grades can have good development, and this concept has been deeply rooted in the hearts of parents. In fact, these views are all wrong. In the new era of education, parents should change their own ideas, teachers should also play their role in this process, through the working group of teachers and parents or other channels to promote the correct concept of talent. The practical significance of talents is that in the case of having a certain professional foundation and skills, there are people who create labor force and make contributions. They are workers with higher ability and quality in human resources, so they are not people who have good achievements. They are actually people who make contributions to society.

3.2 Propagandizing our country's education laws and regulations, pointing out the direction for family education

The state has a certain education policy for preschool education, the purpose is to promote the development of preschool education. According to the relevant outline, it points out that kindergartens should combine care and education, so as to promote the development of children's physical, mental, moral and aesthetic aspects, and emphasizes that kindergarten education should respect the characteristics of children's physical and mental development. The main form of teaching is game activities, which lays the foundation for a series of development of children. The development of children's learning should be carried out from several aspects. Children at all stages should have corresponding teaching content and mode, and what level they should reach should have a reasonable expectation. At the same time, in view of the confusion and misunderstanding of the current preschool education, the paper points out some suggestions. But these policies are only understood by preschool education professionals, so our kindergarten teachers should promote these educational concepts to parents. They are the first teachers of children's growth, and their knowledge level directly affects the quality of children's development. Therefore, the education department should make publicity through various publicity channels to meet the learning needs of parents with different knowledge levels [2]..

3.3 Give full play to the leading role and promote educational practice

Kindergarten teachers guide the direction of education for family education, so as to promote the improvement of educational practice ability. Parents can take the initiative to communicate with kindergarten teachers to discuss the confusion in family education. In addition, kindergarten teachers can also summarize the problems and puzzles of parents, and then feed back these problems to parents at the same time to solve their educational puzzles. Kindergarten education is to cultivate children's learning quality and good living habits, and lay the foundation for future learning.

4. CONCLUSION

As the main participants of family education, family members play a key role in the level of preschool children's family education. But family education is different from kindergarten education, and there is no professional factor between educators and educatees. At this time, parents can also influence children's education through their normal psychology and games, and exert subtle influence according to the characteristics of life to promote the harmonious development of preschool children.

REFERENCE

[1] Jia Qian. On the necessity and implementation strategy of family education for preschool children in childhood [J]. Youth and society, 2019 (27): 82-83.

[2] Wang Xueli. Implementation of family education program for preschool children in Beijing [J]. Preschool education, 2019, 1997 (09): 6.

Research on The Long-Term Operation Mechanism of Community Education Integrated into Community Governance from The Perspective of Collaborative Governance

Jinbing Shen
Faculty Teaching Development Center, City University of Wenzhou, Wenzhou 325000, Zhejiang, China

Abstract: The development of the community is conducive to accelerate the process of social development. The more powerful and sound the function of the community is, the more convenient it can provide for the life of the residents. This paper explores the long-term operation mechanism of integrating community education into community governance from the perspective of collaborative governance. This paper briefly expounds the significance of community education and community governance and their integration, and studies the path of their integration, aiming at promoting the development of the community in many aspects, and providing some references for relevant personnel.

Keywords: Collaborative governance; Community education; Community governance

1. INTRODUCTION

In order to promote the further development of society, the goal should be put in the grassroots community. By enriching the functions of the community, improving the actual collaborative governance of the community, solving the problems of residents' education, strengthening the ability and role of community education, maintaining the harmonious development of society, and realizing the socialist development with Chinese characteristics. Relevant departments should unite various forces to promote the collaborative governance of community governance and community education, promote the further improvement of the community, and strengthen the alleviation of social contradictions.

2. COMMUNITY EDUCATION AND COMMUNITY GOVERNANCE

Community education is a kind of activity that provides certain education environment for residents in the community, enriches residents' life and improves people's quality of life by using various types of education resources. At present, there are three types of community education. First, the school centered community education committee is composed of factories and institutions within the community. Second, the community is the center, the sub district office is responsible, and community education institutions participate in the construction. Third, the community education with industrial and agricultural areas as the geographical boundary, including the community culture education in rural counties [1].

Community governance is mainly led by the government, cooperating with relevant social organizations, making conventions and rules within the community, managing the community, and promoting the actual development of the community. In community governance, firstly, the main body is diversified, including the government, individuals, social organizations and so on. Secondly, the content of governance is rich. In governance, it includes community service, community care, comprehensive governance and environmental property. Finally, the governance process of the community is more complex, through the way of cooperation to interact and build, make the internal environment of the community more harmonious.

On the one hand, community education can improve the ideological level and overall quality of residents, help community governance to maintain a harmonious atmosphere within the community and enhance the sense of happiness of the community. On the other hand, community education can promote the transformation of government functions, make community governance more effective, improve the quality of community governance, and help communities continuously improve their management ability and influence.

3. THE PATH OF INTEGRATING COMMUNITY EDUCATION INTO COMMUNITY GOVERNANCE FROM THE PERSPECTIVE OF COLLABORATIVE GOVERNANCE

3.1 Promote multi-party collaborative governance

China's community education started in the early 1980s, after continuous reform and development, the current direction of community development is to strengthen the function of the community, achieve collaborative governance within the community, and constantly improve the social governance effect. In the past, the main leaders in the community were government departments. Now, with the decentralization of the government, more and more non-governmental organizations are responsible for the leadership and governance of the community, and gradually develop towards the direction of people's governance.

The main goal of community governance is to serve the people. Through reasonable governance, the life of residents in the community will be more convenient. Integrate community education into community governance, promote the effect of community governance through education, and make community governance more effective [2]. Community education can not only set up private teaching, but also build a special training institution in the activity site of the community to provide the place for the residents to receive education and improve their ability. Through community education, it can help the residents to cultivate the correct ideological and political concepts, shape the correct values, and constantly improve their social value in the actual development. In addition, with the help of community education, the comprehensive skills of residents can be improved, which is conducive to improving the self-confidence and living standards of residents. When community governance cooperates with education, it needs to unite various departments and educational institutions to provide corresponding education courses for the community, including non-governmental organizations, individuals and social organizations, to achieve common education in cooperation, so that the community can be more harmonious and perfect, and the residents in the community can also receive more harvest.

3.2 The influence of improving community education on Community Governance

Community education has a greater role in promoting the governance of the community. The collaborative governance of the two is conducive to the continuous development of the community. In order to make the role of community education more obvious, we should strengthen the influence of community education.

On the one hand, residents' acceptance of knowledge and education should be strengthened. Education can provide more possibilities for residents, so we should strengthen residents' awareness of education and realize its importance. With the continuous progress of society, the level of scientific and technological development is also faster and faster, bringing a lot of changes to people's lives. In order to make people adapt to the modern life, we should continue to learn and improve their quality of life through the acquisition of knowledge. Community education can provide education opportunities for residents of different ages and levels. Through the setting of education content, residents can increase their sense of identity to community education and continuously improve the effect of education, which plays a very positive role in residents' mental state, quality of life and social management.

On the other hand, community education provides corresponding education opportunities for the residents in the region through the division of regions. Under the influence of education, it can make people in the community have a stronger sense of identity and belonging. Community education provides people with corresponding education services. The content of education is generally close to life, or learning projects that are helpful to people's development, including handicraft works, skill training and so on. People in the community can interact and communicate at the same time of class, which is conducive to strengthening the emotional construction between each other, making the relationship within the community closer, and building a harmonious community environment. Under the influence of education, making community governance more simple is conducive to improving the effect of community governance.

3.3 The effect of the integration of network publicity community education and Governance

In order to realize the collaborative governance of community education and community governance, we should strengthen the advantages of integrating community education into community governance. In modern life, the application of the network is more and more common, community administrators can try to use the network to promote community education, improve residents' interest in community education, and then improve the effect of governance. With the help of the education website of the superior community, more online learning resources are provided for the residents in the community, so that they can learn at any place and time. Through the establishment of network education platform, government departments can deeply understand the actual needs and ideas of residents in the community, and then solve the problems faced by residents through cooperation, so as to improve the actual efficiency of community governance. In the platform, we can build the module of residents' communication and complaints, and truly express the residents' inner thoughts through the network expression, so as to continuously improve the efficiency of community governance, and then promote the harmony and development within the community.

4. CONCLUSION

To sum up, in the perspective of collaborative governance, in order to better integrate community education into community governance, we should strengthen the cognition of community education and fully understand its actual role. Through multi-party cooperation, its advantages are integrated with community governance, so as to improve the effect of community governance and continuously promote the development of the community.

ACKNOWLEDGEMENTS

The Achievements of Zhejiang Provincial Philosophy and Social Science Planning Grant (No. 20NDJC356YBM);

The research results of 312 talent training project from Zhejiang Radio and Television University

REFERENCE

[1] Qian Hedi, Wang Zhiqiang. On the "five dimensional integration" model of community education into community governance under the concept of collaboration and its practical path [J]. Journal of Ningbo Radio and Television University, 2020018 (002): 5-9.

[2] Liu Lizhen, Hu Rong. Analysis on the construction of interactive mechanism between community education and community governance [J]. Rural economy and technology, 2017, 06 (V.28; NO.410): 188-189.

The Role of Performance Appraisal in Enterprise Human Resource Management

Jingjing Du
Suan Sunandha Rajabhat University, Bangkok, Thailand

Abstract: The subject of this article is the role of performance appraisal in enterprise human resource management. Taking Beijing Jietong Antai Technology Development Co., Ltd. as the research object, through in-depth communication with the general manager and HR person in charge to understand the problems of the company's customer service department, and in-depth analysis of the existing problems, and finally resolved through performance evaluation There is a problem. The establishment of the customer service department found that the staff did not actively answer the phone, the quality of the answering was poor, the lack of professional knowledge, and the lack of enthusiasm for answering the phone. Work objectives and work standards. And then improve work efficiency and quality, to achieve a win-win goal for individuals and companies. After the implementation of performance appraisal, it has been greatly improved, which shows the importance of performance appraisal to work performance. This demonstrates the role of performance appraisal in human resource management.
Keywords: Performance appraisal; Human resources; Work tasks; Work ability; Work attitude

1. INTRODUCTION

1.1 Research Background

The social economy is developing rapidly, and the competition among enterprises is constantly escalating. In order to enhance the comprehensive strength of enterprises and gain a firm foothold in the competition, it is necessary to strengthen the emphasis on enterprise human resource management. Performance appraisal, as an important means of enterprise human resource management, plays an important role in human resource management. (Dai Yuxin 2019)

1.2 Problem statement

Many companies have experienced such a phenomenon: excellent employees ignore our retention and go away; potential employees ignore our expectations and quietly leave; even the key employees, regardless of our trust, let go, leaving the company endless Annoyed and sighed. What makes companies even more puzzling is that it always seems that what should be done is not gone, and what should not be done is gone; ordinary ones are not gone, but excellent ones are gone. In a fast-changing and competitive society, how to attract and retain outstanding employees is facing huge challenges. The most critical factor is the company's job analysis, performance appraisal and salary system. (Liang Xiaofei 2019)

1.3 Research problem

With the continuous expansion of the scale of development of modern enterprises, the importance of human resource management has become increasingly prominent. Among them, performance appraisal is an important means for enterprises to achieve overall strategic goals as the assessment, evaluation, analysis and application of factors such as employee work attitude, efficiency and ability. How to use performance appraisal to promote corporate performance. (Dai Yuxin 2019)

1.4 The goal and purpose of research

In the environment of increasingly fierce market competition, modern enterprises can promote the rationality of human resource management through the scientific application of performance appraisal results, so that enterprises can achieve sustained, stable and good development. (Liang Bo 2019)

2. LITERATURE REVIEW

2.1 Theory

Performance appraisal is a key part of performance management. The success of performance appraisal directly affects the effectiveness of the entire performance management process. Performance appraisal mainly serves the two aspects of management and development. The purpose is to enhance the operation efficiency of the organization, improve the professional skills of employees, and ultimately benefit the organization and employees. Inaccurate or inconsistent performance appraisal will not have a positive motivational effect. On the contrary, it will bring many obstacles to the organization's human resource management, make employee relations strained, and damage team spirit. Therefore, both managers and employees should see the meaning of performance appraisal. (Dong Xueying 2019)

2.2 Explanation of all variables

The assessment results of performance appraisal are determined by the five contents of work performance assessment, work ability assessment, work attitude assessment, work potential assessment, and job matching assessment. The overall performance appraisal result is the dependent variable. The five appraisal items work performance appraisal, work ability appraisal, work attitude appraisal, job potential appraisal, job matching degree appraisal are independent variables, which determine the final data index and effect of performance appraisal. (Dai Yuxin 2019)

2.3 Refer to previous articles to explain the relationship between variables

2.3.1 Work performance appraisal: evaluate the achievements of employees in the work process, and use this as a measure of how much benefit employees bring to the company. This is the core content of corporate performance appraisal.

2.3.2 Work ability assessment: evaluate the ability of employees at work, including professional skills and employees' work coordination and cooperation skills.

2.3.3 Work attitude assessment: evaluate the employees' enthusiasm and proactiveness, which is reflected in whether they obey the arrangement and whether they actively work.

2.3.4 Work potential assessment: evaluate the comprehensive ability of employees to analyze and tap their maximum work potential.

2.3.5 Work position matching assessment: assess the matching degree between employees and their positions to determine whether they are suitable for the current position and whether the company's human resource allocation is reasonable. (Dai Yuxin 2019)

2.4 Conceptual or theoretical framework

Performance appraisal refers to the process in which an enterprise uses specific standards and indicators to evaluate the work behavior and performance of employees under established strategic goals, and uses the evaluation results to positively guide employee behavior and work performance. (Dong Xueying 2019)

3. RESEARCH METHODOLOGY

3.1 Research methods

This article uses a qualitative research method to verify the role of performance appraisal in corporate human resource management through in-depth interviews with corporate general managers and HR leaders and analysis of employee performance appraisals. The object of this research is the customer service department of Beijing Jietong Antai Intelligent Technology Co., Ltd. This is a position that provides tax knowledge consulting services for taxpayers in Beijing. The staff answers tax knowledge via telephone.

3.2 Data collection and sampling

Collected the performance appraisal results of 30 employees in the customer service department in the past three months, and conducted an overall analysis of their monthly performance results. There are 22 working days per month. See Table A.

4. DATA ANALYSIS

4.1 Work tasks

4.1.1 Number of answers: The original phone rang, everyone pretended not to hear, no one took the initiative to answer the call, but after adding the number of answers to the work task, everyone was very active in answering the call, and the individual answered the total monthly The volume was 418 in the first month, 638 in the second month, and 814 in the third month; the total number of monthly calls received by 30 people was 12540 in the first month, 19140 in the second month, and the third months 24420 months;

Date	Average monthly total number of personal answers	30 people answer the total monthly
201912	418	12540
202001	638	19140
202002	814	24420

4.1.2 The quality of traffic: the problem of poor service attitude has also been improved through random inspection and monitoring, and the enthusiasm of employees to answer the phone has increased. At present, the monthly number of random return calls is 500 return calls. 70% to 92%;

date	Number of spot checks	Satisfaction rate
201912	500	70%
202001	500	79.3%
202002	500	92%

4.1.3 Summary work: review the number of new questions summarized daily, the number of question summaries has been increased from 15 to 37 per person per month, and the rate of individual and overall number increase is 2.46 times;

date	Summarized number per person per month	30 man-month summary
201912	15	450
202001	27	810
202002	37	1110

4.2 Ability to work

4.2.1 Basic knowledge: Strengthen the ability to evaluate new knowledge. The mastery of new knowledge has been improved from the original question to three and now it is generally good. The overall score of the basic knowledge assessment is increased by 23 points;

Date	Average score
201912	68
202001	78.6
202002	91

4.2.2 Business skills: Through spot checks and supervisors ‘supervision, employees’ oral expression skills have been improved. They are willing to read more communication books to improve their communication skills. They can simplify complex issues and communicate with taxpayers.

4.3 Work attitude

4.3.1 Busy time: stipulate that employees can have a certain time to rest without answering the phone, but the more time they have to rest, the fewer calls they receive, and the busy time through performance evaluation has been shortened by 33%;

date	Average busy time per person per day	30 people are busy every day
201912	60 minutes	1800 minutes
202001	45 minutes	1350 minutes
202002	40 minutes	1200 minutes

4.3.2 Rules and regulations: Various rules and regulations of the company and the bureau have also been added to performance considerations, which has improved management efficiency and fewer and fewer problems that violate company discipline;

4.4 Attendance

The full attendance award can be obtained without asking for leave. The amount is 500 yuan. After the performance assessment is added to this content, the employee's full attendance rate has been increased from 50% to 93.33%;

date	Attendance
201912	15
202001	twenty one
202002	28

4.5 Plus and minus sub item

It is helpful to improve the employee's ownership spirit and take the initiative to propose better ideas about the company and work. If the company expresses its opinion that the performance evaluation will be improved by 3 to 5 points, the suggestions received and adopted by the company every month are 2.28 times the original.

date	Suggested number
201912	7
202001	11
202002	16

Through the analysis of company leaders and relevant departments, and the analysis of the above data, it is concluded that performance evaluation is very important and necessary to be implemented in the enterprise.

4.6 Results and findings

The performance form evaluates the employees by combining the requirements of work tasks, work abilities, work attitudes, attendance and other aspects. By learning from the communication of their three parties, the employees ‘work enthusiasm and work efficiency have been obtained after using the performance assessment Great improvement.

5. CONCLUSION

Performance appraisal is conducive to forming an efficient working atmosphere, aligning personal goals with organizational goals, and promoting employee development. Performance appraisal is the main means used by enterprise personnel. After appraisal, the personnel’s political quality, psychological quality, knowledge quality, professional quality, etc. are evaluated, and on this basis, the personnel’s abilities and expertise are inferred to analyze which suits them Only by position can you match people to your posts and make the best use of them.

REFERENCE

[1] dong xin. On the application of performance management in hospital human resource management system [J]. China management informatization, 2019, 22(01):111-112.

[2] xu xiangfeng. Performance appraisal in human resource management in public institutions [J]. China market, 2019(01):114-115.

[3] wang yanni. Analysis on performance assessment of university teachers under human resource management [J]. China management informatization, 2019, 22(05):216-217.

[4] cao changhai. Preliminary study on the relationship between enterprise strategy, human resource management system and enterprise performance [J]. Modern marketing (xix), 2019(02):11.

[5] dai yuxin. Problems and Suggestions of performance appraisal in human resource management [J]. China business review, 2019(01):111-112.

[6] zhang xin. Study on incentive mechanism of human resource management in public sector [J]. Modern trade industry, 2019, 40(13):56-57.

[7] hao rongfang. Research on innovation performance appraisal in human resource management of state-owned enterprises [J]. China's collective economy, 2019(14):119-120.

[8] liu zhao. A preliminary study on human resource performance management in the era of big data [J]. China management informatization, 2019, 22(08):70-71.

[9] li yan, zhao ruimei, Chen xi, zhang zhaoxiang. Research on the integration method of human resource performance evaluation and compensation management based on strategic perspective [J]. Enterprise reform and management, 2019 (08) : 79-80.

[10] tang guiyao, Chen Lin, Chen Yang, liu songbo. Executive human resource management commitment, green human resource management and enterprise performance: the moderating role of enterprise size [J]. Nankai management review, 2019, 22(04):212-224.

[11] li ping. Analysis on the role of performance appraisal in human resource management of public institutions [J]. China's collective economy, 2019(28):122-123.

[12] wu chunxing. Analysis on the application of performance management in human resource management [J]. Chinese and foreign entrepreneurs, 2019(27):69-70.

[13] dong xueyin. On the application of performance appraisal method in enterprise human resource management [J]. Modern marketing (xix), 2019(09):187-188.

[14] duan manshu. Research on human resource outsourcing and performance improvement [J]. Cooperative economy and technology, 2019(19):136-138.

[15] cheng fang. Research on the relationship between effective human resource management, psychological capital and job performance [J]. China management informatization, 2019, 22(20):40-42.

[16] zhu zhiye. Discussion on innovation points of enterprise human resource performance management in the era of big data [J]. Modern marketing (xix), 2019(11):183-184.

[17] xie weiwei. High performance work system and organizational performance [D]. Zhejiang university of technology, 2019.

[18] lu xiaojing. Research on performance management of middle managers in ZY company [D]. Xi 'an petroleum university, 2019.

[19] li weixia. Influence mechanism of high-commitment human resource management system on employee performance and pro-organization non-ethical behavior [D]. Zhejiang university of finance and economics, 2019.

Research on Teacher Training System of Innovation and Entrepreneurship Education in Engineering Colleges

Jipeng Zhao[1], Bing Li[2]*
[1]Organization Department, North China Electric Power University, Baoding 071003, China;
[2]Department of Economics and Management, North China Electric Power University, Baoding 071003, China
[*]Corresponding Author.

Abstract: The training of teachers for innovation and entrepreneurship education in colleges is the top priority to improve the quality of teachers and adapt to the reform process of colleges. Based on the development status of teacher training system for innovation and entrepreneurship education in regional colleges under the concept of new engineering, this paper analyzes the causes of existing problems in depth, and builds regional innovation and entrepreneurship in colleges from the aspects of operation, system, resources and training. The optimization model of the education teacher training system has proposed a number of measures such as demand orientation and optimization schemes for new engineering majors. System optimization will promote innovation and entrepreneurship education reform under the new engineering philosophy, help improve the teacher training system, and promote the overall optimization of the quality of regional teaching teams.

Keywords: Engineering colleges; Innovation and entrepreneurship education; Teacher training system

1. INTRODUCTION

The "Opinions on Deepening the Reform of Innovative and Entrepreneurship Education in Higher Education" issued by the General Office of the State Council pointed out that in 2020, the top level design will be used to establish and improve the college education system, and actively promote universities to become the main force of technological innovation and independent entrepreneurship. This requires colleges and universities to attach great importance to the construction of innovation and entrepreneurship education teams to provide protection for China's innovation and entrepreneurship education. Innovation and entrepreneurship education is a systematic project that combines professional education and basic theoretical education. It is rich in content and strong in operability. Its core is to improve the innovation and entrepreneurial spirit and ability of college students and train high-quality innovative and entrepreneurial talents. In order to ensure the smooth implementation of the project and promote the in-depth development of the project, optimizing the high-level faculty is the key. As the creator and implementer of innovation and entrepreneurship courses, as well as the organizer and theoretical researcher of innovation and entrepreneurship education, teachers' position and role in the implementation of innovation and entrepreneurship education are self-evident. The optimization of the training system model of the teaching staff under the new engineering concept has become a requirement of the times, and the effective combination of the two is directly related to the cultivation of new engineering talents with innovative thinking and entrepreneurial capabilities

2. CONNOTATION OF NEW ENGINEERING CONCEPT

The new engineering concept is a new engineering education concept based on China's economic transformation and upgrading, and the development of the new economy [1]. It serves the national strategy and faces the future development as the main goal. It uses cross-disciplinary integration, traditional engineering upgrades, and exploration of emerging engineering as the means [2]. The new concept of education, the new structure of disciplines and disciplines, the new model of talent training, the new quality of education and teaching, and the new system of classification development are the research content, and cultivate composite, innovative and leading engineering science and technology talents [3]. It has the characteristics of practicability, intersection, comprehensiveness and innovation.

3. EXISTING PROBLEMS IN THE DEVELOPMENT OF TEACHER TRAINING SYSTEM FOR INNOVATION AND ENTREPRENEURSHIP EDUCATION IN REGIONAL COLLEGES BASED ON THE CONCEPT OF NEW ENGINEERING

Under the guidance of the new engineering concept, the internal college and university innovation and entrepreneurship education teacher training system is gradually improving, and it serves the development of college innovation and entrepreneurship education with higher quality [4]. However, there are still some problems in the in-depth integration and development of the new engineering concept, which hinders the optimal development of the university teacher training team system [5].

3.1 The training management mechanism is not perfect, and the foreign exchange guidance policy needs to be strengthened.

The new engineering requires scientific management systems in colleges and universities, emphasizing the application level and development efficiency of the teacher training system. However, at present, the management and training mechanism of innovation and entrepreneurship education teachers in regional colleges and universities generally lacks individualization and scientificity. The system of training and completion of innovation and entrepreneurship faculty is poorly systematic, resulting in an imperfect training management mechanism. Innovative and entrepreneurial education personnel training and talent selection adopt a wide-in and wide-out mechanism. The completion standards are low or no standards. After the course is completed, it is automatically regarded as training completion. There is a lack of strict training and completion mechanisms for innovative entrepreneurship teachers. At the same time, the knowledge of innovation and entrepreneurship education is updated rapidly, developed rapidly, the situation changes are complex, the audience is wide, the personality characteristics of students are particularly obvious, and there is a lack of external guidance policies.

3.2 The training operation process is not standardized, and the content of innovation and entrepreneurship education needs to be enriched.

In some colleges and universities, the training functions overlap, and the core position of the management department has not yet been formed, which makes the overall process of innovation and entrepreneurship teacher training difficult to run, and it is difficult to improve the quality of innovation and entrepreneurship teachers in a short time. In terms of team status, due to the lack of scientific training needs analysis and objective evaluation of training results, it is difficult to objectively understand the objective effects and performance of training. At present, under the new engineering concept, the traditional inherent innovation and entrepreneurship teacher training management system conflicts with the new engineering development model. Innovative entrepreneurship teachers lack education practice bases in the training process, separation of teaching and learning, lack of corresponding fast paths and effective carriers, and improper policy application, which obviously runs counter to the requirements of the application of new engineering concepts.

3.3 The instructor training team is not stable enough, and the implementation of the new engineering concept needs to be deepened.

At present, most colleges and universities do not have a fixed innovation and entrepreneurship education teacher training team, and the teaching teachers are mostly those who are temporarily borrowed from the school based on the training content, or domestic and foreign experts temporarily hired due to work needs, resulting in the quality and effect of innovation and entrepreneurship education teacher training. Big uncertainty. This obviously conflicts with the stability of the current teacher training system for new engineering concepts, and it is difficult to deepen and develop the new engineering concepts within a certain period of time. The main reason why the implementation of the new engineering concept still needs to be deepened is that the integration and penetration of the concept in the implementation process is not enough. Against the background of rapid development of new technologies, new economies, and emerging industries, the requirements of new engineering subjects for teachers are in line with the connotation standards of the "Excellent Engineer Education and Training Plan". At the same time, according to the connotation and characteristics of the new engineering discipline, the new engineering disciplines are highlighted, reflecting the interdisciplinary integration of multi-disciplinary specialties and the industrial nature of the disciplines. Therefore, the new engineering department has high requirements for innovation and entrepreneurship teachers in terms of knowledge, industry experience, industrial capabilities, teaching level and comprehensive quality.

4. OPTIMIZATION OF TEACHER TRAINING SYSTEM FOR INNOVATION AND ENTREPRENEURSHIP EDUCATION IN REGIONAL COLLEGES UNDER THE CONCEPT OF NEW ENGINEERING

Aiming at the overall background of the new engineering concept, using the analysis of problems and causes as a platform, the regional college innovation and entrepreneurship education teacher training system optimization model was built through four aspects: operation, system, resources and training. Finally, a number of more mature measures such as new engineering specialty demand orientation, optimization schemes, research interests, and grasping of the new international engineering frontier demand have been formed.

4.1 Construct a new engineering specialty demand orientation at the operational level

Combining the new engineering concept, promoting the cross-combination of engineering resources, establishing the discipline integration of the teacher training system in engineering colleges, in-depth understanding of teacher training needs, formulating comprehensive training plans, and taking the evaluation system with engineering development as the core. Put forward the requirements of lifelong learning for teachers, so that teachers continue to expand their knowledge and pay attention to new, cross-cutting and cutting-edge disciplines related to majors. The off-job training requires the establishment of an industry-leading cooperation base, which enables teachers engaged in the industry to experience, accumulate experience in solving various cutting-edge problems, and maintain close cooperation with the industry, and even regularly study and practice at the base.

4.2 Implement the new engineering optimization plan at the resource level

Encourage qualified universities to cooperate with enterprises and scientific research institutes to build a group of national-level industry-university-research cooperation demonstration colleges, and explore the establishment of a long-term mechanism for cooperative education of industry-university-research cooperation based on the needs of industrial development. , To build a shared practice base or engineering innovation training center. In addition, the evaluation and evaluation system has an important functional positioning, and the establishment of the scientific evaluation system also reflects the wisdom and level of managers. The scientific evaluation and assessment system has a positive effect on the assessment personnel, and it is also necessary to establish an assessment team. According to the positioning of the university itself, it is necessary to reasonably balance the relationship between university teaching and research, scientifically determine the importance of teaching and research performance in the evaluation system, formulate and implement effective teacher classification management methods, and ultimately promote the orderly construction of new engineering and promote the concept of new engineering. Deep integration.

4.3 Give play to the demand thinking of new engineering subjects at the training level

Through the application of teachers, the recommendation of departments, and the selection of schools in multiple layers, the scientific nature of the teachers' training team is guaranteed. Strengthen the reform of teaching methods and teaching methods, learn from the latest research results, enrich teaching methods, and strengthen teacher-student interaction. Focus on promoting the in-depth integration of information technology and education, establish an education platform dominated by large-scale online open courses, high-quality online open courses represented by course applications and teaching services, and promote teaching methods centered on teachers' innovative re-learning. In addition, the new engineering colleges deepen the cooperative relationship with enterprises through industry-university-research cooperation and cooperative education, make full use of and share social resources, and directly hire the required innovation and entrepreneurship education teacher training experts, but considering the nature of the company's in-service staff, Teaching tasks should be flexible.

4.4 Adhere to the international frontier standards of new engineering at the institutional level

The teacher training system should improve the management system, strict training system, promote the combination of training mechanism, training process and practice, and promote the coordinated development of production, education and research. In terms of recruitment and talent introduction, we can draw on the successful and effective experience from abroad to establish a complete and operable recruitment process and talent introduction process. Combining the requirements of the construction of innovative and entrepreneurial teachers and the construction of new engineering, we must not only pay attention to the educational background and work experience of the training teachers, but also pay attention to the authenticity of the students' learning. For on-the-job training teachers, we must do a good job of teacher education, strengthen the systemic, continuous and effective vocational training, put forward clear mission requirements, clarify the major areas of curriculum construction, professional development, talent training and academic research, so as to train teachers Integrate into the specific work of the new engineering project as soon as possible.

5. THE SIGNIFICANCE OF STRENGTHENING TEACHER TRAINING FOR INNOVATION AND ENTREPRENEURSHIP EDUCATION IN COLLEGES UNDER THE CONCEPT OF NEW ENGINEERING

5.1 Promote the reform of innovation and entrepreneurship education under the concept of new engineering

Building a teaching team that adapts to the new type of engineering complex and transformation concept is the soul of the innovation and entrepreneurship curriculum construction and the key to the development of innovation and entrepreneurship education. The proposal of the new engineering concept provides a theoretical basis for the development and reform of teaching work. By optimizing the research model and later application of the innovation and entrepreneurship teacher training system, combining theory and practical teaching, the students' interests are transformed into methods, and the internal and external resources are strengthened. Scientific integration has promoted the adjustment and development of new engineering concepts.

5.2 Help improve the teacher training system under the new engineering concept

The Ministry of Education's "Opinions on Promoting Innovative Entrepreneurship Education in Colleges and Universities and Independent Entrepreneurship Work" emphasizes the need to strengthen the construction of innovative entrepreneurship faculty and staff, and guide professional teachers and vocational guidance teachers to actively carry out theoretical and case studies on innovative entrepreneurship education. Raise awareness and ability to carry out innovation and entrepreneurship education in vocational education and vocational guidance courses. Therefore, to study the optimization of the teacher training system of innovation and entrepreneurship education in regional colleges and universities, based on the "new engineering" concept, cross-reference the new engineering subjects, introduce the stability framework of curriculum reform, and optimize the model of the innovation and entrepreneurship teacher training system model construct.

5.3 Promote the overall optimization of the quality of regional teachers

The optimization of the innovation and entrepreneurship teacher training system in colleges and universities is a systematic guarantee mechanism. Through the suggestions on the optimization of the guarantee mechanism, it has promoted the establishment of the regional colleges and universities innovation and entrepreneurship strategy development system. Starting from the four dimensions of operation level, resource level, system level and training level, combined with the "five upgrades" of the new engineering concept, the core positioning of the quality of new engineering talents, the positioning of education and teaching evaluation, strengthening the accountability of the national strategic system and pursuing value promotion and introduction of international standards to improve the overall teacher training strategy system.

6. CONCLUSIONS

The faculty is the engine for the quality of talent training, and the level of the faculty is a direct influence on the quality of talent training. Whether it is the construction of traditional engineering or the construction of new engineering, the construction of the teaching staff is always the foundation of discipline construction, and it is the prerequisite and guarantee for carrying out academic research in the field of disciplines and the cultivation of professional talents in disciplines. Aiming at the problems of the current innovation and entrepreneurship faculty training system, the reasons for the content and form are explored, and an optimized model of the innovation and entrepreneurship education teacher training system under the new engineering concept is built to promote the realization of the goal of college education reform.

ACKNOWLEDGMENTS

The work is supported by the Fundamental Research Funds for the Central Universities (2017MS174).

REFERENCE

[1] Wu Aihua, Hou Yongfeng, Yang Qiubo, etc. Accelerate the development and construction of new engineering subjects to actively adapt to and lead the new economy [J]. Higher Engineering Education Research, 2017 (1): 1-9.

[2] Zhong Denghua. Connotation and action of new engineering construction [J]. Higher Engineering Education Research, 2017 (3): 1-6.

[3] Lin Jian. Future-oriented construction of new engineering in China [J]. Educational Research of Tsinghua University, 2017, 38(2): 26-35.

[4] Zhu Xiaoyun, Mei Weihui, Yang Chao. Difficulties and strategies for the construction of the faculty of entrepreneurship education in universities [J]. China Higher Education Research, 2012 (9): 82-85.

[5] Zhang Xiang, Yang Chuan. Quality requirements and cultivation paths of innovative and entrepreneurship teachers in universities [J]. Education Research, 2018, 39(5): 66-69.

A Study of Nuclear Magnetic Resonance on Fractal Characteristics of Pore Structure after Pressure-saturated Water

Wu Xukun, Wu Shaokang, Mo Lin
College of Mining, Guizhou University, Guiyang 550025, Guizhou, China

Abstract: In order to understand the characteristics of pore structure change of sandstone under pressure-saturated water, the fractal geometry theory combined with low field nuclear magnetic resonance (NMR) technology was applied to study the relationship between nuclear magnetic resonance fractal dimension and sandstone pore structure under different saturated water pressure. The experimental results showed that the bimodal structure of the nuclear magnetic resonance T_2 spectrum reflects the pore size of the sandstone. And the sandstone produces a lot of micro cracks in the water-saturated. According to the fractal characteristics, the fractal structure of the pore structure of the sandstone has bimodal characteristics, and the fractal dimension D1 and micropore volume of the tiny pore are negative. Correlation; the fractal dimension D2 of medium and large pores is closed to 3, and the pore structure is more complicated. With an increase in the pressure-saturated water, the smaller the fractal dimension of microporous, the more complete the pore development, the more uniform the distribution, the greater the porosity and water absorption. The larger the fractal dimension of the medium and large pores, the greater the reservoir heterogeneity and the lower the porosity. When the water pressure reaches 20 MPa, the NMR fractal dimension is the smallest, the pores are completely developed, and the interior of rock is destroyed.

Key words: Pressure-saturated water; Nuclear magnetic resonance technology; Fractal dimension; Porosity

1. INTRODUCTION

Water pressure has a great influence on the mechanical properties of rock, which can play a great effect in the control of hard and difficult roof. At present, many scholars have used fractal geometry to many fields of mining, and some studies have confirmed that all rocks are heterogeneous, and the heterogeneity of the holes in the rock are closely related to their permeability and the cracking ability (Xu et al.1996; Zhao et al.2019). Comprehensively used full-scale characterization of shale pore structure by mercury intrusion, liquid nitrogen adsorption and carbon dioxide adsorption. The study found that the shale pores conform to the fractal law, and the macropore pore structure is more complicated than microporous and mesoporous (Chen et al.2018). Using the fractal principle and mercury intrusion method to study the pore structure of tight sandstone reservoirs, it was found that the greater the fractal dimension, the higher the complexity of the tight sandstone pore structure and the stronger the heterogeneity (Yang et al.2015). The fractal characteristics of the pore structure of sandstone are discussed. The study finds that the fractal characteristics of sandstone pores are fractal. The fractal dimension quantitatively describes the fractal homogeneity of pores (Li et al.2006). It is found that the microscopic pore structure of tight sandstone has multi-fractal characteristics. In different reservoirs, the larger the integrated fractal dimension and the more fractal intervals, the worse the reservoir pore permeability (Jiang et al.2018). At present, there are many researches on the pore structure characterization of rock and coal seam based on mercury intrusion method, liquid nitrogen adsorption and carbon dioxide adsorption. For example, the mercury intrusion method measures the pores with the largest pores, not the size of the pores themselves, and can only accurately measure the pores above 15 nm (Sun et al.2017); the gas adsorption method not only has a long test time, but also has a measurement range of 0.3~200nm pore (Liu et al 2017; Yang et al 2013). However, nuclear magnetic resonance technology is still rare in the field of fractal theory. It is a new type of nondestructive analysis method, The detection range of the technology can reach 2nm~1mm, the precision reaches ±1nm, and the sample can be tested repeatedly, and the fractal dimension of the method can better characterize rock properties. In recent years, using the fractal theory of nuclear magnetic resonance technology to obtain the fractal dimension of sandstone and coal seam to characterize its reservoir properties (Li et al.2018; Yu et al.2018; Lei et al.2018; Tao et al.2018). In this paper, based on the study of the fractal characteristics of rock pore structure by a large number of scholars, and used the fractal geometry theory to study on fractal characteristics of pore structure of saturated sandstone by NMR technique. Because of the self-similarity of rock itself, it can be fully understood that the pore size and distribution characteristics and complexity of the hard roof rocks. Therefore, it is instructive to choose the suitable water pressure for weakening the hard roof.

2. EXPERIMENTAL METHOD

The T_2 spectrum and porosity of the sandstone rock samples were tested by fixing the saturated water pressure for 8 h and setting different saturated water pressures (5 MPa\10 MPa\20 MPa). First, the sample was placed in the oven and dried at 60 ° C for 24 h; the dry weight was taken out and the T_2 spectrum of the dried sample was taken; then the dried core was evacuated for 12 h and then saturated with water for 24 h to test the T_2 spectrum after water was saturation; Secondly, the core after vacuuming and saturating is placed in the pressure saturation device, and performing different saturated water pressure test T_2 to compare the effects of different saturated water pressure on the microscopic pore structure. Finally, standard calibration and test the porosity of sample.

3. FRACTAL MODEL BASED ON NMR SPECTROSCOPY

It can be seen from the porosity component under the saturated water pressure that the T_2 spectrum of 1 # and 2 # changes the same, and the T_2 relaxation time spectrum ranges from 0.01 to 1000ms. The T_2 spectrum of the sandstone of this group has a bimodal structure, and the peak on the left side is much larger than the peak on the right side. At the same water pressure time, as the pressure gradually increases from negative pressure (0.1 MPa) to 5 MPa\10MPa, and the corresponding peak area increases from 8554.9\11945.06 for vacuuming to 12405.8\16162.46 for saturated water pressure P=10MPa, which increased by 44.34% and 35.31% respectively; the area of T_2 spectral envelope increased rapidly. When the water pressure increases from 10MPa to 20MPa (saturated water for 48h), the variation of T_2 is not significant. The sandstone of the group has discontinuous bimodal characteristics, that is, the left peak represents the pore size distribution of the micropores, and the right peak represents the pore size distribution of the mesopores and macropores, indicating that the pore volume of the micropores of the sandstone is much larger than the pore volume of the medium and large pores; As the water pressure increases, the right wing of the left edge of the T_2 spectrum of the rock sample gradually shifts to the right, indicating that the sandstone generates a large number of micro-cracks during the saturated water process

To further characterize the heterogeneity of sandstone pore structure, the equation (1) knows that NMR T_2 spectrum data has a large number of pore structure information and is used in the laboratory for capillary pressure curves (Yan et al.2017; Yan et al.2017).

$$S_v = \left[\frac{T_{2\max}}{T_2}\right]^{D-3} \tag{1}$$

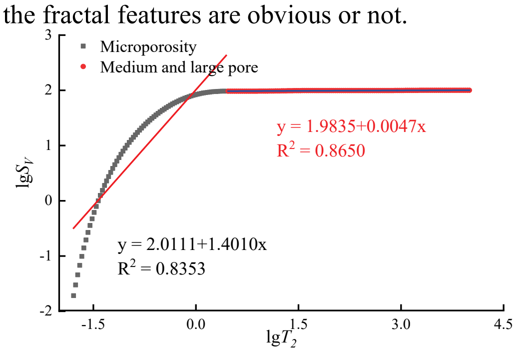
Take the logarithm of both sides of equation (2):

$$\lg(S_v) = (3-D)\lg(T_2) + (D-3)\lg T_{2\max} \tag{2}$$

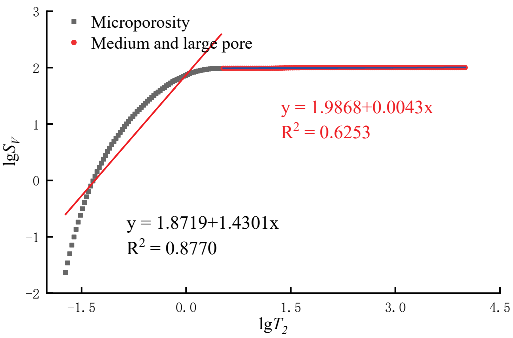
Where T_{2max}--- maximum relaxation time, ms; S_v---the percent of cumulative pore volumes with a transverse relaxation time less than T_2 in the total volume of pores, %; D----Fractal dimension.

It can be known from equation (2) that when the pore structure of the sandstone conforms to fractal geometry, there is a linear relationship between $\lg(S_v)$ and $\lg(T_2)$, the linear regression analysis of the experimental data by equation (3). The fractal dimension of the sandstone pore can be obtained from the coefficient A of the regression equation D=3-A.

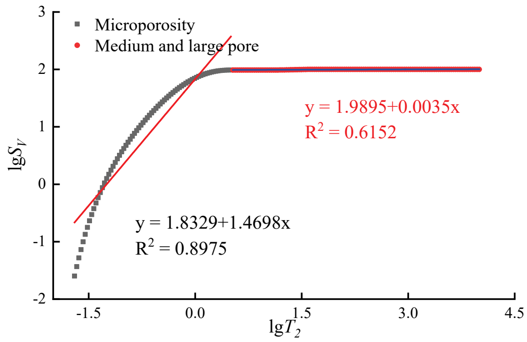
It can be seen from the relationship graph of $\lg(S_v)$--$\lg(T_2)$ (as shown in Fig.1~2) that the trend line of the relationship curve is not a straight line with obvious turning points, which can be divided into two parts, one part is micropores, and the other part is mesopores and macropores; The fractal dimension D is calculated by the coefficient A of the linear regression equation (as shown in Table.1). According to the fractal geometry theory, the fractal dimension is generally 2~3. The smaller the fractal dimension, the more regular the pore shape, the smoother the pore surface, the better the pore permeability relationship of the reservoir, the greater the reservoir seepage property; the fractal dimension is close to 3, the more complex the pore structure, the stronger the anisotropy; if the fractal dimension is greater than 3, it means that the corresponding pores do not have fractal structure (Li et al.2006). The fractal structure of sandstone pore structure has double fractal characteristics, which means that the structure of the micropores and the mesopores is uneven and both have anisotropy. It can be seen that the micropore structure of 1# and 2# sandstones has the largest fractal dimension D1 in the vacuum saturated state by table 1, respectively 1.5990, 1.6168; D2 is the smallest, respectively 2.9953, 2.9940; with the increase of saturation water pressure (0~10MPa), the fractal dimension D1 varies between 1.6168 and 1.4557, showing a downward trend, D2 changes between 2.994 and 2.9965, showing upward trend; when the water pressure reaches 20MPa, the sandstone has reached saturation. the fractal dimension D1 and D2 are reduced; damage to the internal structure of the sandstone by the application of pressure, resulting in microscopic pore expansion, the volume increases, the micropore gradually develops completely, and the internal pore structure tends to be stable. According to the overall law, as the saturation pressure increases, the fractal dimension D1 of micropores is negatively correlated with the micropore volume. The fractal dimension D2 of the mesoporous and macroporous pores is close to 3, the change is small; it indicates that the pore structure of pores and macropores is complicated in sandstone, the anisotropy between the pores is strong, and the fractal features are obvious or not.



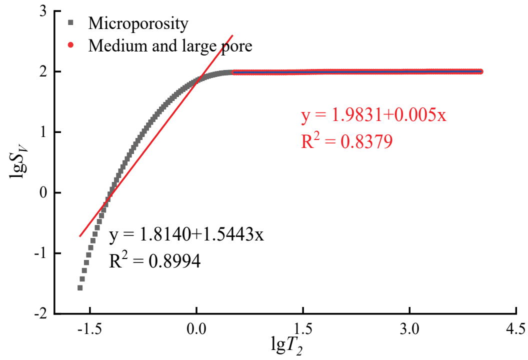
(a) Vacuum-8h



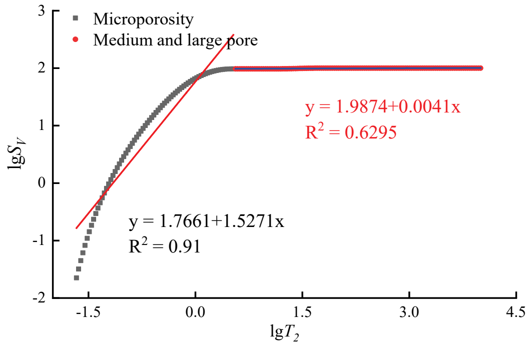
(b) 5MPa-8h



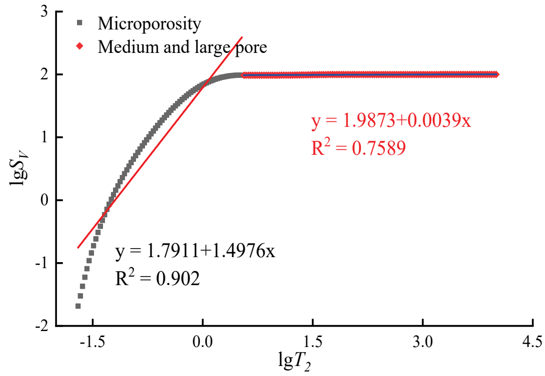
(c) 10MPa-8h



(d) 5MPa-8h

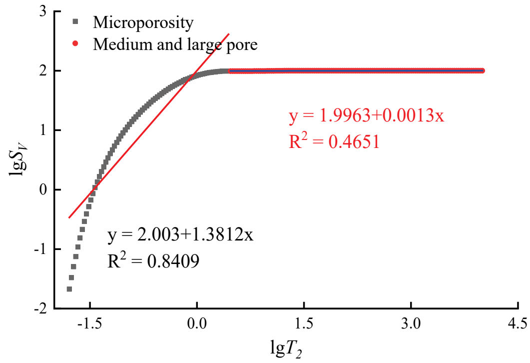


(d) 20MPa-48h

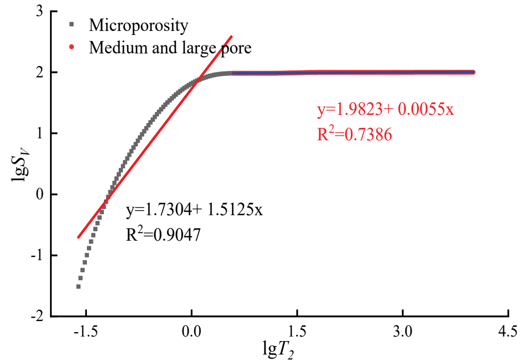


(e) 10MPa-8h

Fig.1 Relationship between lgS_V and lgT_2 under the water saturation pressure of 1#



(e) Vacuum-8h



(a) 20MPa-48h

Fig.2 Relationship between lgS_V and lgT_2 under the water saturation pressure of 2#

Table 1: Pore fractal dimension of sandstone samples

Saturated water pressure	1#						2#					
/MPa	ϕ/%	ω_a/%	D_1	K_1	D_2	K_2	ϕ /%	ω_a/%	D_1	K_1	D_2	K_2
Vacuum	1.11	0.41	1.60	1.40	2.9953	0.0047	1.39	0.51	1.62	1.38	2.9987	0.0013
5	2.27	0.83	1.54	1.43	2.9957	0.0043	2.60	0.95	1.56	1.54	2.9950	0.0050
10	2.55	0.93	1.52	1.47	2.9965	0.0035	2.83	1.04	1.50	1.50	2.9961	0.0039
20(48h)	2.83	1.03	1.47	1.53	2.9959	0.0040	3.11	1.14	1.49	1.51	2.9945	0.0055

RESULTS DISCUSSIONReservoir physical properties are not only related to the nature of the rock itself, but also affected by the complexity of the pore structure, including the roughness of the pore surface, distribution shape and connectivity, etc (Chen et al.2012; Zhang et al.2007). The correlation between NMR fractal dimension D1\D2 and sandstone porosity and water content is very different. It can be seen that with the increase of saturated water pressure, the fractal dimension D1 of micropore is negatively correlated with porosity ϕ and water content ω_a, and the mesoporous and macroporous pore fractal dimension D2 has no correlation with porosity ϕ and water content ω_a. From the fractal dimension of D1 and the relationship between the water content of sandstone under different water pressures shows that the fitting degree of pore fractal dimension of 1#\2# rock samples is R_2=0.8755, 0.8676; It can be seen that there is no fit in the relationship between D2 and water content. From the relationship between the fractal dimension D1 and porosity sees that the fitting degree of the pore fractal dimension of the 1# and 2# rock samples is R_2=0.8779, 0.8606; Conversely, the fractal dimension D2 has no correlation with the porosity); It shows that the fractal dimension D1 of the sandstone micropores is negatively correlated with the porosity and water content of the sandstone; The fractal dimension D2 of the mesoporous and microporous pores has no obvious correlation with the porosity and water content of the sandstone. The results show that the smaller the fractal dimension of micropores, the smaller the micropores develop, the more uniform the distribution, the stronger the connectivity, the greater the porosity and permeability. The larger the fractal dimension of the mesoporous and microporous pores, the greater the reservoir heterogeneity gradually, porosity and permeability reduced.

4. CONCLUSIONS

In this paper, the basic physical parameters such as T_2 spectrum, porosity and pore size distribution of sandstone samples were measured by nuclear magnetic resonance (NMR) technique. The relationship between fractal dimension and pore structure of sandstone under different saturated pressures was studied. Analyze and draw the following conclusions:

Through the NMR test of sandstone after water-saturation, the sandstone has isolated bimodal characteristics, the value of the left peak is much larger than the value of the right peak, and with the water pressure increases, the right wing of the left edge of the T_2 spectrum of the rock sample gradually shifts to the right, indicating that the sandstone produces a large number of micro-cracks during the saturated water process.

According to the characteristics of fractals, the pore structure fractal of sandstone has double fractal characteristics, one part is micro-fractal fractal, and the other part is mesoporous and microporous pore fractal; indicating that the structure of micropore, mesoporous and microporous pore is uneven and anisotropy.

From the overall law, with the increase of saturated water pressure, the fractal dimension D1 of micropores is negatively correlated with the micropore volume; the fractal dimension D2 of mesoporous and microporous pores has no obvious correlation with sandstone porosity and water content.

ACKNOWLEDGMENTS

This work is supported by the National Natural Science Foundation of China (51764010, 51874109), the science and technology support plan of Guizhou Province (Science support of Guizhou Province [2019] 2861), Platform Talents of Guizhou Province [2019]5674.

REFERENCES

[1] A. Odajima, Effects of distribution of correlation times upon T_1 and T_2 in nuclear magnetic resonance, Prog. Theor. Phys. Suppl. 10 (1959) 142–158.

[2] Bai ST, Cheng DJ, Wan JB, et al. Quantitative characterization of nuclear magnetic resonance T_2 spectra of sandstone rocks[J]. Acta Petrolei Sinica, 2016, 37(03):382-391+414.

[3] Chen JK, Zhu YM, Cui ZB, et al. Comprehensive Characterization and Fractal Characteristics of Pore Structure of Longmaxi Formation Shale I n Southern Sichuan[J]. LITHOLOGIC RESERV OIRS, 2018, 30(01):55-62.

[4] C. Zhai, L. Qin, S. Liu, et al. Pore structure in coal: pore evolution after cryogenic freezing with cyclic liquid nitrogen injection and its implication on coalbed methane extraction, Energy Fuel 30 (7) (2016) 6009–6020.

[5] Chen L, Tan KX, Liu J, et al. Fractal Characteristics of Pore Structure of a Sandstone Uranium Deposit in Xinjiang[J]. Journal of Sun Yatsen University (Natural Science), 2012, 51(06):139-144.

[6] Li ZF, He SL, Yang WX. Fractal Feature Description of Pore Structure in Sandstone Reservoirs[J]. Journal of Chengdu University of Technology (Natural Science Edition), 2006(02):203-208.

Innovation of Multimedia Interface Design Based on Cognitive Load Model

Xianghua Song
School of Art and Design, Zhongyuan University of Technology, Zhengzhou 450000, China

Abstract: Multimedia instructional information design, which takes into account the operating mechanism of the human brain, can lead to meaningful learning. Based on this understanding, Mayer proposed the cognitive theory of multimedia learning (ctml). There are three basic hypotheses in the cognitive theory of multimedia learning: dual channel hypothesis, limited capacity hypothesis and active processing hypothesis. The dual channel hypothesis means that human beings process visual and auditory materials in two different channels. When the information is presented in the eyes, human beings begin to process the information in the visual channel; when the information is presented through the ear, the human uses the auditory channel to process the information. The limited capacity hypothesis means that the amount of information that each channel can process at the same time is limited. Positive processing hypothesis refers to people's active involvement in cognitive processing to establish mental representation consistent with their experience. The theory emphasizes that in order to achieve effective cognition, it is necessary to receive appropriate amount of audio-visual multimedia information, integrate the generated speech and image models with corresponding prior knowledge, so as to complete cognitive activities.
Keywords: Cognitive Load Model; Multimedia Learning

1. INTRODUCTION
In multimedia learning, visual and lexical materials are processed in different processing systems. Visual channels eventually produce graphical representation, and lexical channels finally produce. Word representation; cognitive construction depends on learners' active cognitive processing in the process of learning. Meaningful learning only occurs when learners actively select relevant word and picture information, organize them into aggregated words and visual representations, and integrate the corresponding words and visual representations and another related knowledge. The processing energy of visual and word working memory is limited, Therefore, if there are too many elements to be processed in visual or auditory channels, it will cause cognitive overload and hinder learning.

2. COGNITIVE LOAD THEORY
Cognitive load theory focuses on the interaction between individual cognitive structure and information structure. It holds that the information structure presented in the teaching process must adapt to the cognitive structure system of learners in order to achieve effective teaching [1-5]. Cognitive load theory studies learning from the perspective of resource allocation. Cognitive load is the total amount of cognitive resources that learners need to complete specific learning tasks. If the total amount of resources needed in the process of learning exceeds the total amount of resources that individuals can provide, it will cause cognitive overload and affect the efficiency of learning. Based on different sources of cognitive load, sweller divides cognitive load into internal cognitive load, external cognitive load and generative cognitive load [6]. Internal cognitive load is the cognitive load brought by knowledge itself, which is caused by learning
It is determined by the relationship between the concepts or elements contained in the material and the learners' experience level. External cognitive load is the cognitive load that learners spend on operations unrelated to teaching objectives because of external information presentation and teaching processing. Generating cognitive load is used for schema acquisition and rule automation, which promotes learning.

3. RESEARCH ON THE COMPOSITION OF MULTIMEDIA INFORMATION AND COGNITIVE PSYCHOLOGY
3.1. Principles of cognitive psychology from the perspective of cognition

Cognition refers to the process of people's cognitive activities. Cognitive psychology regards the cognitive process as a system of information processing according to certain procedures, which is composed of a series of continuous cognitive operation stages such as information acquisition, coding, storage, extraction and use. Cognitive activities include attention, perception, memory and thinking. In the design of multimedia information, we should pay attention to the characteristics of students' cognitive psychology and adopt corresponding analysis according to the specific structure.

3.2. Pay attention to the form of content

3.2.1. Novelty

Psychological studies have shown that when people understand the world, only new and different information can be stimulating and attractive. Only when multimedia information has vivid and novel stimuli, can it attract the attention of learners and then enter the learning role. It is not the things and their characteristics that people have never experienced, but the abnormal changes of stimulus characteristics or the abnormal combination of various characteristics.

3.2.2. Dynamics

Psychology points out that active and changing stimuli are easier to attract people's attention than inactive and unchanged stimuli. Practice has also proved that in line with the movement and change of people's psychological activities, it can make people excited and happy, so as to promote and strengthen attention. On the contrary, it will make people feel tired and tired, thus dispersing and diverting the direction and concentration of attention.

3.2.3. Perception

Learning begins with perception. Only when the picture of teaching material is effectively perceived by readers, can its content be quickly and accurately transmitted. Here are some psychological rules.

4. PRINCIPLE OF SHORTEST DISTANCE

Visual psychology points out that people tend to perceive objects close to each other as a whole when observing things. If the visual information is divided into groups according to the spatial distance, the perception time can be shortened and the efficiency of information perception can be improved.

4.1. Similar principle

In psychology, similar parts are easy to be perceived as a whole. In this way, when we design the picture of multimedia courseware, we should consciously classify and combine the information of similar attributes, so as to speed up the perception speed of readers.

4.2. Highlight the main body

Generally speaking, the greater the contrast between the subject and the background, the easier the subject is to be perceived. Then, in the picture design, we should properly use some methods to highlight the main body. The common methods are: to increase the contrast between the subject and the background in terms of brightness and hue, simplify the background, and virtualize the background. It should be pointed out that in the design of multimedia teaching materials, many designers blindly pursue the novelty and dynamic effect on the surface. No matter what graphics, images, images and so on, they are displayed all at once, forming meaningless cumbersome and making readers at a loss.

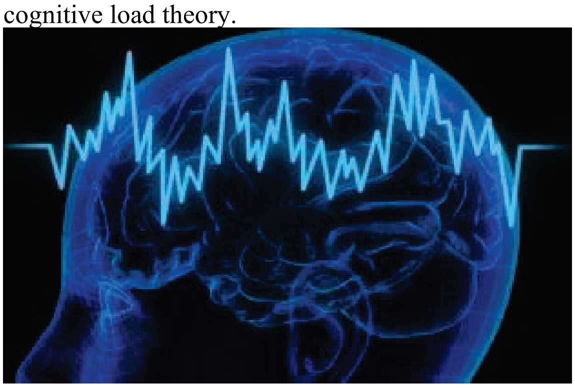
4.3. Arrange pictures according to visual habits

People usually watch things from left to right, from top to bottom[1], and the observation frequency of each part of the picture is also different. When designing the picture, we should follow the visual habits and reasonably arrange the primary and secondary content areas[2].

4.4. Color perception law

Experiments show that people's perception speed of various colors is not the same, the fastest perception is red, green, yellow, and the slowest is white. In general, the warm color is greater than the cold color, the primary color is greater than the complementary color, the complementary color is greater than the achromatic color, and the red color is the strongest[3]. Therefore, when designing the pictures of multimedia teaching materials, we should first analyze the primary and secondary contents, style and so on. Then choose the color reasonably to improve the perception efficiency.

Multimedia combines text, graphics, sound, animation, video and other elements. It has rich content and wonderful pictures. It is more vivid than single media and can provide more abundant information presentation. Therefore, with the popularization of computer and network technology, multimedia is widely used in teaching and learning process, which brings new opportunities to education and teaching. In recent years, more and more people realize that in order to improve the effect of multimedia teaching, it is necessary to design multimedia learning materials according to the cognitive rules of learners in the multimedia environment. In recent years, the research on multimedia learning abroad has experienced three stages: the view of transmission media, the view of representation and the view of sensory channel. These three views represent a gradual and in-depth development process of multimedia learning research. At present, cognitive load theory has become a basic theory to describe the cognitive process in multimedia learning. It is very necessary to design a proper multimedia learning environment and effectively control the cognitive load. Multimedia interface is an interactive channel between learners and multimedia learning materials. The presentation of interface content will directly affect the effectiveness and efficiency of learners to obtain information. This paper mainly discusses the design strategy of multimedia interface information from the cognitive load theory.



With the rapid development of mobile Internet technology and wireless network technology, the application of Internet technology in the field of education has been increasing in recent 10 years, which plays an indispensable role in promoting education. Under the background of education informatization, the rapid development of information technology has a great impact on education. The digital form of textbooks, namely digital textbooks, has become the core resources and hot spots of basic education informatization. Digital teaching material development is the combination of teaching material publishing, website and software development. It is not only a teaching material, but also a teaching website and teaching software. Its focus has gradually shifted from the design of the content and function of the textbook to the learner experience design. People are more and more aware that in order to improve the quality of teaching, it is necessary to design digital textbooks according to the cognitive rules of learners. The interface of digital teaching material is the direct channel of interaction between learners and digital teaching material, and is the key part of the development and design process of digital teaching material, which will directly affect the practicability of digital teaching material and the experience of learners. However, an unreasonable interface design of digital teaching materials is easy to bring a large cognitive load to learners, resulting in low learning efficiency and poor experience. To solve this problem, this paper starts from the theory of cognitive load, according to the strategy of effective control of cognitive load, summarizes the design principles that can reduce the cognitive load of learners, combined with other interface design principles, to achieve the purpose of reducing the cognitive load of interface, and guide the optimization design of interface of digital teaching materials. Based on the actual case of interface design of digital teaching materials, this study evaluates the design of the original interface by three cognitive load measurement methods: subjective (NASA-TLX scale), objective (eye movement physiological experiment) and task performance method. Through the experiment, the cognitive load of the original interface is measured and evaluated, and the design problems in the original interface are found, Aiming at these problems, combined with the interface design principles and requirements that can reduce the cognitive load, the navigation, layout and login modules of the original interface are re optimized. The optimized pages are also evaluated by three cognitive load measurement methods: subjective (NASA-TLX), objective (eye movement physiological experiment), and task performance. By comparing and analyzing the experimental data of the original interface and the optimized interface (such as task completion time, completion rate, fixation times, saccade times, pupil diameter, blink times), it can be concluded whether the cognitive load of learners is reduced, whether the optimized interface design conforms to the cognitive law of learners, and whether the optimized interface design scheme of digital textbook is better than the original interface, and it has higher availability.

ACKNOWLEDGEMENT

General topic of National Social Science Foundation Pedagogy "Interactive Aesthetic Education Precision Poverty Alleviation New Model Construction Research "(item number: BLA180224).

REFERENCES

[1] 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019, Proceedings.

[2] Zhu Baojun, Huo Qin, Niu Linlin. Establishment and evaluation of tutor training system for young teachers in college hospitals [C]. modern distance education of traditional Chinese medicine in China, 2019.

[3] Zhong Huiqun, Su Xin. Opinions on the training of young teachers in Colleges and universities of traditional Chinese medicine; Brand [J]. Theory monthly, 2014.

[4] Xue Pei. Research on teaching supervision mode and evaluation index system in Colleges and universities of traditional Chinese medicine [C]. Beijing University of traditional Chinese medicine; 2016.

[5] Zhu Haiyan, Xie Xuejiao, Xie Sijian. Research on the construction of young teachers' [J]. team in Colleges and universities of traditional Chinese Medicine - "science and education collection", 2015.

[6] Wang Shulin, song Yudan. Research on training young teachers of Chinese medicine ye ye ye Ruan school by integrating resources [C]. annual meeting of TCM prescription science of Chinese Medical Association, 2009.

Present Situation and Countermeasure Research on the Training of Talents of Special Education Majors in Chinese Colleges and Universities Under the Background of The New Era

Xinmei Zhao
School of Information Engineering, School of Arts and Science, Yunnan Normal University, Kunming, Yunnan 650221, China

Abstract: Special education majors have received high attention from the society, and there are many projects about special education majors, but there are very few systematic studies and subsequent reflections on the training programs of special education professionals. In colleges and universities in China, there are still many shortcomings in special education majors. Special education only pays attention to some areas that are paid more attention to. On the basis of analyzing the present situation of special education professionals in colleges and universities, this paper analyzes the deficiency of special education professionals in colleges and universities and gives some countermeasures to improve them.

Keywords: Higher education; Special education; Investigation and research

1. INTRODUCTION

In the special education major of colleges and universities in our country, most colleges and universities can set up courses according to their own development needs. The major also has its own characteristics on the whole, but the shortcomings are also very obvious. These deficiencies will hinder the development of special education majors. By 2020, more than 50 institutions of higher learning in the have offered special education courses, with a total of more than 3, 000 students, including hundreds of masters and dozens of doctors [1-3].

2. CURRENT SITUATION OF SPECIAL EDUCATION IN COLLEGES AND UNIVERSITIES

2.1 Areas of concern remain single

As a whole, Mainland efficient special education pays attention to the education of different kinds of special people, but the research programs of special education majors in some colleges and universities are not diverse enough, and the similarities between different colleges and universities are too high. The degree of openness is not high enough. Mainland high-efficiency special education majors do not pay enough attention to some people with special needs, such as disabled children, girls and low-income groups, which have some disadvantages for the group receiving education, and the people receiving education can not reach the needs of special education through school education. The other deficiency is that Mainland special education majors in colleges and universities have never set up degree programs for foreign students, and few colleges and universities teach foreign languages. Many schools do not even disclose their research projects to the society. This is not conducive to the internationalization of special education majors in Mainland colleges and universities. The teaching scheme in special teaching major does not pay attention to the practicability of teaching, and most colleges and universities pay more attention to theoretical research, which leads students in colleges and universities to pay more attention to theoretical research. Students trained in this educational atmosphere lack practical skills and operational ability.

2.2 Lack of personality in training goals

Mainland special education majors in colleges and universities attach great importance to the overall improvement of students, which can be seen from the development goals of special education in Mainland colleges and universities. Without their own personality and advantages, students naturally lack competitive advantage after coming out of school. Too much attention to the overall development of students will also make students lose the opportunity to get better development in some way. Comprehensive development means that the development goal is too ambitious and the energy will be too scattered. For college students who face their jobs directly, this will make them lack some irreplaceable. That is to say, it is easy to be replaced after entering the post. Another manifestation that many colleges and universities pay more attention to theory than practice is that students receive theoretical education in school far more time than students practice in practice.

2.3 The curriculum is not reasonable

Mainland university curriculum is not scientific enough, many colleges and universities do not want to put their own school teaching courses and programs on the Internet, nor do they want to put their own curriculum content on the Internet for all researchers to use. Learners in other colleges and universities lack access to information, which is a manifestation of the lack of openness in university curriculum. Mainland the proportion of professional courses in special education majors in colleges and universities is relatively low in the total number of courses. Most of the courses in colleges and universities are based on general curriculum content, and students' professional quality can not grow rapidly.

2.4 Lack of innovation in training modalities

Colleges and universities in Mainland lack diversity of teacher training, teaching methods have no new ideas, basically only theoretical teaching and practice to the actual scene, and theoretical teaching occupies most of the teaching time and teaching energy. Among the special education majors in Mainland colleges and universities, teaching methods based on lectures are used more often. Under the new era background, education that does not make use of the products of the times and follow up the trend of educational development will be eliminated. Online communication and other learning methods can broaden students' horizons and strengthen students' international contacts and exchanges.

2.5 Evaluation system needs to be improved

Mainland special education majors in colleges and universities usually have no uniform requirements in enrollment, grade evaluation and degree awarding, although they are strict, but there are great differences between schools. Major with the same curriculum has different credit evaluation standards in different schools, and the evaluation standards of each school are different. Students have no reference standards when applying for major, and in enrollment and degree awarding, the thresholds of each school are different. There is no consistent standard between colleges and universities, which provides obstacles for students to apply for examination. Like other professional courses, the examination of special education majors also attaches great importance to the final examination results. From a certain point of view, this is a reflection of the emphasis on theoretical knowledge. Many colleges and universities attach too much importance to students' participation in the curriculum and not to whether students have learned real knowledge. For the final graduation degenerate, the school also pays more attention to the number of words of the paper, the format of the paper and what kind of journal the paper can be published in, which also directly guides the students to pay attention to the superficial kung fu and not to devote their energy to the study and mastery of the actual knowledge. By investigating the actual situation, Mainland lack of a complete system for the training of special talents education in colleges and universities, the training plan is not rich enough, the means are not novel and interesting enough, and the students' competitiveness is insufficient.

3. COUNTERMEASURES TO IMPROVE THE PRESENT SITUATION OF SPECIAL PERSONNEL TRAINING IN COLLEGES AND UNIVERSITIES

3.1 Enhancing diversity

There is a problem in the current special education major that these majors can not meet the different educational needs of the population, in our society, because of the better economic development, various marginalized groups have gradually attracted the attention of the society, some special groups, especially minor groups of education are paid attention to by the social and government departments. These special groups have different physical and psychological defects and different educational needs, which determines that the corresponding teachers should have different skills and have enough theoretical and practical knowledge for the future special education teachers in colleges and universities. The contents of special education in colleges and universities must meet the needs of different people. Teachers must respect the physiological and psychological differences of different special groups and carry out teaching according to the characteristics of different special groups so as to receive good teaching results. The professionals of special education in colleges and universities should have different skills to meet the needs of different people, such as the needs of people with physical and psychological defects, the needs of special people with different educational backgrounds, and so on.

3.2 Enhanced novelty

Special people are different from ordinary people. The teaching skills of special population education in colleges and universities must also have enough skills and different methods, especially in the network age. Higher education should follow the footsteps of the times and be good at using the tools of the times. Educators in colleges and universities are faced with future educators. The students they teach are future teachers and disseminators of knowledge. They must have an open and tolerant attitude and the spirit of daring to change and innovate. Students in colleges and universities come from different backgrounds and social strata. They come to colleges and universities and choose special education majors in order to contribute to society and bring hope and warmth to groups that are not concerned by society. Educators in colleges and universities must pay attention to integrating innovative skills into their in their own teaching methods.

3.3 Expansion of openness

Colleges and universities are a place to learn, in colleges and universities, academic exchanges should be encouraged, different opinions and views should be able to be inclusive, similarly, there should be room for criticism and mistakes here. Colleges and universities are the first place to learn, where the latest and most abundant resources should be available. However, the energy and money invested by many colleges and universities in the special education specialty are not enough to support the development and rise of the specialty, and even close the special education specialty in our school. Colleges and universities should create a relaxed learning environment for students, increase the exchange of special education majors with special education professionals in other colleges and universities, and learn more from advanced schools. Then the content suitable for the school will be used in the development of the school. Colleges and universities should also be good at facilitating various scientific and technological means, such as network courses and multimedia teaching tools. Through the network, students can quickly obtain all kinds of learning materials they need, and can also communicate easily with scholars from other colleges and universities and other countries. If the network knowledge is integrated into the curriculum, the competitiveness of students in all aspects can be improved, and the ability to obtain information can be strengthened.

4. CONCLUSION

Colleges and universities should pay attention to strengthening the competitiveness of special education professionals, changing the existing state of lack of openness of special education majors, strengthening the richness of curriculum content, and using various teaching means to train talents with one skill.

REFERENCES

[1] Wang Yan, etc. on Teacher Training in Special Education in China Beijing: Beijing normal University Press, 2019(9):236-239.

[2] The national primary and secondary school teacher's professional development survey project team. China Primary and Secondary School Teachers Professional Development Survey and Policy Analysis Report [J]. Educational Research, 2019(3):6.

[3] Zhao Xiao Xiao. Comparative Study on Teacher Training in Higher Special Education Specialty [D]. Chengdu: Sichuan normal University, 2019(7):60-61.

The Influence of Word of Mouth on The Purchase Decision of Internet Consumers

Yufeng Huang
Suan Sunandha Rajabhat University, Bangkok, Thailand

Abstract: Under the network environment, the spread of word of mouth has a new feature, is no longer the one or more under a single line. At the same time, there are a lot of word of mouth, not only affecting the reputation of the enterprises but it also will purchase behaviors of consumers. In this paper, catering consumer is the object of study, by collating and summarizing research scholars on traditional word of mouth, networking reputation, word of mouth and other effects on purchasing behavior and consumer word of mouth effect, we will select independent variables from three aspects, and the perceived risk as a mediating variable, trust propensity as the moderator. About word-of-mouth sender, we will select five variables: sender professional; the aspects of the network reputation feature selected five variables: the number of word-of-mouth network, the information intensity, content subjectivity, timeliness and visual effects; recipient areas select a variable: the degree of network involvement of negative word-of-mouth recipient. Through these variables, building a research model, by designing and collecting data, and then using SPSS statistical software for mathematical statistical analysis, then finish significance testing, Modify the model based on the test results. Finally, explaining the result and Putting forward effective measures for the enterprises. So, it has an important significance to manage tne negative iwom for enterprises.

Key words: Internet word-of-mouth; Buying intention; Trust propensity; Catering

1. INTRODUCTION

Under the upsurge of online shopping, online shopping has also developed rapidly. As of the end of 2011, in the ranking of the growth rate of online services, online shopping has become the second fastest growing online service throughout the year. The number of consumers participating in online shopping reached 64.65 million, with an annual growth rate of 244.8%. the purchase decision-making consumption in 2013 was 18.78 billion yuan, a net increase of 9.21 billion yuan over 2012, an annual growth rate of 97.8%, accounting for 52.4% of the market share for the whole year. The main consumer group for purchase decision-making is the white-collar group (HANSON 2003), Research data show that 60% of white-collar workers will use the Internet to check food websites in advance before going online to prepare for online shopping. And in order to obtain greater benefits, they will be more willing to choose online shopping, and 56.5% of these white-collar workers will browse the word-of-mouth reviews of online shopping platforms through food websites (Hennig-Thurau, 2003). The size of China's mobile internet users and their proportion of the overall netizens

This article will discuss the research on the impact of Internet word of mouth on consumers and test the significance of the research hypothesis.

2. LITERATURE REVIEW

2.1 The concept of word of mouth

Huang Minxuan (2011) believes that word-of-mouth refers [to the consumer's approval or dissatisfaction with the use or consumption experience as different as expected, and the consumer conveys the experience through the network channels to those who know or do not know each other, and suggests that everyone actively or carefully buy the process.

2. 2 Network word-of-mouth characteristics

In this paper, the research variables of network word-of-mouth characteristics are mainly quantitative research variables. In recent years, the rapid development of the Internet has upended the traditional business shopping model. Then the influence of word-of-mouth on consumer shopping decision-making has attracted scholars to start researching. For example, fufu (2007) network word-of-mouth influence stomp on the concept model of consumer willingness to buy, only from the network word-of-mouth characteristics of the selection of research variables, without considering the word-of-mouth sender and receiver characteristics. The results show that the quantity, quality and network word-of-mouth information form of network word-of-mouth will influence consumers' willingness to buy by perceiving information and perceived popularity, and perceived information and perceived popularity are the intermediary variables in the research model, as shown in Figure 1. Finally, for the business to put forward rationalization proposals, that is, to enrich the network word-of-mouth information, increase its credibility.

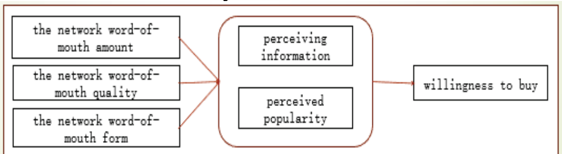


Figure 1 fufu (2007) network word-of-mouth influence stomp on the concept model of consumer willingness to buy

3. RESEARCH METHODOLOGY

3.1 Model building

3.2 Model Assumptions

H1: Word-of-mouth senders' professionalism is significantly affecting consumers' willingness to buy online.

H2: The number of word-of-mouth is significantly affecting consumers' willingness to buy online.

H3: Word-of-mouth information intensity is significantly

affecting consumers' willingness to buy online.
H4: The subjectivity of word-of-mouth content is significantly affecting consumers' willingness to buy online.
H5: The timeliness of word-of-mouth is significantly affecting consumers' willingness to buy online.
H6: The visual effects of word-of-mouth are significantly affecting consumers' willingness to buy online.
H7: The recipient's network involvement significantly affects the consumer's willingness to buy online.
H9a: Trust tendency plays a regulatory role in the relationship between word-of-mouth sender's professionalism on the willingness to buy online.
H9b: Trust tendency plays a regulatory role in the relationship in which word-of-mouth quantity affects online shopping intentions.
H9c: Trust tendency plays a regulatory role in the relationship between word-of-mouth information intensity and the influence of online shopping intentions.
H9d: Trust tendency plays a regulatory role in the relationship between word-of-mouth content subjectivity and the influence of online shopping intentions.
H9e: Trust tendency plays a regulatory role in the relationship in which word-of-mouth timeliness affects the willingness of online shopping.
H9f: Trust tendency plays a regulatory role in the relationship between the visual effects of word-of-mouth on the willingness of online shopping.
H9g: Trust tendency plays a regulatory role in the relationship in which the recipient's network involvement has an impact on the willingness of online shopping.

3.3 Questionnaire design and data collection

3.3.1 Measurement of variables

3.3.2 Questionnaire Design

3.3.3 Inspection Methods

3.3.3.1 Validity test

3.3.3.2 Credibility test

3.3.4 The distribution and recovery of questionnaires

4. DATA PROCESSING AND ANALYSIS

4.1 Anova Analysis

4.1.1 Descriptive statistical analysis

Table 1: Descriptive statistical analysis

Index	Indicator value	Frequency	Percentage
Gender	Man	238	46. 8%
	Woman	271	53.2%
Age	Under 20 years of age	10	1.9%
	21-25	79	15.5%
	26-30	196	38.5%
	31-35	128	25.2%
	36-40	59	11.6%
	41 years old (inclusive) or older	36	7.1%
Buying decision-making often go to the online shopping platform	U.S. Mission	201	39.5%
	Hand-in-hand net	63	12.3%
	Group 800	15	2.9%
	Popular Review Network	130	25.6%
	Rice Net	61	12.0%
	Full	5	1.0%
	Nest sings	18	3.6%
	Clicks	0	0%
	Other	16	3.2%

The Table 1 shows that the survey has the following characteristics:

4.1.1.1 Sex

The results showed that the proportion of men and women in the survey was 46.8% and 53.2% respectively, and the proportion of women in the respondents was slightly higher than that of men, because the fashion, convenience and entertainment of online shopping were more consistent with women's shopping habits. Therefore, the sex ratio of this questionnaire is more reasonable.

4.1.1.2 Age

By the age group statistics can be found that 26-30 years of age accounted for 38.5% of the number of valid questionnaires, this age group of respondents are the largest. This was followed by a sample of 31–35-year-olds, representing 25.2 per cent of the number of valid questionnaires. That is, most of the young people surveyed were young, because younger groups were more familiar with the online environment and were better able to provide research data. This is consistent with the conclusions of the pre-research and is in line with our research needs.

4.1.1.2 Buying decision-making often go to the online shopping platform

The U.S. group network had the highest popularity, at 39.5 percent, followed by the public review network, at 25.6 percent, and the ratio of hand-holding and rice networks to close, at 12.3 percent and 12.0 percent, respectively.

4.2 Variance Check

Table 2: Variance Qiqi Test Results

F	Freedom 1	Freedom 2	Significance
1.194	50	458	0.179

The variance tint of Table shows that the associated probability is 0.179, greater than the given significance level of 0.05, and therefore the original assumption is that the overall variance of each group is equal and meets the prerequisites for variance analysis, as Table 2.

4.3 Multi-factor variance analysis

To verify whether the different levels of these control variables of gender, age, and purchase decision-making have an impact on consumers' willingness to buy, the results are analyzed here using gender, age group, and the websites frequented by purchase decision-making, respectively, for a variance analysis of the willingness to buy online, as shown in Table 3.

Table 3: The test of intersubject effect1

	Freedom	Average	F	Significance
Gender	1	.435	.615	.433
Age	5	.554	.783	.563
Online shopping platforms where buying decisions are often made	6	.820	1.160	.327
Gender - Age	4	.199	.282	.890
Gender : Online shopping platforms where purchase decisions are often made	6	.732	1.034	.402

Table 4: The test of intersubject effect2

	Freedom	Average	F	
Age- and purchase decisions often go to the online shopping platform	18	.715	1.011	.445
Gender- * age group - Online shopping platforms that often go when making purchases	9	.367	.519	.861

As can be seen from the table above, the influence of the interaction of the various control variables on the willingness to buy online is much greater than 0.05, so the overall means of each control variable are proved to be no significant difference at different levels of multiple control variables. From this, it can be seen that the impact of word-of-mouth on consumers' willingness to buy decisions will not vary depending on the gender, age and purchase decisions of the respondents who often go to the site. 4.2 Reliability and validity test

4.3.1 Confidence Test

4.3.2 Efficacy test

4.3.3 Regression analysis

4.4 Hypothesis Test Results and Model Corrections

The data of 509 questionnaires were analyzed using SPSS statistical software, including reliability and validity testing, anova analysis, and regression analysis. The results of the test are shown in the table, and the modified model is shown in the figure 2.

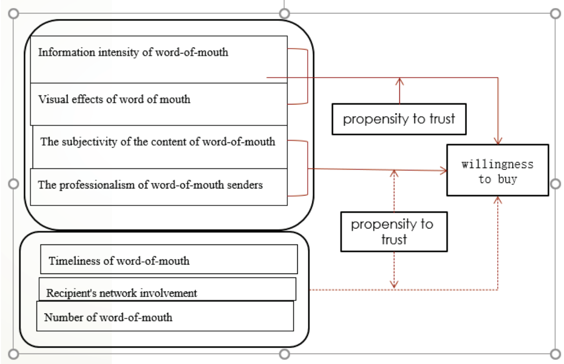


Figure 2: Modified model

Table 5: Study Hypothesis Test Results

Number	Study assumptions	Test results
H1	Word-of-mouth sender's professionalism is significantly affecting consumers' willingness to buy online	Was founded
H2	The number of word-of-mouth is significantly affecting consumers' willingness to buy online	Not true
H3	Word-of-mouth information intensity is significantly affecting consumers' willingness to buy online	Was founded
H4	The subjectivity of word-of-mouth content is significantly affecting consumers' willingness to buy online.	Was founded
H5	The timeliness of word-of-mouth is significantly affecting consumers' willingness to buy online.	Not true
H6	The visual effects of word-of-mouth are significantly affecting consumers' willingness to buy online.	Was founded
H7	The extent of word-of-mouth recipients' network involvement is significantly affecting consumers' willingness to buy online	Not true
H9a	The tendency of trust plays a regulating role in the relationship between the professionalism of word-of-mouth sender sending and the willingness of online shopping.	Not true
H9b	The tendency of trust plays a regulating role in the relationship in which the number of word-of-mouth has the influence on the willingness of online shopping	Not true
H9c	Trust tendency plays a regulating role in the influence relationship of word-of-mouth information intensity on the willingness of online shopping	Was founded
H9d	The tendency of trust plays a regulating role in the influence relationship of word-of-mouth content subjectivity on the willingness of online shopping	Not true
H9e	The tendency of trust plays a regulating role in the influence relationship of the timeliness of word-of-mouth on the willingness of online shopping.	Not true
H9f	Trust tendency plays an regulating role in the influence relationship of word-of-mouth visual effect on the willingness of online shopping	Was founded
H9g	Trust tendency plays an regulating role in the influence relationship of word-of-mouth recipient's network involvement on the willingness of online shopping	Not true

5. CONCLUSION

The independent variables were selected from the three aspects of the sender's characteristics, the word-of-mouth information characteristics and the receiver's characteristics, namely, professionalism, quantity, information intensity, content subjectivity, timeliness, visual effect and the degree of network involvement of the receiver, and added perceived risk as an intermediary variable and trust tendency as an adjustment variable. Build the research model of this paper and put forward the research hypothesis. The mathematical statistical analysis of SPSS software is used, including variance analysis and regression analysis, hypothesis testing, and revision of the research model of this paper.

This study draws the following conclusions: the influence of the sender's professionalism, visual effect, information

intensity and content subjectivity on the willingness of online shopping has passed the significance test, and the intention of online shopping is influenced by some intermediary role of perceived risk. The influence relationship between the number of word-of-mouth, timeliness and the degree of network involvement of the recipient and the willingness of online shopping did not pass the significance test, and the tendency of trust played a regulating role in the relationship between the information intensity of word-of-mouth and the influence of visual effecton on the intention of online shopping
According to the results of the study, the original research model is modified, and the reasons for the hypothesis test results are analyzed, which is based on the reasonable management suggestions for traditional enterprises and online shopping platforms.

REFERENCES

[1] Jin Lidian. Impact of online word-of-mouth information on consumer purchasing decisions: an experimental study. [J]. Economic Management, 2007(22):36-42.
[2] Zhang Hongyu, Zhou Tingrui, Yan Huan, etc.. Study on the Impact of Internet Reputation on Consumer's Online Behavior... Managing the world, 2012, 30 (3).
[3] Guo Xiaoxuan, Chen Weilei. The influence factors of network word-of-mouth effect are actually studied. [J]. Journal of Beijing Polytechnic University (Social Science Edition). 2009 (11)31-35.
[4] Wang Tao, Li Yanping. The effect of the recommender characteristics in the virtual community on the recommendation effect. Business Economics and Management, 2007(7).
[5] Chen Fajie, Cui Dengfeng, Wang Taejie. Empirical analysis of the impact of online word-of-mouth on consumer purchase decisions in social networks... Business Times, 2015 (25): 68-69.
[6] Zhu Wei. The impact of negative internet reputation on the purchase decision of consumers of economic hotels is analyzed. Business, 2016 (32): 237-238.

Discussion on Strengthening Path of Internal Control of Enterprise Accounting Financial Management

Hongyu Chen
Chengdu Vocational & Technical College of Industry, Sichuan 610000, China

Abstract: In the management of corporate finance, accounting and financial management is an extremely important part, which plays an important role in the internal control of the enterprise. Its quality and control results will affect the overall financial management of the enterprise, and have an important connection with the development of the enterprise. At this stage, the level of social and economic development is getting higher and higher, and the pressure facing enterprises is also increasing. Therefore, the internal control of enterprise accounting and financial management must be strengthened. In this article, the author analyzes the internal control of enterprise accounting and financial management, and puts forward certain strengthening measures. Hope to better achieve the long-term development of the enterprise.

Keywords: Enterprise Accounting; Financial Management; Internal Control; Work Strengthening; Discussion

1. INTRODUCTION

With the continuous development of my country's economy, the pressure of enterprises in the development will be greater and greater. The internal control work of accounting and financial management is an important part of the management work of an enterprise, and has a very high status and significance. Only by comprehensively and systematically implementing the internal control of corporate accounting and financial management can the efficiency of corporate financial management be effectively achieved and its quality be improved to a certain extent. Therefore, the relevant managers must pay attention to the internal control of enterprise accounting and financial management. As long as the in-depth analysis, the formulation of relevant measures, from different angles of internal control of accounting and financial management, can better achieve the development of the enterprise [1-4].

2. THE IMPORTANCE OF INTERNAL CONTROL OF ENTERPRISE ACCOUNTING AND FINANCIAL MANAGEMENT

2.1. Guarantee the circulation of corporate finance

For enterprises, only by achieving sustained profit growth can they provide a certain vitality for the development of the enterprise. Let the enterprise better carry out production and other activities, so as to better sell products and achieve the purpose of returning capital. Eventually forming a complete closed loop the way. This shows that funds play an important role for an enterprise. Therefore, enterprises must make a reasonable allocation of fixed assets and circulating funds. By setting a basic line of defense, the rational circulation of internal funds within the enterprise can be effectively rationalized. The financial work of accounting is mainly to further understand the cost construction in enterprise production through internal control. Through the reasonable allocation of funds, every link in the operation of the enterprise can have a certain proportion of investment. The human and financial resources can be reasonably allocated to effectively improve the economic efficiency of the enterprise.

2.2. Guarantee the management of enterprise finance

The internal control value of enterprise accounting and financial management is through reasonable control of the production and operation of the enterprise's schedule. Before each project of the enterprise, the functions of the enterprise department can be divided, and each link can be implemented to minimize the production and operation activities of the enterprise. At the same time, the internal control of the enterprise can guarantee the final financial revenue and expenditure of the enterprise's operation, supervise and manage its process, and better promote the actual profit development of the enterprise. At the same time, it can also improve the overall efficiency of the enterprise and better manage the financial affairs of the enterprise.

2.3. Improve the economic benefits of the enterprise

The main purpose of an enterprise in production is to obtain certain benefits. Financial work is to investigate and analyze the company’s funds so that each fund invested by the company can effectively play its role, reduce unnecessary costs, and more effectively reduce the cost of production. Fundamental measures can save the company's resources and further enhance the company's economic interests. Secondly, through internal control of corporate accounting and financial management, it can also improve the management level of the staff, perform their work more efficiently, and achieve comprehensive supervision of the enterprise.

3. PROBLEMS IN THE INTERNAL CONTROL OF ENTERPRISE ACCOUNTING AND FINANCIAL MANAGEMENT

3.1. Imperfect system

With the continuous development of society, relevant government departments in my country have introduced a series of policies in order to improve the financial management of enterprises. This has created a good market competition for the external environment of enterprises and pointed out the correct direction. However, in actual management, some enterprises do not have enough insight into the internal work of financial management. There are certain problems in the way of production and operation, which cannot meet the needs of the current market, and the internal control system of financial management is difficult to carry out in an orderly manner.

3.2. The internal control system is not strict

It is difficult for the management of some companies to correctly recognize the internal control work of the company's financial management, which makes it difficult to perfect the internal control system. This makes the internal plans of the company and the actual operation there are certain gaps, which produces unavoidable contradictions. . In addition, due to the insufficient financial management and control system of the enterprise, the process of its establishment is not rigorous. This creates difficult problems and brings economic losses to the enterprise.

3.3. Insufficient supervision

In the current corporate financial management work, the government has introduced relevant management measures. The process of supervision and control is also carried out by both the government and the people. But these supervisions cannot effectively improve the financial management of the enterprise. Because they do not understand the business situation of the enterprise, when financial problems arise. They cannot bring substantial help.

4. THE COUNTERMEASURES FOR THE INTERNAL CONTROL OF ENTERPRISE ACCOUNTING AND FINANCIAL MANAGEMENT

4.1. Change the traditional internal control concept of enterprise accounting and financial management

First of all, for developing companies, it is necessary to realize the importance of internal control from the perspective of thought. When managing and working on internal controls. Business strategy is often affected by financial management. Therefore, only on the basis of the implementation of internal control, the development strategy of the enterprise can be further improved and promote the improvement of economic benefits. Enterprises should formulate corresponding control systems based on internal actual conditions and provide accurate accounting information. Then plan the future development of the enterprise based on the accurate information and strictly regulate the work behavior of the financial management personnel of the enterprise.

Secondly, enterprises can, according to the relevant policies and legal regulations issued by China, make the staff in the enterprise fully aware of the important role of internal control of financial management. Improve their management efficiency and ability, so that the comprehensive competitiveness of the enterprise can be obtained Certain improvement.

4.2. Build a perfect internal control system

First of all, if an enterprise wants to ensure the full implementation of internal control, it must build a sound internal control of accounting and financial management. Let it provide good guarantees in the operation of the enterprise and carry out certain basic conditions for subsequent work. This shows that enterprises must improve the internal control system of accounting and financial management, which has become the core basis of enterprise financial management.

Secondly, in order to better ensure that the internal control of the enterprise has a certain degree of scientificity and rationality. During implementation, the corresponding supervision work should be fully implemented to promote the effect of the internal control of the enterprise, improve the quality of the work, and protect the company’s actual interest.

4.3. Strengthen the internal supervision of the enterprise

First of all, when arranging various internal work, enterprises must further implement different internal supervision and guidance work, which is the prerequisite for good operation of enterprises. When implementing internal supervision, different departments and different tasks should be further refined. Especially the administrative and auditing supervision work, through the internal supervision of accounting and financial management, the overall efficiency of the enterprise can be further improved To enhance the authenticity and sufficiency of financial information.

Secondly, the financial management personnel in an enterprise should understand the true accounting and financial information of the enterprise. Only on the basis of a comprehensive grasp can they plan and guide the future development of the enterprise. When the enterprise has certain internal supervision of accounting and financial management, it can promote the internal management efficiency of the enterprise's accounting and financial work to a certain extent. It can further improve the management process of the enterprise and allow the enterprise to obtain huge economic profits in actual production.

4.4. Using electronic information technology

In the 21st century, computer technology, electronic information technology, and Internet technology have achieved tremendous development. Modern electronic information technology has penetrated into all aspects of people's lives. Therefore, in the internal control of corporate accounting and financial management, the use of electronic information technology can ensure the efficiency of corporate financial management and further strengthen the rationality of accounting and financial management.

First of all, when implementing the internal control of enterprise accounting and financial management, we can further strengthen the processing of electronic information technology. Build a complete information platform according to the actual situation and realize a digital shared financial platform.

Secondly, the effective combination of financial management and internal control can have a certain degree of uniformity in management. Through strict management of information and decision-making, it provides accurate financial information to corporate managers. This can be effective To protect the taste buds of the enterprise and provide them with effective financial support. Further ensure the rationality and operability of the financial plan and promote the development of the enterprise.

5. CONCLUSION

All in all, with the rapid development of the modern economy, enterprises should pay attention to the internal control of accounting and financial management. By changing the traditional internal control concepts of corporate accounting and financial management, to build a perfect internal control system and internal supervision of enterprises. Effective use of electronic Information technology to achieve sustainable development of enterprises.

REFERENCE

[1] Fang Yu. Analysis on the Impact of Accounting Informatization on corporate Financial Management and Countermeasures [J]. National Circulation Economy, 2016(23):35-36.

[2] Xiang Li. Discussion on strengthening The Internal Control Of Enterprise Accounting and Financial Management [J]. Market Modernization, 2012, (009):129-130.

[3] Rumeng Song. Research on the Path of Strengthening internal control in Corporate Accounting Financial Management [J]. China Accounting for Township Enterprises, 2019(10).

[4] Minmin Jin. An Analysis of the Strengthening Path of Internal Control in Enterprise Accounting And Financial Management [J]. Commodity and Quality, 2017, 000(028):61.

Research on the Innovation of Chinese Teaching in Higher Vocational Education Under the Background of New Media

Xiaoliu Sun
Nantong Open University, Nantong, Jiangsu, 226000, China

Abstract: With the continuous development of modern society, the system reform in education has become more and more systematic and perfect, and the overall education mode has realized the corresponding innovation and development. On this basis, we need to combine the specific teaching content of contemporary Chinese to seek some updated educational models, so that they can meet the objective requirements of Chinese teaching. Under the background of new media, the teaching mode of Chinese education in higher vocational colleges needs to be further innovated, in which some new cultural values and contents are infiltrated. Combining with the actual situation, we can grasp the specific characteristics of the new era, so as to make the education work more meet the objective needs of people in the new era, reflect good results, and promote the deepening reform of modern education system.
Key words: New media; Higher vocational education; Chinese Teaching

1. INTRODUCTION

With the development of Internet era, the Chinese education system under the background of new media is more and more unique, which has rich contents, which requires the teaching staff to think about it, and to carry out effective teaching work in combination with the actual situation of students, improve students' learning enthusiasm, make the teaching content really permeate the students' thoughts, and give full play to the important value of Chinese education So that Chinese education can occupy a more favorable position in the modern education system. This requires relevant education staff to seize the opportunity of the Internet in time, understand the advantages of teaching in the Internet, reflect the characteristics of new media, seek for a new teaching reform system, so that the teaching work of Higher Vocational Chinese education can be innovated and developed accordingly.

2. THE IMPORTANT VALUE OF NEW MEDIA IN HIGHER VOCATIONAL CHINESE TEACHING

First of all, the use of new media in the teaching of modern higher vocational Chinese education can enrich the content of the classroom. In this process, the teaching of Chinese can be combined with the actual needs and hobbies of students to integrate some modern timeliness news information, so that students can also understand social news and other aspects of knowledge in the process of Chinese learning, and improve students' learning enthusiasm. In addition, it can help students to form a more effective language learning environment based on the network culture, and help students to form a more effective language learning environment Cultural thinking [1].

Secondly, the application of new media in Modern Higher Vocational Chinese teaching can enrich the teaching mode. Specifically, Chinese teachers take more diversified teaching methods according to the actual situation of students, so that the classroom teaching is no longer limited to the traditional full room teaching mode, integrating some more novel and rich content, and promoting the improvement of students' interest in learning. For example, the higher vocational Chinese teaching based on multimedia can use some pictures, video and audio to infiltrate into the teaching content, attract students' attention, enrich the classroom teaching mode and teaching content, so as to effectively improve the teaching effect, and make use of some modern multimedia platforms, including wechat and QQ, to make the teaching more effective Teachers and students can achieve real-time interaction and communication, let students put forward some doubts and problems in the learning process, teachers solve them, so that the distance between students and teachers can be pulled in [2].

3. INNOVATIVE WAYS OF CHINESE TEACHING IN HIGHER VOCATIONAL COLLEGES UNDER THE BACKGROUND OF NEW MEDIA

3.1 Cultivate students' innovative consciousness

In the process of high school Chinese teaching, we should pay attention to the effective cultivation of students' innovative consciousness, which is also the specific goal in the process of contemporary education. Students have innovative thinking in the process of learning, which reflects the objective effect of modern education and achieves part of the purpose of Chinese education. In the new era, college students should have a certain sense of innovation, so that students' wisdom and personalized content are correspondingly displayed and improved. In the process of higher vocational teaching, students are generally in the period of integration and development of innovative thinking and consciousness. We need to pay attention to the cultivation of students' curiosity, so that students can break the Convention and find new learning content and learning mode Inspired by the active education work, it reflects a better teaching effect. In this process, the application of problem-based teaching mode can stimulate students' thinking and interest in Higher Vocational Chinese teaching, help students reserve more abundant information and data resources, cultivate students' independent thinking and creative ability, and enable students to have strong exploration and curiosity in the future Chinese learning process, so as to better find and solve problems [3] .

3.2 Some classroom teaching modes based on the new media

In the context of new media, the traditional teaching mode in the teaching of Chinese in higher vocational colleges is not suitable. It is necessary to integrate some new media technology based on the modern teaching content, so that the openness and richness of the content in the process of Chinese classroom education can be effectively reflected. At the same time, we should also give the initiative of the classroom to the students, which reflects the students' subjectivity, and creates them in the classroom, and spreads the students' thinking. At the same time, we should use modern network platform media to take the teaching work under the concurrent line and line, and release some educational information and content through micro-blog and WeChat official account platform, so that students can use modern network tools to produce corresponding understanding of specific Chinese knowledge, and to get real with others based on the timeliness and interaction of the Internet itself. Communication is now in the immediate. And let the teacher help students solve problems through modern multimedia software, so as to accelerate the pace of the construction of Higher Vocational Chinese teaching mode, and make students' interest in learning effectively improve, realize the sharing of various resources and promote the common progress of teachers and students [4].

3.3 Improve teachers' innovative teaching level

In the Chinese teaching work in higher vocational colleges, teachers need to fully understand the value and characteristics of the new media platform itself, conduct in-depth communication and exchange with students, understand the specific state and psychological activities of students, so as to be able to take appropriate teaching methods according to the differences of students, and carry out differential education for students based on the Internet Teaching work, to create a more advanced teaching classroom, so that education reflects the characteristics of more professional and personalized. At the same time, teachers also need to constantly improve their own innovative teaching level, integrate some new teaching content, enrich the classroom atmosphere, flexibly use diversified teaching modes, adapt to the actual requirements of modern education, and improve students' attention [5].

4. CONCLUSION

In the 21st century, the competition for talents has become more and more fierce. It requires that teachers in Higher Vocational Chinese teaching can timely understand some important technologies produced under the background of new media, use new means and models to promote the reform and development of teaching work, make the teaching system more perfect, attract students' attention, and promote the effective improvement of teaching effect.

REFERENCE

[1] Zhang Hua. Research on the cooperation mode between automobile engineering specialty and enterprises in Higher Vocational Colleges [J]. Science and technology entrepreneurship monthly, 2019, 32(01):76-79.

[2] Zhang Hua. Research on the cultivation of professional quality and employability of automotive engineering majors in Higher Vocational Colleges [J]. Journal of Hubei open vocational college, 2019, 32(05):34-35.

[3] Shi Lei. Sino British Higher Vocational Colleges sign memorandum of cooperation [J]. World education information, 2019, 32(06):78-79.

[4] Long Qiren. Analysis on the "X" formulation strategy of accounting major in Higher Vocational Colleges under the "1 + X certificate system" [J]. Journal of Harbin Polytechnic, 2020, 05:57-60.

[5] Huang Minxiong. Discussion on leading the campus culture construction of Higher Vocational Colleges with brand enterprise culture projects -- Taking Hunan Automotive Engineering Vocational College as an example [J]. Industry and Technology Forum, 2020, 19(23):242-243.

Research on Performance Course and Ideological and Political Education of College Students

Xiaofei Liang
Conservatory of Music, Henan University, Kaifeng 475000, Henan, China

Abstract: With the rapid development of the times, great changes have taken place in the mode and concept of performance teaching in Colleges and universities, gradually changing from the traditional goal of cultivating professional elite talents to the goal of focusing on students and all-round development of students. This paper mainly focuses on the university performance curriculum and ideological and Political Education (hereinafter referred to as ideological and Political Education) to carry out research, in which, the necessity of Integrating Ideological and political education into the university performance curriculum and related strategies are briefly discussed.

Key words: Ideological and political education; Colleges and universities; Professional teaching; Performance courses; Existing problems

1. INTRODUCTION

From the perspective of colleges and universities, it is always an important goal and task to carry out high-quality ideological and political education. It is necessary to integrate ideological and political education into the performance course of colleges and universities. That is, to develop the relevant knowledge of curriculum specialty and practice, to realize the effective excavation of moral and ideological factors contained in various knowledge, and help students achieve the effect of sublimation of thought and emotion morality, which is not only helpful to optimize students' Ideological and political education The quality of performance course learning has a positive impact on promoting the development of its comprehensive quality [1-2].

2. THE NECESSITY OF DEVELOPING IDEOLOGICAL AND POLITICAL EDUCATION OF COLLEGE STUDENTS IN PERFORMANCE COURSE

The ideological and political work in Colleges and universities has a high complexity, and it belongs to one of the work that universities must carry out, which determines the necessity of it in the professional courses. Education is an important subject in the process of human development. Excellent three views and noble personality are the main objectives of talent training in Colleges and universities. From ancient times to now, it is all the same. The characteristics of socialism are ideological and political education, and ideological and political education in Colleges and universities is an important strategy to carry out socialism with Chinese characteristics. Based on the background of the present era, the development of economic globalization, the college students' thoughts are influenced by various cultural waves, so it is imperative to carry out excellent ideological and political education. For the students of performance major, the society is complicated and the market of film and television series is becoming more and more complicated. It is very important for students to carry out effective ideological and political education for them in the future.

3. SPECIFIC STRATEGY ANALYSIS

It is an important measure to integrate ideological and political education into the professional courses, which is an important measure to realize the ideological and political education goal in Colleges and universities, and also a key means to cultivate students' comprehensive quality. To explore various effective strategies and realize the integration of performance courses and ideological and political education is an important way to optimize the students' moral, intellectual, physical, and labor abilities, and to optimize the three views and personality of college students.

3.1 Renew the concept of Teachers

Teachers of performance course in Colleges and universities need to update their teaching ideas, attach great importance to ideological and political education, set up close and scientific plans, fully absorb teaching contents, fully explore the factors that can be used as moral education materials in teaching materials, and design teaching contents and processes with clear objectives. Specifically, teachers should return to real life according to the characteristics and actual teaching contents of performance courses, excavate and utilize all kinds of innovative thinking, scientific spirit and team consciousness contained in the course, and then realize the purpose of Ideological and political education for students. Through the mutual connection and integration of teaching and learning, teachers should lead students to improve their moral quality and improve their moral quality in the teaching process China has its own personality, realizes all-round development and realizes comprehensive quality improvement [2].

3.2 Pay attention to teaching by words and deeds

This kind of method mainly refers to the influence on students based on ideology. The main goal of traditional performance course teaching is to cultivate high-quality elite talents. Teachers play a leading role and set an example in students' impression, including living standards, academic concepts, and even speech and behavior, which has a significant impact on students. In specific teaching practice, teachers play an exemplary role.

Therefore, the performance course teachers need to pay attention to abandon the traditional business concept, give full play to the exemplary role of being a teacher, take themselves as an example, actively change their own defects, and carry out all-round sublimation from the ideological and behavioral level. They should not only become the giant of theory, but also become the leader of students, and perfectly integrate oral and personal teaching.

3.3 Specific analysis of specific things

It is also one of the effective measures to strengthen the teaching quality of performance courses and accelerate the integration of Ideological and political education to lead students to analyze and deal with specific things, express their own opinions without restriction, and realize the ideological and political education of students from the psychological level. A qualified teacher can, in the teaching practice stage, with the help of the characteristics of College Students' flexible thinking, delicate and sensitive emotions, carry out specific analysis with students for specific things, help students develop a good concept of right and wrong, and then gradually sublimate to the level of morality, values, and even higher ideological and political consciousness, and finally realize the comprehensive development of physical and mental quality .

3.4 Upgrade evaluation mechanism

In order to better support and encourage teachers to actively carry out ideological and political education, and promote the integration of performance courses and ideological and political education, we also need to take a complete evaluation mechanism as support. We should not only pay attention to the process of Ideological and political education, but also pay attention to the final results. According to the evaluation standard, we should follow the principle of clear focus, comprehensive and detailed. For the purpose of evaluation, we need to follow the principle of improving the quality of Ideological and political education. In the process of evaluation and summary, we should encourage the current achievements, point out the shortcomings and find the right direction. When setting up the evaluation method, we should pay attention to the daily evaluation, at the same time, carry out reasonable design of regular evaluation, and try our best to simplify it. Among them, we need to pay attention to give full play to the effectiveness of daily evaluation.

In addition, we should pay attention to clear objectives and detailed content. The former mainly refers to the establishment of education objectives with clear focus, and the establishment of assessment and evaluation system and reward and punishment mechanism including teachers' job responsibilities and implementation status. Teachers of performance courses are required to make clear the specific objectives of ideological and political education and record them. The latter is to infiltrate and decompose ideological and political education, and integrate it into specific processes, including examination, teaching, preparation before class, guidance after class and so on. Evaluation optimization is also an important means, which mainly refers to the evaluation of the ideological and political education effect of performance course based on the quantitative index system, so as to optimize the teaching mode and method.

3.5 Stimulate the polarity of educational subject and guest volume

In order to achieve the ideological and political education goals and improve the overall teaching effect of performance courses, it is very important to actively participate in the subject and object of education. From the specific practice point of view, colleges and universities should attach importance to the establishment of sound incentive mechanism, and then realize the transfer of the polarity of the volume of the main and the guest. Among them, we should pay attention not only to the spiritual level of motivation, but also to how to carry out reasonable material incentive. In addition, we can actively promote and dig out various typical deeds by establishing typical and selecting excellent ideological and political educators, and promote the majority of Ideological and political educators and students to move towards the typical, and clarify their own shortcomings, so as to establish a pragmatic, upward and positive atmosphere, and finally realize the transfer of the polarity of the volume of educational subjects and clients.

4. CONCLUSION

According to the above analysis, it is necessary to integrate the ideological and political education into the performance course of University. During the specific practice, teachers should pay attention to updating their own ideas, attach importance to ideological and political education, teaching by words and deeds, and help students to carry out effective analysis through specific things, and guide students from psychological level, and promote students to establish good and correct values And the outlook on life, to help students achieve comprehensive quality and comprehensive development.

REFERENCE

[1] Shen Yuwen, Wu Jie. Analysis of the application strategy of film and television drama in Ideological and political education publicity in Colleges and Universities under the new media communication path [j]. Science and education literature (next Xunyuan), 2021, (02): 33-34.

[2] Wu Chao, Zhang Fan. The application of red resources in Ideological and political education in Colleges and Universities -- on the study of the reform of Ideological and political theory curriculum in Colleges and universities [j]. Educational theory and practice, 2021, 41 (06): 2.

Analysis of The Influence of Geographical Environment Factors on Human Health and Longevity

Lishu Wang
School of Water Conservancy and Hydropower, Hebei University of Engineering, Handan, Hebei, China

Abstract: Since ancient times, human beings have been exploring the mystery of longevity. With the deepening of research, we found that a key factor affecting human health and longevity is geographical environment. This paper makes a specific analysis of the impact of geographical factors on human health and longevity for reference.

Keywords: Geographical factors; Human; Longevity; Influence

1. INTRODUCTION

This paper discusses the relationship between human longevity and natural environment from the aspects of geography, topography and soil health. A good geographical environment can effectively improve people's physical condition, improve people's disease resistance, slow down human aging, so as to effectively prolong life.

2. THE INFLUENCE OF TOPOGRAPHY ON HUMAN HEALTH AND LONGEVITY

Through the analysis of the topography of Changshou area, we found that most of the Changshou areas in the world are located in high altitude areas, and have a relatively closed environment. This makes these areas less polluted by industrial wastewater and waste discharge, ensures the cleanness of water, soil and air, and avoids the harm of chemical smog and acid rain. At the same time, in this relatively closed environment, it can also effectively reduce noise pollution and provide a high-quality ecological environment for people's living and survival. In addition, for people living in mountainous areas, due to the reasons of topography, it is inevitable to climb mountains and uphill, and often these areas have higher altitude, so in this low-pressure, low oxygen environment, in order to adapt to the surrounding environment, the human body will increase the heart's blood excretion rate, and further expand the human coronary artery, enhance the blood diffusion Ability to achieve stronger diffusion efficiency. Therefore, people living in this area will have a higher oxygen utilization rate. Therefore, this also shows that under the condition of the same oxygen consumption, people living in this kind of geographical environment can have stronger oxygen utilization efficiency, and can achieve more chemical energy generation. Therefore, even if people have strong physical labor, they can also have higher blood oxygen level. Through the increase of climbing frequency of people living in mountainous areas, it can also promote human blood circulation, improve human immunity, and further improve human health, especially for cardiopulmonary organs and hematopoietic function. In addition, in the environment of hypoxia, it can also make people accumulate carbon dioxide in the body, further integrate the acid-base level in the body, realize the acid-base balance of the human body, and prevent the damage to the human nervous and immune system caused by acid-base imbalance. Therefore, for the mountain area with higher altitude, it can promote people's health and prolong people's life.

3. THE INFLUENCE OF CLIMATE ON HUMAN HEALTH AND LONGEVITY

Among the climate factors, including air pressure, temperature, precipitation and light time, these conditions have a direct or indirect impact on people's health and longevity, in which the impact of temperature is the most obvious. Through the analysis of each longevity area in the world, we can summarize the climate types of longevity area into the following two types: first, warm climate, pleasant four seasons and good climate conditions. The temperature in these areas is very suitable for human survival, and the temperature difference is small, the annual precipitation is high, and the sunshine time is long, which makes these areas have a pleasant climate, beautiful scenery, rich products, and promote people's health and longevity. Secondly, it is the cold area with bad climate, which is very cold in winter, even some areas are covered with snow all the year round. This is mainly due to the influence of temperature on human cells, and also related to human growth period. People in cold regions have a longer growth period and therefore a higher life expectancy than people in tropical regions. Therefore, the cold climate characteristics are also conducive to people's longevity.

4. THE INFLUENCE OF AIR ON HUMAN HEALTH AND LONGEVITY

In the evaluation of air quality in a region, the primary index is the content of negative ions in the air, which is closely related to the cleanliness of the air. Because most of the longevity areas in the world are located in mountainous areas, far away from cities and factories, the ecological environment is good, the air is relatively fresh, and the degree of pollution is small. So there are higher levels of negative ions in the air in these areas. Through the relevant environmental medicine shows that if the negative ion content in the air is too low, it will increase the probability of physiological disorders, and pose a threat to health. The high content of negative ions in the air can not only promote the growth and development of human beings, but also effectively prevent and treat diseases and delay aging. First of all, negative ions can reduce blood pressure, at the same time, it is good for cardiopulmonary health, and can accelerate metabolism, effectively improve sleep quality. Secondly, because negative ions can destroy bacteria, it can also achieve better sterilization effect. And negative ions can enhance the function of the human immune system, and coordinate hormone balance, reduce the occurrence of allergic reactions. Finally, negative ions can also achieve the role of adjuvant therapy for a variety of diseases, enhance the efficiency of organs, and will not bring side effects, which is conducive to the extension of human life.

5. THE IMPACT OF WATER AND SOIL RESOURCES ON HUMAN HEALTH AND LONGEVITY

Through the investigation and analysis of water resources in Changshou area, the drinking water in these areas has good water quality and rich trace elements. These elements can not only strengthen the immune function of the human body, but also help to prevent a variety of common diseases of the elderly, such as hypertension, heart disease, rheumatism, diabetes and so on. They can effectively delay aging, supplement the trace elements needed by the human body, prolong people's life and improve the health level of the human body.

For the soil, which contains many trace and macro elements, as the basic elements of living organisms on the earth, soil conditions also have an important impact on human growth and health and longevity. The distribution and content of trace elements in soil are closely related to human health. Through the investigation, we found that the higher the content of Mn and Zn in soil, the lower the content of Cu and CD, which will reduce the incidence of cardiovascular disease and prolong the life span of human beings. Through the food and drinking water, the trace elements in the soil enter the human body, and the food and spring water produced under the high quality soil condition will also have higher nutritional components, which can promote the growth and development of human beings, supplement the trace elements of human body, and achieve better anti-aging functions.

Human survival and development can not be separated from the natural geographical environment, good geographical environment elements can ensure the health and longevity of the human body. Therefore, people should pay attention to the magic power of nature, protect and improve the ecological environment, and create a good ecological atmosphere, which can make the overall level of human life rising continuously, so that human beings can benefit for life. Therefore, through the study of geographical environment elements, effective use of the impact of the environment on the human body, there is no need to rely entirely on modern medical technology, enhance people's physical quality and physical fitness, reduce the incidence of disease, reduce the pain of treatment, and constantly improve the level of human health.

6.CONCLUSION

To sum up, at this stage, it is necessary to conduct in-depth investigation and Research on the influence of geographical environment factors on human health and longevity, which can also provide valuable basis for the subject of extending human life. On this basis, we will continue to achieve breakthroughs and development, get closer to the mystery of human longevity, continuously improve the health level and average life span of all human beings, and promote the development of nature the magic power of the game can be used effectively.

ACKNOWLEDGEMENTS

High-level talent funding project of Hebei Province (B2019003035).

REFERENCE

[1] Jiang Sutong. Spatial analysis and characteristics of rural landscape in Zhongxiang, Hubei Province, the hometown of longevity [D]. Xi'an University of architecture and technology, 2020.

[2] Huang Jinhui. Comparative study on three typical longevity villages from the perspective of landscape atlas [D]. Xi'an University of architecture and technology, 2020.

The Necessity of Applying Dalcroz Music Teaching Method in Sports Arts

Xin Wang
Sport art college of Guangzhou Sport University, Guangzhou, China

Abstract: The so-called sports art projects are worth some sports such as aerobics, figure skating, figure swimming, etc. in the process of performance, different from traditional sports, they need to form a certain cooperation with music, so as to present the audience with the double experience of sports and art. In order to achieve the high-level display of sports arts, it is necessary to train the coordination ability of athletes. In the analysis of this paper, it analyzes and expounds the training effect achieved by the application of dalcroz music teaching method in sports art projects.
Key words: Sports and art events; Dalcroz music; Coordination ability; Sports skills

1. INTRODUCTION

The training method of body rhythm proposed by darcrotz, a famous music educator in Switzerland, can be used in sports and art training activities after being improved in the present research. The training under this method is mainly based on the theory of motion perception. In the changing music environment, it can inhibit and stimulate the kinesthetic effect of the motor person, so as to make the brain and the body have close connection and communication, so as to form the effect of improving the ability of controlling the perceptual behavior.

2. COORDINATION ABILITY

In the development of sports art projects, we attach great importance to the coordination ability of sports personnel. Only by ensuring the athletes have a high level of coordination ability, can they effectively make more difficult actions in the sports, so that in the actual training process, we need to fully connect the basic types of coordination ability.

2.1 Neurocoordination

Neurocoordination is a kind of interaction between the process of excitation and inhibition when people complete a group of actions, so that the neural process presents many elements such as flexibility, sensory calibration and necessary intelligence level. This is precisely the realization of the circulation between the brain and the organs controlled. For the nervous system, the basic coordination mode is mainly based on the reflection activity. At the same time, the coordination ability of human body will be realized directly in the process of nerve reflex, which can be realized as different muscle activities, as well as various connections and simultaneous operation effects between muscle groups, and further produce the effect of reflection reaction. In the specific performance, different combination reactions may occur based on different external environment stimuli. In this way, a large number of complex neural capacity responses can be realized under the control of the nervous system. Therefore, during the process of human movement, the physiological activities of human body are directly or indirectly managed by the nervous system. Meanwhile, the inhibition and excited control of the human brain cortex directly determines the complexity of the human body to complete the action.

2.2 Muscle coordination

For muscle coordination, it is a reasonable tension or relaxation behavior for muscles. Therefore, only by maintaining the consistency of muscle adaptability and coordination, can the muscle have a strong adaptability. The degree of muscle exertion and the sequence of muscle process will affect the completion of the action. In muscle coordination, it mainly involves the internal coordination, intermuscular coordination and specific coordination among muscle groups. Muscle coordination is not only controlled by the nervous system, but also affected by the muscle structure, muscle components and various receptors. The coordination of nervous system is not equal to the coordination of muscle operation. Therefore, it is necessary to carry out special training for muscles in daily training, so that the internal structure and composition of muscles can be changed, so as to further enhance the body's ability to respond to external stimuli, so that muscles can move efficiently and achieve a high level of coordination.

2.3 Kinesthetic coordination

Kinesthetic coordination is a kind of coordination of time and space in the process of action, which is formed by the degree of exertion of various joints and different parts of the body. In the process of kinesthetic coordination, the nerve signal is transmitted by the tree nervous system first, and then executed by the action organs. Therefore, the transmission of this kind of information mainly comes from the feeling of vestibular noumenon and the feeling of design in the process of movement. The stability of vestibular receptors is mainly a coordination of vestibular receptors. Only maintain the stability of the vestibular receptors, so that in the process of stimulation, the vestibular response is smaller, so as to complete the action quickly. If we can promote the formation of motor skills, we need to ensure that the action can be completed quickly and reasonably, so that the body's sensory skills can be effectively exercised. At the same time, the higher the sensory skills of the body, the more skillful the use of various movements and techniques in the process of competition and training.

2.4 General coordination capability

For general coordination ability, it is an innate ability of human beings. But for different individuals, their differences often lead to inconsistent levels. Therefore, athletes in the process of training, due to the specific training, compared with the general person's coordination ability is higher. In the actual training, in order to achieve the improvement of sports level, but also to further enhance the coordination ability of training, so as to play a training effect.

2.5 Special coordination ability

In the process of special movement, higher requirements are put forward for coordination ability. In the specific training, we need to analyze the characteristics of the special sports, which can play a good role in improving the coordination ability of sports personnel, so that sports personnel can complete the special technical action efficiently, fast and labor-saving. In the process of special training, through repeated special actions, it can play a good role in improving the coordination ability.

3. BASIC REQUIREMENTS OF IMPROVING COORDINATION ABILITY TRAINING

3.1 Diversity of training methods

For the training of coordination ability, we need to ensure that in the actual training process, it can present complexity, non-traditional and novelty, so that we can make good use of this training method and achieve the training goal as soon as possible. In the process of general training and special training, we need to carry out training work according to different training difficulties. Using these training activities, we can make sports personnel understand and get used to their own movements, so as to strengthen the coordination of movements. Once the coordination of the movement is improved, it is necessary to change the training behavior immediately, so as to carry out new exercises. This way of diversified training can improve the coordination ability of sports personnel.

3.2 Improve the reserve of motor skills

In order to ensure the effective promotion of coordination ability, we need to carry out a variety of motor skills, which is due to the high matching degree between motor skills and coordination. At the same time, it is also an ability to integrate various motor skills. Therefore, so that many trainers, in the long-term training, can be a good grasp of sports skills. Even if engaged in other sports, still can be due to a higher level of coordination ability, and excellent completion of learning and movement practice.

3.3 According to the characteristics of sports events

In different movements, the coordination ability presents the characteristics of correctness, rapidity, rationality and adaptability. For the emergence of these features, it keeps a high degree of contact with technical and tactical actions. Therefore, in the process of special training for students, it needs to be strictly based on the special needs, and can focus on combining the characteristics of the project to cultivate the coordination ability. At the same time, in the process of training coordination ability, it is necessary to realize the effective combination with special technical and tactical training, so as to realize the comprehensive training of coordination ability and lay a good foundation for the later higher level of training content.

3.4 Comprehensive quality training

In the process of training, strength, endurance, speed, sensitivity and flexibility should be taken as different abilities for special training. These five elements have internal relations, but the training centers are different, which are essentially formed by the control of the central nervous system, and the muscles are completed through coordination. But in the process of training, we need to combine the actual action characteristics and carry out targeted adjustment and training, so as to ensure the realization of comprehensive quality training.

4. DALCROZ'S SPORTS AWARENESS EDUCATION MODE

In darcrotz's theory, there is a very complex relationship between the brain of understanding and analyzing things and the body that operates human motion, and forms a feedback system, which is the formation of action sense. But for this feedback system, it only appears under some subconscious premise. In the daily life process, for many actions and activities, they are accomplished unconsciously, or through their own thinking and willpower. For this subconscious reaction, it is often not affected by thinking in advance, but natural action. Therefore, once students can effectively use this kind of action awareness in the process of training, they can display their own abilities and operation smoothly. In the past research, psychologists have proposed that although the current movement system has more operations, they all use the same method to appear in primate animal system, but human thinking has always existed in human beings. This kind of thinking is more practical and a dominant ability, which can make the body realize the rational distribution of perception and movement, thus forming the advantage of movement. In darcrotz's theory, we associate hearing, body movement and brain, and make a deep study and analysis of the whole motor sense, so as to ensure that there will be repetitive information transmission between brain and motor body.

Therefore, in the actual training process, we can train the movement awareness through their own consciousness, so that students can feel the difference between sound and rhythm, and compare and analyze their rhythm with others, so as to make the conscious behavior succeed in replacing the original response. In such training, the body can form a specific rhythm of performance, and at the same time, the other body will show a completely different rhythm.

5. MUSIC TEACHING METHOD OF DALCROZ

In darcrotz's theory, the perception of the rhythm of music often depends on the movement of people's muscle system and the ability of hearing. As for music, it is composed of sound and motion. The sound unit is the representative of form and needs to be placed in the second place, while motion is the key to directly produce music. In sports, movement is rhythm and the basic condition of music. In the actual movement process, human body needs to exist in time and space, and the amount of time and space formed by it directly affects the speed and amplitude of action. Therefore, the formation of energy, time and space all need to be affected by the weight and balance of the body. In order to achieve a perfect movement, we need to make the energy, space and time organically integrate and coordinate. In order to properly control the movement, we need to effectively control the music rhythm, strength range and other aspects in the actual movement process, and then first of all, the balance of the body.

In the process of changing music, students can keep constant attention and use their body to create changeable movements, forming creative and rhythmic improvisation. In addition, the feelings and feelings of the auditory organs and human body for music will directly stimulate emotions and ideas, so as to form a variety of different emotional feelings. On the other hand, the brain needs memory, judgment and analysis to adjust and control its own actions. Under the influence of music, the body will act spontaneously and control the action.

6. THE BASIC TRAINING PRINCIPLES OF DARCROTZ'S MUSIC TEACHING METHOD

For sports art projects, in the process of training, they are basically realized with the accompaniment of music. For different styles and different rhythms of music, we need to cooperate with different styles of action types. Therefore, we need to be able to express the emotion based on the music emotion, and let the body complete the corresponding action. This kind of music with the combination of physical aspects, will let the athletes in the process of sports, can smoothly realize the emotional performance, but also play a corresponding role in mining the students' feelings for body movements. In the body and rhythm, rhythm and emotion, often maintain a relatively close relationship, so in the current teaching process, we can effectively achieve special training based on this training method.

6.1 Mindfulness training method

This is a psychological level of training skills, can be very good for students to improve the ability of movement coordination, but also can be very good for students to use visual and muscle coordination, effective protection of the smooth completion of the action. In addition, we also need to let the antagonistic muscles relax when the active muscles contract in the process of training. In this way, it is convenient to help complete the coordination action. In the actual training process, we need to actively let the active muscle group achieve maximum contraction. At the same time, pay attention to the need for individuals to relax their muscles to the greatest extent, and use their physical ability to tense the whole muscle group.

6.2 Transformation training method

In the process of training, the transformation training method can improve the students' coordination ability. In the actual training process of coordination ability, it can also effectively change some elements in the relationship, and change the movement requirements and intensity during the change process. In the long-term training process, it can be very good based on this complex training mode, effectively stimulate the analyzer of students, and make the neuromuscular system active Get up. From the basic simple action, and gradually transition to some more complex actions, so that the body coordination can be significantly improved.

7. CONCLUSION

In conclusion, in sports of sports and arts, music is often used for accompaniment. In order to fully guarantee the coordination ability of sports personnel in the process of training, it is necessary to adopt darcrotz music training method based on the current training content to further improve the pertinence and efficiency of training, which has made the sports personnel improve Own coordination ability.

REFERENCE

[1] Susshan. The research on the harmonious development of the students' physical and mental in sports art projects [j]. Contemporary sports science and technology, 2020, 10 (16): 141+143.

[2] Qinxiaojun, Chen Dong. The teaching status of "eight beats" system password in the physical education and art project course of Guangxi University [j]. Western journal, 2020 (10): 104-106.

[3] Wang Peng. A study on the diversified development of sports art performance projects in the field of University -- the training plan for young backbone teachers in Henan University [j]. Contemporary sports science and technology, 2020, 10 (11): 174-175.

[4] Liu Lijun. Exploration of the teaching reform of general English course of sports art based on the project [j]. Examination and evaluation (College English teaching and research edition), 2019 (03): 101-105.

[5] Zhou Min, Tanhualing. A survey of the current situation of sports art performance projects in Universities [j]. Journal of Hubei correspondence university, 2018, 31 (05): 158-159.

[6] Ye Yu, Luo Yi. The development and evolution characteristics of sports art projects [j]. Journal of Harbin Institute of physical education, 2017, 35 (06): 91-96.

Research on Teaching Reform of Higher Vocational Mechanical Courses Based on Craftsman Spirit

Hong Wen
Shandong Transport Vocational College, Weifang, Shandong 261206, China

Abstract: With the innovation and development of the social economy and education industry, the education industry increases the research on the economic market, realizes the professional research on the education system, helps to realize the professional management and education of students, and pays attention to improving the professional level and comprehensive quality of students. As for the education arrangement of mechanical specialty in higher vocational colleges, teachers should improve the education concept and mode, deepen the effective development of craftsman spirit, help to cultivate students to become comprehensive professionals, and promote the high-quality development of students in society. This paper mainly analyzes the teaching of mechanical courses, and the research results are only for reference.

Key words: Craftsman spirit; Higher vocational education; Mechanical specialty; Course teaching; reform

1. INTRODUCTION

At present, the domestic higher vocational colleges strengthen the innovation research on professional education, which will help to improve the overall teaching technology level and quality of higher vocational colleges, and to achieve the education objectives of talent training, to achieve the overall improvement of students' professional strength and comprehensive quality, and lay a solid foundation for the development of students in the social field. In the relevant research of teaching courses of mechanical specialty, teachers need to rationalize the theoretical teaching and practical exercises, and increase the key quotation of craftsman spirit, which helps to exercise students' endurance and seriousness. However, there are still some influencing factors in the school, which need to be studied and effectively solved.

2. IMPORTANT CONTENTS OF CRAFTSMANSHIP SPIRIT

Craftsmanship spirit mainly refers to people can devote themselves to a certain field or industry in daily life, and control themselves to do the relevant work conscientiously and excellently. Therefore, craftsman spirit plays an important role in the development of all trades in society, and also an important embodiment of the serious professional attitude, high-tech ability and noble professional character of the people. For the development of modern vocational colleges, teachers need to deepen their craftsmanship spirit, strengthen effective guidance and education on students' study and thinking. While students need to cultivate their own craftsman spirit, correct their attitude to study and work, and realize effective cultivation of their professional ability and professional quality, which plays an important role in promoting the development of social work in the future [1].

3. THE IMPORTANT ROLE OF CRAFTSMANSHIP SPIRIT IN THE MECHANICAL EDUCATION OF HIGHER VOCATIONAL COLLEGES

The promotion of craftsman spirit in modern society can not only reflect the important inheritance of traditional culture, but also an important part of social development. Therefore, domestic social industries should strengthen the application and dissemination of craftsman spirit, and deeply understand the connotation of craftsman spirit, which will help to realize the innovation and development of various industries, and then realize the stable development of social and economic system. In the teaching of mechanical specialty in higher vocational colleges, strengthening the integration of craftsman spirit can increase the teaching requirements for teachers and change the attitude of students to work, deepen the value and importance of the development of higher vocational education, and then achieve the teaching objectives of talent training, promote the innovation and development of domestic education industry, and realize the effective inheritance and development of craftsman spirit Exhibition.

4. ANALYZE THE RELEVANT OBSTACLES OF THE REFORM AND DEVELOPMENT OF THE TEACHING COURSE OF MECHANICAL SPECIALTY IN HIGHER VOCATIONAL COLLEGES

4.1 Teachers' teachers' strength is relatively low in professional courses

Through the investigation of the teaching of mechanical specialty in higher vocational colleges, it is found that the teachers of professional practical courses are weak. It is because the school is influenced by traditional teaching forms and the development of theoretical knowledge, which leads to the school's neglect of students' practical ability training, and the recruitment of practical teachers is relatively small, and the relevant education is not strictly restricted The system is not conducive to the effective development of teaching quality in higher vocational colleges.

4.2 The development of professional courses is influenced by traditional teaching mode

According to the education research of mechanical specialty in higher vocational colleges, it is understood that the domestic educational development environment has been influenced by traditional teaching concepts for a long time, which leads to the incomplete situation in the innovation and development of some schools, and is still in the teacher-led teaching curriculum development, which is not conducive to the cultivation of students' practical ability and logical thinking.

4.3 The teaching infrastructure of professional courses is not matched

Through the teaching research of mechanical specialty in higher vocational colleges, it is found that the development of professional practice courses does not have the effective management of supporting teaching equipment, which affects the effective opening of professional teaching and hinders the development of students' practical ability. Basic teaching facilities can play an auxiliary role in teaching activities. If the management department does not carry out professional management, it will be difficult to realize the teaching The innovative development of learning, and then affect the development of students' horizons and thinking.

4.4 Lack of practical strength training in the teaching development of professional courses

According to the research on the development of mechanical specialty education in higher vocational colleges, it is found that some higher vocational colleges lay particular emphasis on the development of theoretical courses in the arrangement of teaching courses, thus ignoring the importance of practical courses education. As a result, students are unable to make substantial transformation of professional theoretical knowledge in practical operation and development, thus affecting the future development of students, such as mechanical engineering Mechanical specialty pays attention to the cultivation of practical ability.

5. FORMULATE RELEVANT MEASURES FOR THE REFORM AND DEVELOPMENT OF MECHANICAL PROFESSIONAL TEACHING COURSES IN HIGHER VOCATIONAL COLLEGES

5.1 Pay attention to the optimized construction of professional practice teacher team

With regard to the development of modern higher vocational education, the school needs to pay attention to the effective integration of teachers. Because of the strong practicality and operability of mechanical specialty, in the aspect of teacher training, we need to focus on the theoretical and practical ability, so as to build a more professional double qualified teachers team.

5.2 Strengthen the innovation and characteristic improvement of professional teaching courses

For the teaching development of modern mechanical specialty, teachers are influenced by the development of the times. They should strengthen the innovative research of professional education courses, pay attention to the cultivation of practical technical ability, and lay an important foundation for the future development of students. Therefore, teachers in the teaching design at the same time, according to the social market demand for talent related effective arrangement, so as to achieve the teaching goal of talent training [4].

5.3 Strengthen the professional management of professional teaching infrastructure

With regard to the teaching development of mechanical specialty in higher vocational colleges, the supporting application of teaching facilities is an important auxiliary force for the development of education. Therefore, in the actual development process, the school needs to update and purchase the infrastructure management in time, which helps to improve the students' practical level and operation strength.

5.4 Strengthen the special training of professional teaching practice ability

The cultivation of practical ability is an important part of the education of mechanical specialty. As the teaching of mechanical specialty focuses on the learning of mechanical operation, maintenance and management, teachers need to strengthen the effective integration of teaching resources, guide students to strengthen the comprehensive grasp of knowledge, and then realize the effective improvement of professional quality.

6. CONCLUSION

To sum up, under the promotion of social economy and the innovation and development of the times, the domestic education industry needs to pay attention to professional research, deepen the effective teaching of craftsman spirit, help to deepen students' autonomous and positive learning consciousness, realize the effective cultivation of students' professional strength and professionalism, and then complete the education and management of comprehensive professionals. For the teaching reform of mechanical specialty in higher vocational colleges, we can show the importance of education reform and development through the optimization of teaching team, the innovation of teaching courses, the management of teaching facilities, the cultivation of teaching practice, etc., which is helpful to promote the professional research of education industry and the high-quality development of social education.

REFERENCE

[1] Li Dian. Discussion on the teaching reform of Higher Vocational Mechanical Courses Based on craftsman spirit [J]. Science and education guide - Electronic Edition (first ten days), 2020, (6): 147.

[2] Zang wenqiong. Research on mathematics teaching reform of mechanical specialty in Higher Vocational Colleges [J]. Curriculum Education Research (new teacher teaching), 2014, (4): 72-72, 49.

[3] Wang Guodong, Jiang Xiao. Research on teaching reform of Higher Vocational Mechanical Courses Based on craftsman spirit [J]. Electronic Journal of new education era (Student Edition), 2019 (1): 0176-0176.

[4] Zhang Zong. Research on the teaching reform of mechanical courses in Higher Vocational Colleges Based on craftsman spirit [J]. Contemporary teaching and research theses, 2017 (9): 123-123.

Research on The Development Direction of Mechanical Design and Manufacturing and Its Automation

Ziyi Zhao
School of Mechanical Engineering Sichuan University, Chengdu, Sichuan 610065, China

Abstract: With the development of modern society, the level of science and technology continues to improve, and the application in all walks of life has achieved outstanding results, showing some new development models in the mechanical design and manufacturing industry, promoting the progress of the times. Modern machinery manufacturing technology has combined some automation technology and electronic information technology, so that modern chemical industry, machinery and other different fields have been more rapid development, to meet the needs of more abundant functions, efficiency and other aspects, forming a diversified industrial model. In this paper, the development direction of mechanical design and manufacturing and its automation is studied, and the specific principles of mechanical design and manufacturing are deeply considered.
Key words: Mechanical design; Mechanical manufacturing; Mechanical automation

1. INTRODUCTION

As an important part of the development of modern society, mechanical design and manufacturing and its automation contains a variety of science and technology, but also has certain characteristics of automation. The development of machinery manufacturing and its automation can promote the further production and reform of related enterprises, effectively improve the production efficiency and quality, help enterprises occupy a place in the fierce market competition, and bring more abundant economic profits for machinery manufacturing enterprises. Therefore, it is necessary to study the development direction of mechanical design and manufacturing and its automation, understand the inherent value, and promote the development of modern machinery production industry.

2. THE IMPORTANT VALUE OF MECHANICAL DESIGN AND MANUFACTURING AND ITS AUTOMATION DEVELOPMENT

First of all, the application of mechanical manufacturing and its automation technology can effectively save the time of mechanical manufacturing. The traditional mechanical manufacturing will invest rich human resources and funds, but it can not guarantee the quality of the products produced. However, based on the mechanical design and automation, we can adopt more advanced science and technology to realize the close integration and unification between modern technology and equipment, and gradually replace the manual operation used in traditional production In this process, the production time of products can be effectively reduced, and the actual production effect of related products can be improved [1-5].

Secondly, the application of mechanical manufacturing and its automation technology can improve the safety of production. The traditional mechanical production links usually produce various problems. The problems in the current mechanical production process in China are relatively frequent and complex. The main reason is that some human resources problems and equipment are not advanced in the process of mechanical design and manufacture, which lead to the impact on the life and health of construction and production personnel, and also cannot affect the life and health of construction and production personnel The economic benefits of the enterprise have a good effect. The application of mechanical design and manufacturing and automation technology can make the mode of modern machinery production more advanced, the parts produced are more accurate, the production effect is more stable, and at the same time, a more reasonable and complete mechanical production industry system can be constructed. Through the construction and setting of comprehensive mechanical design and manufacturing and its automation system, it helps the mechanical design and manufacturing and its automation system to complete the comprehensive self-monitoring and exploration in the actual production process, adjusts the production mode of the machine, and finds out the problems in the production process in time, and solves it [2].

In addition, the application of mechanical design and manufacturing and its automation technology can effectively reduce the difficulty of production. Traditional mechanical manufacturing links will be applied to complex operation and production process, which leads to the great pressure of the relevant personnel, and it is easy to produce some errors, which leads to problems. The application of mechanical manufacturing and automation technology can strictly control the mechanical automation system, which reflects the rationality of all operations, reduces the difficulty of mechanical operation of the whole control, prevents some errors, and makes the overall construction effect safer and stable. Generally speaking, the function will be relatively perfect in the development of mechanical design and manufacturing and automation system. Only the staff need to complete systematic program control, can complete the production of various mechanical equipment, reduce the difficulty of production and promote the update of the overall production mode.

3. Specific Direction Of Mechanical Design And Manufacturing And Its Automation Development

3.1 Development of intelligence

In the current mechanical design and manufacturing and its automation application, intelligent is the main development direction. The development of intelligent is mainly based on the original mechanical design and manufacturing and its automation control basis, improve the comprehensive intelligent level of the overall mechanical design and manufacturing, so as to integrate more advanced innovation technology and technology, and realize artificial intelligence production and processing process simulation operation. Compared with the original mechanical design and manufacturing and automation control technology, the application of intelligent technology can further improve the level of mechanical design and automation, help the early warning effect of machinery to be effectively improved, make the parts produced by the machine more accurate and safe, and reflect higher effect, so as to make the control effect better. At present, in the process of intelligent development of mechanical design and manufacturing and automation, the application of intelligent technology has been gradually replaced by traditional technology. As a main direction of future development, artificial intelligence needs to understand it and use some artificial intelligence technology more skillfully, so as to improve the quality of the whole product accordingly.

3.2 Development of Mechatronics

As the main direction of the future development in the process of mechanical design and manufacturing and its automation technology application, it is necessary to integrate a number of technologies in the development of mechatronics integration, so as to achieve the overall coverage of the whole production process and meet the actual requirements of production. In the process of mechatronics integration, modern information technology and electronic control technology should be fully applied to make the actual production and processing process fully integrated with the relevant production requirements, and achieve a fully automatic operation state. At present, in the actual development of mechanical and electrical integration of mechanical design and manufacturing, the relevant technical system is still not perfect and the specific performance is not complete. Therefore, it is necessary to calculate and analyze the mechanical components of the relevant system, to realize effective simulation operation, to provide good guarantee for the stability of the whole mechanical and electrical operation process, and optimize the overall Mechanical system, promote the effective improvement of modern mechanical design and manufacturing effect.

3.3 Development of network

In the network development of mechanical design and manufacturing and its automation, we need to further optimize the actual production effect of products based on network technology, improve the production mode of mechanical equipment, fully apply some modern network technology to optimize the specific working system, and realize remote monitoring of machinery, so as to effectively prevent the problems in the actual use of machinery Security issues to ensure the actual operation effect.

4. CONCLUSION

Generally speaking, the development of mechanical design and manufacturing and its automation as an important part of the development process of modern social system, the overall development trend reflects the characteristics of more intelligent and network. In this paper, the analysis, understand the important value of mechanical design and manufacturing and automation itself, hope to promote the further development of China's economy.

REFERENCE

[1] Sun Chaoxia, Zhao Jianfa, Fu Minghui. Research on the development direction of mechanical design and manufacturing and automation [J]. Engineering construction and design, 2019, 04:176-177.

[2] Ren Zhiqiang, Li Tie. Research on the development direction of mechanical design and manufacturing and automation [J]. China Equipment Engineering, 2019, 06:212-213.

[3] Huang Guijun. Research on the development direction of mechanical design and manufacturing and automation [J]. Science and technology innovation guide, 20191603:1 + 3.

[4] Zhang Jin. Research on the development direction of mechanical design and manufacturing and automation in China [J]. Science and technology wind, 2020, 09:167.

[5] Gao Yu. Research on the development direction of mechanical design and manufacturing and automation [J]. Southern agricultural machinery, 20184919:188.

On the Integration of Folk Music in Solfeggio Teaching

YueLan Deng
Guangxi Normal University for Nationalities, Chongzhuo, Guangxi, China

Abstract: Solfeggio is an important basic course of music theory in music professional courses, which mainly cultivates students' comprehensive ability of music such as "seeing", "singing", "listening" and "remembering". In today's diversified world music situation, how to integrate folk music close to life into Solfeggio teaching, make students easy to accept, enhance students' love for folk music, enhance students' recognition of national culture, cultivate students' diversified thinking of music, and improve students' comprehensive ability of music. In this paper, the Solfeggio Teaching in Colleges and universities as a starting point, focusing on the analysis of the integration of national and folk music in solfeggio teaching.

Key words: Solfeggio; Folk music; Integrated application

1. INTRODUCTION

Solfeggio is a professional compulsory course in music specialty, and it is a basic discipline of music theory which covers basic knowledge and skills of music such as solfeggio, ear training and music theory. It is a basic discipline of music theory which is interdisciplinary and knowledge structure permeated. It is a teaching system introduced from the West in China. As a teaching system introduced by the west, for a long time, the teaching system of solfeggio in China has been mainly based on the western style. The main selection of the music in the teaching materials of the College Solfeggio is mainly composed of the style melody of the western major minor, the main length of which is the theme of the music works of famous composers in Europe and America, and the folk songs of some countries in Europe and America. There are also a few folk songs and Chinese works in various parts of China Folk music fragments of the theme of the works of the composer. China is a country with 56 nationalities, and there are many kinds of national music works. In the teaching of solfeggio, how to integrate folk music into the teaching content, promote students' understanding of national culture, help students to establish the cultural concept of national music, enhance the confidence of national culture and improve the comprehensive musical literacy of students [1-4].

2. ANALYSIS OF THE CURRENT SITUATION OF SOLFEGGIO TEACHING IN NORMAL UNIVERSITIES

Solfeggio is a required course for musicology majors in normal universities. Solfeggio through systematic training of students, training students to sing music, listening and memorizing, music feeling and other aspects of literacy, improve students' appreciation and performance of music and creative ability. For example, through the training of solfeggio repertoire, students can develop their sense of music. When they see the score, they will have music in their heart and can express the music more accurately. This is the ideal state of solfeggio skill training. Solfeggio, as a foreign discipline, has developed for nearly a hundred years in China. This kind of teaching concept in Europe has promoted music education in China in a certain period. However, with the development of society, at the moment of vigorously advocating "world diversification", the teaching system based on western big and small tunes has mainly selected western big and small tunes The single teaching mode, to a certain extent, hindered the inheritance and development of our national folk music. At the same time, in recent years, affected by the enrollment expansion of colleges and universities, the basic level of music of music majors in normal universities is uneven. Most of the students only receive the training of solfeggio ability before entering school. Some students feel that the course of solfeggio is more difficult, the teaching content and teaching progress do not match their ability, and there are some problems Influenced by the thinking that solfeggio is not like vocal music and piano, some students are not interested in learning and have poor learning initiative. Therefore, how to improve the teaching methods and how to improve the diversification of Solfeggio teaching, effectively integrate the national music which is close to life, has the characteristics of our country or the area where the university is located, and is familiar to students into Solfeggio teaching, enrich the teaching content, enhance the interest and nationality of Solfeggio teaching, and constantly stimulate the students' interest in active learning, so as to realize the goal The interaction, comprehensiveness and authenticity of Solfeggio teaching can promote the sound development of Solfeggio Teaching in normal universities.

3. THE NECESSITY OF INTEGRATING SOLFEGGIO TEACHING INTO FOLK MUSIC IN NORMAL UNIVERSITIES

China's national folk music is rich and colorful, with a long history of development, including folk songs, national instrumental music, quyi music, opera music and other types, which has profound national cultural connotation. Guangxi is an autonomous region dominated by the Zhuang nationality. In the process of generations of work, the working people have created a wealth of folk music works, leaving a lot of popular music. These excellent music works embody the wisdom of the Zhuang people and embody the cultural essence of Guangxi people. As an important port to train music teachers in primary and secondary schools, how to effectively integrate the folk music materials, especially the local folk music in the Solfeggio teaching, and improve the depth and quality of integration, so as to really improve the level of Solfeggio teaching And the ultimate goal of promoting the inheritance of traditional music culture.

3.1 Folk music can provide students with rich humanistic knowledge

The ultimate goal of Solfeggio teaching is not only to improve students' music skills, but also to improve students' humanistic feelings, enrich students' humanistic quality, improve students' ability of music evaluation, appreciation and creation, and grasp the cultural attribute of music works as a whole. Music is an inclusive subject, which includes all kinds of music content. In the process of production and life development, people in every country and region have created their own national music with their own characteristics. There is almost a story or legend behind every national folk music. For example, Guangxi Caidiao drama "Liu Sanjie", mainly in the form of folk songs and combined with Caidiao opera music, shapes the image of Liu Sanjie as a "singing immortal", reflects the story of Guangxi Zhuang singing immortal Liu Sanjie leading the villagers to fight against the tyrant with folk songs as a weapon, and reflects Guangxi People's culture of taking songs as ceremony, expressing life with songs and pursuing happiness with songs. By learning to sing Liu Sanjie's series of music, students can feel Liu Sanjie's spirit of fighting against the landlord and feudal class and boldly pursuing freedom and happiness; Fu Sui County's colorful drama "Grandma's strap" tells the customs of the people in shanxu Town, Fu Sui County, Guangxi Province, and the music works embody the essence of "Tao, filial piety and righteousness" in the classics of traditional Chinese culture. The national style of all kinds of music works is not only reflected in the folk inheritance of music form, but also reflected in the thinking characteristics of different cultural concepts and national spirit. The profound humanistic connotation of national music works can be seen. Therefore, the teaching purpose of solfeggio is not only the training of skills, but also the inheritance of the humanistic feelings of music.

3.2 Folk music can provide students with rich music resources

The development of folk music in our country has a long history, rich in variety, strong regional color, melodies and melodies, profound cultural accumulation, and the main essence of music in all ethnic groups and regions. It shows the personality characteristics of all ethnic groups, including rap music, opera music, religious music, instrumental music and so on. In solfeggio teaching, the integration of various ethnic folk music materials, especially in the areas where colleges and universities are located, can broaden students' musical vision, help students accumulate a large number of musical vocabulary, and accumulate rich musical materials. For example, the normal universities in Chongzuo region of Guangxi can systematically compile the Solfeggio teaching materials in combination with the local folk music, such as tea picking opera, tianqin playing and singing, Dagao mountain tune folk songs and so on, so that students can understand the most distinctive local music culture in the learning activities of Solfeggio and ear training courses, promote students' appreciation of local folk music, and stimulate students' interest To develop students' enthusiasm for in-depth study of local culture. At the same time, the integration of national and folk music teaching in solfeggio can provide students with more abundant music resources, expand their musical vision, and expand their musical thinking and appreciation.

3.3 National folk music can stimulate students' cultural identity and promote the inheritance and development of national music culture

China's national folk music originates from the daily life of the working people. It is a cultural tradition tempered and passed down from generation to generation. It has profound national cultural connotation and is the precious spiritual wealth of the Chinese nation. For students majoring in Musicology in normal universities, in the teaching process of solfeggio, teachers focus on improving students' "inheritance and dissemination of national culture", so as to enhance students' familiarity and identification with national music culture, enhance cultural confidence, stimulate students' patriotic feelings, and promote the inheritance, innovation and development of national music culture. For example, in solfeggio teaching, students' interest in learning can be aroused by learning the representative folk music works in Chongzuo region or Guangxi region. Students can take the initiative to understand the music culture of Guangxi, such as the legends of Liu Sanjie and related music works, so as to understand the relevant cultural knowledge and unique tonal characteristics of Zhuang nationality After the study and research, promote students' understanding and recognition of Zhuang culture, and further promote the development and inheritance of its folk music.

4. PRACTICAL THINKING AND FEASIBILITY OF INTEGRATING SOLFEGGIO TEACHING INTO FOLK MUSIC CONTENT IN NORMAL UNIVERSITIES

It is an advanced Solfeggio teaching idea to integrate the local folk music into the Solfeggio Teaching in Colleges and universities. It is a kind of Solfeggio teaching guiding ideology integrating the local advanced culture, nationality and society. It can adapt measures to local conditions, teach students in accordance with their aptitude and apply what they have learned. In solfeggio teaching, how to integrate folk music materials, let students fully understand and master the national music language, accumulate more music vocabulary, and then lay a solid foundation for learning and mastering the music of other nations and countries, grasp the foundation of students' music related cultural knowledge, and lay a good music knowledge foundation for future primary and secondary education .

4.1 Change the traditional thinking of Solfeggio teaching, innovate teaching methods and strengthen teaching effect

Solfeggio is a subject introduced from the West. In the traditional teaching of solfeggio, students are mainly trained by the Western sound sense system. Students mainly accumulate western music vocabulary. Chinese traditional music is also a very excellent cultural heritage. In the process of solfeggio training, how can students integrate into Chinese traditional music and combine Chinese and western music to make music more inclusive and students' sound sense training more extensive. It requires that teachers should change the traditional teaching concept of solfeggio, take the idea of multi music education in the world as the guiding ideology, improve and innovate teaching methods, expand the scope of teaching content, expand students' musical cultural vision, and be familiar with and understand the structure and tonal characteristics of different kinds of music, so as to realize the teaching goal of solfeggio.

4.2 Change the single teaching equipment to provide more abundant music and sound accumulation for students

At present, some normal colleges and universities only have piano or few kinds of teaching equipment in the process of Solfeggio teaching. For the sound experience of other instruments, especially for Chinese national instruments, students are less exposed in class. They are not sure about the pitch of national instruments such as tianqin and erhu. This also reflects the unitary teaching equipment, single teaching mode and students The weak accumulation of sound leads to the students' poor grasp of pitch and the lack of ability to express music in different musical instruments. Therefore, in the teaching of solfeggio, we should appropriately join the practice of folk music instruments and music in China, and increase the teaching equipment of national instruments such as Erhu and pipa. Especially, if the special national instruments in the region where normal universities are located, they should be used in the teaching activities of visual singing and ear training, such as the special instrument tianqin in Chongzuo region, and in the Local Normal University The solfeggio course activities of the school will enable students to experience frequently, enhance their ability of sound discrimination of different musical instruments, stimulate students' love for local national instruments, promote students' deeper understanding of the unique musical instruments in the school area, be familiar with more sound of Chinese and Western musical instruments, accumulate better music and sound materials, and have good musical literacy.

4.3 Increase the content of folk music, enrich the content of Solfeggio and ear training materials, and play the role of regional folk music in normal colleges and Universities

Solfeggio teaching as a teaching system introduced from the west, in the selection of teaching content, in a certain period of time, the main content is western large and small tune type. With the development and progress of society, the compilation of Solfeggio teaching materials in many colleges and universities is gradually reasonable. In the selection of Solfeggio repertoire, there is a certain proportion of the selection of national and folk music repertoire in China Song. However, there are many nationalities in our country, and each nationality has passed down music with national characteristics in the process of development from generation to generation. Its music forms are various, the number is huge, and it covers a wide range. However, in the Solfeggio teaching materials of most colleges and universities, in addition to the national folk music of various regions and nationalities, there are a few folk songs In addition, other forms of folk music, such as rap, song and dance, religion and drama, are rarely involved in the teaching materials. As a result, the form of folk music in solfeggio teaching materials is missing and the content is single. It is difficult for students to systematically understand the unique style and musical characteristics of folk music in different regions. The folk music in the area where colleges and universities are located is a kind of cultural form reflecting the culture and life of the local people. It is helpful for students to understand the relationship between music and local environment and human production activities, as well as the understanding and development of local folk music Stimulate their interest in learning, promote students' research on the regional music culture, and contribute to the inheritance and development of local folk music.

4.4 Strengthen the cultivation of students' perception ability

Chinese folk music has the unique advantages of simple content, close to life, beautiful melody and clear harmony. In the teaching of solfeggio, teachers should pay attention to the cultivation of students' perceptual ability. They should combine the different connotations of Chinese and western music culture to teach. Western music advocates the concept of precise and rational intonation, while Chinese music advocates sensibility and freedom. Therefore, in the learning process of intonation, rhythm and tonality, students should enhance their understanding of the unique intervals in the melody of national and folk music And the perception of rhythm and tonality, highlighting the relationship between common intervals and degrees of national tonality. For example, the major intervals in different tonality of tianqin music in Chongzuo area are big second and small third. In practice, we should pay attention to the control of these national tonality intervals. In the music of tea picking drama in Fusui County, Chongzuo, many operas have many melodies. We should introduce these music into Teaching activities, and let students learn and learn through audio or video display In the experience of perception of melody differences. In the integrated learning of national and folk music, students can use the singing method of the first tune, and combine with the distinctive rhythm characteristics of national music to carry out a series of learning.

4.5 Improve teachers' national music literacy

Teachers play a leading role in teaching activities. Therefore, teachers' music literacy largely determines the teaching effect. Most of the solfeggio teachers have a solid foundation in western music, but their national music literacy is relatively weak. Therefore, it is necessary to cultivate teachers with one specialty and multiple abilities to ensure the smooth integration of folk music works in solfeggio teaching activities.

5. CONCLUSION

In today's multicultural world, we music educators should adhere to the concept of cultural self-confidence and national self-confidence, and integrate national folk music into the teaching content through various methods in the teaching work, so as to realize the transmission and research of national culture, and promote the charm and sustainable development of national folk music in China.

REFERENCE

[1] Yang Chuanzhong, Zhang Haili. The integration practice of folk music elements in Solfeggio Teaching in normal universities [J]. Northern music, 2020 (12): 162-163.
[2] Lang caifei. Thoughts on integrating Solfeggio into folk music [J]. Contemporary music, 2020 (06): 37-38.
[3] Zhang Fang. Application of Chinese folk music in Solfeggio Teaching [J]. Folk music, 2013 (04): 120-121.
[4] Zheng Boying. On the application of Solfeggio Teaching in Colleges and universities of folk music [J]. Music world, 2014 (06): 10-12.

Analysis of Related Factors of Allogeneic Blood Transfusion After Total Hip Arthroplasty

Ming Li
Jilin Province FAW General Hospital, Changchun, Jilin, China

Abstract: Objective: to analyze the related factors of allogeneic blood transfusion after total hip arthroplasty. Methods: 80 patients with total joint replacement in our hospital were included in this study. The study started in January 2020 and ended in January 2021. The clinical data of all patients were collected for retrospective analysis. According to the allogeneic blood transfusion after treatment, the patients were divided into two groups, the patients with postoperative blood transfusion were divided into blood transfusion group (n = 16), and the patients without postoperative blood transfusion were divided into two groups the patients were divided into non transfusion group (n = 64). Statistical analysis of the two groups of patients with various indicators, and comparative analysis of the results, single factor analysis. Results: among all the patients, there were 16 patients with allogeneic blood transfusion, accounting for 20.0% of the total number, and 64 patients without allogeneic blood transfusion, accounting for 80.0% of the total number. The age, ratio of osteoarthritis or rheumatoid arthritis, drainage tube placement, bilateral surgery, female and other data of patients in the non-transfusion group were lower than those in the transfusion group, with significant differences and statistical significance ($P < 0.05$). There was no significant difference in operation index (operation time, intraoperative blood loss), body mass index, preoperative complications, platelet count (preoperative), ASA score between the two groups ($P > 0.05$). The results showed that the risk factors of heterotopic blood transfusion included bilateral surgery, osteoarthritis or rheumatoid arthritis, drainage tube placement, etc. Conclusion: in patients with total joint replacement, there are many factors leading to postoperative heterotopic blood transfusion, which has a great impact on patients. Therefore, it is necessary to analyze the relevant factors in detail and adopt reasonable methods to effectively control heterotopic blood transfusion.

Keywords: Total Joint Replacement; Postoperative Heterotopic Blood Transfusion; Factor Analysis

1. INTRODUCTION

In order to prevent the influence of allogeneic blood transfusion on the rehabilitation of patients after hip replacement, this study analyzed the related influencing factors and made the following report.

2. DATA AND METHODS

2.1 General information

Methods: the data of 80 patients who underwent total hip arthroplasty in our hospital from January 2020 to January 2021 were retrospectively analyzed. The detailed data of patients are shown in Table 1.

2.2 Method

The data of all patients were analyzed retrospectively.

2.3 Statistical analysis

There are many related data involved in the research process, mainly counting data and measurement data. In order to facilitate analysis and comparison, all the data are put into the computer, and the computer software SPSS 23.0 is used to sort out the data. The percentage is used in the process of expressing the counting data, the data test is completed by x2, and the standard is used in the process of expressing the measurement data The data were compared by T. If there is a significant difference in the data comparison, it means ($P < 0.05$), there is statistical significance.

3. RESULTS

3.1 Analysis of heterotopic blood transfusion after operation

After the operation, 16 patients received heterotopic blood transfusion, accounting for 20.0% of the total number. In addition, 64 patients did not receive blood transfusion, accounting for 80.0% of the total number. 400 ml to 2000 ml was the amount of heterotopic blood transfusion, with an average of (760.45 ± 242.13) ml.

3.2 Comparison and univariate analysis of the data of the two groups

In the related data of the two groups, the ratio of osteoarthritis, female, preoperative hypertension classification, drainage tube placement, bilateral surgery, etc. in the non blood transfusion group was lower than that in the blood transfusion group, and the difference was statistically significant ($P < 0.05$). The femoral head necrosis, postoperative calcium concentration and preoperative Hb concentration in the non-transfusion group were higher than those in the transfusion group, and the difference was statistically significant ($P < 0.05$). There was no significant difference in preoperative platelet count, intraoperative blood loss, operation time, ASA score and BMI between the two groups ($P > 0.05$). Therefore, bilateral surgery, osteoarthritis or rheumatoid arthritis, drainage tube placement are the risk factors of ectopic blood transfusion.

4. CONCLUSION

According to the above data, bilateral operation, osteoarthritis or rheumatoid arthritis and drainage tube placement are the risk factors of ectopic blood transfusion. In terms of bilateral operation, many patients were diagnosed with symptoms during admission. If the patient is the end-stage patient of the double hip, it is necessary to treat the total hip replacement. In this case, the operation time will be prolonged, and the tissue injury is higher than that of one side and the bleeding volume increases. These factors will lead to the improvement of blood transfusion rate after operation. The drainage tube placement is a common medical means after operation, mainly to prevent local hematoma and infection. The research of Zhao Shixin [1-3] and other scholars shows that the placement of drainage tube after operation has a good effect on the prognosis of patients. However, the placement of drainage tube is the disappearance of filling effect, which makes the patients lose blood and increases the probability of retrograde infection. If the patient does not place the drainage tube, early rehabilitation exercise can effectively improve the recovery speed. At the same time, it can reduce the occurrence of deep vein thrombosis and joint swelling. The results showed that the placement of drainage tube increased the risk of blood transfusion, similar to the above results.

Table 1. Comparison and univariate analysis of the data of the two groups

Index	Blood transfusion group (n = 16)	No blood transfusion group (n = 64)	t/X^2	P
Gender (M / F, n)	6/10	32/32	4.697	<0.05
Age (years, X ± s)	58.59±7.19	56.29±8.68	2.358	<0.05
BMI(kg/m^2, x±s)	24.51±3.81	24.61±4.02	0.196	
Femoral head necrosis (yes / no, n)	8/8	45/19	11.279	<0.05
Fracture of femoral neck (yes / no, n)	2/14	7/57	0.957	>0.05
Osteoarthritis / rheumatoid arthritis (yes / no, n)	5/11	13/51	8.876	<0.05
ASA score (I / II / III, n)	6/9/1	28/32/4	0.695	>0.05
Diabetes (yes / no, n)	1/15	6/58	0.289	>0.05
Coronary heart disease (yes / no, n)	3/13	11/53	0.075	>0.05
Cerebrovascular disease (yes / no, n)	1/15	5/59	0.196	
Hypertension (0/ I / II / III)	0/3/10/3	9/33/20/2	8.076	<0.05
Preoperative platelet count (× 109 / L, X ± s)	234.31±39.03	229.08±43.88	1.124	>0.05
Preoperative hemoglobin (g / L, X ± s)	134.54±7.95	138.51±8.69	4.075	<0.05
Operation time (min, X ± s)	55.08±11.83	53.95±9.71	0.864	>0.05
Intraoperative blood loss (ML, X ± s)	238.31±52.19	229.17±55.47	1.375	>0.05
Drainage tube placement (yes / no, n)	8/8	22/42	8.275	<0.05
Number of surgical sides (single / double, n)	13/3	61/3	17.156	<0.05
Postoperative blood calcium concentration (mmol / L, X ± s)	2.13±0.19	2.25±0.25	4.798	<0.05

In conclusion, if the patients receive the total hip replacement, if there is ectopic transfusion, it will affect the recovery of the patients, even lead to complications. Therefore, the risk factors need to be analyzed in clinical, so as to prevent the time of ectopic transfusion and improve the prognosis.

REFERENCE

[1] Liu Wenhui. Analysis of the factors influencing the rapid recovery of the first total hip arthroplasty [d]. Guangxi Medical University, 2017.

[2] Zhao Shixin. Analysis of the related factors of allogeneic blood transfusion after the initial total hip replacement [d]. Zhengzhou University, 2020.

[3] Guo Tao, Wei Ren Qian, Huang Kai. Factors influencing the latent blood loss after total hip arthroplasty of ankylosing spondylitis [j]. Journal of practical orthopaedics, 2017, 23 (06): 538-541.

Exploration of Curriculum Ideological and Political Implementation in International Trade Practice

Juliang Mi
Shandong Vocational University of Technology, Jinan, Shandong, China

Abstract: Since China joined the World Trade Organization in 2001, China's foreign trade industry has made great progress, especially the signing of RCEP, which brings new opportunities and challenges for the development of China's foreign trade industry, and also puts forward higher requirements for the cultivation of international trade talents. This paper analyzes the current situation of Ideological and political education in the course of international trade practice in Colleges and universities, and explores the implementation of Ideological and political education in the course.
Keywords: International trade practice; Curriculum, Ideological and political education; Implementation; Method; Exploration

1. IDEOLOGICAL AND POLITICAL BACKGROUND OF THE COURSE

In December 2016, at the National Conference on Ideological and political work in Colleges and universities, it was pointed out that non-ideological and political courses should also pay full attention to ideological and political education. Under the guidance of Ideological and political courses, they should go in the same direction as ideological and political theory courses, and put ideological and political work throughout the whole process of education and teaching. "Curriculum ideological and political education" is an important measure for colleges and universities to implement the fundamental task of moral education under the guidance of socialism with Chinese characteristics in the new era and the central government's important exposition on education. It is an effective cut in to build a comprehensive education system of morality, intelligence, sports, beauty and labor and a high-level talent training system. It is also an important way to improve the whole process and all-round "three all-round education" Hold hands [1-4].

2. CURRENT SITUATION OF IDEOLOGICAL AND POLITICAL IMPLEMENTATION OF INTERNATIONAL TRADE PRACTICE

According to the spirit of the National Conference on Ideological and political work in Colleges and universities, as teachers of professional courses in Colleges and universities, we should organically integrate ideological and political education with professional knowledge and skills. However, the current situation is that teachers of professional courses are generally rich in professional knowledge and pay attention to the teaching of professional knowledge and skills, but the ideological and political theory is relatively scarce, and there is no ideological and political system and ideological and political concept Knowledge is relatively weak. In order to better implement the spirit of the National Conference on Ideological and political work in Colleges and universities, and meet the current social requirements for the knowledge, ability, ideological and political quality of foreign trade talents, it is imperative to implement the ideological and political reform of the course of international trade practice.

3. THE IMPLEMENTATION METHOD OF IDEOLOGICAL AND POLITICAL EDUCATION IN THE COURSE OF INTERNATIONAL TRADE PRACTICE

Ideological and political education is to integrate ideological and political elements into professional teaching, so that teaching and education can be organically integrated. At the same time of imparting professional knowledge and skills, it can guide students to strengthen their ideals and beliefs, cultivate their patriotic feelings, strengthen their moral cultivation, increase their knowledge and insight, cultivate their fighting spirit and enhance their comprehensive quality.

"Curriculum ideological and political education" should take classroom teaching as the starting point, and teachers as the most active elements of Ideological and political education. As far as the course of international trade practice is concerned, it should be combined with the whole process of international trade, carefully excavate the ideological and political elements of each link, and integrate them into each link of the course teaching, throughout the whole process of teaching, so as to achieve the goal of cultivating morality and talents. What we need to pay attention to is that not every lesson and every knowledge point should be rigidly integrated with ideological and political elements, but we should carefully select them in combination with professional talent training programs, curriculum objectives and curriculum standards, and adopt appropriate and diverse means to naturally integrate ideological and political education with professional teaching at the right time, so as to achieve the teaching effect of moistening things silently. Ideological and political content is like salt, Professional knowledge is like soup, which melts salt into soup naturally, so that students can drink a bowl of nourishing soup.

3.1 Improve the level of professional teachers' Ideological and political thinking and strengthen their awareness of Ideological and political affairs

The key to implement curriculum thinking is to strengthen the consciousness of teachers' curriculum thinking and politics and improve the level of teachers' curriculum ideological and political construction. Only by strengthening the awareness of education, finding the correct angle of education and improving the ability of education, can we better play the educational effect of curriculum ideological and political. Therefore, we should strengthen the training of curriculum thinking and politics, such as the pre job training, on-the-job training, teachers' ethics and special training of teaching ability, etc., the school can also organize professional teachers to listen to the ideological and political teachers' courses and systematically learn and master the ideological and political theory system.

3.2 Carefully explore the ideological and political elements of the course

International trade practice is designed based on the export process. In teaching, teachers of professional courses should also excavate the ideological and political elements through the export process, and work hard to "excavate, integrate and infiltrate", integrate the Recessive Ideological and political education into the teaching of professional courses, and organically unify the knowledge goal, ability goal, quality goal and ideological and political goal In order to realize the integration of Ideological and political education and professional teaching, we should adopt the method of law and multiple means. The following is to take "international trade practice" as an example to explore the excavation of Ideological and political elements.

3.2.1 When introducing the general situation of China's foreign trade. Through video data, charts, data or text data, this paper introduces the development process and achievements of China's local foreign trade. Especially in 2020, under the severe situation of global epidemic, China's foreign trade has achieved a "great reversal", with annual import and export growth of 1.9% year on year. China is the only major economy in the world to achieve positive trade growth in 2020. Let students enhance national pride and patriotic enthusiasm, firm faith, cultivate national feelings and responsibility, at the same time, establish the ideal of working hard for China's foreign trade.

3.2.2 Preparation before trading. Through market research, students can understand the status of China's foreign trade import and export volume in World Trade and the composition of China's import and export commodities, so as to cultivate the sense of innovation and craftsmanship; through looking for foreign customers, students can understand the difficult process of opening up foreign customers, cultivate a down-to-earth and conscientious work style, good communication skills, exercise the ability to face setbacks and failures, and cultivate a strong sense of responsibility Persistent and never give up professionalism.

3.2.3 In the process of transaction negotiation and contract signing. We should educate students not to be arrogant when negotiating with foreign customers, cultivate interpersonal communication skills and quick response ability in the process of negotiation, cultivate rigorous and meticulous work style from the contract terms, and establish the contract spirit and risk prevention awareness of abiding by the law and being honest and trustworthy.

3.2.4 During the performance of the contract. Let students gradually develop a rigorous and meticulous, honest and trustworthy professionalism.

3.2.4.1 Expediting, examining and correcting the certificate. Cultivate rigorous and meticulous work habits, establish a sense of responsibility and responsibility, and professional awareness of abiding by international practices.

3.2.4.2 In the process of goods preparation, establish the legal awareness and contract spirit of abiding by the contract and not practicing fraud, cultivate the spirit of craftsman, and strive to improve the product quality and establish the brand.

3.2.4.3 Commodity inspection, space booking, customs declaration and insurance. We should establish a sense of abiding by the law, make no false or concealed reports, establish the spirit of contract, and act in strict accordance with the contract.

3.3 In the process of making bills and settling foreign exchange, cultivate students' patience, meticulous and rigorous working attitude, team spirit and professional dedication, establish the sense of responsibility for the interests of the enterprise, and develop good professional ethics.

3.4 Make full use of the second classroom to carry out ideological and Political Education

In addition to the ideological and political education in the classroom, we can also make full use of the second classroom.

3.4.1 Give lectures or reports. For example, organize regular discussion between excellent graduates and students in the major, and share some of their work experience or classic business cases in foreign trade posts. Through real and vivid examples, we can help them to establish a down-to-earth, serious, hard-working, dare to face setbacks and failures, team spirit, and develop a good professional ethics of law-abiding, dedicated, honest and trustworthy.

3.4.2 Carrying out ideological and political education through Internet plus. Under the "Internet plus" mode, the transmission and dissemination of information, knowledge and culture are characterized by diversification, fragmentation and interaction. This provides a new platform for ideological and political education.

In short, as a professional teacher of international trade practice, we should actively explore the effective path of combining knowledge and ability training with curriculum ideological and political education, carefully excavate the ideological and political elements of the curriculum, and carry out ideological and political education through in class, extracurricular, online and offline channels, so as to cultivate more international trade talents suitable for the needs of the times for our country.

REFERENCE

[1] Zhao Jingjing. Current research situation and future research direction of curriculum ideology and politics [J].

Quality education in Western China. 2019 (14).
[2] Li Tianhe. Dilemma and way out of Ideological and political construction of university curriculum [J]. Journal of Nantong Shipping vocational and technical college. 2019 (04).
[3] Li Nan. Research on Ideological and political construction and education path of Higher Vocational Colleges [J]. Education modernization. 2018 (46).
[4] Jiang Wen. Exploration on the ideological and political path of international trade practice course in Higher Vocational Colleges [J]. Business information. 2020 (75).

Research on The Quality Evaluation System of Higher Vocational Education in China

Huiyi Wang
Changchun Automobile Industry Institute, Quality Control Department, Changchun, Jilin 130013, China

Abstract: Under the background of the new curriculum teaching reform, the quality evaluation of talent cultivation in Colleges and universities needs to be based on the general goal of talent cultivation set by the state at this stage, and can be carried out in strict accordance with the specific indicators and contents of relevant talent cultivation. This kind of talent training quality evaluation mode needs to make assessment evaluation for students within a certain period of time in the process of education in Colleges and universities. This paper makes a systematic research and Discussion on the optimization strategy of talent training quality evaluation system of Higher Vocational Education in China.

Key words: Higher vocational education; Talent training mode; Quality evaluation system

1. BUILD A DIVERSIFIED EVALUATION SUBJECT OF TALENT TRAINING

Building a diversified evaluation subject of talent cultivation is one of the important means to continuously optimize and improve the quality evaluation system of talent cultivation in higher vocational education. Generally speaking, the construction of diversified evaluation subject needs to start from the following four aspects.

First, school evaluation. In the process of talent training quality evaluation system, higher vocational education institutions need to strictly follow the systematic talent training objectives and requirements of education departments for different majors to ensure that the talent training of students of various majors in higher vocational education institutions can achieve the overall talent training objectives of education and teaching. According to the requirements of school evaluation, students are effectively trained to become modern comprehensive technical talents with strong professional theoretical basis ability and professional skill level, and the professional quality and moral standards of students in higher vocational education institutions are effectively cultivated through reasonable arrangement of teaching course content and practical activity courses. Only after the students' learning indicators have passed the school's talent training quality evaluation standard can they be allowed to graduate [1-3].

Second, the evaluation of internship units. As the teaching practice content of talent cultivation in higher vocational education institutions, practice is an indispensable part of education and teaching. On the one hand, in the teaching practice of internship, students can effectively apply the professional basic theoretical knowledge learned and mastered in the school to the practical work, effectively enhance the students' professional application practice ability and skill operation level, and enrich the students' social practice experience to a certain extent. On the other hand, students in the practice unit practice, but also through the constraints and management of the unit system, constantly improve the Vocational Education College Students' sense of responsibility, work discipline and other aspects of professional ethics comprehensive quality ability, to maximize the promotion of students' stable employment, give play to the students' working spirit of good basic conditions.

Third, the evaluation of employment units. For the students who have participated in the employment, the successful graduation mainly shows that the students' learning performance and learning lessons effectively meet the standards and requirements set by the school and practice units. However, the final talent training quality evaluation of vocational college students still needs to be evaluated by their employment units. First of all, students' professional basic theoretical knowledge level, special skills operation level, professional information technology mastery degree and work performance created for the unit during the employment period are the important basis for the employment unit to measure and evaluate students' talent quality standards [2]; second, in the employment unit, students' usual work attitude, work state and personal characteristics International communication relationship is also the standard and requirement of employment units for talent quality evaluation. In addition, in the process of employment units participating in talent quality evaluation, the employment units feed back these evaluation standards and requirements to students, which can also effectively enhance the role of higher vocational education institutions in reforming and innovating teaching mode, enriching and expanding teaching evaluation.

Fourth, the third-party professional evaluation organization. For the third-party personnel training quality evaluation organizations in the society, their existence is a special education evaluation organization independent of the school organization. Therefore, the evaluation standards and requirements for the quality of students have high professionalism and objectivity. At the same time, due to the high self-evaluation level and comprehensive quality of the relevant evaluators of the third-party talent quality evaluation organization, the evaluation methods and contents adopted by the third-party talent quality evaluation organization of social nature are more integrated and related, which plays an important positive role in the accuracy and scientificity of the evaluation results to a certain extent.

2. ESTABLISH AND IMPROVE THE SCIENTIFIC TALENT TRAINING EVALUATION INDEX SYSTEM

To establish and improve a scientific and effective talent training quality evaluation index system is the core content of improving and optimizing the talent quality evaluation in vocational colleges, which is related to the overall quality of the talent training evaluation system. On the one hand, according to the students' learning characteristics, practical skills and special theoretical application ability, colleges and universities formulate the corresponding teaching materials and teaching objectives, and plan the learning content knowledge of each specialty in Higher Vocational Colleges into the theoretical knowledge index of professional courses according to the basic scientific and cultural knowledge, professional basic theoretical knowledge and effective professional skills practical courses In the standard, it lays a good foundation for the formation of a standardized and efficient theoretical knowledge index system, and effectively promotes students to have a higher level of basic knowledge and professional theoretical skills [3]. On the other hand, according to the basic situation of students' daily learning and the comprehensive ability of autonomous learning, we should actively cultivate students' autonomous learning and inquiry ability of basic theoretical knowledge, and promote the continuous improvement of students' professional skills and level. In the specific practical teaching, the diversified teaching forms and contents are used to continuously cultivate and exercise students' practical operation level and skill application level, effectively develop students' independent exploration and innovation ability in practical work practice, and create a good prerequisite for students' ability factor index in higher vocational education institutions. Finally, the quality of personnel training should pay attention to the students' comprehensive quality indicators, and set the personnel training mode according to the differences and unique characteristics of students' learning and practice in different majors and the requirements of professional quality. In general, by enhancing students' correct ideological awareness, positive mental outlook and indomitable will, we can effectively build students' comprehensive quality index, effectively cultivate students' professional ethics, professional innovation ability and professional special practice, and comprehensively promote students' comprehensive development.

3. Strengthen The Effective Combination Of Qualitative Evaluation And Quantitative Evaluation Of Talent Training Mode

The construction of the quality evaluation system of talent training in vocational education institutions requires the effective combination of qualitative evaluation and quantitative evaluation. First, qualitative evaluation of talent quality is more intuitive and operational. The content of interest, emotion identification, psychological characteristics and social adaptability that students show in the process of learning and practice can not be quantified. Therefore, it is necessary to combine qualitative evaluation with quantitative evaluation, actively construct the student's learning development file, integrate and connect the students' process and practice in the learning process, and enhance the accuracy and comprehensiveness of the evaluation results, which has a prominent influence on the realization of teaching objectives in higher vocational education institutions.

4. CONCLUSION

In conclusion, the teaching goal of talent training in Colleges and universities is to cultivate a number of practical talents with strong professional and comprehensive technical ability by using fully covered technical training on the basis of focusing on training technical and comprehensive talents. The perfection and scientificity of the evaluation system of talent training quality in higher vocational education institutions is of great practical significance to the healthy development of Vocational Colleges and the reform of talent training system. Therefore, it is necessary to explore the influencing factors and standards from many aspects, and effectively volatilize the constructive role of the evaluation system in promoting the reform of talent training mechanism in Colleges and universities, and promote the high level of talents training The healthy and sustainable development of vocational education institutions.

REFERENCE

[1] Zeng Xiue. Visual analysis of the research on the talent training mode of higher vocational education [d]. Nanchang University, 2018.

[2] Li Mengqing, Xing Xiao. The reconstruction of talent training program of Higher Vocational Education under the background of "double high school plan" [j]. Modern education management, 2020 (01): 107-114.

[3] Shuyajing. Study on improving the quality monitoring and evaluation system of talent training in Higher Engineering Education [d]. Harbin University of technology, 2016.

Review of Studies on EFL Grammar Teaching in Chinese Mainland from 2007 to 2020

Wenjie Zhang
Zhejiang Yuexiu University, Shaoxing, Zhejiang, China

Abstract: This paper focuses on the published key research papers during 14 years (2007-2020) on English grammar teaching in Chinese mainland and aims to reveal the trends of domestic studies in this field and provide reference for future English grammar teaching and research.
Key words: EFL grammar teaching; Studies in Chinese mainland; Review; Trends

1. INTRODUCTION

The importance of English grammar to EFL learners is unquestionable, but to what extent grammar teaching is important to grammar acquisition is debatable. Domestic scholars Dai Weidong and Chen Liping (2005) pointed out that grammar teaching has been ignored since 1970s with the notion that conscious learning of grammar forms cannot be transformed into automatic linguistic competence. Krashen (1982) pointed out the distinction between acquisition and learning, holding that conscious learning of grammar was not conducive to grammar acquisition, which can only be achieved by abundant comprehensive input. As a matter of fact, the role of explicit grammar teaching was once reduced to its minimum, nearly leading to the exclusion of grammar teaching from classroom. Studies on grammar teaching has witnessed revival with the rise of second language acquisition research since the 1980s, and grammar teaching has shifted from method-oriented era to learner-oriented era with researchers showing strong interests in learner language and learners' individual differences (Ellis, 2013).

Domestic scholars Liu Zhongzheng and Li Qian reviewed the studies on English grammar teaching in Chinese mainland from 1996 and 2007, and pointed out three major problems concerning English grammar teaching research: a lack of empirical studies, uneven research subjects (no study done on primary school students or postgraduate students), narrow scope of research and insufficient depth. This paper makes a further study by reviewing the published papers in the core Chinese journals of foreign language teaching and research during 14 years (from 2007 to 2020), with a view to revealing the trends and problems and providing reference for future study on grammar teaching in Chinese Mainland.

2. SELECTION OF RESEARCH PAPERS

The author used CNKI (China National Knowledge Infrastructure) as the major source and searched for relevant papers published during 2007 to 2020 in the 14 core Chinese journals of foreign language study as well as doctoral dissertations, got 35 research papers (33 journal papers and 2 doctoral dissertations) related to English grammar teaching. The author sorted the papers according to the journal title, year of publication, research method (empirical research or non-empirical research), research subjects, etc.

2.1 The papers are listed according to the journal titles and the year of publication in order to get the overall trend of English grammar teaching research in China.

2.2 The papers fall into two broad categories of empirical studies and non-empirical studies. The empirical studies mainly involve quantitative research on English grammar teaching, including teaching reform practice, case studies of English learners and teachers, as well as qualitative research characterized by systematic collection of data. Papers of non-empirical research do not have systematically collected data and mainly involve theoretical interpretation of grammar teaching or reflection and review of the application of relevant teaching theories to grammar teaching.

2.3 Research subjects are divided, according to English learners at different levels as well as English teachers, into five categories: English majors, non-English majors, middle school students and mixed students groups (not clearly mentioned in the paper) and teachers.

2.4 Review of studies on English grammar teaching is discussed according to the subject matter of the papers.

3. STATISTICAL SUMMARY OF PAPERS ON ENGLISH GRAMMAR TEACHING

As can be seen from Table 1, a total of 35 research papers were published during 2007 to 2020, while only 16 papers were published during 1996 to 2007 (Liu Zhongzheng 2010). Statistics show that 20 research papers were published during the first 4 years (2007-2010), accounting for 57% of the total; In addition, there were only two doctoral dissertations.

As can be seen from Table 2, empirical studies account for 60% of the total while the corresponding figure during 1996 to 2007 is only 25%, which shows that empirical studies have gradually become the mainstream of grammar teaching research. Table 3 shows that, among the studies on six research subjects of English majors, non-English majors, middle school students (junior high school and senior high school students), mixed students groups and English teachers, studies on mixed students groups account for 43%, followed by 23% on English majors, 14% on non-English majors, and 11% on middle school students with 4 papers altogether (3 papers on junior high school students and 1 paper on senior high school students). Besides, among the 4 papers on teachers, 2 papers are on college English teachers, and 2 on middle school English teachers (1 on junior high school English teachers and 1 on senior high school English teachers).

Table 1 List of Research Papers on English Grammar Teaching in Chinese Mainland

year / journal	07	08	09	10	11	12	13	14	15	16	17	18	19	20	total
Journal of Foreign Languages															0
Technology Enhanced Foreign Language Education			1	1				1							3
Foreign Language Education					1										1
Foreign Language Learning Theory and Practice		1	1	1		1			1				2	1	8
Foreign Language Teaching and Research				1											1
Foreign Language World									1				1		2
Foreign Languages Research		1							1						2
Foreign languages and Their Teaching	2		1			1		1			1				6
Modern Foreign Languages															0
Foreign Languages in China				2											2
Foreign Language and Literature			1	1											2
Foreign Language Research		1		1											2
Journal of Xi'an International Studies University			1	1	1										3
Journal of PLA University of Foreign Languages								1							1
Doctoral dissertation	2														2
total	4	3	5	8	2	2	0	3	3	0	1	0	3	1	35

Table 2 Division of Papers on English Grammar Teaching in Chinese Mainland

year / method	07	08	09	10	11	12	13	14	15	16	17	18	19	20	total	percent-age
empirical study	3	2	2	3	1	1		3	2		1		2	1	21	60%
non-empirical study	1	1	3	5	1	1			1				1		14	40%
total	4	3	5	8	2	2	0	3	3	0	1	0	3	1	35	100%

Table 3 Subjects of Papers on English Grammar Teaching in Chinese Mainland

subject / year	07	08	09	10	11	12	13	14	15	16	17	18	19	20	total	Percent-age
English majors		1	3					1	1		1		1		8	23%
non-English majors	3			2											5	14%
middle school students						1		1	1					1	4	11%
mixed students groups		2	2	4	2	1		1	1				2		15	43%
English teachers	1			1				1					1		4	11%
total	4	3	5	8	2	2	0	3	3	0	1	0	3	1	35	100%

4. STATUS QUO OF DOMESTIC STUDIES ON ENGLISH GRAMMAR TEACHING

Papers on grammar teaching fall into the following five categories in terms of subject matter: papers that discuss grammar teaching from theoretical point of view, papers that revolve around English grammar teaching pedagogy, papers that focus on interpretation of concept of grammar ability and its components, papers that mainly discuss English grammar teaching from the perspective of teacher cognition.

4.1 Studies on English Grammar Teaching from Theoretical Point of View

This category includes 14 papers altogether (13 journal papers and 1 doctoral thesis), accounting for about 40% of the total. Among the 14 papers, 2 are on English majors, 2 on non-English majors, 1 on junior high school students, and the rest 9 are on mixed students groups. Gui Shichun (2010) stressed the importance of grammar teaching research from the perspective of cognitive psychology and psycholinguistics. Some researchers such as Zeng Xinyue and Liu Zhengguang (2009), Liu Wei (2011), Lin Zhengjun and Liu Yongbing (2012) argued for the necessity of grammar teaching and call for the focus on a combination of form-based and meaning-based grammar teaching activities. Some scholars such as Lin Zhengjun and Jia Lei (2015) advocated a top-down grammar teaching innovation, calling for teachers' innovating concept of grammar teaching by constructing a cognitive pedagogical grammar. Wang Yin (2019) tried to reconstruct a new approach to English grammar teaching by integrating the localized Embodied-Cognitive Linguistics with the ideas of cognitive English grammar. Huang Hui (2007), in her doctoral dissertation, discussed college English grammar teaching from constructivism point of view. Li Yanping and Zhu Yushan (2011), Lv Jun and Dong Xiaoqiu (2009) analyzed the application of prototype category theory in grammar teaching. Ge Yixiang and Li Qi'an (2009) studied the implications of theory of Communities of Practice to grammar teaching via multi-media. Cao Yaoping (2010) illustrated the importance of communicative approach in grammar teaching from the viewpoint of communicative competence. Xiang Mingyou (2019) put forward the concept of supply-side structural reform in grammar teaching for college English majors. Like Lin Zhengjun and Jia Lei, Xiang Mingyou also called for teachers' updating their concept of grammar teaching. By reviewing these papers, it is obvious that the focus is not on the necessity of grammar teaching but on the approach to it. And consensus has been reached that striking a balance between form-based and meaning-based activities is essential in grammar teaching. Moreover, as Gui Shichun (2010) put, more interdisciplinary research needs to be done from the perspective of cognitive psychology and linguistics.

4.2 Studies on English Grammar Teaching Pedagogy

These studies mainly deal with certain teaching methods, approaches, or means in grammar teaching. There are 12 related papers, accounting for about 34% of the total. In terms of research subjects, 4 papers are on English majors, 1 on non-English majors, 3 on junior high school students, 1 on high school students, and 3 on mixed students groups. Many scholars have carried out comparative studies of teaching methods. Zhang Sumin (2014, 2015) did a comparative study between input processing instruction and 3P (presentation, practice, production) grammar instruction in junior high school and senior high school. Zhao Jizheng (2008) didoes an experimental study on grammar teaching by comparing three approaches to grammar acquisition: explicit learning, implicit learning and consciousness raising. Zhu Yushan (2007) presented five task types of teaching activities for implicit grammar teaching in college English teaching context. Zhang Pei and Sun Jian (2009) proposed three types of tasks in task-based college English grammar teaching of English majors. Long Xianping and Liu Xiqin (2007) investigated college students' perception of grammar teaching, and propose the idea of striking a balance between explicit and implicit grammar teaching to achieve internalization of grammar acquisition. There are also scholars who study the application of new technologies in grammar teaching. Luo Ling, Wen Shanyi and Zhu Yonghong (2014) proposed three kinds of data-driven grammar learning based on a self-made grammar learning corpus. Wu Jun (2010) analyzed and exemplified the significance of corpus-aided grammar teaching. Chen Fang (2017) explored the impact of the authority of teachers on students through a project where students participated in peer assessment and self-evaluation in a student-centered classroom at college level. Xu Jinfen and Li Changying (2020) compared the effects of two different kinds of timing of form-focused instruction on junior high school English learners' grammar acquisition.

It can be drawn that, on the whole, these studies are carried out in the context of communicative teaching pedagogy, aiming to achieve the combination of explicit grammar teaching with implicit grammar teaching in classroom activities design. Researchers generally agree that grammar teaching should be embedded in communicative activities and meaning should be primary. As a matter of fact, grammar acquisition is hardly achieved if learners ignore language form in communicative language teaching. Research on form-focused instruction has become a hot issue of research in second language acquisition, which means language teachers should use different means and strategies to guide learners to pay attention to the language form in communicative activities. But relevant studies in Chinese mainland are insufficient, with only 2 papers by Xu Jinfen. And both the two papers are on junior high school students. More studies on form-focused instruction need to be done on senior high school students and college students.

4.3 Studies on Interpretation of Concept of Grammar Ability and Its Affecting Factors.

There are 4 papers in this category, 3 papers are on English majors and 1 on non-English majors. These papers mainly discuss the interpretation of English grammar and grammar competence, as well as factors that influence grammar competence. As Dai Weidong (2005) pointed out, the concept of grammar has been extended and it is no longer limited to linguistic forms for in a way, form is meaning. Xu Xiaoyan and Xu Luming (2009) divided grammar competence into three categories and examined the changes in grammar comprehension competence, controlled production competence, and production competence of English majors from freshman year one to senior year. Gao Fengjiang (2008) divided grammar into 3 three types: mental grammar, functional grammar and school grammar (usage grammar) and Gao Fengjiang (2008) examined the relationship between school grammar teaching and language awareness cultivation. Bai Liru's (2015) study on 171 Chinese English majors attempts to construct an evaluating scale of English grammatical competence which consists of three items: the sentence monitoring skill, the sentence manipulating skill and the sentence production skill. Zhu Xiaoshen (2010) analyzed the three factors that affect grammar acquisition (acquisition of relative clauses): language aptitude, cognitive styles and individual differences. It is worth noting that the research subjects of the above-mentioned studies are mainly English majors, and these studies have great significance of reference for English grammar teaching.

4.4 Studies on Teacher Cognition in English Grammar Teaching

In this category there are altogether 6 papers including 1 doctoral dissertation. The studies generally center on three aspects: teachers' beliefs about grammar teaching, teachers' grammar knowledge, and the relationship of teachers' cognitions with their teaching practices. The studies involve using questionnaires or interviews to examine teachers' teaching practices and cognitions with comparing teachers' and students' beliefs about grammar teaching. The research subjects of these studies include junior high school English teachers, senior high school English teachers and college English teachers. Li Yanping and Zhu Yushan (2011) surveyed 120 English teachers (60 each from middle school and university) on their beliefs of grammar teaching method and content arrangement. Xu Jinfen and Li Changying (2019) investigated into junior middle school English teachers' form-focused instruction in their teaching practice by surveying 394 middle school English teachers. Taking a longitudinal case study approach, Yang Luxin and Fu Xiaofan (2014) examined how two high school EFL teachers changed their beliefs and practices in grammar teaching through their participation in a voluntary teacher development program over four months. In his doctoral dissertation, Gao Qiang (2007) surveyed the cognitive patterns of EFL grammar teaching held by 392 college English teachers and 884 non-English major freshmen and sophomores from 14 colleges and universities in Shandong Province. Gao Qiang and Qin Junhong (2010) explored the relationship between grammar teaching beliefs held by 396 Chinese college English teachers and their grammar teaching practices. The results of the questionnaires in the above-mentioned studies generally demonstrate that most teachers agree on the importance of explicit and deductive approaches and emphasize the necessity of drilling exercises. And both teachers and students generally favor explicit grammar teaching. However, participant college learners in the questionnaires don't want their teachers to spend much time on grammar teaching. And College English teachers are more in favor of inductive approaches and giving priority to meanings over forms compared with middle school teachers. Compared with abundant studies abroad, there are relatively few domestic studies on grammar teaching from the perspective of teacher cognition.

It is worth noting that, as a matter of fact, Chinese EFL teachers' use of mother tongue is very common in grammar teaching classroom, especially at junior middle school and senior middle school level. Many EFL teachers argue that appropriate use of mother tongue in explaining grammar terminology is necessary. But no corresponding studies have been made concerning the effect of using mother tongue on grammar acquisition in classroom teaching activities.

5. CURRENT PROBLEMS OF RESEARCH IN EFL GRAMMAR TEACHING

5.1 The Uneven Distribution of the Research Subjects

As can be seen from Table 3, the five broad categories of research subjects include English majors, non-English majors, middle school students (junior middle school and senior middle school students), mixed students' groups and English teachers, accounting for 23%, 14%, 11%, 43%, 11% respectively, which shows an obvious uneven distribution. As a matter of fact, researchers are mainly scholars from colleges and universities, and that explains why studies on college students make up the largest proportion. And there is no research on graduate students and primary school students and studies on middle school students are insufficient. However, several researchers have made studies on English teachers especially on middle school English teachers, which show that academic exchanges between researchers and middle school teachers are being strengthened so relevant studies could provide reference and guidance for middle school English grammar teaching.

5.2 The Relatively Narrow Research Depth

It can be seen that existing studies have explored grammar teaching greatly in width but not in depth. Firstly, more empirical studies need to be made on research hotspots of second language acquisition. Many theories have emerged in support of L2 grammar teaching, and *focus on form* has become the most influential one. But there are not enough relevant domestic studies. Xu Jinfen (2019, 2020) studied junior middle school English teachers' form-focused instruction but there are no relevant studies at college level, senior middle school level or primary school level. Another hotspot of grammar teaching research is grammar teaching from the perspective of teacher cognition. Gao Qiang (2007, 2010) surveyed college English teachers' cognition; Yang Luxin (2014) surveyed senior middle school English teachers' cognition; Xu Jinfen (2019) surveyed junior middle school teachers' cognition. However, no studies have been made concerning primary school teachers' cognition in grammar teaching and existing studies are obviously insufficient. Secondly, a lack of research width and depth can be found concerning data collection and in some research fields. Wu Jun (2010) analyzed and exemplified the significance of corpus-aided grammar teaching, But no empirical study of corpus-aided grammar teaching on a certain type of learners have ever been done. Thirdly, there have been few longitudinal cases studies that place great emphasis on learners' process of grammar acquisition. Yang Luxin's (2014) longitudinal case study lasts for 4 months but there are no other studies that last for a longer time and the intervals between pre-tests and post-tests in existing studies are relatively short. Finally, the largest proportions of studies are on mixed students groups, and that to some extent indicates researchers' relative insufficient attention paid to leaners' individual differences.

6. CONCLUSION

Existing studies show that there are great differences between students and teachers in the concept of grammar learning and teaching. As can be seen from Huang Hui's (2007) study, data collected from the questionnaires and interviews show that a large number of L2 English learners are not satisfied with their English grammar, but they don't want teachers to spend much time on grammar teaching in classroom. This shows that there is a big gap between learners' beliefs and teachers' beliefs of grammar learning and teaching. The author believes that the big gap is partly due to the lack of learning strategy training in EFL grammar teaching. Another point worth noting in Gao Qiang's (2007) study is that EFL teachers, especially middle school English teachers, mention other factors such as their learning and teaching experiences, rather than studies on EFL grammar teaching as sources of their beliefs and approaches of grammar teaching. Therefore, the author of this paper believes that existing studies on EFL grammar teaching in China has provided little guidance or reference for grammar teaching practice. How to promote teaching reform through teaching research, so that learners set up an efficient concept of grammar learning and teachers take initiative to embrace teaching reform and update their beliefs of instruction and teaching practices? As a matter of fact, most L2 grammar teaching researchers are college teachers or scholars and there should be more academic exchanges between researchers and teachers, especially middle school teachers.

The author believes that future studies on grammar teaching in Chinese mainland could prosper from the following perspectives. Firstly, more empirical studies can be done on broader research subjects to include primary school students and graduate students. Secondly, more studies can be done in the field of second language acquisition research hotspots such as *focus on form instruction* and teacher cognition. Thirdly, more interdisciplinary studies can be done on EFL grammar teaching from the viewpoints of cognitive linguistics, psycholinguistics, corpus linguistics, sociolinguistics, etc. As a matter of fact, currently researchers are now paying more attention to grammar and grammar teaching than language teachers, so it is hoped that this paper can arouse teachers' attention to view grammar and teach grammar from a new perspective.

REFERENCES

[1] Bai Liru: Construction of an Evaluating Scale of English Majors' Grammatical Competence [J]. *Foreign Language World*, 2015 (5):42-51.

[2] Cao Yaoping: On English Grammar Teaching from the Viewpoint of Communicative Competence [J]. *Journal of Xi'an International Studies University*, 2010.06:109-113.

[3] Chen Fang: Testing the Proposed Reform Variables for an Advanced Grammar Course [J]. *Foreign languages and Their Teaching,* 2017 (4):16-25.

[4] Dai Weidong and Chen Liping: A Review of L2 Grammar Teaching Theories, [J]. *Foreign Language Teaching and Research*, 2005.03: 92-99.

[5] Ellis, R. *The Study of Second Language Acquisition (Second Edition)* [M]. Shanghai: Shanghai Foreign Language Education Press, 2013.

[6] Gao Fengjiang: On the Correlation of Usage Grammar and Language Awareness Cultivation [J]. *Foreign Languages Research*, 2008(2):62-65.

[7] Gao Qiang: Grammar Teaching from the Perspective of Teacher Cognition: A Survey of Chinese EFL Teachers to non-English Major Undergraduates [D]. *Doctoral Dissertation of Shandong University*, 2007.

[8] Gao Qiang, Qin Junhong. An Exploration of the Relationship between Grammar Teaching Beliefs Held by College Teachers of English and Their Grammar Teaching Practices [J]. *Foreign Language Learning Theory and Practice*, 2010 (3):50-56.

[9] Ge Yixiang, Li Keian: A Study on Teaching English Grammar via Multi-media in the Light of the Theory of Communities of Practice [J]. *Technology Enhanced Foreign Language Education*, 2009.07: 53-57.

[10] Gui Shichun: Reflections on Some Issues in Foreign Language Teaching in China [J]. *Foreign Language Teaching and Research*, 2010.07: 275-281.

[11] Huang Hui: Research on College English Grammar Teaching from Constructivism Point of View [D]. *Doctoral Dissertation of Shanghai International Studies University*, 2007.

[12] Krashen, Stephen D. *Principles and Practice in Second Language Acquisition* [M]. Oxford: Pergamon, 1982.

[13] Li Yanping, Zhu Yushan: English Grammar Teaching from Prototype and Category Theory Point of View [J]. *Foreign Language Education*, 2011.01:62-65..

[14] Lin Zhengjun, Jia Lei: A Probe into English Grammar Teaching Innovation [J]. *Foreign Language Learning Theory and Practice*, 2015(3):57-62.

[15] Lin Zhengjun, Liu Yongbing: English Grammar Teaching: A perspective of Construction Grammar [J]. *Foreign Language Learning Theory and Practice,* 2012(1): 51-57.

[16] Liu Wei: On Three-dimensional Grammar Teaching Padagogy in the Light of Linguistics and Language Teaching Development [J]. *Journal of Xi'an International Studies University,* 2011.12:70-74.

[17] Liu Zhongzheng, Li Xi. Review of Studies on English Grammar Teaching during 1996-2007 in China [J]. *Foreign language and Literature*, 2010.06:122-125.

[18] Long Xianping, Liu Xiqin: Investigation of College Students' Perceptions concerning Grammar Teaching [J]. *Foreign languages and Their Teaching,* 2007(6):28-30.

[19] Lv Jun, Dong Xiaoqiu: Grammar Teaching to College English Majors from Categorization Theory Point of View [J]. *Journal of Xi'an International Studies University*, 2009.03:108-110.

[20] Luo Ling, Wen Shanyi, Zhu Yonghong: The Development of a Guided Data-driven Self-directed Learning Model of English Grammar and its Effectiveness [J]. *Technology Enhanced Foreign Language Education*, 2014.09:16-21.

[21] Wang Yin, Wang Tianyi: English Grammar Teaching from Embodied-Cognitive Linguistics Point of View [J]. *Foreign Language World*, 2019(1):44-52.

[22] Wu Jun: Corpus and English Grammar Teaching [J]. *Foreign Language Research*, 2010 (1): 104-107.

[23] Xiang Mingyou: Supply-Side Structural Reforms in College English Grammar Teaching [J]. *Foreign Language Learning Theory and Practice*, 2019(3):6-11..

[24] Xu Jinfen, Li Changying: Effects of the Timing of Form-focused Instruction on English Learners' Grammar Acquisition across Different Proficiency Levels [J]. *Foreign Language Learning Theory and Practice*, 2020(2):50-56.

[25] Xu Jinfen, Li Changying: Research into Junior Middle School English Teachers' Form-focused Instruction [J]. Foreign Language Learning Theory and Practice, 2019(3):12-17.

[26] Xu Xiaoyan, Xu Luming. Change and Development in Chinese L2 English Learners' Abilities of Grammar Comprehension, Controlled and Uncontrolled Production [J]. *Foreign Language Learning Theory and Practice*, 2009 (3):1-14.

[27] Yang Luxin, Fu Xiaofan: EFL Teachers' Belief and Practice Change in Grammar Teaching during Teacher Training Program [J]. *Foreign Languages and Their Teaching,* 2014(1):60-66.

[28] Zeng Xinyue, Liu Zhengguang: Insights of Cognitive Linguistics on Grammar Instruction [J]. *Foreign Language and Literature*, 2009.08:111-117.

[29] Zhang Pei, Sun Jiancheng: Teaching English Grammar through Tasks [J]. *Foreign Language and Their Teaching,* 2009, (9):37-42.

[30] Zhang Sumin: A Comparative Study of 3P Grammar

Instruction and Input Processing Instruction from the Perspective of Learning Motivation [J]. *Journal of PLA University of Foreign Languages*, 2014.11:74-82.

[31] Zhang Sumin: A Comparative Study between Processing Instruction and 3P Grammar Instruction [J]. *Foreign Language Research*, 2015(5):44-49.

[32] Zhao Jizheng: Explicit Learning, Implicit Learning and Consciousness Raising-An Experimental Study on Grammar Teaching [J]. *Journal Sichuan International Studies University,* 2008.07: 136-140.

[33] Zhu Yushan: On College English Writing Task Design from Implicit Grammar Teaching Point of View [J]. *Foreign Languages and Their Teaching*, 2007(09):50-52.

Discussion on Web Front End Development Technology

YanQin Cao
Wuhan Qingchuan University, School of Computer Science, Wuhan, Hubei 430204, China

Abstract: The development of Internet and information system promotes the development and application of Web front-end gradually, but in the process of network data transmission, malicious attacks, frequent advertising and other problems gradually appear. This paper briefly introduces the three key languages of Web front-end development technology, and discusses the specific measures to optimize the web front-end development technology, aiming at continuously improving the front-end development technology of web system.

Key words: Web; Front end development technology; Cloud computing

1. INTRODUCTION

In modern society, the network occupies an important position in human life, and even some activities have been completely dependent on the network. Web technology is a technical means of network page display, which can effectively help the development of network information. However, with the diversified development of the Internet environment, web development has gradually developed into a distributed system terminal to enhance the user experience. At the same time, the web system development center has also transferred to the front-end development.

2. KEY LANGUAGE OF WEB FRONT END DEVELOPMENT TECHNOLOGY

Web front-end development technology mainly includes three core languages, namely HTML, Java and CSS. The functions and executive standards of different languages are different, but the technical characteristics are related. First of all, html is a standardized markup language, its core does not belong to the programming language, but can make the web browser work normally, the browser will translate the HTML language, so as to help users browse the web. Secondly, Java is a literal script language, which can maintain a variety of development forms including dynamic types, prototypes, weak types, etc. because the translator comes from the browser engine, it is also known as the Java engine. Java development process is mainly suitable for web upgrade, and on the basis of HTML dynamic function promotion. Finally, CSS is a kind of computer language with the help of a certain application and subset in HTML, and its core belongs to cascading style sheet. In the web front-end development technology, CSS plays a vital role, which can segment the content of the computer web page, improve the running speed of the browser, reduce the difficulty of system maintenance, and help to simplify the browser page code. In the web front-end development work, HTML, Java and CSS are indispensable. At the same time, various new technologies are continuously integrated to achieve the expected development goal [1].

3. SPECIFIC MEASURES FOR OPTIMIZING WEB FRONT END DEVELOPMENT TECHNOLOGY

3.1 Application of cloud computing technology

The essence of Web front-end development optimization is the optimization of computer network function. As an emerging technology in computer software technology, Internet cloud technology can take the Internet as the media, decompose the initial large amount of processing data, process the basic operation unit through the server cluster, and return it to the user, so as to realize the common operation of Web front-end development The computer reaches the level of supercomputer. In the actual development process, on the one hand, independent system version is needed to ensure the compatibility of software; on the other hand, for some computer data that can not achieve data compatibility, matching data to the corresponding computer is needed to realize the browser search function between different software. Taking two kinds of computer software a and B as examples, when using cloud computing technology for web front-end development, a has advantages in system and information processing, and its stability in actual operation will be stronger than B, and the system does not need additional auxiliary work. But the storage capacity is limited, long-term use makes the client data jam, running speed is reduced, need to repair the system. B will always be affected by many conditions in the use process, and the related operation is more complicated. Compared with a, B has a smaller number of users, but it also makes B do not need system maintenance, and can achieve long-term automatic management. No matter what kind of Web front-end development technology, the fundamental purpose of its development is to serve users, so the market should emphasize the efficient optimization of cloud computing technology application [2].

3.2 Application of system virtual technology

In the optimization of Web front-end development, the application of computer software technology can effectively improve the processing efficiency, and system virtualization technology is one of them. It refers to the realization of virtual machine service functions such as "one virtual many", "multiple virtual one" and "multiple virtual many" on a physical machine by using software such as esxi, etc. In this service mode, the data is parallel and independent, and the different operating systems and applications installed will be separated from each other during the service period, so as to realize the effective allocation and use of resources. For example, a company's digital management platform uses a virtual cluster server, which has 180 processor cores and 254gb of memory, meeting the needs of independent operation of servers and promoting the efficient development of business. At the present stage, there are many kinds of virtualization cluster server technology products. First of all, most of the web front-end development systems adopt the virtual server product, and compared with other virtual software products, the requirement of the system environment is lower, which realizes the data processing directly on the hardware, and effectively improves the system stability and performance. Secondly, Microsoft Hyper-V is a server virtualization solution launched by Microsoft to cooperate with Windows Server 2008 system. Through the 64 bit microkernel management program, VSP and VSC core content are upgraded to meet various types of operating system applications, and the performance and security are improved. Finally, compared with the former two virtual software products, Citrix Xen server is characterized by realizing the transformation of static and complex data center environment into dynamic and more manageable server working environment, so as to effectively control the cost of data processing and get closer to bare metal performance.

3.3 Application of identity authentication technology

Web front-end development technology is not only to realize the optimization of web pages, but also to complete the functionality and security of web pages. Information security technology is a new concept emerging with the Internet wave, whose purpose is to ensure information security. With the continuous development of Internet technology, the application of identity authentication technology will bring massive sensitive business data, which can effectively guarantee the security of information security interaction model of Web front-end development. Take the quantum communication technology as an example, it issues the secret key through the quantum secret key, and transfers the secret key through the quantum channel. This data transfer mode can accurately detect the system motion state without changing its original data state, so as to ensure that the web data will not be eavesdropped, intercepted and changed. In 2008, China successfully developed a decoy state optical fiber quantum communication prototype system, and became the first 3-node chain optical quantum telephone network users in the world. In 2012, Chinese scientists completed the 100 km free space quantum teleportation, marking a new level of research on quantum communication technology in China. Web front-end development technology optimization as an information asset, its own security needs to be protected by a variety of means, using a variety of identity authentication technology, can tap the potential value of Web front-end development technology optimization.

4. CONCLUSION

To solve various problems in the process of Web front-end development, the core is to complete the technical optimization work, combine with the application of modern computer technology, realize the efficient and stable development of Web front-end development technology, and effectively improve the overall level of Web front-end development.

REFERENCE

[1] Tang Caihong, Lai Jingliang, Zhai Hongyan. Research on the course certificate integration teaching system of "web front end foundation" under the "1 + X" certificate [J]. Journal of Guangdong Polytechnic of light industry, 2020, 19 (04): 59-62 + 68.

[2] Chen Fang. Web front end development technology and technology optimization for website design and production [J]. Electronic world, 2020 (23): 196-197.

Research on The Application of Data Mining in Education Big Data

Xiaoxiao Chen, Yueman Shi
Hunan University of Arts and Science, Changde, Hunan 415000, China

Abstract: With the deepening of the construction and application of smart campus, education big data featuring huge data volume, rapid change and diversification has been produced. Education under the background of big data, through the gathering, analysis, mining, it is concluded that valuable knowledge, diagnosis, early warning, the improvement on teaching business tracking, for schools to carry out the individualized education guide, reform teaching methods, optimizing education resources, students' growth and development forecast, building education decision making, a think-tank, provide data support, so as to promote the development of education undertakings.
Key words: Education big data; Mining analysis; Education decision

1.INTRODUCTION

With the emergence of cloud computing technology and the continuous improvement of computing power, people's ability to extract value from data is also significantly improved. In addition, as more and more people, devices and sensors are connected through the network, the ability to generate, transmit, analyze and share data has been revolutionized. The type, depth and breadth of data are growing rapidly, which brings great challenges to the current data management and data analysis technology. The Internet ushers in the era of big data. The basic concepts, key technologies and utilization of big data have been widely recognized by the industry. It has become a consensus in the industry to process and analyze big data and find the huge value of big data.

2.DATA MINING IN THE ERA OF BIG DATA

Since the invention of computer, until before the era of big data, most of the data people are faced with are structured, which has strong logic and strong causal connection. For example, the operator customer relationship system records the user's number, account opening time, account opening place, package type and other information. Now, most of the data that people are faced with is unstructured, and this kind of data has the characteristics of anytime, massive, elastic and uncontrollable. In order to mine more information from unstructured data, it is necessary to deal with the challenges of big data in four aspects: capacity, data diversity, processing speed and value mining. Data mining in the era of big data mainly includes parallel data mining, search engine technology, recommendation engine technology and social network analysis.

2.1 The parallel data mining process includes four steps: preprocessing, pattern extraction, verification and deployment. A full understanding of data and business objectives is the premise of doing data mining well, and it is necessary to complete algorithm parallelization and distributed data processing with the help of MapReduce computing architecture and HDFS storage system.

2.2 Search engine technology can help users quickly locate in huge amounts of data to the need of information, only to understand the real intention of the document and the user, make content matching and importance, in order to provide an excellent search service, need to be calculated by using graphs architecture and HDFS storage system to complete the document storage and the generation of the inverted index structure.

2.3 Recommendation engine technology to help users automatically receive personalized service in the vast amounts of information or content, it is the key to search to find age transition, cold start, sparse and extensibility is an eternal topic recommendation system need to directly face the, recommend effect not only depends on the model and algorithm, and is closely related to product form, service mode and other non-technical factors.

2.4 Social network analysis starts from the relationship between objects, analyzes new problems with new ideas, and provides methods and tools for interactive data mining. It is the concentrated embodiment of group wisdom and crowd-sourcing, and it is also the key link to realize social filtering, marketing, recommendation and search.

3. THE APPLICATION OF DATA MINING IN BIG DATA OF EDUCATION

Data mining application in the field of education has a very wide range, made some remarkable achievements, not only solved the problems of the teaching department, such as professional subject construction, innovative talent training, learning process control, early warning and supervision of the achievement, school tradition construction of check on work attendance, teaching comprehensive assessment, makes the education management more scientific, but also increase the construction of the digital, greatly improved the teaching quality and level, provides effective scientific decision basis for the school development.

3.1 Subject achievement analysis

Through the analysis of teaching big data such as exam, practice, class, teaching and research, the knowledge rules of students' basic performance analysis, individual and group development analysis, discipline detailed analysis, goal achievement analysis and so on are mined and obtained. Through data analysis, teachers can understand each student's learning situation in a vertical and horizontal way, find out teaching problems in time, provide a basis for teachers to teach students in accordance with their aptitude, and effectively improve the accuracy of teaching behavior. Students can find knowledge points to grasp the situation, for their own personalized learning to provide data support. Education managers can discover the problems of all kinds of school teaching, and teachers, is beneficial to scientific diagnosis, make the school teaching quality management can be realized with standard, implement of fine management and intelligent decision-making, so as to solve the education information stealth, decision-making and extensive, lack of resources, improve the quality of teaching and the comprehensive competitiveness.

3.2 Students learn by themselves

With the continuous advancement of information construction and the implementation of personalized adaptive learning, students' learning is no longer limited to specific classroom teaching and book knowledge. Mobile learning, ubiquitous learning, computer-assisted instruction and network education have become important channels for students' learning. Students can choose their favorite learning methods and contents independently. However, the differences and learning behavior data among students are difficult to be quantified and statistically. As a result, teachers are unable to guide and supervise the whole process of course learning and cannot evaluate the learning effect and learning feedback of students. What characteristics of an online learning environment can lead to better learning results? Which learning behaviors can lead to better learning results? What kind of education is most effective for certain students? And so on, using data mining technology, can get scientific and accurate answers. In the background of big data in education, the parallel processing technology, distributed framework acquisition tools, network data acquisition tools and other means are used to collect students' self-learning data, mining and analysis are carried out through data mining, and visualization analysis results are given. Then, according to the analysis results, students' learning needs and attitudes are mastered, learning behaviors are deeply explored, learning conditions of students are understood, teaching plans and programs are timely adjusted to help teachers recommend appropriate learning methods for different students, and different teaching resources are provided, so as to optimize students' independent learning.

3.3 Teaching effect evaluation

Education data mining technology is introduced into the teaching effect evaluation of the application of decision tree classification and correlation analysis of teacher evaluation data and teaching course grade data mining analysis, analysis of the relationship between teachers' personal quality and teaching level, professional quality and the relationship between the teaching achievements, fully excavate data contains the significance of education, to accurate personalized teaching quality, refinement, scientific analysis and evaluation, implement teaching evaluation results by scientific methods of impartiality and fairness. Based on the needs of schools, teachers and students, we should guide teachers to carry forward and pay attention to matters in teaching, improve teachers' quality and self-cultivation, and provide comprehensive services for regional decision-making, teaching and research management, school development, teacher teaching and student growth.

3.4 Student employment management

By analyzing large data mining students employment, sorting and analyzing the different regions and between professional, students' quality characteristics and between employment, employment skills and professional foundation course, their awareness and the relationship between entrepreneurship and so on, so as to have a goal have a direction to guide the graduates employment, guide the school of education resources rationally, to provide personalized business career guidance service, targeted training applied skilled personnel, improve the employment guidance to improve school employment competitiveness.

4. CONCLUSION

With the advent of the era of big data in education, data mining will be applied to push learning resources, construct virtual learning communities, optimize learning paths and cultivate innovative talents in teaching and learning in the future. Using data mining to carry out automatic analysis and in-depth mining, to transform education big data into valuable knowledge and information wealth, guide and assist education management departments to formulate scientific and effective policies, optimize the use of educational resources, so as to promote the development of school education and enhance the core competitiveness.

ACKNOWLEDGEMENTS

Scientific research project of Hunan University of Arts and Science(20ZD08). Research on Learning Process Control Practice Based on Big Data(186140058).

REFERENCES

[1] Wei H C, Peng H, Chou C. Can more interactivity improve learning achievement in an online course? Effects of college students\" perception and actual use of a course-management system on their learning achievement[J]. Computers & Education, 2015, 83:10-21.

[2] Yang JiWu. Application of data mining in education big data [J]. ShangQing. 2019(8):202.

[3] Chen Dexin, Zhan Yuanyuan, Yang Bing. Application analysis of deep learning technology in the field of education big data mining [J]. E-education Research. 2019(40), 2: 68-76.

A New Approach to the Training of the Core Competence of Animation Specialty

Chen Yinwei
Chongqing Institute of Technology, Chongqing, China

Abstract: Animation major is a very practical major, and also an interdisciplinary major featuring the deep integration of science and art. How to cultivate high-quality applied animation professionals is a problem that universities at home and abroad are discussing. The core ability of animation talents is to cultivate innovative and specialized talents who can adapt to the development of digital age and information society and engage in animation, cartoon production, creation and communication in related enterprises. In this paper, based on the core competence of the animation specialty cultivation problems, combining with the Chongqing college of engineering animation professional years of exploration and practice of applied talent training experience, from the perspective of professional course put forward "the theory of diversification, basic course modularization, industry course enterprise" the education idea, to cultivate the specific theoretical foundation is good, high comprehensive quality, professional ability of modern applied professional talents.
Key words: Animation major; Core competence; Curriculum system; Training path

1. INTRODUCTION

Throughout the development history of Chinese animation for 100 years. WJH brothers from the 1920 s began to make studio, to the 60 s unique characteristics of the Chinese ink painting style of animation "little tadpole looking for mom", the introduction of computer animation, in the late eighty s, in animation movie to 2021 the son tooth, present a different visual art form, but also have different production technology and method. From the perspective of talent cultivation, we are constantly exploring the cultivation path of animation major from mentoring, training to academic education. For college animation professional talent training, what is the first to teach? Secondly, how to teach? And then who will teach? The problem; Colleges and universities have different professional orientation and training characteristics, but the talents they cultivate should meet the needs of enterprises. To explore the cultivation of core competence of animation major is a problem that domestic colleges and universities are reforming and exploring. These problems are mainly reflected in the lack of application ability of animation talents trained by colleges and universities, the lack of mastery of new technologies and the gap between enterprises' demands [1-5].

2. THE CHANGE OF DEMAND HAS BROUGHT ABOUT THE CHANGE OF TEACHING CONTENT

2.1 Applied talents promote the change of teaching content

Application-oriented talents are high-quality talents who meet the employment standards of enterprises and can adapt to industrial posts. Animation major conducts research on enterprises every year. In the research in 2020, the main positions of animation major include two-dimensional animation, three-dimensional animation, game art, cartoon illustration, new media animation, planning and creativity, etc., which have certain differences in the core competitiveness of talents from different enterprises. The selection of teaching content should be suitable for the needs of enterprises, which is embodied in the content of professional basic courses, professional courses and industrial courses.

The content of professional basic courses mainly cultivates students' modeling ability and aesthetic ability, and gets rid of the traditional sketch, color and sketch in art education; Change to line modeling and color performance, specific courses include animation modeling foundation, color, dynamic sketch, movement rules, etc.

The content of professional courses is mainly to cultivate students' mastery of the core competence of the major. Real projects are selected to draw the teaching knowledge points, and teaching is carried out on the principle of sufficient knowledge points selection.

The content of the course of industry orientation is mainly to cultivate students' practical ability, choose enterprise business projects to carry out the teaching, and face the market promotion, so as to lay a good foundation for the subsequent internship and employment. Specific courses include paperless animation, comic illustrator creation, 3D animation, etc.

2.2 Difficulty in the selection of current teaching contents

From the perspective of enterprise employment standards, the technical ability, professional quality, communication ability and assistance ability of 34 animation related enterprises were investigated in 2020; Among them, technical ability accounted for 100%, professional quality accounted for 79.41%, communication ability accounted for 70.59%; The ability to assist accounted for 70.59%, which proved that the applied talents trained were actually comprehensive talents. There are some problems in the selection of teaching content in the cultivation of comprehensive talents, such as incomplete selection of cases, low difficulty and unstable source of cases.

The selection of teaching cases is not comprehensive and cannot meet the comprehensive cultivation of students. For the cultivation of comprehensive talents, the main knowledge should be comprehensive, in the face of multiple modules and dozens of positions in the industry knowledge selection will appear blind spots and incomplete choice.

The difficulty of teaching case selection is relatively low, and it can not adapt to corporate posts. The average credit of a course is 3 credits and 48 hours. Teaching is integrated teaching, and each course has corresponding teaching tasks. The case selection is too difficult, the practice is insufficient, and the knowledge is not in place. The update of teaching cases is not stable and cannot meet the technical requirements of enterprises. Teaching cases are prepared by teachers according to their own courses. In terms of preparation resources, there is a big gap between the early project resources and the current market demand, and students lack of new technical and quality requirements.

3. THE CHANGE OF STUDENTS HAS BROUGHT ABOUT THE REFORM OF TEACHING METHODS

3.1 Weak team awareness promotes group teaching

Animation production is a multi-process, multi-person and multi-collaboration work, so cultivating students' teamwork ability is the core competence of animation talents. Art majors emphasize individualization and creativity. In addition, contemporary college students have better conditions and are more "blessed", which leads to their weak sense of teamwork. In the course design of animation specialty, cognitive education is carried out for team cooperation and group teaching is promoted. Especially in the practice course of animation creation, the teaching means of "project type", "group type" and "crew type" are generally adopted to enhance students' teamwork ability, project management ability and communication and coordination ability. In these teaching methods, often appear the team is not harmonious, the project team management is not in place, members of the disagreement and so on. In the teaching process, teachers should play a guiding and coordinating role in the middle, and use group teaching method to enhance students' team consciousness.

3.2 Insufficient cultural and artistic accomplishment to improve the diversity of teaching

The animation major is a major integrating the development of "humanities, art and science and technology". It is the core competence of animation talents to cultivate students' humanistic quality and artistic aesthetic ability. In the national long-term education, exam-oriented education is the priority. Most art students take the art professional examination through 3-9 months of intensive training, and their cultural performance is relatively low, which leads to their inadequate cultural and artistic accomplishment. In the curriculum setting of animation major, 3-5 theoretical courses are adopted to make up for the lack of cultural and artistic accomplishment. In particular, art students do not pay attention to cultural courses and do not love learning objective factors, it is necessary to adopt a variety of teaching methods to attract students' attention, improve students' cultural and artistic accomplishment. In the classroom education, the curriculum design of artistic cultivation courses should be strengthened. Cultural masters and big names in the industry can be invited to join some courses to enhance the diversity of teaching.

3.3 Lack of exploration and personalized development of innovative thinking

Animation art is audio-visual art, in the audio-visual art, special emphasis on the creation of art, training students' innovative thinking is the core ability of animation talents. Nowadays, in teaching, the class is taken as the unit to carry out popular talent training, and the personalized training is often weakened. Students develop their own specialties through self-study. The national standards of animation major have certain requirements on students' design thinking. The lack of innovative thinking can be made up through innovative courses, design thinking and creative design in some courses. Students' personalities can be found and their personalized development can be enhanced through various training of innovative thinking.

4. CULTIVATION PATH OF CORE COMPETENCE OF APPLIED ANIMATION TALENTS

There are two types of courses for animation major: general courses and professional courses. The professional courses are divided into professional theory, professional courses and industry courses. The core ability of cultivating animation talents can be found through different types of courses to meet the employment needs of enterprises.

4.1 Adopt diversified theoretical courses

The theoretical courses of animation major in the national standard are mainly composed of three modules: basic and introduction, basic skills, and historical knowledge. The main courses include audio-visual language, animation principles, introduction to art, history of Chinese and foreign animation, communication, and foundation of drama, etc. These courses lay a solid foundation for cultivating animation talents with good theoretical foundation. In terms of teaching methods, they are divided into teaching method, discussion method, task-driven method, visiting method and independent learning method. Today, with the rapid development of information technology, cramming teaching has been unable to meet the needs of teaching. "There are teaching methods, but there is no fixed method" is selected according to different courses and different teachers. Fragmented learning has become the mainstream of students' learning, and it is imperative to focus on theoretical teaching. To strengthen the experiential teaching method is to improve the ability of students to master knowledge, focusing on the project of theoretical courses, the diversification of teaching methods, and gradually reduce the classroom bench. Going out and bringing in is the path that animation theory course explores.

4.2 Build a modular professional curriculum system

The key to the cultivation of animation talents lies in professional courses. How to reasonably build a modular knowledge system is the topic we discuss, and it is also the key point to cultivate the core competence of animation talents. The core competence of animation talents is mainly concentrated in modeling, action and software application, and the curriculum is also set around these three aspects.

Modeling ability is a basic ability that enterprises attach more importance to. Whether it is a plastic talent or not, enterprises should observe from this aspect and train animation talents with emphasis on basic skills to pave the way for subsequent learning and development. Specific courses on modeling ability include basic animation modeling, color, dynamic sketch, character design, scene design, etc.

Action ability is the core essence of animation major and also an important component of animation works. Strengthening the training of action ability is the core competitiveness of enhancing students' employment. Specific courses of action ability include animation principles, motion rules, original painting design, character action design and so on.

Software application ability is the basic ability of animation artistic expression, and it is also the observation point that enterprises pay more attention to. To cultivate the application ability of software is to let students master the new technology of animation performance, improve the production efficiency and enhance the quality of works. Specific courses of software application ability include digital image processing, audio and video processing technology, animation software foundation, animation model making, animation special effects, animation post-production, etc.

4.3 Carry out enterprise-oriented industrial curriculum practice

Cultivate application-oriented animation talents to meet the needs of enterprises, focusing on students' project experience. Industry is aimed at students employment set course, how to effectively carry out business course is the subject of colleges and universities at home and abroad are discussed, adhere to the "university-enterprise cooperation, integration production and education" is applied undergraduate colleges and universities to explore the path, chongqing college of engineering after years of university-enterprise joint education has begun to take effect, cultivate the talents can be recognised by the height of the enterprise, but with the depth of the enterprise is insufficient, university-enterprise cooperation common education to real project source from the practice curriculum system, practice, practice teaching conditions, practical nuclear system carried out four dimensions.

The current problem in the practical teaching system is that "the connection of practical courses is not close enough". Based on the technical ability requirements of enterprise posts, the principle of "modularization" is adopted to build a practical teaching system oriented to enterprise post ability from modeling module, design module, action module and software module.

The problems now in the practice project source "update slower, the lack of a fixed update resource source", by cooperating with enterprise practice teaching resources, USES the principle of "classified fusion", reserve 2 d animation, 3 d animation, comics, illustration, game project, regular screening of combing to adapt to the curriculum practice, comprehensive practice teaching content.

The current problems in practical teaching conditions, such as outdated equipment and backward technology, will be integrated with enterprises, adopt the principle of "sharing", carry out practical work of teachers and students in enterprises through school-enterprise cooperation, regularly carry out school-enterprise technical exchanges, and establish school-enterprise intercommunication mechanism.

The current problems in the practice assessment system "can not be recognized by enterprises". According to the employment standards of enterprises, the principle of "school-enterprise joint assessment" is adopted, and enterprises participate in teaching activities, examine questions, and jointly evaluate, so as to build a practice assessment system suitable for the animation industry.

5. CONCLUSION

The cultivation of core competence of applied animation major is a topic discussed both at home and abroad. From the perspective of enterprise employment, we analyze that the core competence of animation major is practical and effective. It is a big project to explore the cultivation of core competence of animation major under the background of multidisciplinary integration. We from the aspects of teaching content, teaching method, curriculum setting of animation professional core ability, especially in the practice course of enterprise and puts forward a new problem, practice "class cohesion is not quite close together, project updates slower", the lack of "fixed update sources, " teaching "outdated equipment, backward technology, examination system problem such as" not approved ", adhere to the "cooperation between colleges and convergence" education is to improve applied animation professional personnel training specification, so as to further explore and booster first-class talent training quality, and the local economic development services to the industry.

ACKNOWLEDGEMENTS

This paper is a key teaching and research project of Chongqing Institute of Technology. Project Name: "Construction and Practice of Practical Teaching System of Animation Major under the Mode of School-Enterprise Cooperation"; Project number: JY2020204.

REFERENCE

[1] Hua Lei. Framework and Practice of Cultivating High-quality Innovative Animation Talents in Different Directions [J]. Research on Fine Arts Education.2021, (01):94-95.

[2] Yin Bing. New Exploration on the Cultivation Path of Core Competence in Animation Major [J]. Contemporary Animation.2020, (01):106-112.

[3] Shao Ran. Research on the Training Mode of Schooling and Enterprise Cooperation in Animation Major of Colleges and Universities [J]. Media Forum, 2020, 3(21):139+141.

[4] Hua Liang. Curriculum System Setting of Foreign Animation Major and Its Enlightenment [J]. Art Education Research, 2021, (01):106-107.

[5] Li Na, Wang Weiqi. Research on the cultivation of animation talents under the background of new media era [J]. Science, Technology and Economy Guide. 2020, 28(27): 104+103.

Teaching Reform and Practice of Mechanical Principal Course Under the Condition of Information Technology

Chongzhi Mao
School of Mechanical Engineering, Shandong University of Technology, Zibo 255000, Shandong, China

Abstract: Science and technology and information technology are becoming more and more mature, and education has also been reformed and innovated. Under the condition of information technology, the traditional teaching mode of mechanical principle course has been difficult to meet the needs of students' learning and development, which requires teachers to abandon the limitations brought by the traditional teaching mode and implement the innovation of teaching mode in combination with the trend of the times Based on this background, this paper discusses the teaching reform and practice of mechanical principle course under the condition of information technology for reference.

Key words: Information technology; Mechanical principal course; Teaching reform

1. THE PROBLEMS EXISTING IN THE TEACHING PRACTICE OF MECHANICAL PRINCIPAL COURSE

The increasing market demand for talents majoring in mechanical principles has brought more challenges and tests to the teaching of mechanical principles. According to the current situation, there are still some deficiencies in the teaching practice of traditional teaching principles, mainly in the following aspects.

1.1 Due to the influence of traditional exam-oriented education background, the teaching mode of mechanical principle course is relatively single and boring, which is mainly dominated by teachers, and it is difficult to highlight the status of students as the main body of learning. Students are always in a passive state of accepting knowledge. In addition, the boring teaching atmosphere will consume students' learning enthusiasm to a great extent, and the teaching effect is difficult to achieve the expected [1].

1.2 Teaching evaluation is simple. Generally, the evaluation index of mechanical principle course only includes attendance rate, homework completion and examination results, which is one-sided and can not motivate students' active learning;

1.3 The teaching content and teaching methods are relatively backward, which greatly limits the improvement of students' comprehensive ability, and to a large extent leads to the development of automation, networking and intelligence in the teaching of mechanical principle course. On this basis, the actual arrangement of course teaching also has obvious disadvantages such as "emphasizing teaching method, neglecting learning method", "emphasizing result, neglecting process", "emphasizing theory and neglecting practice" .

2. TEACHING REFORM AND PRACTICE OF MECHANICAL PRINCIPLE COURSE UNDER THE CONDITION OF INFORMATION TECHNOLOGY

2.1 Reform and reconstruction of teaching process

Under the condition of information technology, if we want to realize the reform and practice of mechanical principle course, and ensure the improvement of its teaching quality and teaching results, one of the key points is the reconstruction of teaching process. In view of this work, teachers first need to improve their teaching consciousness under the guidance of relevant advanced theories, so as to implement the guidance of people-oriented concept With the support of technology, we can realize the dynamic reform in the teaching process. Specifically, we can take a three-stage progressive mixed teaching process for each teaching link, such as before class, in class and after class.

2.1.1 Preparatory study before class

For the pre class preparation stage, teachers can formulate certain learning tasks according to the actual teaching situation and students' learning needs, so that under their guidance, students can use mobile phones, computers and other devices to test online micro class. In this process, they can make real-time evaluation combined with their actual learning progress, so as to effectively help students learn In addition, teachers can communicate with teachers at any time through online communication in the stage of preparing for learning, breaking the limitation of space and time, and better ensuring the efficiency of answering questions and solving puzzles. In addition, combined with students' learning feedback, teachers can improve the efficiency of answering questions and solving puzzles Teachers can also effectively adjust the teaching planning scheme to provide better help to improve the teaching quality [2].

2.1.2 Deep learning in class

In class deep learning stage is the focus of teaching. Students can have a basic understanding and memory of knowledge after experiencing the preparatory learning before class. Based on this, teachers can carry out the teaching of problems and cases according to the guidance of teaching plan, and change the degree of difficulty with the in-depth implementation of the course. At the same time, combined with different learning difficulties, teachers can improve the teaching efficiency It can implement different forms of teaching methods, so as to provide students with more diversified learning experience, promote their interest and enthusiasm in learning, and give better play to the value of subjective initiative. For example, the problems with lower difficulty can enable students to carry out independent inquiry learning, and the problems with higher difficulty can carry out group cooperative learning In the lively and interesting teaching atmosphere, it can promote students to take a more active attitude to study, and realize the construction and improvement of this part of the knowledge system.

2.1.3 After class extended learning

After class extended learning can better help students consolidate their knowledge, and improve their practical ability to apply the knowledge to solve practical problems. In view of this, teachers need to arrange the content of the extended learning stage in combination with the actual teaching situation in the class, and it can start from the actual life of students, improve the enthusiasm of students' participation, so as to use some of their favorite cases It can promote the implementation of the expansibility of other layout. For the feedback of this teaching stage, it can guide students to record inquiry learning, such as sharing posts in the teaching platform and writing their own blog. Teachers need to understand and master the students' learning and inquiry situation, so as to provide better reference for the follow-up teaching.

2.2 Reform and reconstruction of teaching evaluation

Under the condition of information technology, the reform and reconstruction of teaching evaluation method is also a very important content. In view of this, the relevant personnel need to abandon the traditional one-sided teaching evaluation method, so as to comprehensively optimize and select the evaluation index, not only pay attention to students' learning performance, but also strengthen the cultivation and consideration of students' comprehensive ability, We can build a "diversified, whole process, ability oriented" teaching evaluation system. In the process of implementing the teaching system, we also need to implement the principle of "people-oriented, achievement oriented".

2.2.1 Diversified evaluation contents

The essence of this content is to enrich and optimize the teaching evaluation indicators. Based on the previous factors such as students' attendance rate, homework completion and examination results, it also needs to combine the performance of pre class micro class learning completion rate, reappearance test, classroom test and classroom inquiry learning to solve problems, and integrate classroom test, group cooperation and knowledge discussion The process includes all aspects of comprehensive coverage, better enhance the objectivity and effectiveness of teaching evaluation [3].

2.2.2 Diversification of evaluation subjects

The so-called diversification of evaluation subject is mainly the improvement of the objects involved in the evaluation. In this process, teachers can use student self-evaluation, teacher evaluation, student mutual evaluation and other methods to carry out the evaluation work with the support of information network curriculum platform. In this way, it can effectively emphasize the realization of teaching objectives for students, and also can greatly reduce the burden of teachers In addition, we should implement the significance of evaluation, grasp the situation of students more comprehensively, and realize the targeted adjustment and implementation of its continuous teaching.

3. CONCLUSION

To sum up, under the condition of information technology, the teaching method of mechanical principle course is also facing innovation and reform. Teachers need to pay attention to the use of information technology means, so as to realize the comprehensive reform of the whole teaching process and teaching evaluation method, better ensure the teaching effect, and promote the comprehensive improvement of students' ability and quality.

REFERENCE

[1] Liu Xiaoxia, Wu Zhaoyun, Ding Hao, Ruan Jinglan, Shen Huipeng, teaching reform and practice of mechanical principle under the condition of information technology [J]. University education, 2019, 0 (10).

[2] Wang Hui. Exploration on teaching reform of mechanical principle [J]. New West, 2019, 0 (32).

[3] Zhu Lida, Gong Yadong, Shi Jiashun, mechanical curriculum reform and practice based on modern information technology [J]. China educational technology equipment, 2018, 0 (16).

Analysis and Countermeasures of Kindergarten Children's Safety Education

Yuanyuan Tian
Shaanxi Vocational and Technical College, Preschool Education College, Xi'an 710100, Shaanxi, China

Abstract: As an issue of special concern to all sectors of society, early childhood safety education has always been an important core content of early childhood education. In kindergartens, some safety accidents often occur, which seriously affect the comprehensive development of children's physical and mental health. In this paper, the kindergarten children's safety education problem analysis and countermeasures are discussed.
Key words: Kindergarten; Safety education problems; Analysis; Countermeasures

1. THE CURRENT PROBLEMS IN KINDERGARTEN SAFETY EDUCATION IN CHINA

1.1 Lack of safety awareness and loopholes in management

At present, the primary task of kindergarten education is safety work. However, as far as the implementation of kindergarten education curriculum in China is concerned, in most early childhood education, schools and parents put too much energy on children's quality education, and teachers also focus their daily work on children's teaching curriculum education. The daily curriculum schedule is divided into English curriculum, thinking logic curriculum, Chinese culture education, dance curriculum and music curriculum Music courses are so full that the education time of safety education courses is squeezed to a minimum [1]. In addition, there are many safety education courses in kindergartens, which transform more teaching contents into core courses of quality education. For children's safety education curriculum is not enough attention, resulting in preschool teachers and children are difficult to form a correct sense of self-protection safety, so that they do not know how to deal with their own security risks, and do not know how to avoid risks when encountering security risks again, leaving many security risks for future study and life.

1.2 The security system of safety education lacks perfection

At present, the kindergarten safety education teaching system is an important basis and premise to ensure the safety education of children. In the current kindergarten safety education teaching, there is a lack of a set of systematic and perfect rules and regulations, which seriously restricts the smooth development of children's safety education. With the continuous advancement and development of curriculum education reform process, the goal, task, purpose and significance of early childhood education are constantly updated and changed, gradually highlighting the dominant position of students in teaching. Therefore, the traditional security system of safety education has been unable to meet the needs of children's learning and the change and development of curriculum reform. It is necessary to continuously practice and explore some advanced new teaching ideas and new teaching methods to effectively enhance their feasibility. In the process of reforming the security system of children's safety education, preschool teachers need to keep pace with the times and adjust measures to local conditions to build a set of perfect, systematic and consistent rules and regulations system that can promote the healthy development of their own kindergartens. In addition, the kindergarten's safety education rules and regulations also exist the phenomenon of unclear rights and responsibilities, unclear responsibilities and so on. Therefore, when constructing the rules and regulations system of children's safety education, it is necessary to make clear the rights and responsibilities, and be meticulous to the individual. The responsibility is specific to the individual and assigned to the individual. Through this form, the power and responsibility can be clearly defined, specific and transparent, and the behavior norms of teachers and children can be well developed.

1.3 Children's safety education and training is seriously insufficient

At this stage of early childhood education, teachers' safety awareness is insufficient, their understanding of the significance of early childhood safety education is not comprehensive and sufficient, and the safety education activities of early childhood education are not carried out smoothly. As an excellent preschool teacher, we should not only pay attention to the cultivation of children's quality and ability, but also put the focus of early childhood education on guiding children to develop correct safety awareness, so that children can take effective measures to help themselves when they encounter safety risks and other critical moments, rather than teachers just around children like nannies Bind and restrict the comprehensive development and growth of children's physical and mental health [2]. In terms of the current teaching situation of children's safety education course, the construction of teaching facilities is not complete, and there are few successful cases of teachers carrying out children's safety education through teaching picture books and advanced teaching methods and technologies. In this teaching environment, children learn and contact with relevant safety education, learning content is relatively less, and practical experience is insufficient, which seriously affects children's self-learning When it comes to safety hazards and risks, it will have a lot of adverse effects on children's physical and mental health.

2. ANALYSIS OF THE COUNTERMEASURES FOR CHILDREN'S SAFETY EDUCATION

2.1 Strengthen the training of children's safety education

In kindergarten teachers to carry out the relevant children's safety education practice courses, teachers need to take safety work as the primary task of education, pay attention to the training of children's safety awareness and safety methods and the cultivation of coping ability, strictly deal with the phenomenon of playing computer, making phone calls and brushing mobile phones when carrying out teaching courses, and strictly follow the rules and regulations of children's safety education The content of the system can effectively implement the responsibility; effectively avoid the safety accidents of children falling from the bed and knocking to the ground caused by the improper care or negligence of kindergarten teachers, effectively do a good job in the quality control of safety work, and try our best to put an end to all potential safety hazards of children. Through continuous exploration and practice teaching, innovate and optimize the teaching means and forms of children's safety education with the times, constantly update and expand the teaching content, carry out open, interesting and heuristic safety education teaching practice activities for children, guide children to know what things are dangerous, and take what means and methods to prevent and solve [3]. For example, in the teaching of safety education practice course, in order to effectively enhance the effectiveness of the course teaching, teachers can guide children to have a personal experience, so that children can strengthen the deep understanding and effective practical application of safety education course content as if they were on the scene, effectively cultivate students to form a sound and healthy safety awareness, and let children learn and experience imperceptibly In the process, we should master and digest some common sense of safe life, and highlight the importance of safety education in early childhood education.

2.2 Strengthen the importance of safety management in kindergartens

It is undeniable that children's safety education plays a very important role in the development of children's physical and mental health. Children's health and safety is related to the happiness of school and family. Therefore, preschool teachers need to take children's safety education and security work as a top priority for effective implementation. On the one hand, schools should build a special job rotation system. Implement in strict accordance with the requirements and contents of relevant safety rules and regulations. On the basis of no special circumstances, no one is allowed to visit in the kindergarten. For all foreign personnel, we should do a good job in the relevant registration and strictly implement the relevant registration system. On the other hand, the kindergarten also needs to summarize the food safety of the canteen into the practical teaching of safety education, and strictly follow the relevant food safety system, food quality requirements and standards, so as to effectively ensure the quality of children's food And zero accident rate. Under normal circumstances, in order to effectively control the quality of food safety, kindergartens actively employ professional nutritionists to provide reference for children's seasonal recipes, so as to realize the normative and scientific control of children's diet. Kindergartens strictly formulate healthy and scientific diet according to the recommendation of nutritionists, so as to effectively promote children's physical and mental health and all-round development.

3. CONCLUSION

To sum up, it is particularly important to strengthen safety education in kindergartens. Preschool teachers should pay attention to the cultivation of children's safety awareness, strengthen the ability to identify potential safety hazards and solve safety problems. Teachers need to constantly improve their comprehensive strength and practical teaching level, actively innovate their own safety education ideas, and guide children to avoid safety risks from the source.

REFERENCE

[1] Zhang Tingting. Research on the current situation and coping strategies of infant injury accidents in kindergarten [D]. Tianjin Normal University, 2017.

[2] Tian Zhenlong. Analysis of current situation of sports safety education in primary school physical education in Xicheng District of Beijing and Research on countermeasures [D]. Capital Institute of physical education, 2018.

[3] Yan Xinyi. Research on personal safety management and safety education of kindergarten children [D]. Suzhou University, 2018.

Research on Management Accounting Innovation Under the Background of Supply Side Reform

Bing Wang
Zibo Vocational Institute, Zibo 255314, Shandong, China

Abstract: It has been more than six years since supply side reform was put forward. It has changed the development direction of enterprises and brought a series of problems. If enterprises want to strengthen their competitiveness, they should attach great importance to management accounting. Under the background of supply side reform, they need to carry out new innovative research on management accounting, so as to achieve the strategic goal of long-term development.
Key words: Management accounting; Supply side reform; Innovation research

1. INTRODUCTION

Since the reform and opening up, the domestic market economy has been advancing at a high speed, and the national economy has been constantly improving. However, with the rapid development, there are also some problems, such as: the economic structure needs to be improved. The traditional management mode in the past has not adapted to the new era, so it is an inevitable trend to carry out supply side reform. In such a context, the development of management accounting is urgent. First, we need to strengthen the standardization of the system, and second, we need to implement innovation to promote the development of enterprises.

2. THE IMPORTANT ROLE OF MANAGEMENT ACCOUNTING INNOVATION UNDER THE BACKGROUND OF SUPPLY SIDE REFORM

Under the background of supply side reform, it plays an important role in the innovation of management accounting. This paper summarizes the following aspects, including: to better manage the cost of enterprises, to make the decision-making and evaluation of enterprises more scientific.

2.1 To better manage the cost of enterprises

At present, it is the era of knowledge economy, so the value of a product is not only as simple as economic benefits, but also with the content of knowledge level, so the management of enterprises must make adjustments, so as to ensure the refinement of costs and to ensure that they can stand firm in the economic market. Under the background of supply side reform, enterprises should position the value-added of a commodity when they produce or invest it. Before the value-added, they need to optimize the technology, have a deep understanding of the product, and do a good job in cost management after fully mastering the data. This means that the content of management accounting should be standardized and scientific. Therefore, we need to attach great importance to innovation in the future development New job.

2.2 It can make the decision-making and evaluation of enterprises more scientific

If you want to make the decision-making and evaluation of enterprises move towards the scientific direction, the innovation of management accounting is essential. In the economic development of enterprises, decision-making is very important, which affects the overall development of enterprises. In terms of enterprise decision-making, the information provided by management accounting in the past is only the use and outflow of funds, which can not help any substantive. If we innovate the previous management accounting work, we can make the decision more accurate and reliable, and promote the development of enterprises in a real sense.

3. THE INFLUENCE OF SUPPLY SIDE REFORM ON MANAGEMENT ACCOUNTING

The impact of supply side reform on management accounting is multifaceted, which can be embodied in the following aspects: the impact on value added, the impact on management control, and the impact on information support.

3.1 Impact on value added

At present, domestic development has certain advantages in high-tech products, but some parts and value-added parts applied to high-tech products are in the hands of developed countries. Under the background of supply side reform, some low-end products can be eliminated, and the value-added part will naturally rise. The work of management accounting is to maximize the benefit of the value-added part during this period.

3.2 Impact on management control

In the economic management control, management accounting plays a very important role and has a great influence on the control work. If the work of management accounting is further increased under the background of supply side reform, it is necessary to further study the value and optimize it with Internet technology. In addition, it is necessary to pay attention to the preferential policies of the state in this field and make contributions to the development of accounting management The most correct rectification, so as to promote the healthy development of enterprises.

3.3 Impact on information support

In the past, the mode of management accounting is relatively single, which needs to record and sort out the use of enterprise funds. The utilization rate of data is very small, and the key information can not be obtained through data. Therefore, the predictability is limited, and it can not bring any substantive help. In the context of supply side reform, we need to use Internet technology to carry out modern rectification of enterprises, so that management accounting can liberate human resources, and staff can have more time to study and analyze data, so as to bring decision-making help to enterprises through cloud computing and big data, so as to improve competitiveness [1].

4. MEASURES OF MANAGEMENT ACCOUNTING INNOVATION UNDER THE SUPPLY SIDE REFORM ENVIRONMENT

4.1 Strengthen the construction of management accounting information system

Since the 21st century, information technology has covered people's lives and brought great convenience to daily life. The development of enterprises should also connect with information technology to provide a force for the development of management accounting. We can use modern software to deal with various fund activities in management accounting. Under the background of supply side reform, enterprises should follow up the development of the times, deeply use information technology to create more benefits for enterprises, and carry out economic transformation. At the same time, enterprises should always pay attention to the preferential policies issued by the state to form a more systematic development space combined with the Internet, and analyze the internal operation and market operation to establish a set of forecasting system, so that the management accounting can realize the information construction, and the logistics and capital can be effectively combined. After the establishment and combination of information, enterprises can understand the changes of the market as soon as possible, make timely adjustments to the future development, and further realize the predictability. In addition, management accounting needs the support of high-quality talents. Enterprises need to cultivate talents from two aspects: technology and thought. Only in this way can the quality be improved. Moreover, enterprises can cooperate with schools to cultivate qualitative talents, which is a good way.

4.2 Further expand the standardization of management accounting services

In the management accounting management and control system work, enterprises should attach great importance to, and fully cooperate, so as to control production costs, bring certain benefits for the economy. Under the background of supply side reform, enterprises should learn to make rational use of the current advantages, bring normative rectification for the overall operation, so as to further strengthen the functions of management accounting, expand the scope of services, and enhance the external competitiveness after management accounting. In the context of supply side reform, management accounting should attach great importance to financing activities to contribute to the financing efficiency of enterprises, so as to drive value-added business. At the same time, the society emphasizes the green development strategy, and enterprises should join the management accounting from the perspective of ecology, so that the decision-making process of enterprises will not conflict with the ecological benefits, and achieve the goal of balance.

4.3 Strengthen the integration of business and financial management

In the process of enterprise development, there is an obvious shortcoming, that is, the financial management and business can not be effectively linked up. Under the background of supply side reform, enterprises should pay attention to the coordination of the two. First of all, the management mode should be optimized and rectified to a certain extent. It should be combined with the actual situation of enterprise development, innovate the management again, and strengthen the evaluation of management accounting work, so as to ensure the effective development of all work. Secondly, the enterprise's cost control and economic activities should strengthen the analysis of data to ensure the late decision-making [2].

5. CONCLUSION

To sum up, it is a brief analysis of management accounting innovation research under the background of supply side reform. In view of the above discussion, it can be seen that management accounting occupies a very important position in the development of enterprises. Under the background of supply side reform, we need to follow the pace of the times, so as to provide substantive help for the development of enterprises. This paper discusses the innovative measures of management accounting, including strengthening the construction of management accounting information system and further expanding the scope of management accounting services The integration of business and financial management should be strengthened.

REFERENCE

[1] Chen Liuwei; research on the innovation and development of management accounting under the background of supply side structural reform [J]. China high tech Zone, 2018:22.

[2] Tian Weiwei. Research on the optimization and innovation path of management accounting under the background of supply side Reform [J]. Journal of Heihe University, 2018.

Research on The Application of Big Data in University Management

Xu Bin
Nanjing Institute of Railway Technology, Information Management Center, Nanjing, Jiangsu, China

Abstract: With the development of information technology, big data is widely used in various industries, including the education industry. The application of big data technology in university management can effectively improve the quality of management, which has a positive impact on promoting the stable development of universities. Therefore, we should pay attention to the research of big data, so as to effectively improve the overall level of university management. At this stage, there are still some problems in the application of big data in university management, resulting in the application effect of big data is not obvious, unable to give full play to the advantages of big data. In view of this situation, we need to conduct in-depth research. This paper will discuss the application of big data in university management, hoping to provide valuable reference for related research.
Key words: Big data; University management; Application research

1. INTRODUCTION

At this stage, big data technology has been widely popularized, which is of great help to improve people's quality of life, and provides convenience for the healthy development of various industries. Compared with the traditional management methods, big data technology has the characteristics of high management efficiency and rich information resources, which can give full play to the management advantages. Its application in the management of colleges and universities can greatly improve the management level of colleges and universities, so as to promote the stable development of colleges and universities. For colleges and universities, we must strengthen the research on big data technology, enhance the big data awareness of relevant managers, and constantly improve the relevant system of big data university management, so as to promote the process of university information management.

2. APPLICATION SIGNIFICANCE OF BIG DATA IN UNIVERSITY MANAGEMENT

2.1 Provide a stable campus environment for students

University management involves many work contents, such as education and teaching, daily management, logistics support, etc. if there are management problems, it will affect the campus order and bring great inconvenience to students' study and life. Therefore, we should pay attention to the development of university management. For university administrators, the application of big data technology can better grasp the daily thinking of students, and make targeted management plans according to the learning needs of different students, which helps to improve the overall quality of university management and avoid unnecessary management mistakes, so as to achieve the improvement of university management level and provide a safe and stable environment for students Campus environment.

2.2 Help to carry out personalized teaching

The application of big data technology in university management breaks the limitations of traditional management mode, helps to improve students' learning behavior and learning style, and enables students to learn efficiently through big data, which can effectively improve teaching efficiency and lay a good foundation for university management. The application of big data in university management can carry out personalized teaching, promote students to learn in a variety of channels, help to promote the diversified development of university management, so as to broaden the development space of university teaching. It can be seen that the application of big data can realize the innovation of traditional teaching mode, break the limitations of traditional teaching mode, help to cultivate students' awareness of autonomous learning, make them think independently in the learning process, and finally realize the personalized development of students.

2.3 Increase the predictability of University Management

The application of big data in university management can increase the predictability of university management, and realize the objective evaluation of individuals or things through big data. When there are problems in the teaching process, it can timely check and fill the gaps, provide scientific reference for teachers, promote the teaching content more reasonable, and increase the accuracy and objectivity of university management, so as to promote the development of university management Stable development.

3. APPLICATION DIFFICULTIES OF BIG DATA IN UNIVERSITY MANAGEMENT

3.1 The level of information management is not high enough

In the process of university management informatization construction, there is a problem that the level of information management is not high enough. The main reason is that the foundation of relevant information equipment is not perfect, and the application advantages of big data can not be brought into full play. As a result, the university management is hindered by various factors, which seriously affects the development process of university management informatization. At present, the related software of many colleges and universities is too single, which can not carry out accurate statistics, analysis and processing in the implementation process, resulting in the poor quality of data entry, data statistics and other work, and can not provide effective guarantee for the smooth development of university management. At the same time, information is often not standardized and incomplete in university management, which greatly reduces the information level of university management, and also hinders the development of university management data.

3.2 There is no unified big data standard

At this stage, colleges and universities have not yet built a unified big data application standard, which has a great impact on the development of university management. In recent years, the enrollment scale of colleges and universities is becoming larger and larger, which makes the management of colleges and universities face a grim development situation. Only by innovating the traditional management mode can we meet the current needs, so as to better promote the development of the management of colleges and universities. However, due to the lack of a unified big data application standard, the traditional management mode is still used in the management of colleges and universities, which not only can not achieve further innovation of management, but also reduces the efficiency of information processing, resulting in incomplete information in the management of colleges and universities, which seriously affects the statistics, collation and analysis of information data, and then increases the big data The difficulty of application in university management.

3.3 Failure to ensure information security

With the development of big data technology, its application in university management has obvious effect. It has many application advantages, but it also brings many disadvantages, such as low information security. In the actual management work, if we do not operate in strict accordance with the application standards of big data technology, it will lead to the risk of information leakage in the management work, and then bring serious threats to the management work of colleges and universities, which is easy to produce unnecessary security risks. Therefore, we should strengthen the application research of big data to avoid the situation of information leakage. For colleges and universities, we must follow the operation points of big data, constantly improve the relevant standards of big data application, ensure the accuracy of information collection, information processing and information analysis, so as to improve the security of school management and reduce the occurrence of security risks such as information leakage and information theft [1].

3.4 Lack of sufficient management experience

For the application characteristics of big data, the most obvious is that it can analyze individual behavior, ensure the effectiveness of university management, and then promote the stable development of universities. With the advent of the new era, information technology has been widely used in daily management, which has a great impact on students' learning and life. It is not only conducive to stimulate students' learning enthusiasm, but also can realize the innovation of teaching mode, which helps to promote the further development of higher education. But in this case, the amount of information data is greatly increased, and colleges and universities have not established a perfect information processing platform, which leads to low efficiency of information processing and inaccurate evaluation results, which seriously affects the smooth development of university management. In the actual management work, in addition to strengthening the application of big data technology, we should also ensure that colleges and universities have sufficient management experience to deal with various problems in the management process, and then promote the process of university data management [2].

4. APPLICATION STRATEGY OF BIG DATA IN UNIVERSITY MANAGEMENT

4.1 Establish a sound big data university management system

In the application of big data in university management, first of all, it is necessary to accurately collect the basic information, which can reduce the workload of managers and avoid unnecessary operational errors, so as to effectively improve the quality and efficiency of university management. At present, the management of colleges and universities is faced with a lot of data information. The types of these data are too complex and exist between different departments and institutions, which makes the management of colleges and universities more difficult and cannot ensure the efficiency of the management of colleges and universities. Therefore, it is necessary to establish the awareness of big data management, timely improve the relevant big data university management system, achieve the purpose of standardizing management behavior through the application of the system, and prevent repeated collection and chaotic collection, so as to enhance the application value of big data information [3].

4.2 Creating university management data platform

Through the creation of university management data platform, it can greatly improve the degree of university management information, so we should strengthen the attention of university management data platform. The university management data platform mainly includes the following management contents: educational administration management, personnel management, scientific research management and campus card management, reasonably setting the application authority between each module, giving full play to the application advantages of big data technology, continuously improving the application value of big data, ensuring the authenticity of information collected by each department, so as to provide guarantee for the follow-up management work In this paper, we present a new method to solve the problem[4].

4.3 Build a high quality technical team

Under the background of big data, university management should conform to the development of the times, pay attention to the cultivation of big data professionals, and constantly improve the efficiency and quality of university management, so as to ensure the good development of university education. At the present stage, there is a lack of high-quality professionals in Colleges and universities, which is easily hindered by human resources when carrying out the management work of colleges and universities, and can not effectively play the big data thinking, thus affecting the further development of the management work of colleges and universities. Therefore, colleges and universities should establish a high-quality technical talent team in time to ensure that the management personnel have professional operation ability, as well as big data thinking and analysis ability, so as to avoid unnecessary mistakes and effectively improve the quality of university management [5].

4.4 Provide decision-making basis for university management evaluation

With the development of information technology, the application of big data has become a common phenomenon. The application of big data technology in university management can improve the effect of university management evaluation, facilitate teachers to accurately grasp the actual learning situation of students, and then make effective adjustment according to the evaluation results, so as to prevent the university management evaluation from being affected by human factors, and then enhance the accuracy of University Management evaluation, reduce the data deviation of university management, which is helpful to improve the quality of university management The overall level of university management has laid a solid foundation for the stable development of university education [6].

5. CONCLUSION

In the era of big data, big data has a wide range of applications in various industries, but also brings new challenges to the management of colleges and universities. How to apply big data technology to improve the management effect of colleges and universities has become an important research topic. At present, there are many difficulties in the application of big data in university management, such as the inability to ensure information security and the low level of information management, which seriously affect the smooth development of university management. Therefore, it is necessary to strengthen the research on big data technology, so that it can give full play to the application advantages of big data, so as to achieve the improvement of university management effect. For colleges and universities, it is necessary to establish the awareness of big data application, cultivate high-quality professionals as support, and establish a perfect management information platform, so as to realize resource sharing and improve the level of university management data.

REFERENCE

[1] Zhang Yongmei, Mu Wenjuan. Research on the application of big data in university management accounting [J]. Educational accounting research, 2015, 26 (04).

[2] Yu Bin. Application of big data thinking in university teaching management [J]. Journal of Shenzhen Institute of information technology, 2016, 14 (02).

[3] Xiong Fazheng, Li Yuqiang, Chen Yingqi. Analysis of the application path of big data technology in the education and management of college students [J]. Intelligence, 2016 (23).

[4] Zhang Chang. Research on University Emergency Management in the era of big data [D]. Northwest University of agriculture and forestry science and technology, 2017.

[5] Yu Jin. Research on the application of big data in the professionalization of college counselors [D]. Northeast Normal University, 2019.

[6] Zhao Rukui. Discussion on the application of management accounting tools in financial management under the background of big data [J]. Modern business, 2019 (28).

Analysis of The Impact of New Media Tools on College Student Management in The Era of Big Data

Xin Zhou
Zhoukou Normal University, Zhoukou, Henan 466001, China

Abstract: The development of science and technology has played a powerful role in promoting the progress of society, and the arrival of the era of big data has also made people pay more attention to the way of using data, and a variety of new media tools also have an important impact on the improvement of information exchange and data exchange efficiency. At the same time, colleges and universities are gradually growing. Under the influence of new media tools, student management has also been an effective breakthrough. Therefore, this paper will analyze the current situation of the development of college student management, the advantages of new media tools and the challenges it brings to college student management, and discuss the methods of using new media tools to improve the efficiency of college management, hoping to promote the effective play of the positive role of new media tools in promoting college student management effect.
Key words: Big data; New media tools; Universities; Student management

1. INTRODUCTION

With the development of information technology, Internet technology has been integrated into all aspects of people's lives, among which new media tools such as QQ, wechat, microblog also occupy an important position in people's lives, and these new media tools also play a certain role in the management of college students. This is because today's college students often use computers, mobile phones and other network terminals, and share information on the corresponding new media tools, and then the new media tools are sought after and favored by contemporary college students. Therefore, colleges and universities in student management must make effective use of new media tools, which can not only effectively improve the efficiency of student management, but also better guide students' thinking [1].

2. THE DEVELOPMENT STATUS OF COLLEGE STUDENT MANAGEMENT

At present, the traditional management thinking can not meet the needs of today's society, so if colleges and universities want to realize the construction of modern education system, they must combine education with today's social development trend, so that the management of students can present a benign development trend and produce better results. Through the investigation of the current situation of student management in Colleges and universities, we can find the following problems

2.1 The work system of college students is not perfect

Since the founding of the people's Republic of China, the management of college students has gone through three stages: from political education as the leading role, to the common development of politics and management, and then to the complementary development of politics, management and service. Because of the turmoil in the special period, the cause of education suffered a serious blow, so there is a big gap between the education system of our country and that of western developed countries. Among them, because the management of students often presents a top-down vertical system, which makes the transmission of information is also vertical, and in the process of information transmission, there may be problems such as communication is not in place or communication error, which also brings great trouble to the grass-roots staff, and even has a certain negative impact on the management work[2].

2.2 The lack of management consciousness and responsibility of managers

In some colleges and universities, the grass-roots managers who are directly engaged to communicate with students are not professional and professional staff. Many of them are social workers. They only carry out the work of uploading and releasing information, and they are often lack of flexibility in their work. They can provide help in psychological counseling, career counseling and social guidance for students It is also relatively limited, and even part of the grassroots managers just deal with the work, which has brought great obstacles to the development of student management.

3. ADVANTAGES OF NEW MEDIA TOOLS

3.1 The channel of new media tools is simple

The development of science and technology has the characteristics of rapid updating, and with the popularity and promotion of mobile phones, tablets, computers and other tools, people pay more attention to new media tools, and the utilization rate of various new media tools is also rising. Because these new media tools can be easily downloaded from various software managers and app store, and most of them are free products. In addition, they have the advantages of small memory and fast download speed, so WeChat, QQ, microblog and other tools have become necessary communication software in people's daily life.

3.2 New media tools are easy to operate with low threshold

Wechat, QQ, microblog and other new media tools are also fast and simple, so everyone can easily start. And in the use of these tools, we only need to carry out a simple operation to transfer information and effectively record mood and perception. At the same time, it has no fixed format requirements. Users can publish what they think to new media tools anytime and anywhere, and then realize their own dynamic update [3]. In addition, in addition to publishing information, users can also upload videos, music and photos, which can effectively realize the sharing between friends and improve the efficiency of interaction between friends.

4. CHALLENGES BROUGHT BY NEW MEDIA TOOLS TO UNIVERSITY MANAGEMENT

Under the influence of the era of big data, new media tools have developed rapidly, and because they are widely used in people's life and work, they are respected and loved by most people. However, the wide use of new media tools has also brought some challenges to student management, because college students may use them in classroom learning, which will have a certain impact on classroom discipline and students' learning efficiency, and even make teachers' enthusiasm for teaching suffer.

4.1 Eroding the authority and discourse power of mainstream media

With the popularity of new media tools, some people with weak legal awareness and ulterior motives will use the network platform to release false information, which will have a serious impact on the social order and public opinion environment. Because college students are just beginning to contact with the society, their ability to resist temptation is often weak, so this demagogic information will often have a great impact on the ideological development of college students. If the grassroots management personnel of colleges and universities do not realize the harm of negative information to college students and do not give corresponding intervention and guidance, it is bound to harm college students This is a threat to the development of China. In the long run, it will weaken college students' trust in the mainstream ideas [4].

4.2 Challenge the predictability of University Management

As new media tools are fast and convenient, and have been popularized in the whole society, students will encounter all kinds of junk information, false information and violent information when using tools, which will have a certain negative impact on the spiritual world of college students, and even have a negative guidance for college students. Under this effect, college students may have extreme psychology. If colleges and universities can not find an effective way to deal with it slowly, it will pose a serious threat to the physical and mental health of college students, and make the management of students more difficult.

5. USING NEW MEDIA TOOLS TO IMPROVE THE EFFICIENCY OF UNIVERSITY MANAGEMENT WORKERS

Today's society has entered the stage of universal use of new media tools, in this trend, managers must be calm about the development trend of new media tools, and find the positive role it can play in the management of colleges and universities, so as to develop strengths and avoid weaknesses, so as to inject new vitality into the management of students.

5.1 Open official wechat and microblog public platforms

In order to better ensure the smooth progress of student management, colleges and universities must establish the corresponding mechanism for the management of new media tools, cooperate with various departments, and then carry out the corresponding management work together. In addition, they should constantly improve the process of information release, and effectively maintain and manage the time of information release. At the same time, we should also pay attention to information security to prevent hackers' invasion. In addition, it is necessary to strengthen the credibility and influence of the platform, and employ professionals to be responsible for the maintenance and management of the platform. In this way, the official public platform can present a benign development trend in the long run, so as to achieve sustainable development.

5.2 Reasonably grasp the structure of information writing

When publishing information, the official public platform of colleges and universities must standardize its format and structure, and ensure the integrity of the information released, so as to reflect the professionalism of the official platform, and then attract students' interest in reading, making it pay more attention to the public platform. The information released by the official public platform should include the following contents: first, the live broadcast of campus hot events; second, the announcement of key information such as holiday arrangements; third, the disclosure of hot topics inside and outside the school; fourth, the publicity of school related activities. In addition, there is a certain difference between the official public platform and the individual public platform in the information release, so the characteristics of the corresponding institutions must be effectively displayed.

5.3 Improve the pertinence of ideological education for individual students

When college students use new media tools, they often show their feelings and feelings, which is also a way for college students to express their personality. Because contemporary college students grow up with the development of the Internet, their way of thinking has also been effectively expanded under the influence of the network, and because the use of new media tools has no time and place restrictions, they can obtain and evaluate information more efficiently. In this trend, managers should grasp the way of thinking and psychological dynamics of college students, And then to effectively deal with the possible psychological problems, and also to carry out more targeted ideological education work [5].

5.4 Strengthen the communication between teachers and students to meet the emotional communication needs of college students

When using new media tools, school administrators should not only use them as props, but also use them to enhance the quality of interaction between teachers and students. Nowadays, college students are often addicted to mobile phones and are not willing to communicate with teachers. Through the use of new media tools, teachers can observe students' living conditions on the relevant public platform, and then they can find students for communication and psychological counseling, so as to strengthen the relationship between teachers and students. In this way, under the guidance of teachers, when students encounter problems, they are more willing to seek the help of teachers, which will give the guidance of harmonious relationship between teachers and students Construction provides the conditions.

6. CONCLUSION

To sum up, with the development of the times, the use of new media tools is an irresistible social trend, and in order to effectively play its positive role in improving the quality of student management, school administrators and grass-roots student management workers need to constantly explore the application of new media tools, and compare their use with students' psychology Effective combination, so as to make the student management to keep up with the trend of the times, and then can better ensure the quality of student management.

REFERENCE

[1] Bian Feng. Research on the innovation path of College Students' education management in the era of big data [J]. Education Informatization Forum, 2021 (01): 15-16.
[2] Liu Jie. Analysis of measures to integrate student management and teaching management in Colleges and universities [J]. Public standardization, 2020 (24): 208-209.
[3] Sun Jianli, Zhang qianhan. Analysis of the influence of network communication on college student management [J]. Knowledge base, 2020 (24): 109 + 111.
[4] Chen Hui. Research on the application of big data processing technology in college student management [J]. Journal of Huainan vocational and technical college, 2020, 20 (06): 63-66.
[5] Zhang Li. Exploration on the innovation path of college student management from the perspective of new media [J]. Green technology, 2020 (23): 264-265.

An Automated Testing and Control System About

Yuejuan Jing, Zhouzhou Liu, Han Peng, Xinhua Ma, Yuanyuan Hou
School of Computer Science, Xi'an Aeronautical University, Xi'an 710077, China

Abstract: With the progress of computer technology, the development of industrial automation is getting faster and faster, but in the engineering production, the test and delivery of airbag components are still by manual completion, the work efficiency is low, so the development of a set of automated test device is an urgent problem to solve. In this paper, an automatic test and control system of airbag components is proposed. By building a variety of sensors and control terminals, the automatic test of airbag components is realized, which solves the problems in industrial production and improves the work efficiency.
Key words: Airbag Assembly; Test System; Automation

1. INTRODUCTION

Airbag components in vehicles, aircraft and other modern vehicles are widely used, its quality is particularly important. In industrial production, the quality test of airbag components has not been fully automated, which seriously affects the efficiency of industrial production and is not conducive to the sampling analysis of the quality characteristics of airbag components. This paper presents a test device for solving airbag assembly.

Airbag components test device is mainly used to verify the airbag components in fuel and temperature environment, on the ground simulation test, obtain the necessary data, and to provide a scientific basis for design and inspection airbag components, used to simulate air component installation, test and gas shielding fracture morphology test, all kinds of work under the environment of state parameters (fuel injection quantity, squeeze oil velocity, oil quantity measurement) measurement.

The extrusion control system in the test device is used for the control and monitoring of the whole test device, including the system control computer and application software, responsible for the closed-loop servo control of the valve switch and servo valve, threshold setting, data acquisition of all kinds of sensors, dynamic display of the test state control system. The test measurement and control system has a good human-computer interaction interface, and can store all kinds of monitored information quickly and conveniently for data storage and subsequent test analysis.

2. TECHNICAL SOLUTION

The test device for airbag components should not only simulate the specific use state of missile engine fuel tank with high fidelity, but also meet the requirements of data monitoring and observation of the test system. The technical scheme of the test device for airbag components simulation work is shown in **Figure 1** [1].

The simulation test device for airbag assembly includes fuel tank part, filling metering system, temperature control system, extrusion nitrogen pressure system and sensing recording system.

The oil tank section mainly refers to the oil tank and the oil storage tank. The oil tank section includes the internal structure of the oil tank, the airbag assembly and the inner barrel, etc. The internal structure of the oil tank section is in accordance with the service state of the installed parts. The oil storage tank consists of oil storage tank 1 and oil storage tank 2. The oil storage tank 1 is used to store the fuel required by the filling metering system. The filling metering system fills the fuel in the oil storage tank 1 to the tank, and the oil storage tank 2 is used to store the fuel extruded from the tank [2].

The filling metering system is used to realize the initial vacuuming of the airbag and fuel filling. Airbag vacuum pumping is to realize the internal vacuum by sucking the gas in the airbag through the rotary vane vacuum pump. A cut-off valve is set on the vacuum pumping pipe to control the switch of the gas, and a gas pressure sensor is set to monitor the internal pressure of the airbag in real time. When the pressure is less than the required value, the cut-off valve is closed to stop the vacuum pumping. The fuel filling process is to inject the fuel in the oil storage tank 1 into the fuel space in the tank cabin through the oil pump as required. A cut-off valve is set on the fuel pipeline, which is controlled by the test measurement and control system. At the same time, a turbine flowmeter is set to monitor the fuel injection flow in real time. The control of oil pump and rotary vine vacuum pump is distributed by distribution box 2. The button switch on the control box controls the on-off and on-off of the corresponding relay to realize the start and stop control of the pump.

The temperature control system is used to simulate the high, low and normal temperature environment of the tank cabin. The tank cabin is completely placed in the temperature control cabin. In order to achieve temperature control, a compressor, a circulating fan, a temperature controller and a thermal insulation system are set up.

Extrusion nitrogen pressure system is used to fill the airbag assembly with nitrogen at the specified pressure and flow rate to expand the airbag assembly and extrude fuel into the oil storage tank 2. The air source is provided by the high-pressure nitrogen cylinder group. In order to meet the nitrogen filling pressure needs of the air bag assembly, six high pressure and pressure reducers are set to reduce the pressure to 1MPa, and a cut-off valve is set. The cut-off valve is controlled by the test measurement and control system to control the opening and closing of the air path. At the same time, the cut-off valve can also be cut off manually. A buffer gas cylinder is provided for the storage of nitrogen to ensure the stable flow and pressure of nitrogen entering the air bag assembly; A gas pressure sensor is set up to monitor the gas pressure of the buffer gas cylinder in real time. When the overpressure occurs, the computer sends out an alarm message. An electric exhaust valve is set up to discharge the gas when the pressure is higher than the required value. In order to adjust the nitrogen pressure, an electric shut-off valve is set. The servo loop is formed by the pressure sensor at the back end, the electric shut-off valve and the computer to control the nitrogen pressure in a closed loop. The nitrogen pressure range is 0-1.0MPa. A filter is set to remove impurities and water vapor in nitrogen to ensure the cleanliness of nitrogen entering the air bag. A safety valve is set in front of nitrogen entering the air bag to prevent overpressure of the gas entering the air bag and damage the air bag. At the same time, the pressure and temperature of nitrogen at the entrance of the air bag are monitored in real time. Airbag inflation out of fuel, fuel temperature and pressure sensor real-time monitoring oil chamber fuel temperature and pressure, in the process of turbine flowmeter real-time monitoring on the outlet pipe road set up the squeeze oil flow, at the same time set up the servo valve, and connecting with the outlet pressure measurement, a closed-loop servo control squeeze oil outlet pressure, squeeze out the fuel into storage box 2, oil storage tank within 2 fuel manual switch by themselves go back to the terminal.

Test measurement and control system are used to implement control and monitoring of the entire test rig, including system control computer and computer system monitoring, control computer is mainly used for switch control cut-off valve and servo valve closed loop servo control, monitoring computer is used for collecting all the pressure, flow, temperature sensor input signals, and the image display, test measurement and control system has good man-machine interface, at the same time to fast and convenient storage monitoring of all kinds of information, in order to save and subsequent test and data analysis[3].

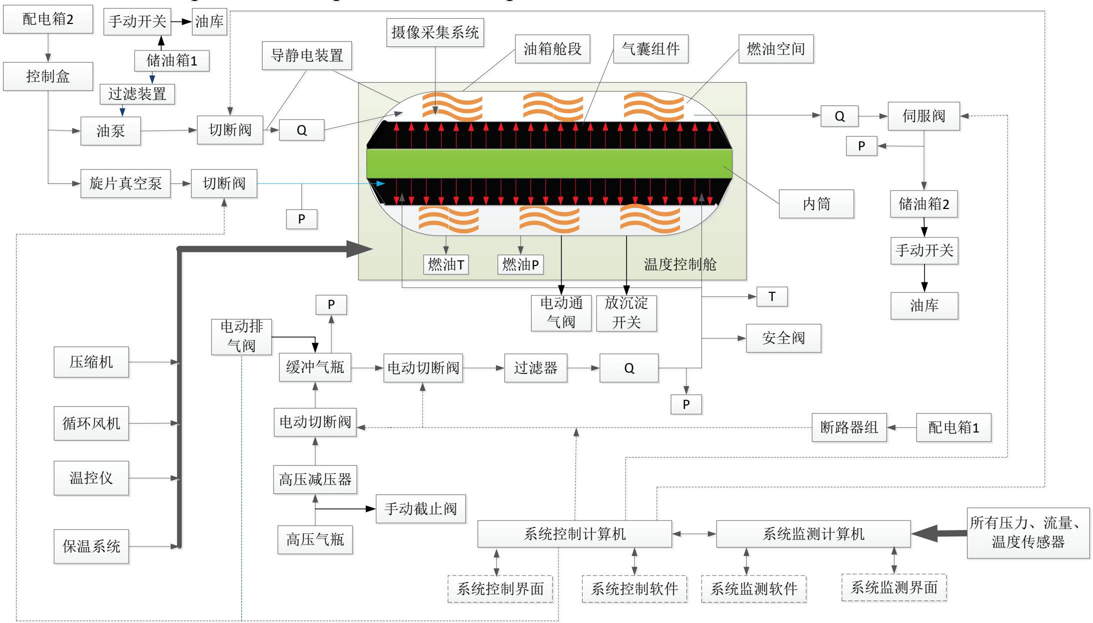


Figure 1: General block diagram of the test device

3. DETAILED DESIGN OF TEST MEASUREMENT AND CONTROL SYSTEM

3.1 Test and control interface

The system operation interface is divided into two parts, which are system control sub-page and monitoring sub-page [4], as shown in **Figure 2** and **Figure 3.**

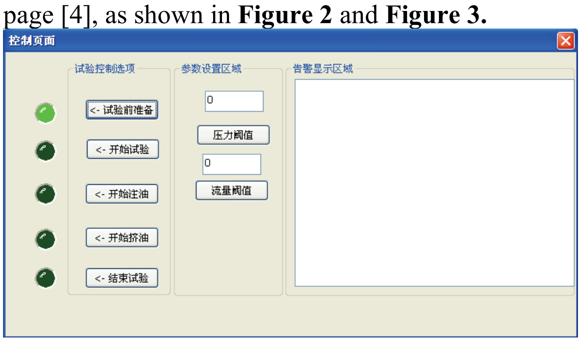


Figure 2: Control child pages

The control sub-page is divided into three parts, which are test control option, parameter setting option and alarm display area.

The test control options correspond to the five processes of the test, which are the preparation before the test, the start of the test, the start of oil injection, the start of oil extrusion, and the end of the test. When clicking any button, the light on the left side will be on. In the test process, the test is only allowed to be carried out from top to bottom until the test is completed. It is strictly prohibited to operate out of sequence, otherwise the prompt operation is illegal.

The parameter setting area is mainly for setting the control threshold.

Among them, the first is to set the pressure threshold, which is mainly the nitrogen monitoring pressure setting in the extrusion process.

The second is to set the flow monitoring parameters in the extrusion process.

Alarm display area is mainly for abnormal operation during the test or abnormal reminder during the test.

The monitoring sub-page is mainly for sensor data collection and display and dynamic demonstration of the test process, as shown in **Figure 3**.

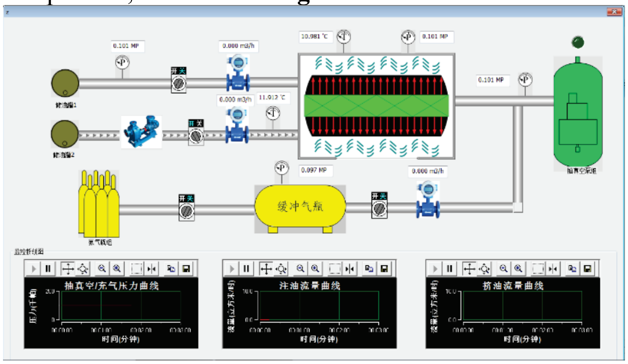


Figure 3: Monitor the child pages

The page is divided into two parts: sensor parameter display, dynamic display area of the test process and monitoring line chart area. The first part mainly displays the readings of the sensors, including four pressure sensors, two temperature sensors, three flow sensors and four servo-switch status displays. At the same time, the flow process of nitrogen and oil was dynamically demonstrated in the test process. The red represents the flow of nitrogen, the black represents the flow of oil, and the arrow in the process of flow indicates the direction of flow.

The second part is used to display the broken line of the three pressure or flow sensors over time, and dynamically store the data for post-test analysis. The first figure is used to show the pressure of the two experimental processes of vacuuming and inflating.

3.2 Control principle

According to the detailed design results of the simulation work test device for air bag components, the device involves the closed-loop control of nitrogen filling pressure and the closed-loop control of oil extrusion flow, both of which are controlled by PID algorithm. The control principle is shown in **Figure 4**.

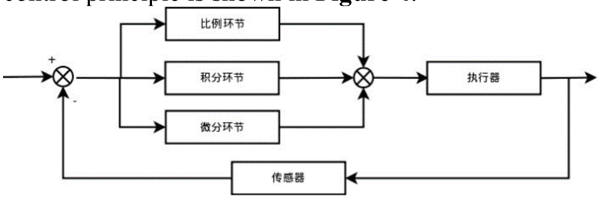


Figure 4: Diagram of PID control algorithm

In engineering practice, the most widely used regulator control law is proportional, integral and differential control, PID control for short, also known as PID regulation. PID control with its simple structure, good stability, reliable work, convenient adjustment and become one of the main industrial control technologies. When the structure and parameters of the controlled object cannot be fully grasped, or the precise mathematical model is not available, and other control theory technologies are difficult to adopt, the structure and parameters of the system controller must rely on experience and field debugging to determine, then the application of PID control technology is the most convenient. PID controller is the system error, the use of proportion, integral, differential calculation of control quantity for control.

Proportional (P) control

Proportional control is one of the simplest control methods. The output of the controller is proportional to the input error signal. There is steady-state error in the output of the system when only proportional control is used.

Integral (I) control

In integral control, the output of the controller is proportional to the integral of the input error signal. For an automatic control System, if there is a steady-state Error after entering the Steady state, then the control System is called a steady-state Error or System with steady-state Error for short. In order to eliminate the steady-state error, "integral term" must be introduced into the controller. The integral term against the error depends on the integration of time, and as time increases, the integral term increases. In this way, even if the error is small, the integral term will increase with the increase of time, which will drive the output of the controller to increase and further reduce the steady-state error until it is close to zero. Therefore, the proportional + integral (PI) controller can make the system almost free of steady state error after entering the steady state.

Differential (D) control

In differential control, the output of the controller is proportional to the differential of the input error signal (the rate of change of the error). The automatic control system may oscillate or even become unstable during the adjustment process to overcome the error. The reason is that there are large inertial components (links) or delay components, which have the effect of suppressing errors, and their changes always lag behind the changes of errors. The solution is to make the change of suppression error "ahead", that is, when the error is close to zero, the effect of suppression error should be zero. That is to say, in the controller only to introduce "ratio" is often not enough, the role of proportional is only amplified amplitude error, and the need to increase the "differential", it can predict error change trend, so has the proportion + differential controller, can early enough that the control action of inhibiting error is equal to zero, even negative, so as to avoid the serious overshoot of the amount of the accused. Therefore, for the controlled objects with large inertia or lag, the proportional + differential (PD) controller can improve the dynamic characteristics of the system in the process of regulation.

3.3 Test process description

The extrusion control system is divided into five stages: preparation before test, start test, start oil injection, start oil extrusion and end test. Each of these stages has a corresponding button on the control sub-page. The whole test process must be conducted in strict accordance with the sequence of the five stages. The system strictly prohibits any operation that does not conform to the rules, and the corresponding prompt information will be given [5].

3.3.1The preparation stage before the test

1) Set sensor monitoring threshold. Sensor threshold setting is only allowed in this phase.

A) Setting of nitrogen monitoring pressure threshold in the extrusion process

B) Setting of flow monitoring parameters in the extrusion process

2) Click the Start button. The beginning of the test phase is mainly to ensure that all valves are closed, that is, the front electric regulating valve of buffer gas cylinder is closed, the back electric gate valve of buffer gas cylinder is closed, the electric regulating valve of oil storage tank 2 is closed, the front electric gate valve of oil storage tank 1 is closed, so as to prepare for the next test.

3.3.2 Initiation phase

Entry conditions: the lower valve of the buffer cylinder is closed, and the electric regulating valve at the back end of the squeeze is closed.

Click the button, need to open the vacuum pump group, vacuum, and real-time monitoring of the pressure sensor value, real-time curve sees the vacuum pressure curve, when the pressure is less than a certain value, the signal indicator light on the vacuum pump group, indicating that the vacuum is completed. And the warning message in the warning area: vacuum is completed, please close the vacuum pump set.

3.3.3Begin the oil injection phase

Access conditions: all valves are closed.

Open the electric gate valve and manually open the injection pump. Real-time monitoring of the flow curve, human monitoring of the completion of the oil injection process, shut down the oil injection pump. The warning area displays the prompt message of oil filling start.

3.3.4Begin the oil squeeze phase

This phase is accomplished in two steps, namely filling the buffer cylinder and squeezing the oil test. Enter the test phase after clicking the start oil squeeze button.

1) Inflate the buffer cylinder

Entry conditions: the backend gate valve of the buffer cylinder must be closed to enter the filling process.

The first step is to automatically open the front electric regulating valve of the buffer gas cylinder to inflate the buffer gas cylinder and prompt the inflating process. According to the default threshold value of 1.1m Pa, the buffer cylinder pressure is monitored in real time. When it is greater than a certain value, the electric regulating valve is automatically closed, and the alarm message shows that the filling is completed.

2) gas extrusion test

Entry conditions: confirm that the electric gate valve at the refueling end is closed, and enter the gas extrusion test.

The system automatically opens the electric gate valve, monitors the electric control valve according to the set pressure threshold, and uses PID algorithm to control the switching state of the electric control valve. The curve of charging pressure is displayed in real time in the monitoring broken line area.

At the extrusion end, according to the flow control threshold, real-time monitoring of flowmeter parameters, electric control valve control. Manually monitor the extrusion process and click the "End Test" button to complete the extrusion process.

3.3.5 End of trial

After clicking the end test button, close all valves to end the test and store the test data.

4. CONCLUSION

In the light of the overall framework and the gasbag component test device test process is analyzed and described, through the test, the scheme is feasible, and cannot be able to complete control of the whole process of airbag component testing, and be able to support the test data capture, for later on qualitative analysis of the characteristic of airbag components to reach the designed system.

ACKNOWLEDGEMENTS

Project supported by the Natural Science Foundation of Shaanxi Province, China (Grant No. 2020JM-633).

Project supported by the Key Research and Development Program of Shaanxi Province, China (Grant No. 2020GY-084).

Scientific Research Program Funded by Shaanxi Provincial Education Department (Program No.20JG014).

REFERENCE

[1] Yang Shuai, Jiang Xinkuo, Wu Dazhuan, Wang Leqin. General automatic test and control technology of centrifugal pump. Journal of Drainage and Irrigation Machinery Engineering, 2014, 32(03).

[2] Chuxuan Qiu, Jingchao Chen, Ying Wang, Limin Cheng. Design of an intelligent LED test control system. Household Electric Appliances, 2016, (06).

[3] Jiang Xiao-Jun, Tong Yang. ECU Automatic Test System Based on PC. Journal of Jilin Engineering Normal University, 2004, (12).

[4] Jiang Pei, The development and research of ship airbag group pressure monitoring client based on Internet of things. Guangdong University of Technology, 2018.5.

[5] He Shaofeng. Study on ignition energy control and timing control of airbag point burst test system. Shanghai Automotive, 2017 (01).

A Practical Study on the Integration of Process Approach and Positive Psychology in the Teaching of Second Language Writing: Based on the Practice of English Writing Group Training in TKK College

Xiaoqin Guan
School of the English Language and Culture, Xiamen University Tan Kah Kee College, Fujian, China

Abstract: In recent years, the influence of feedback teaching method on second language learners' writing instruction has become the focus of research on second language writing instruction, and the research fervor continues to rise, which is considered as an important part of second language instruction. This paper intercepts two perspectives, process teaching method theory and positive psychology theory, from the research perspective of feedback pedagogy, and integrates them into the practice of second language writing teaching, with a view to providing a new way for second language writing teaching through specific practical operations of English Writing Group Training in TKK College.

Keywords: Feedback Teaching Method; Process Approach Method; Positive Psychology Theory; Teaching of Second Language Writing

1. INTRODUCTION

In the *College English teaching Guide* launched by Steering Committee of Foreign Language Teaching in Universities of the Ministry of Education, the teaching goals of college English course consist of two parts. From the perspective of students' growth needs, it helps students understand the outstanding civilization and culture of the world, cutting-edge science and technology, advanced management experience and ideology, cultivates humanistic spirit, enhances comprehensive quality, promotes all-round development, and also provides a basic tool for students' knowledge innovation and potential development, so as to prepare for the opportunities and challenges in the era of economic globalization. From the perspective of national strategic needs, university English courses help cultivate and reserve a large number of talents with global vision, international awareness and cross-cultural communication skills, knowledge of international rules and proficiency in international negotiations, providing sufficient high-quality human resources to promote China's socio-economic development, enhance China's ability to fulfill its international obligations and participate in global governance, and promote the building of a community of human destiny. The objectives of university English teaching are divided into three levels: basic, improvement, and development. The development level is determined in response to the special needs of the university's personnel training program and the diverse needs of students with academic ability. The specific requirements for the written expression ability corresponding to the development level are: students can express their personal opinions more freely, and speak with substance, reason and order; they can write expository and argumentative essays with a certain depth of thought on a wide range of social and cultural topics, and write short reports or essays on specialized topics with clear expression of ideas, rich content, clear essay structure, adequate argumentation and strong logic; they can summarize and integrate information obtained from different sources, write outlines, summaries or abstracts, use complex sentences and diverse articulation devices appropriately, with clear explanations and strong arguments; write business letters, newsletters, memos, etc. in the correct format and in the appropriate style. This places higher demands on cultivating students' writing ability which is one that can comprehensively reflect the language ability of second language learners - the most difficult one of the four basic skills of "listening, speaking, reading and writing". However, it is also the weakest link in language teaching. Teachers spend a lot of time and energy correcting students' compositions, mainly focusing on the problems of language and grammar. However, it comes out with little effect. Students make the same mistakes again and again in their writing. As a result, scholars have begun to reflect on and summarize the traditional teaching of writing and to explore new ways of teaching of writing. Traditional teaching tends to focus on the final writing result and ignore the writing process and thinking process of students, while the teacher's evaluation method is single, mostly in the form of Written Corrective Feedback (WCF). If they are not well regulated, students may not be enthusiastic and motivated to write, and finally they may become indifferent to the teacher's written corrective feedback, which leads to the stagnation of most students' writing level and their fear of second language writing [1-16].

The research on feedback teaching method has continued to heat up in recent years, and its impact on writing instruction for second language learners has become the focus of research on second language writing instruction, a very dynamic research topic that is considered to be an important part of second language teaching and research. Feedback is an important tool for students to develop their self-expression skills by using multiple drafts, identifying problems in expression and revision, and receiving inspiration from the feedback giver (either teachers or peers) (Wang Ying, 2007:48). The feedback teaching method was introduced into the teaching of writing by the rise of the process approach. In the 1970s, experts and scholars began to reflect on the problems of traditional writing instruction and to focus on the process of students' writing from a psychological perspective. At present, the main research perspectives on feedback teaching method include second language writing theory, second language acquisition theory, process writing theory, sociocultural theory, social cognitive theory, positive psychology, and computer science. Among them, process approach theory is derived from the perspective of psychology, and its specific implementation steps are mainly a multi-level feedback mechanism that focuses on the interaction between writers and others, while positive psychology also focuses on the emotional regulation of students during the writing process or when they receive feedback. If the two perspectives are combined, it should be a good way to promote how to make the most of students' initiative and maximize the effect of the feedback method.

2. PROCESS APPROACH METHOD

Since the 1970s, when psychological approaches were applied to focus on students' writing process, a process approach to teaching writing began to emerge, which helped students to improve their writing skills as a whole rather than focusing too much on vocabulary and grammar instruction. In the late 1970s, experts and scholars began to reflect on the methods and problems of traditional writing teaching, absorbing and accepting the theories of sociolinguistics, cognitive psychology, applied linguistics, etc. In the 1970s, McKenzie and Tompkins first applied communicative theory to writing teaching and proposed the process writing method. The theoretical basis of the process approach is the interactive theory, which emphasizes the social and communicative function of language. Its basic propositions include advocating the communicative process of teaching, believing that only by making the process of teaching foreign languages communicative can students truly develop their communicative competence, emphasizing that students should take the initiative to learn, experience the process of cooperative learning and knowledge construction and effectively (Chen Liaokun 1991).

The process approach considers writing as a top-down learning process and focuses more on the process and content of writing, which is very different from the previous teaching of writing. The process approach emphasizes student-centeredness and is a form of teaching that focuses on teacher-student interaction as well as interaction between students. It focuses on students' writing process, on expanding their thinking and communicative skills, and on developing students' ability to use writing as a means to freely express the content of their ideas and to communicate with readers. The teacher does not act as an evaluator of the final writing product, but participates in the whole writing process of the students by designing various teaching activities, observing their reactions, helping them examine the topic from multiple angles, formulating ideas, discussing the rationality of the material chosen together, and giving appropriate guidance on the layout and word choice until the final writing is completed. There are six basic procedures of process teaching method: pre-writing idea stage, first draft writing stage, peer feedback stage, second draft writing stage, teacher review stage, and final draft stage. These six links, interlocking, teachers and students work together to continuously promote the writing process forward. In this process, a text is revised repeatedly in multiple drafts. In the feedback mode of multiple revisions, the teacher's critical feedback helps a lot with the language form, content and organization of the composition, while mobilizing students' subjective consciousness and dynamic role, and strengthening their ability to communicate and cooperate with others.

3. POSITIVE PSYCHOLOGY THEORY

The concept of “Positive Psychology (PP)” was first proposed by humanistic psychologist Abraham Maslow, and Seligman inherited and developed this idea, stating that the goal of PP is to achieve a "positive shift" in research and practice in the field of psychology. Seligman continues and develops this view, stating that the goal of PP is to achieve a "positive shift" in research and practice in the field of psychology, and proposes the "three cores" of PP: 1) positive experiences, 2) positive individual traits, and 3) positive institutions. Specifically, positive subjective experiences include positive emotional experiences and feelings; positive individual traits are relatively stable and have personality-like characteristics, such as courage and perseverance; and positive collective environments are highly communicative, mainly referring to communicative environments constructed by two or more parties, such as classroom environments. Since then, PP has become an important branch of psychology and started to gain widespread attention and has been actively studied by scholars around the world. PP focuses on subjective positive experiences, individual positive characteristics, and collective positive environments, aiming to enhance well-being, promote mental health and success (MacIntyre 2016; Jiang Guiying, Li Cheng Chen 2017). Training writing skills is a long and arduous process in which learners are prone to various negative emotions, and it is an important topic to guide learners to receive feedback during the writing process and to generate positive emotions when completing the writing task. More and more scholars have introduced the research of positive psychology into second language writing learning, and they have found that positive and negative changes in emotions can have different effects on learning outcomes, and their research focuses on how second language learners deal with negative emotions, and regulating negative emotions is the key to enhancing well-being and success (MacIntyre 2016). Positive Psychology intervention reflects a strong humanistic educational ideology, emphasizing the subjectivity of students, valuing both their intellectual needs and their emotional experiences, and it is an educational philosophy of "informed and comprehensive development". (Jiang Guiying, Li Cheng Chen, 2017) The process of second language writing is challenging and difficult for most English learners, and students' ability to regulate negative emotions is very important. Most students are prone to fear of difficulties, depression and other negative emotions in the process of second language writing. These negative emotions often lead some students to avoid the writing task or to just put them away after reading the teacher's feedback, without thinking about correcting the mistakes and how to avoid similar ones in the future writing tasks. Positive psychology offers a new perspective on second-language writing, allowing teachers to understand the role of emotions in learning, to pay attention to students' emotional changes, and to adopt strategies to help students regulate their emotions. Students are able to develop their own positive psychological mechanisms from such learning experiences, and gain both academic progress and a sense of happiness in the process of learning.

4. PRACTICAL INQUIRY

Uchallenge English Challenge for College Students is a public competition jointly organized by Foreign Language Teaching and Research Press and China Foreign Language and Education Research Center. It includes the three major events: English speech, writing and reading, and is a broad stage for university students to present and realize themselves, as well as a communication platform for reflecting wisdom and showing innovation in the field of foreign language education. It aims to cultivate international talents with international vision, innovation consciousness, family sentiment and future spirit, and to promote education and educate people through the competition. Since 2013, Tan Kah Kee College has set up a writing group, which is dedicated to training and selecting students to participate in national English writing competitions, winning prizes at all levels such as Grand Prize, First Prize, Second Prize and Third Prize. In the process of training students over the years, teachers have also been keeping up with the times, constantly improving teaching methods and exploring new ways of teaching.

Each year, starting in May, the writing group identifies a research topic, develops a practical research plan, and recruits students throughout the school who have strong English language skills, are interested in writing and have an active mind. And after a selection test, the writing group finally identifies 30 students to enter the writing training group. In the process of training, the members of the writing interest group would be given weekly writing training. The instructors of the training class are three experienced teaching writing who conducted training on three types of essays: argumentative, expository and narrative essays. The major method that is adopted in the training is the feedback teaching method, the process teaching method to be exact. Recently the instructors also try to incorporate the theory of positive psychology starting to focus on students' emotional problems in the training process.

In the pre-writing stage, students and teachers would brainstorm together about the selected topic, solve it from various angles, collect writing materials together, and select suitable materials related to their ideas. Many students are accustomed to choosing materials right after they see the topic, which can lead to a situation where the material and the idea are separated in the later stage of writing, when they are forced to assemble materials to support the idea. We encourage students to work together to carefully examine the topic and then develop an idea, then brainstorm and record all the material they can think of, from which they can select the material that suits their own essay ideas. The interaction between teachers and students and between students themselves at this stage is important to help them open their minds and train their critical thinking skills. After this pioneering discussion, it becomes less difficult for students to come up with their first drafts.

In the 2020 writing training group, we included a peer review session after the students completed their first drafts. Peer review means that in the process of writing, students replace the teacher's role in revision and revise their classmates' essays in both written and oral forms. In the traditional English writing teaching, teachers generally are in a dominant position, focusing on mechanical input and output, and the students' communicative competence is not sufficiently trained. Students are seldom able to participate in this session of assessment and always passively accept the teacher's evaluation of their own compositions. In front of the teacher's absolute authority, some students will lack independent thinking and judgment and lose their self-confidence. In recent years, however, a large number of empirical studies have shown that the introduction of peer feedback mechanism has considerable effect in improving students' second language writing ability. Peer feedback enables students to think independently, and also increases reader awareness and sensitivity to errors. When students are given the right to critique, they may not be able to identify all the grammatical and syntactic problems as teachers do, but they are able to gain a stronger sense of responsibility and better reflective skills by switching between the two identities of author and reader, and thus participate more actively in the writing process. In the essays we received for cross-correction, we found that students were able to identify some syntactic problems, problems with the appropriateness of vocabulary use, and problems with the coherence and echoing of the chapters. For example, in an essay about audio books, one student was supportive of audio books, but in the last paragraph she wrote down sentences like: "There is no difference between the way of reading and the carrier of. To make use of their advantages and disadvantages, the two ways can be combined to form our own reading habits." In the peer review, this problem was also identified by the peers and they pointed out that "in the ending part, you did not restate the point you made at the beginning (i.e., why you advocate audio books), and it is a bit confusing to the readers because you raised a new point." From this example, we can see that students can be trusted to correct essays. Another thing is that when students see that their peers have written great essays, it can have a positive impact on them and create a positive learning environment. For example, one student wrote a comment on another student's essay: "The whole essay is very smooth, and many details of the description are very, very nice!" So don't underestimate the students' ability. When they are given the right to correct, their sense of responsibility will be greatly enhanced, and they will look up words and phrases they are not sure of in the dictionary, which will help them improve their ability. According to researchers, both senders and receivers of feedback benefit from peer feedback, and peer feedback has a positive impact on the quality of writing. In addition to the improvement of learners' writing skills, peer review also contributes to self-confidence building, and language acquisition.

In the teacher's review stage, teachers should avoid reducing themselves to "grammar correction machines". They are not just to find every mistake, but to look at the whole text and give advice to students from the perspective of the whole essay and logical thinking, and to give advice and inform students of their own thinking process for their reference during the review. For example, in an essay about whether online communication or face-to-face communication is better, the student is in favor of online communication, but this is what she wrote in her final paragraph summary: "Although the traditional way of face-to-face communication is considered to be better than the online one, on With the combination of both of them, we may eventually realize the dream of long-distance communication. With the combination of both of them, we may eventually realize the dream of long-distance communication and keep a strong sense of shared emotion." The teacher's comment is "The first sentence is abrupt. Why do you suddenly say that face-to-face communication is considered better? I personally suggest that the end of the essay is to reinforce your own point of view and not to make any looser ends. The conclusion of the paragraph should be clear and should not use ambiguous sentences to summarize. If I were asked to write such an essay, I would conclude the essay with a paragraph like this: "To sum up, long-distance communication has unparalleled advantages and represents the trend of the times. We can do is to keep up with the times and make the most of it. Make it work for us, not against us." In this way, when the students received this kind of feedback, he would understand his own problems and at the same time, he would understand how the teacher develop ideas. It would be a virtuous circle of teacher-student communication.

In the last year's training, we started to introduce positive psychology research theory to guide students' second language writing based on feedback teaching method. The positive psychology theory emphasizes the students' subjectivity and their emotional experience, so our trainers began to pay attention to the students' emotional changes during the feedback interaction with them. We noticed that some students were able to adjust quickly after receiving the teacher's feedback, from initial frustration to thanking the teacher for her help and then actively engaging in the process of rethinking and recreating the essays. Some students, however, lose confidence in themselves and become intimidated by writing because of the large number of errors pointed out in the teacher's feedback. In a previous writing training, one student also made mistakes in topic review and material selection during a writing session later in the training, and the teacher gave feedback in a critical tone, causing the student to suffer a blow to his self-esteem and confidence and to deny himself completely, thus not knowing how to write and creating negative emotions of avoidance. After the teacher discovered this problem during the training, she actively dealt with it and there was good communication between the teacher and the student. The teacher first affirmed her writing ability, while together analyzing the current problems, the strengths and weaknesses in the student's writing. Through the conversation, the student regained her confidence and re-engaged in practice, achieving good results in the writing competition. We found that the teacher is an important part of the problem of emotional regulation in the second language writing process. Teachers should strive to build a good teacher-student connection and help students overcome their anxiety. However, an even more important part of this is that students themselves can gradually build up good emotional coping mechanisms and reap the benefits of happiness from learning to reach the realm of pleasurable learning.

5. CONCLUSION

In this paper, we have picked out two perspectives from feedback teaching methods and explored the practical application of process teaching method theory and positive psychology theory to the teaching of second language writing. In the long-term training of the writing group at Tan Kah Kee College, teachers and students have been working together to achieve the "student-centered" principle of Tan Kah Kee College, and both teachers and students have gained a lot from a virtuous circle of teacher-student communication. The development of the times requires teachers of second language writing to continue to learn and keep up with the latest theories, to broaden their perspectives on teaching English writing, to reflect on pedagogy and to innovate in order to promote the effectiveness of foreign language teaching and learning, and to cultivate English talents with good overall English application skills.

ACKNOWLEDGEMENTS

This article is the result of the project "Research on the application of feedback teaching method in second language writing teaching" of Foreign Language Teaching and Publishing House in 2020, project number is 2020102802.

REFERENCES

[1] Allen, D.&A.Mills. The impact of second language proficiency in dyadic peer feedback [J]. Language Teaching Research, 2015(4).

[2] Carson, J. G. & G. L. Nelson. Chinese students' perceptions of ESL peer response group interaction [J].

Journal of Second Language Writing, 1996(1).

[3] Chen Liaokun. Communicative approach and secondary school English teaching [J]. Modern Foreign Languages, 1991, (2)

[4] Cui Ying, Gai Xiaosong, Zhang Shaojie. Exploring the effectiveness of peer feedback method and the feasibility of applying it to English writing teaching[J]. Foreign language e-learning, 2019, (4)

[5] Fredrickson B L The role of positive emotions in Positive Psychology: The broaden-and-build theory of positive emotions [J]. American Psychologist, 2001, 56(3) : 218- 226.

[6] Goetz T & Bieg M. Academic emotions and their regulation via emotional intelligence [A]. In Lipnevich A A, Preckel F & Roberts R D (eds). Psychosocial Skills and School Systems in the 2lst Century: Theory, Research, and Practice [C]. New York: Springer, 2016. 279- 298.

[7] Gross J J. The emerging field of emotion regulation: An integrative review [J]. Review of General Psychology, 1998, 2(3) : 271-299.

[8] Han Y., Xu Y. T. A study on emotional experience and emotional regulation strategies of second language writing learning from the perspective of positive psychology-using written corrective feedback as an example [J]. Foreign Language, 2020, (1)

[9] Han Y. Written corrective feedback from an ecological perspective: The interaction between the context and individual learners [J]. System, 2019, 80: 288-303.

[10] Han Y & Hyland F. Academic emotions in written corrective feedback situations [J]. Journal of English for Academic Purposes, 2019, 38: 1-13.

[11] Helgesen M. Happiness in ESL/EFL: Bringing positive psychology to the classroom [A]. In MacIntyre P D, Gregersen T & Mercer S (eds). Positive Psychology in SLA [C]. Bristol: Multilingual Matters, 2016.

[12] Hyland F. The impact of teacher written feedback on individual writers [J]. Journal of Second Language Writing, 1998, 7(3) : 255- 286.

[13] Jiang Guiying, Li Cheng Chen. A review and prospect of second language acquisition research from the perspective of positive psychology[J]. Foreign Language, 2017, (5)

[14] MacIntyre. P D. So far so_ good: An overview of positive psychology and its contributions to SLA [A]. In GabryS-Barker D & Galajda D (eds). Positive Psychology Perspectives on Foreign Language Learning and Teaching [C]. New York: Springer, 2016.

[15] Wang Ying. Feedback and English writing [M]. Shandong: Shandong University Press, 2007.

[16] Yan Ruofang, Ou Guangan. Research on the application of process teaching method in college English writing teaching [J]. Educational Theory and Practice, 2018, (6).

Discussion on The Teaching Mode Reform of Management Courses Based on Case Teaching Method: Taking Human Resource Management as An Example

Zhe Li
School of Economics and Management, Qilu Normal University, Shandong 250200, China

Abstract: In the steady development of China's higher education, through a series of reforms and optimization, many excellent teaching ideas and methods have been born, among which case teaching method is one of the very effective teaching methods. In essence, the case teaching method is based on the knowledge points of human resource management and guided by cases, guiding students to generate their own thoughts and ideas according to the cases, and carrying out more meaningful discussion activities to increase the effectiveness of teaching. For case teaching, it out of the boring knowledge teaching, instead use more practical reality phenomenon or problem to promote the teaching, to combine theory with practice closely, is accord with the characteristics of university education characteristics and students a new teaching method, fully embodies the modern open education, the characteristics of actual phenomenon can make students better adapt to society, to improve the ability of solving practical problems, students after graduation to participate in the work can be more easy and efficient.

Key words: Colleges and Universities; Human Resources; Management Courses; Case Teaching Method; Application Research On

1. INTRODUCTION

With the reform of higher education in China, the new teaching methods and teaching idea gradually applied in the teaching, case teaching method is simply throw boring knowledge teaching, introduce students to a particular case, case reflects the actual phenomena or problems in society and life, let the students see the essence through the phenomena in the process of exploring the case, by deepening the understanding of knowledge, fully embodies the characteristics of the modern open education, improve the students ability of solving practical problems, will learn to live through human resources management knowledge, improve the students' comprehensive vocational ability [1-6].

2. THE BACKGROUND OF THE BIRTH OF CASE TEACHING METHOD

2.1 Characteristics of higher education

First should clear is that the university has strong applicability, human resources management courses of colleges and universities itself needs to have strong practicality, to make better trained personnel to meet the needs of future jobs, but in the past a lot of colleges and universities of human resources management courses practice application is less, prefer to theoretical teaching, teachers blindly field theory and impart knowledge to students, the students passively accept learning effect is not good, today, along with the education reform, the application of case teaching in teaching the proportion is higher and higher, practice proved it is accord with the characteristics of education in colleges and universities teaching methods [7-11].

2.2 Learning characteristics of college students

Starting from the study characteristics of university students, which leads to the teaching effect is not good can be summarized simply for the college students' learning ability is insufficient, study interest is not enough, two points with the introduction of case teaching method to teaching, fully embodies the openness of the teaching, let the student taking the exploration of actual phenomenon or problem, to improve the students' interest in exploring, and eventually return to the essence through the phenomena, and to introduce human resource management knowledge, students take a tumble, understanding of knowledge will be more thorough, the teaching effect is better. In general, case teaching method is a teaching method in line with the characteristics of college education and students' learning, which can make students' learning more thorough and in-depth.

2.3 Connotation and advantages of case teaching method

Case teaching, boring knowledge teaching is simply left to introduce students to a particular case, case reflects the actual phenomena or problems in society and life, let the student feel on case, produce their own ideas and opinions, and to strengthen the interaction and mutual discussion between the basic form in the field of human resource management, finally analyze the basic problem, return to the teaching of knowledge, students take a tumble, understand the human resource management knowledge and life of the connection between the human resource management phenomenon or problem, by deepening the understanding of knowledge, fully embodies the characteristics of the modern open education.

(1) Teaching without knowledge: the former human resource management course teaching is more inclined to knowledge teaching, students are immersed in the boring knowledge world, while the case teaching method is more inclined to reflect and discuss the practical problems,

based on the actual cases as the starting point, divided into Analyzing the existing and corresponding knowledge points of human resource management in the case increases the effectiveness of teaching.

(2) to respect students' subjectivity, respect students' subjectivity of case teaching method, case teaching requires each student around case to think, to produce their own ideas and opinions, changed the former rote education, students' awareness of knowledge of human resource management more deeply, and exercise the thinking ability, also can make the teaching tend to be more efficient.

(3) to cultivate students ability to solve practical problems: the starting point of case teaching method is a real case or cases exposed problems, explore the process of case teaching method is to analyze the case and the process to solve the problem, in case teaching, the students are not in learning knowledge, but in the solution actual problem, through the case teaching method, must can cultivate students ability to solve practical problems, improve the students' comprehensive professional quality.

(4) the discussion of case teaching, case teaching method requires students to case has its own understanding and view, second revolves around their point of view to explore communication among students, enhance teaching interaction, students in the mutual communication, will bring about sparks more thinking, will continue to absorb good idea and innovation, make the teaching more efficient.

3. REASONS WHY CASE TEACHING METHOD IS NOT EFFICIENT ENOUGH

While adjusting the implementation of the case teaching method in the teaching of human resource management courses in some universities, it can be found that there are still problems of different degrees in the practice process of the case teaching method, which leads to the poor effect of the implementation of the case teaching method. The main reasons are

In the following three aspects:

3.1 Problems in case selection

Some cases of case teaching method selection has a problem, case aging, formatting, cannot effectively arouse students' interest in learning, or the choice of case contact to teaching knowledge is not quite close together, causes the teaching effect is not good, will case teaching as a systems engineering perspective, from the teaching goal, the types of cases, case source of novelty, case and so on many Angle comprehensive considerations, analysis the problems and countermeasures, to prepare.

3.2 Boot problem

In an actual case teaching, the students still relies on habit, accustomed to the inherent thinking, accustomed to the teacher taught directly, cause when the case in the students' divergent thinking is not enough, do not produce their own ideas or opinions, this requires teachers to properly guide, on the one hand is the guide of teaching knowledge, throw an innovative, have education significance topic to guide students thinking, on the other hand is to explore the atmosphere of the guide, to avoid ice, avoid running deviation for case discussion and communication.

3.3 Lack of generalization and summary

The nature of the case teaching method, based on case as a starting point, finally to see the essence through the phenomenon, its return to the human resources management knowledge, students and knowledge point of contact for cases to analyze, and to sum up, and then have the purpose of improving the teaching effectiveness, and in many cases, students of human resources management knowledge without good sum up, human resources management in the teaching of knowledge in students' mind is chaotic, debris, cognitive is weak, make the effect of case teaching.

4. APPLICATION OF CASE TEACHING METHOD IN HUMAN RESOURCE MANAGEMENT COURSES

4.1 Select teaching cases

The implementation of case teaching method first lies in the selection of teaching cases. On the one hand, teachers should study the human resource management curriculum materials, on the other hand, they should actively develop social case resources, centering on the hot current events in society and life, and summarize them into their own case base. The better the teaching cases, the better the teaching effect. In addition, in the case of enough cases, case should stick to the choice of teaching content, and to conform to the students of the current study situation, moderate difficulty, it can stimulate students' learning motivation, can let students learn more knowledge to apply human resource management courses, and for the difficulty is higher, has certain challenging case analysis, the necessary grouping can make students explore cooperation, the effectiveness of the distribution of attention cooperation team, to make each students all have their own views and opinions, can't go with the flow. Data were collected from teaching objectives horizontally, and then case teaching methods were analyzed. Finally, cases with stronger educational significance were found according to the value dimension. Case teaching method was regarded as a system engineering, and a comprehensive consideration was made from teaching objectives, case types, case novelness, case sources and other perspectives.

4.2 Deep perception of the creation situation

Case teaching method using the establishment situation to reduction in real scene, lets the student enter the scene, strengthen the comprehension, the effect will be better, in students' comprehension in the situation, many words can't express clearly problem will become more clear, in the process of reduction and creating scene, lie in the imperfection of the creating scenes, the students understand the result is bad, sometimes, teachers use some model tools, multimedia to create scenes, raise some issues which have depth, will let the scene more real, students feel more efficient, more able to stimulate students' thinking, let the students have their own views on case.

4.3 Strengthen discussion

After students have their own views and opinions on the case based on the knowledge points of human resource management, they can guide students to carry out communication and discussion. In the process of communication and discussion, students will gradually deepen their understanding and thinking on the nature of the case and create more sparks of thinking. In principle, the teacher should be bold to let go, will return more autonomy to students, let students really free, independently on the speculative exchanges, collaboration with each other, inspire each other, but in the actual teaching, the students may be so wandering, gradually to explore other topics, or inadequate communication, therefore, the teacher's guidance and inspiration is essential, the teacher to ask questions or add to the discussion, let more active study atmosphere, can make teaching more effective, let the surrounding the case discussion topic carry on more efficiently.

4.4 Summarize and restore theoretical knowledge

Restore essence through the phenomena, we must do is teaching the beginning is the analysis of the case, and gradually, to bring it into human resource management knowledge teaching, guides the student to the actual case as well as the corresponding knowledge, to sum up, and then have the purpose of improving the teaching effectiveness, at the time of induction summary, teachers should respect students different ideas and opinions, even if some of them are insufficient, the lack of the idea of recorded, one by one, analyzes its possibility, and then gradually penetrate knowledge, excellent teaching from multiple dimensions and multiple direction to let the students have a more profound understanding of knowledge points, Cultivate students' comprehensive thinking.

4.5 Feedback and evaluation

After a series of case teaching progress, the teacher should give a scientific and reasonable feedback and evaluation, feedback and evaluation should be based on students' actual level and explore ability evaluation, the best students to give you performance, and put forward higher requirements, continue to stimulate students' learning potential, give encouragement to poor students and find them in case teaching in the process of learning, inspire students' learning interest and enthusiasm. In addition, a certain incentive mechanism can also be created as a part of feedback and evaluation, and appropriate rewards can be given to students with excellent performance, so as to set up learning models, promote students' enthusiasm, and pay attention to the analysis and study of cases.

5. CASE TEACHING MODE

The teaching of this course, no matter the selection of course content or the organization of teaching content, always focuses on the main line of the cultivation of application ability, and integrates teaching into the solution of practical work tasks, which not only highlights the application of the learned knowledge, but also cultivates students' practical operation ability. The practical training projects submitted to students in the course teaching scenarios are carefully organized and selected on the basis of the key points from human resource management. Each scenario is closely related to the actual human resource management and truly reflects the vocational application ability requirements of the posts. In teaching, the concept of combining work and study is realized. The teaching process is no longer limited to the classroom, instead, teaching is organized by real work tasks. Combining theory with practice, combining work with study, learning and applying, building the employment bridge between schools and enterprises. The traditional teaching idea of imparting knowledge is transformed into a multi-dimensional interactive teaching idea of solving problems and completing tasks. Reproductive teaching will be transformed into inquiry learning, so that students are in an active learning state, each student can according to their own understanding of the current problems, the use of common knowledge and their own unique experience to propose solutions to the problem. In the process of concrete application, teachers improve the learning effect through several stages: setting up situation, determining problem (task), autonomous learning, cooperative learning and effect evaluation. A large number of cases are used in the teaching process of this course. The purpose of this course is to make students analyze, judge, be inspired and learn to think in the replay of real scenes by analyzing cases. Teachers can flexibly use teaching methods such as demonstration inspiration and intuitive inspiration, starting from the unique reality of human resource management, so that students can effectively grasp the teaching content and acquire the required vocational ability through their own repeated understanding and understanding on the basis of profound perceptual knowledge. In view of the key points and difficult points, the method of explanation, inspiration and asking questions is adopted, or the form of group discussion is adopted, in which one group finds the question and the other group answers, so as to improve students' interest in learning and make them really master it. The teaching process takes the project as the main line, the teacher as the guidance, and the student as the main body, which changes the previous passive receiving teaching mode of "the teacher speaks, the student listens", and plays an important role in enhancing the students' interest in learning and improving the learning effect. Students conduct research learning after class, and organize students to discuss in groups in the next class or in their spare time, so as to enhance their learning initiative.

6. CONCLUSION

Above all, the nature of the case teaching method is based on actual social phenomenon or problem in the beginning, in the process of analyze the phenomenon or problem gradually infiltration and the introduction of human resources management knowledge teaching, has a strong openness and applied, is accord with college education characteristics and the characteristics of the university students is the teaching method, not only can stimulate the students' learning interest and learning initiative, more can improve students' understanding of project management knowledge, a better teaching effect.

REFERENCE

[1] Li Ruifen. Reform of Teaching Methods of

Undergraduate Economic Management Courses [J]. Journal of Beijing University of Agriculture, 2002, 17(002):68-69.
[2] Zhang Guangming, Tian Jian, Jia Xi, et al. Discussion on Teaching Methods of Management Courses [J]. Journal of Jiangsu University of Science and Technology (Social Science Edition), 2003, 3(2):89-91.
[3] Cui Shuyin. Application of Participatory Case Teaching in the Teaching of Public Management Courses [J]. Science of Modern Education (4):167-169.
[4] Cui Shuyin. Application of Participatory Case Teaching in the Teaching of Public Management Courses [J]. Science of Modern Education, 2010.
[5] Hua M. Management Curriculum Teaching Should Implement Case Teaching Method [J]. Vocational Education Research, 2003, 000(005):15-16.
[6] Yue Wenhe. Research on Teaching Content and Method Reform of Management Courses in Colleges and Universities [J]. Journal of Theoretical Studies, 2007, 000(002):237-238.
[7] Hua Mei. Management Course Teaching Should Implement "Case Teaching Method" [J]. Modern Skills Development, 2003.
[8] Shao Jihong. On the Application of Case Teaching Method in Management Course Teaching in Colleges and Universities [J]. Career Time and Space, 2007, 3(005):33-34.
[9] Luo Feng, Huang Li. Application Research of Simulation Teaching Method in Management Course Teaching [J]. Entrepreneur World (second half month), 2005(03):82-83.
[10] Zhang Guangming, Tian Jian, Jia Xi, et al. Discussion on Teaching Methods of Management Courses [J]. Journal of East China Shipbuilding Industry Institute (Social Science Edition), 2003.
[11] Peng Yihua, Li Xiaomei. Teaching Research on Engineering Management Course under the Background of Building Informatization-- Taking Engineering Structure as an Example [J]. Journal of Higher Education, 2020, 127(05):100-102.

Input-Output Analysis of Rural Primary, Secondary and Tertiary Industry Integration Degree

Zhe Li
School of Economics and Management, Qilu Normal University, Shandong 250200, China

Abstract: According to the statistics of the Ministry of Agriculture and Rural Affairs, as of the second half of 2020, there are about 277, 000 small farmers to provide professional services for the society, 13, 000 enter leisure agriculture and rural tourism, and more than 2, 000 are engaged in folk handicrafts and other local characteristic industries. More than half of them provide integrated services of production, processing and sales; 268, 000 set up processing, circulation and sales entities; 40, 000 develop rural e-commerce; and nearly 160, 000 have registered trademarks or agricultural product quality certification. By conducting large-scale planting, breeding, bigger and stronger, a batch of rural characteristic industry to the prenatal postpartum extends through business, gradually led to the agricultural industry value-added synergies, let farmers have more space for employment income, lead the 123 rural area industrial integration development, comprehensive implementation extend the industrial chain, improve the value chain, build the supply chain, and a large gap, improving agricultural comprehensive benefit more farmers cooperatives still belongs to the small, low level of loose management status, short industry chain, value-added efficiency of space.
Key words: Rural Areas; Industrial Integration; Agricultural

1. INTRODUCTION

According to the No. 1 document of the Central Committee in 2021, farmers' cooperatives can try to explore the following dimensions in extending the processing chain and exploring the multi-functional value of agriculture: First, vigorously develop the primary processing of agricultural products in producing areas according to local conditions. We should make full use of the policy opportunity of the central finance agricultural production development fund project to support the construction of new agricultural business entities to store and keep fresh facilities for agricultural products, and take advantage of the situation to step up to a higher level and a higher efficiency development stage. Second, to develop intensive processing of agricultural products through joint and cooperation. Actively seek the cooperation of the agricultural products processing or circulation enterprises with the strong capital, technology or market channel strength. First, play a down-to-earth role as a standardized supplier of high-quality agricultural raw materials, and then try to achieve a strong alliance in the deep processing link through investment, product technology research and development and other ways to achieve mutual benefit and win-win results. In this process, gradually accumulate experience and ability, and lay a solid foundation for the future development of the whole industrial chain. Third, make full use of village resources to develop leisure agriculture and tourism. The local natural landscape, folk culture, old house village, the traditional craft of characteristic resources, expand the research learning education, rural health, parenting experience, training, and other functions, the development of a home stay facility, peasant feast, handicrafts, leisure landscape (garden) and other services, through leasing assets, investment, absorbs all kinds of tangible and intangible tourism resources into the cooperative business, and become a shareholder by farmers cooperatives, hire local labor force and other way to make friends more villagers to employment income from it [1-5]. Finally, through a period of efforts and with the support of village organizations, farmers' cooperatives take the lead to gradually develop the rural leisure tourism boutique scenic routes with distinct regional characteristics, profound cultural deposits and strong local flavor, so as to realize the joint manifestation of agricultural and rural production, life, ecology and other multiple values. Fourth, actively strive for the external support of land, capital and other elements. Ministry of Agriculture and Rural Affairs recently jointly issued on the guarantee and standardization of rural primary, secondary and tertiary industry integration development of the notice policy opportunities, strive for reasonable land indicators. At the same time, we should strengthen communication with local governments to win their support in the construction of water, electricity, roads, networks and other facilities. In addition, we can actively give feedback to the government departments and strive for the improvement of social security subsidies, tuition subsidies, education and medical conditions, so as to recruit and attract more professional talents and social capital to join and participate [6-10].

2. RURAL INDUSTRIAL INTEGRATION IS TO REALIZE AGRICULTURAL MODERNIZATION AND PROMOTE AGRICULTURAL SUPPLY-SIDE STRUCTURAL REFORM

Increasing the income of rural residents and promoting the transformation and development of rural economy are also important measures to complete the building of a moderately prosperous society in all respects. But overall, the 123 rural industrial convergence development is still in its infancy, the principal contradiction of rural industry foundation is weak, lack of power, quality and efficiency is not high and the structural imbalances, etc., have been unable to meet the demand of rural the 123 industrial integration development, and show the four dimensional characteristics: one is the agricultural raw ratio is not high, deep processing ability is insufficient, low degree of standardization, new industry lack of main body, the 123 rural basic need founding industry amalgamation; Second, the development coordination of production, marketing and marketing is insufficient, the degree of marketing organization is not high, the brand construction of agricultural products lags behind, and the integration quality of rural primary, secondary and tertiary industries needs to be improved urgently. Third, there is a shortage of talents in agriculture-related industries, limited application of advanced industrial technologies and industrial integration concepts, poor financing channels, unsound interest linkage mechanism, weak connection between rural industrial integration policies and other agriculture-related policies, and an urgent need to optimize the integration environment of rural primary, secondary and tertiary industries.

2.1 The general idea of integrated development of primary, secondary and tertiary industries in rural areas

Adhere to the high-quality integrated development idea of centering on one, closely linking two and relying on three, and promote the quality, efficiency and power transformation of the integrated development of rural industries. One is to use modern technology, management elements and service concepts to upgrade and transform rural industries and lay a solid foundation for the integrated development of rural primary, secondary and tertiary industries. Two closely, is closely related to the integration of production and village construction, industry to revitalize the village as a breakthrough, strengthen the integration of rural resources, revitalize the rural idle houses, collective construction land and mountain, water, forest, farmland and lake resources, realize the industrialization of resources, agricultural landscape, village scenic spots, residential scenic spots, open up a new path of integration of production and village; Based on the construction of the community of production and people, a new mechanism for the integration of production and people is formed by taking farmers' promotion of production as the foothold and industries' enrichment of people as the foothold, and constructing a mechanism for the connection of interests of production and people, cultivating farmers' values of perseverance in production and people's perseverance. The three supports are to rely on the characteristic town to promote the construction of land integration, optimize the land use arrangement and industrial layout of rural industrial integration, realize the efficient docking with the characteristic town construction, and implement the new model of industry-city integration; Based on a visit to get residency system will advance into construction, the selection of rural people, rich, good home university graduates, rural science and technology personnel, farmers' professional co-operatives members to carry out special entrepreneurship training plan, strengthen the new professional farmers, short term rapid vocational skills education and rural youth science and technology talent team construction, promote farmers ability construction, realize the industrial integration development talent support; Relying on the construction of finance and technology, we will introduce a number of outstanding village-level agricultural industry management cadres in mainland China, actively carry out the implantation of precision and catalog investment attraction and industrial integration technology mode, and realize the technological innovation leading of rural industrial integration development.

2.2 Orientation and layout of integrated development of primary, secondary and tertiary industries in poverty-stricken areas

Rural industrial integration can effectively promote poverty alleviation and prosperity in poverty-stricken areas. According to the factors and resources, the poor areas should choose the industrial chain extension model, the park extension model, the Internet+ agriculture integration model, the industry+poverty alleviation model. The construction of rural infrastructure and supporting conditions such as transportation, logistics, electricity, science and technology, culture and education, finance, socialized services, social security and medical care in poor areas will be strengthened to lay a solid foundation for the development of rural industries.

To create demonstration and pilot areas for the integrated development of primary, secondary and tertiary industries in poor rural areas; We will further improve the financing mechanism for financial loans in poor areas and promote the loan insurance guarantee mechanism. Explore a new mode of industrial poverty, in which land transfer can earn rent, park service can earn salary, business operation can earn cash, and collective economy can earn commission. With innovative thinking, industry-driven, functional improvement and interest connection as the breakthrough points for rural poverty alleviation in poverty-stricken areas, we will create a new model and demonstration pilot project for industrial integration poverty alleviation and development, focus on the development of courtyard economy, folk custom experience, ecological tourism and other industrial poverty alleviation models, and encourage the poor population to deeply participate in industrial integration development.

2.3 Orientation and layout of integrated development of primary, secondary and tertiary industries in the suburbs

According to local conditions, we should promote industrial park agglomeration model, agricultural internal integration model, industrial chain extension model, functional expansion model and urban-rural integration model that are suitable for suburban development. Focus on the construction of suburban leisure agriculture, vegetables, flowers, fruits and trees and other four suburban industrial clusters. Combined with the regional agricultural resources, ecological resources and agricultural products processing industry area, innovation of agricultural culture, farming experience, education science, ecological sightseeing, humanistic ideas, diet culture, life services, catering services and other leisure agriculture and rural tourism development pattern, encourage the construction of the central staple food kitchen, leisure garden, agricultural products and processed products of warehousing logistics facilities and distribution system, Internet marketing platform and other facilities, to meet diversified urban and rural residents, and personalized needs. Implementation takes a swallow, one village one scene, takes a rhyme special engineering, construction with local characteristics, ethnic customs the charm of the town, town construction intangible, characteristic folk village, village farming, nomadic culture tribe characteristic such as villages, cultivated leisure agriculture, community support, agricultural people farm, gardening (vegetables, flowers, fruit tree) industrial clusters, to build the theme in rural agricultural and garden for sightseeing Tours, agricultural science and technology, farming experience tour, special tourism projects, such as farming culture tour and the high-quality goods route, make urban citizens happy.

3. CONSTRUCTION OF INTEGRATED DEVELOPMENT MODEL OF PRIMARY, SECONDARY AND TERTIARY INDUSTRIES IN RURAL AREAS

3.1 Promote the construction of the whole industrial chain

With leading enterprises, production base, cooperatives, farmers as the foundation, through agriculture industry chain upstream and downstream, the industrial production and processing link forward and backward extend continuously, build park delay before the show, leading enterprises + cooperatives, deep processing of agricultural products such as fusion model, implement comprehensive industry chain integration management, promote resource recycling within the whole industry chain, through closely with market, to promote the value chain extension.

3.2 Promote the construction of industrial agglomeration mode

Taking the agricultural industrial park as the leading role, it gathers high-quality agricultural resource elements within the region, strengthens the layout of agriculture-related industries to the park, builds an industrial integration platform, promotes the competition and cooperation among industries within the park, and realizes the integration of industrial clusters into each other's markets.

3.3 Promote the construction of agricultural function expansion mode

Dominated by various kinds of agricultural park, promoting agricultural development demonstration project construction, vigorously promote animal husbandry brigade fusion, promote the first industry, agricultural product processing industry, rural services and cultural industries such as tourism integration development, promoting production, sightseeing, leisure, tourism, education, which integrates multi-functional agricultural development, focus on the development of leisure agriculture, tourism agriculture, creative agriculture, building rural complex projects, promoting the construction of agricultural brand, expand agricultural utility value.

3.4 Promote the construction of agribusiness interconnection mode

Taking Internet+ as an opportunity, new agricultural business entities and agriculture-related e-commerce enterprises will take the lead, adhere to the market orientation, strengthen the construction of cold chain logistics system and supporting infrastructure of e-commerce, and build the standard system of the whole industrial chain; Create sub-parent brand standard system, create a group of sub-brands with prominent regional characteristics and distinctive product characteristics; We will establish a long-term and stable linkage mechanism for production and sales, and develop contract agriculture, integration of production and sales, and equity cooperation.

3.5 Promote the construction of poverty alleviation industry integration model

To fully integrate and utilize the existing poverty alleviation policies, resources and funds for the integrated development of rural industries. With the government's top-level design as the driving force and agriculture-related enterprises as the leading role, we will strengthen the quality zoning of characteristic agricultural products, implement the project of "One Land One Product" and "One Product One Strategy", and promote the construction of the integration mode of poverty alleviation industries such as characteristic forest and fruit, horticulture and animal products in poverty-stricken counties.

3.6 Promote the construction of the gully economic model

The government as the backing, dominated by cultural tourism enterprises, implement the strategy of full mountain gold ditch industrial convergence, focus on developing gen, travel industry, fully tap groove in the domain of natural landscape, history and culture, the characteristics of biological resources, highlight the characteristics of a groove, a domain, industry and mountain economy, focus to foster a batch of green ecological, distinctive, burst forth dynamic channel domain economy demonstration area, promote the training base, mountains beauty XueGuan life, youth and guest center, characteristic base of home stay facility, road trip destination, kang raising base, forest oxygen bar, the warriors hunting park, wedding photography base creative projects such as construction, Realize the former Tushan Gully to the golden Gully gorgeous butterfly change.

4. OPTIMIZATION OF THE INTEGRATED DEVELOPMENT ENVIRONMENT OF RURAL PRIMARY, SECONDARY AND TERTIARY INDUSTRIES

4.1 Develop the industrial standard system for the integrated development of primary, secondary and tertiary industries in rural areas

We will accelerate the study and formulation of criteria for identifying operators for the integrated development of primary, secondary and tertiary industries in rural areas

Business entities should establish standards for the evaluation standards for the integrated development of primary, secondary and tertiary industries in rural areas, create a brand with standards, attract capital with brands, and gather resources with capital to improve the standardization of industries, industry standardization and service quality.

4.2 Improve infrastructure construction

Relying on traffic construction planning, tourism development planning, ecological environment protection planning, active docking rural tourism attractions, focus on strengthening slum, agricultural and pastoral areas, suburban farmland, water, sanitation, environment, roads, power grids, network, electricity, logistics, parks and other rural infrastructure and supporting facilities construction, improve the 123 industrial convergence development basic condition.

We will establish investment and financing platforms for the integrated development of rural industries, strengthen innovation of investment and financing models, strengthen the level construction of rural industrial integration by replacing subsidies with awards, and guide private capital to actively participate in rural industrial integration projects. Use channels, poverty alleviation projects, TV stations (CCTV, provincial TV stations), the Internet, media, WeChat, Weibo, e-commerce platforms, tourism and other channels to promote the integration of rural primary, secondary and tertiary industries. We will integrate agriculture-related policies, carry out special studies on construction land and tax collection, encourage local governments where conditions permit to put idle rural assets, resources and funds to good use, and build pilot demonstration areas for the integrated development of primary, secondary and tertiary industries in rural areas.

5. SUMMARIZE

We should deepen our ideological understanding from a strategic and overall perspective, and put the integrated development of primary, secondary and tertiary industries in rural areas on the agenda as an important starting point for the implementation of the rural revitalization strategy. We will move faster to establish a joint conference system and a working group to promote the integrated development of primary, secondary and tertiary industries in rural areas, and formulate a scientific development plan and mechanism for promoting it. Prefectures, counties and municipalities should accelerate the formulation of corresponding implementation plans for the integration of primary, secondary and tertiary industries in rural areas. The Ministry of Finance, in conjunction with relevant departments, issued special policies for the integrated development of primary, secondary and tertiary industries in rural areas. We will continue to favor poor, agricultural and pastoral areas with government funds, and increase input in general transfer payments. We will set up a special fund for the integrated development of primary, secondary and tertiary industries in rural areas to involve more private and financial capital, and actively explore new models of cooperation between the government and private capital.

We will strengthen the selection, training and assessment management of cadres for the development of rural industries, and strive to build a contingent of cadres with strong politics, skilled professional skills and willingness to play a role in the integrated development of rural primary, secondary and tertiary industries. Scientific research institutions, institutions of higher learning and vocational schools in the zone have established a targeted talent training mechanism and model for the integrated development of primary, secondary and tertiary industries in rural areas, and organized expert lectures and other special trainings focusing on the cultivation of new-type professional farmers, young scientific and technological talents and key personnel.

REFERENCE

[1] Jiang Changyun. Japan's "Six Industrialization" and China's Promoting the Integration of Rural Primary, Secondary and Tertiary Industries [J]. Journal of Agricultural Economics and Management, 2015, 000(003):P.5-10.

[2] Su Yiqing, You Yutin, Wang Zhigang. Integration and Development of Primary, Secondary and tertiary Industries in Rural Areas: Theoretical Discussion, Current Situation Analysis and Countermeasures [J]. China Soft Science, 2016(8):17-28.

[3] Jiang Changyun. The Path and Focal Points of Promoting the Integration of Rural Primary, Secondary and Tertiary Industries [J]. Zhongzhou Academic Journal, 2016, 000(005):43-49.

[4] Jiang Changyun. New Solution to the New Problem of Promoting the Integrated Development of Rural Primary, Secondary and Tertiary Industries [J]. China Development Review, 2015, 000(002):18-22.

[5] Ma Xiaohe. Reflections on Promoting the Integration of Rural Primary, Secondary and Tertiary Industries [J]. Rural Operation and Management, 2016, 000(003):28-29.

[6] Zhao Hai. On the Integrated Development of Rural Primary, Secondary and Tertiary Industries [J]. Rural Operation and Management, 2015.

[7] Jiang Changyun. Improving the Interest Connectivity Mechanism for the Integrated Development of Rural Primary, Secondary and Tertiary Industries: Broadening the Vision [J]. China Development Review, 2016.

[8] Huang Zuhui. Increasing Farmers' Income in the Integration of Primary, Secondary and Tertiary Industries [J]. China Cooperative Economy, 2016, No.345(01):25-28.

[9] Kuang Yuanping, Yang Yang. Agricultural Industrialization Driven the Integration of Primary, Secondary and tertiary Industries in Hunan [J]. Hunan Social Sciences, 2017, 000(005):108-113.

[10] Zhang Hongyu. Research on Financial Support for the Integration of Rural Primary, Secondary and Tertiary Industries [M]. China Finance Press, 2016.

The Current Situation and Countermeasures of Hebei Import Cross-Border E-Commerce

Yu Liu, Wei Jin*, Tao Yan, Lifeng Xue
Shijiazhuang Posts and Telecommunications Technical College, Shijiazhuang 050021, China
*Corresponding Author.

Abstract: This paper first analyzes the current situation of import cross-border e-commerce in Hebei Province from the aspects of platform, port and e-commerce trunk line. It is found that there are some problems in Hebei's import cross-border e-commerce, such as insufficient policies, lagged platforms, and uncoordinated ports and trunk lines. On this basis, it puts forward the development countermeasures of Hebei Import cross-border e-commerce from the aspects of improving the service platform, developing the trunk transportation network, and improving the personnel training system.
Keywords: Cross Border E-Commerce; Import Port; Trunk Network

1. INTRODUCTION

In recent years, China's consumption upgrading has accelerated, focusing on promoting a new round of high-level opening to the outside world, actively expanding imports, building platforms for cooperation and sharing, and promoting regional economic opening, exchange and integration. In 2020, under the influence of the global epidemic, more than 100 countries will participate in the China International Import Expo, with products covering six exhibition areas: medical devices and health care, technical equipment, food and agricultural products, consumer goods, service trade and automobile. According to the previous year's brand development intention, it reached 72.2 billion US dollars, and hopes to enter the Chinese market continuously [1].

With the support of national and local policies, China continues to expand imports. Import cross-border e-commerce is becoming more and more refined. The construction of platform, the speed of logistics, the influx of capital and import tax policies have greatly reduced the cost of import cross-border online shopping. With the popularity of mobile Internet and the rise of global consumption concept, users' demand for high-quality cross-border e-commerce is further increasing [2].

Hebei Province, as a latecomer in the development of cross-border e-commerce, also has a good performance in the past two years. In 2018, Hebei province accounted for 5.05% of China's cross-border online shopping users, ranking seventh in China. In 2021, the cross-border Bonded Commodity Exhibition Center of CaofeiDian in area of Tangshan, the first pilot free trade zone for cross-border e-commerce in Hebei Province, will officially open, and Hebei cross-border e-commerce will usher in a good opportunity for development [3].

2. DEVELOPMENT STATUS OF HEBEI IMPORT CROSS BORDER E-COMMERCE

2.1 Current situation of import cross border platform in Hebei Province

(1) Actively build the import cross-border e-commerce service platform in Hebei Province. With the help of one belt, one road and the coordinated development of Beijing Tianjin Hebei, the structure of cross-border electricity suppliers will be adjusted actively while introducing advanced science and technology equipment. In the past three years, nearly 20 "provincial cross-border e-commerce demonstration platforms" have been passed, and "China Shijiazhuang cross-border e-commerce comprehensive public service platform" has been vigorously promoted [4]. The released platform construction is also dominated by export cross-border e-commerce, and gradually adjust and increase the construction of import cross-border e-commerce platform. It provides opportunities for development and innovation for the reasonable structure of Hebei cross-border e-commerce trade.

(2) The construction area of import cross-border e-commerce service platform is relatively concentrated. Cross border e-commerce platform construction is mainly concentrated in Shijiazhuang, Tangshan and other areas. In 2019, The service platform of Tangshan's Quan jie was recognized as a comprehensive cross-border e-commerce platform in Hebei Province, The platform of Yang guang in Shi jiazhuang, The platform of Pinzhibao global shopping in Tangshan, and the cross-border e-commerce platform of treasure hunting channel in Handan.

(3) With the help of B2B, B2C mode, cultivate local import self-support platform. At the present stage, most of the cross-border imports are carried out by relying on domestic and international well-known third-party e-commerce platforms, which is relatively concentrated. In terms of market segments, cross-border import platforms such as Xiao hongshu and Fengqu Haitao occupy most of the domestic market.

2.2 Current situation of Hebei Import cross border e-commerce ports

Import and export cross-border e-commerce ports are the gate way and window for cities to open to the outside world. With a developed comprehensive port system, they are an important measure to promote the development of import cross-border trade [5, 6].

(1) Gradually opening up a variety of customs supervision methods. In 2019, Shijiazhuang customs opened the bonded import business of cross-border e-commerce online purchase in Tangshan Hebei Province. The goods imported under the mode of online purchase bonded import by cross-border e-commerce mainly include milk

powder, cosmetics and other food and daily necessities. E-commerce platform can purchase a large number of goods from abroad, enter the country and store them in special supervision areas of domestic customs according to market forecast and consumer demand, then conduct online retail, and distribute them to ordering personnel according to the order out area.

(2) Enrich the system of special designated ports. Caofeidian Comprehensive Bonded Zone in Hebei Province is to build a designated import port. It gives full play to the functional advantages of the seaport, makes the bulk commodities go directly to the bonded storage base after landing, forms the agglomeration effect of bonded logistics, and promotes the port development and opening up of Caofeidian comprehensive bonded zone. Since 2018, Caofeidian port has gradually become the first designated meat port, vehicle import port, designated fruit port and timber port in Hebei Province. For consumers to handle customs clearance procedures nearby, minus unnecessary costs.

2.3 Current situation of import cross border e-commerce trunk lines in Hebei Province

At present, the main line transportation in Hebei Province mainly focuses on air, railway and water transportation according to the mode of transportation, which can be divided into direct transportation and transit transportation according to the mode of organization[6].

Zhengding International Airport in Hebei Province is a 4E Civil International Airport and an important air transportation hub. It has 8 flights from abroad, involving 10 shipping routes. The imported goods can be imported from Huang hua port, Tangshan port, Jingtang Port, Qinhuangdao port, Tangshan port and Caofeidian port in Hebei Province. There are six international container trains in Hebei Province, including three in Central Europe and three in Central Asia.

3. PROBLEMS OF HEBEI IMPORT CROSS BORDER E-COMMERCE

3.1 Import cross border e-commerce service platform lags behind

Hebei province attaches great importance to the development planning of cross-border e-commerce, but compared with advanced regions, the formulation of macro policies is relatively backward. The publicity and guidance of cross-border e-commerce is not in place.

Cross border e-commerce service platform can provide "one stop" import and export business services for cross-border e-commerce enterprises. Hebei Province in 2020, China (Shijiazhuang) cross-border e-commerce integrated public service platform is only online operation, so in the construction and improvement of the platform, the government and customs need to strengthen supervision, improve the overall function of the platform.

3.2 Port construction still needs to be strengthened

At present, the main and trunk transportation of the import port is the bonded import port of Tangshan online shopping. Tangshan has developed economic strength and good coastal geographical advantages. However, the aviation, railway and highway transportation hub of Hebei Province is located in Shijiazhuang City in the middle of China. Some goods imported from Tangshan still need to be transferred to Shijiazhuang City, which virtually increases the time, cost and the probability of damage.

3.3 Trunk line transportation is restricted

There are few direct trunk transportation in Hebei Province. For air trunk transportation, although there are two airports in Hebei Province with international routes, only Zhengding airport can carry out import and export transport of goods. In the direct shipping route, Qinhuangdao, Huanghua port and other ports are mostly import and export of bulk goods, and the volume of goods belonging to cross-border e-commerce import goods is less.

3.4 Lack of human resource support capacity

There is a certain gap between Hebei Province and neighboring Beijing and Tianjin in terms of living environment and residents' income, which leads to brain drain to a certain extent and fails to produce the advantage of talent aggregation. Compared with Jiangsu, Zhejiang, Guangzhou and other regions, due to the influence of market demand, it has promoted the accumulation of talents. The environment of attracting talents in Hebei Province needs to be improved.

4. SUGGESTIONS ON THE DEVELOPMENT OF HEBEI IMPORT CROSS BORDER E-COMMERCE

4.1 Establish and improve cross border e-commerce comprehensive service platform

The integrated service platform of cross-border e-commerce mainly serves the import and export cross-border e-commerce. The functions of the integrated service platform of cross-border e-commerce in Hebei Province should be designed with the government, enterprises, service platform and supporting units as the main body. Realize the multi-directional communication between the government, enterprises and customers. On the platform, the government can open policy, government affairs, exhibition and other information, and provide data collection, exchange and comparison, regulatory control and other work for enterprises in the province, so as to help solve the pain points of enterprise development. Enterprises can release products, display enterprises, etc., and realize information interconnection and resource sharing among enterprises, service institutions, regulatory authorities, etc. At the same time, it provides support and exchange for import cross-border e-commerce related industrial chain.

4.2 Strengthen the construction of ports and constantly improve the matching degree with trunk transportation

Starting from the designated ports of special commodities such as imported meat, fruits and aquatic products, the industrial development of xiong'an new area is connected with the industrial development of the three coastal ports in Hebei Province. It will provide a convenient customs clearance environment for the collection and distribution of goods at the three coastal ports and for the import and export goods in inland areas.

In the construction of inland ports, while relieving the pressure of ports, it is necessary to coordinate the distribution of interests between inland ports and coastal ports, delimit the inspection division between inland ports and coastal ports, and make ports willing to release part of their business volume.

4.3 Continuously develop and improve Hebei Import trunk transportation network

Take Zheng ding airport as the hub to build an international import shipping network. International import shipping network is divided into two parts, direct import network and transit import network. On the existing basis, we will continue to expand domestic and international freight routes and stabilize postal air routes. We will continue to introduce well-known domestic and foreign airlines and air cargo companies to open up new routes. With Zheng ding airport as the core, we will build a provincial distribution network integrating expressways, trunk lines, urban roads and rail transit. In the transit import aviation network, on the basis of consolidating the existing aviation transit network and continuously improving service efficiency and level, Zheng ding airport should actively expand new transit aviation network by taking advantage of its national and provincial location advantages.

Constantly improve the transport network, explore the construction of international road transport network. We will continue to improve the existing water and rail direct trunk transport network, so that goods will directly enter Tangshan port or Baoding, Shijiazhuang and other cities by water or China Europe trains. We will actively build a multi-modal transport system of waterway and highway with neighboring ports such as Tianjin, Dalian and Qingdao, and improve the logistics speed of goods entering from these ports. Actively explore the construction of international road transportation network, and the construction of transportation network with Russia and other Central Asian countries.

4.4 Improve cross border e-commerce talent training system through multiple channels

There is a serious imbalance between the demand and supply of cross-border e-commerce talents. The lack of talents has become an important factor restricting the rapid development of cross-border e-commerce.

College graduates are still the first choice. Graduates with rich experience in cross-border e-commerce are more likely to change jobs due to their limited working experience. Enterprises are also more willing to accept domestic college graduates, especially those majoring in "technology" and "small languages".

Enterprises actively integrate into colleges and Universities. Industry university integration cross-border e-commerce talent training is an important way of talent cultivation. Relevant colleges and universities in Hebei Province must cooperate with enterprises timely in cross-border e-commerce talent training. Hebei should have relevant associations and industrial organizations, actively introduce cross-border e-commerce enterprises, cooperate with colleges and universities to build cross-border e-commerce training bases, provide practical conditions in a real environment, and teach students the latest knowledge and practical skills. After learning, students can sign employment agreements with enterprises through two-way selection. In the training process, students can be trained in cross-border platform practice according to the characteristics of the industry and region of the enterprise, so that students can be familiar with the relevant business of the enterprise, and zero distance employment can be realized in the future.

Integrating students' innovation and entrepreneurship practice. As an important practical and innovative link for students, innovation and entrepreneurship education actively connects with cross-border e-commerce related enterprises, and specific independent links are the actual working environment for students to carry out innovation and entrepreneurship. Through the process of innovation and entrepreneurship, students can directly master the main ways of online store operation, and get practical training in finding the source of goods, product optimization, operation promotion, customer service, data analysis, etc., so that students can really master various skills of cross-border e-commerce operation.

ACKNOWLEDGEMENT

This research is supported by the project of Shijiazhuang Posts and Telecommunications Technical College. The title of the project is: Hebei Province Import cross-border e-commerce operation mode decision-making research. And the project number is YB2019013.

REFERENCES

[1] Xue W, Li D, Pei Y. The Development and Current of Cross-border E-commerce[J]. WHICEB 2016 Proceedings, 2016, 53.

[2] Gomez-Herrera E, Martens B, Turlea G. The drivers and impediments for cross-border e-commerce in the EU[J]. Information Economics and Policy, 2014, 28: 83-96.

[3] Ma S, Chai Y, Zhang H. Rise of Cross-border E-commerce Exports in China[J]. China & World Economy, 2018, 26(3): 63-87.

[4] Wang Y, Lee S H. The effect of cross-border e-commerce on China’s international trade: An empirical study based on transaction cost analysis[J]. Sustainability, 2017, 9(11): 20-28.

[5] Tian M. The in-depth marketing environment of cross-border e-commerce experience stores[J]. Ekoloji, 2019, 28(107): 2861-2864.

[6] Wang Y, Jia F, Schoenherr T, et al. Cross-border e-commerce firms as supply chain integrators: The management of three flows[J]. Industrial Marketing Management, 2020, 89: 72-88.

Optimization of Higher Education System

Yuwen Sun[1, 2], Jing Wang[1, 3], Zixing Liu[1, 2]*
[1]*Mathermatical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;*
[2]*College of Artificial Intelligence, North China University of Technology, Tangshan 063210, China;*
[3]*Yisheng Innovation Education Base, North China University of Science and Technology, Tangshan 063210, China;*
[*]*Corresponding Author.*

Abstract: The health status of higher education system has an important influence on national economic development and the cultivation of high-level talents. How to evaluate and establish a healthy and sustainable higher education system has become an important national task. In this paper, a comprehensive evaluation model based on TOPSIS theory and grey correlation analysis is established for the quality evaluation of higher education in various countries. Considering the advantages of grey correlation analysis and TOPSIS theory, the quality of higher education in various countries is evaluated from two angles of positive and negative ideal solutions and grey correlation degree, and the quality scores of higher educations in different countries are obtained.
keyword: Grey Relational Analysis; TOPSIS theory; Comprehensive Evaluation Algorithm.

1.PREFACE

For a country, the higher education system is closely related to many important aspects such as economic development and scientific and technological innovation, so having a healthy and sustainable higher education system is of great significance for the comprehensive development of the country. In today's world is closely linked and rapid development, countries need to reflect on the problems existing in the higher education system, and what can be done better.[1]

Previously, in order to promote the connotative development of education, the research on the evaluation mechanism of education quality in educational powers such as Japan and Canada has been endless, and the evaluation and thinking of domestic higher education has gradually increased.

In the existing literature, some scholars focus on the quality of domestic higher education, using factor analysis method to concentrate the multivariate with complex relationship into a few comprehensive factors, and construct the corresponding evaluation model.[2] In view of the current situation of China ' s higher education development, combined with the existing problems in the cultivation of higher education talents, some scholars use the principal component analysis method to calculate the weight to comprehensively construct the intuitionistic fuzzy evaluation model.[3]

2.TOPSIS METOD AND GREY CORRELATION ANALYSIS

2.1 TOPSIS method

TOPSIS method is a comprehensive evaluation method which uses the original data information to reflect the gap between the evaluation schemes. The essence is to find the optimal scheme and the worst scheme in the finite scheme, then calculate the Euclidean distance between each evaluation object and the optimal scheme and the worst scheme respectively, and obtain the relative closeness between each evaluation object and the optimal scheme, which is the basis for evaluating the advantages and disadvantages.[1]

2.2 Grey relational analysis

Grey correlation analysis is a multi-factor statistical analysis method based on grey system. The basic idea is to determine whether the relationship is close according to the similarity of the geometric shape of the sequence curve. The closer the curve is, the greater the correlation between the corresponding sequences is, and vice versa. Finally, the comprehensive evaluation is carried out according to the correlation degree.

3.TOPSIS-GREY CORRELATION COMPREHENSIVE EVALUATION MODEL

Reasonable selection of evaluation indicators of education quality is the basis for comprehensive evaluation of higher education. There are many different indicators in different countries. Based on the undergraduate teaching evaluation of the Ministry of Education and the Canadian higher education audit system, combined with the statistical yearbooks of China, Vietnam and Italy, the data are divided into nine indicators, as shown in Table 1.

3.1 Evaluation index selection

Tab.1 Index points to category

Dimension of descriptiveness	Index
Cost	The proportion of education expenditure in national fiscal expenditure
Fairness	The enrollment ratio of different genders
Educational scale	Number of teaching staff per million
Opportunity	Tertiary education enrollment
Degree value	Annual number of core papers published
Research levels	Proportion of scientific research expenditure
Educational achievements	Proportion of population with higher education
Social contribution	Graduates employment rate
Educational quality	Number of Nobel Prize winners every five years

3.2 Construction of evaluation matrix

In order to better test the evaluation model in the future, this paper collects the statistical data of higher education system in 18 countries, and selects 9 evaluation indexes. In order to facilitate the construction of evaluation matrix, it is assumed that there are m evaluation objects and n evaluation indexes, and the corresponding index values are $r_{ij}(i = 1,2,3,\dots,m; j = 1,2,3,\dots,n)$, The evaluation matrix is:

$$R=\left(r_{ij}\right)_{m\times n}=\begin{bmatrix} r_{11} & \cdots & r_{1n} \\ \vdots & \ddots & \vdots \\ r_{m1} & \cdots & r_{mn} \end{bmatrix} \quad (1)$$

3.3 Data pre-processing

Due to the different physical meanings of various factors, the dimensions of data are not necessarily the same, which is not convenient for comparison. Therefore, in order to obtain the dimensionless evaluation matrix, it is necessary to preprocess the matrix.[4]

Step1: Convert each index value r_{ij} to a standardized index $\widetilde{r_{ij}}$.

$$\widetilde{r_{ij}}=\frac{r_{ij}-\mu_j}{s_j} \quad (i=1,2,\cdots,m, j=1,2,\cdots,n) \quad (2)$$

$$u_j=\frac{1}{m}\sum_{i=1}^{m} a_{ij} \quad (3)$$

$$s_j=\sqrt{\frac{1}{m-1}\sum_{i=1}^{m}\left(r_{ij}-u_j\right)^2}, (j=1,2,\cdots,n) \quad (4)$$

Where u_j, s_j represent the sample mean and standard deviation of the jth indicator.

Step2: Calculation of standardized matrix $\widetilde{x_j}$.

$$\widetilde{x_j}=\frac{x_j-u_j}{s_j}, (j=1,2,\cdots,n) \quad (5)$$

3.4 Model content

When using the grey relational analysis method, the data need to be forwarded. Due to the differences in the nature of each index, the types of data are different, and there are maximum data, minimum data, intermediate data and interval data. Therefore, it is necessary to forward the data and convert them into maximum data for processing.[5]

The minimum value data represent that the smaller the value of the data is, the better it is. When transforming into the maximum value data, the following formula can be used for transformation.

$$max - x \text{ or } \frac{1}{x}$$

Intermediate data represent that the closer the data value is to a certain value, the better it is. When converted into maximum data, the following formula can be used for conversion.[6]

$\{x_i\}$ is a set of intermediate index series. Its optimal value is x_{best}, Then the forward formula is as follows

$$M=\max\{|x_i-x_{best}|\} \quad (6)$$

Conversion Value Calculation

$$\widetilde{x_i}=1-\frac{|x_i-x_{best}|}{M} \quad (7)$$

Interval data represents that the data is the best in a certain interval range. When converted into maximum data, the following formula can be used. $\{x_i\}$ is a set of interval index sequences, Its best interval is $[a,b]$.

Then the forward formula is as follows

$$M=\max\{a-\min\{x_i\}, \max\{x_i\}-b\} \quad (8)$$

$$\widetilde{x_i}=\begin{cases} 1-\frac{a-x_i}{M}, & x_i<a \\ 1, & a\le x_i \\ 1-\frac{x_i-b}{M}, & x_i>b \end{cases} \quad (9)$$

(8) Normalization of data after normalization

Standardization of rating matrix

$$y_{ij}=\frac{r_{ij}}{\left(\sum_{i=1}^{m}(r_{ij})^2\right)^{1/2}} \quad (10)$$

The maximum value of each row in the preprocessed matrix is taken out as the imaginary parent sequence, and the grey correlation degree between each index and the parent sequence is calculated, where the resolution coefficient ρ is 0.5.

$$\varepsilon_i(k)=\frac{\min_s\min_t|x_0(t)-x_s(t)|+\rho\max_s\max_t|x_0(t)-x_s(t)|}{|x_0(k)-x_i(k)|+\rho\max_s\max_t|x_0(t)-x_s(t)|} \quad (11)$$

Then we can calculate the weight ω.

$$\omega=\frac{\varepsilon_i(k)}{\sum_{i=1}^{n}\varepsilon_i^2(k)} \quad (i=1,2,\cdots n) \quad (12)$$

Introducing the calculated weight ' ω ' into TOPSIS evaluation model

Define maximum

$$R^+=\left(R_1^+, R_2^+, \cdots, R_m^+\right)$$
$$=(\max\{r_{11}, r_{21}, \cdots, r_{n1}\}, \max\{r_{12}, r_{22}, \cdots, r_{n2}\}, \cdots, \max\{r_{1m}, r_{2m}, \cdots, r_{nm}\}) \quad (13)$$

Define the minimum

$$R^-=\left(R_1^-, R_2^-, \cdots, R_m^-\right)$$
$$=(\max\{r_{11}, r_{21}, \cdots, r_{n1}\}, \max\{r_{12}, r_{22}, \cdots, r_{n2}\}, \cdots, \max\{r_{1m}, r_{2m}, \cdots, r_{nm}\}) \quad (14)$$

Define the distance between the $i(i=1,2,\cdots,n)$ evaluation object and the maximum

$$D_i^+=\sqrt{\omega\sum_{j=1}^{m}\left(R_j^+-r_{ij}\right)^2} \quad (15)$$

Define the distance between the $i(i=1,2,\cdots,n)$ evaluation object and the minimum

$$D_i^-=\sqrt{\omega\sum_{j=1}^{m}\left(R_j^--r_{ij}\right)^2} \quad (16)$$

According to the determined positive ideal solution and negative ideal solution, the grey correlation degree of each sample with respect to positive and negative ideal solutions is calculated by Equations (15) – (16), and the results are shown in Table 2.

Tab.2 Grey Relativity

	Grey correlation degree of positive ideal solution D_i^+	Grey correlation degree of negative ideal solution D_i^-
Israel	5.6001	0.2537
Sweden	4.7230	0.7264
United States	6.5609	0.2281
Finland	4.6094	0.7326
Iceland	4.5617	1.0203
China	4.5676	0.8613
Norway	4.5643	0.9188
Slovenia	4.5017	1.5133
Netherlands	4.3291	2.3651
Czech Republic	4.4321	1.5682
Italy	4.2709	3.6126
Luxembourg	4.3635	1.6273
Portugal	4.2931	3.9547
Spain	4.3017	3.8613
Hungary	4.8126	3.2799
Greece	4.4273	1.2918
Poland	4.4217	1.6801
Chile	4.7304	2.9703

So, we can calculate the unnormalized score of the $i(i=1,2,\cdots,n)$ evaluation object:

$$S_i=\frac{D_i^-}{D_i^++D_i^-} \quad (17)$$

Considering TOPSIS and grey correlation degree, the unstandardized scores of samples were obtained by using formula (11) -formula (17), where β = 0.5. The results are shown in Figure 1.

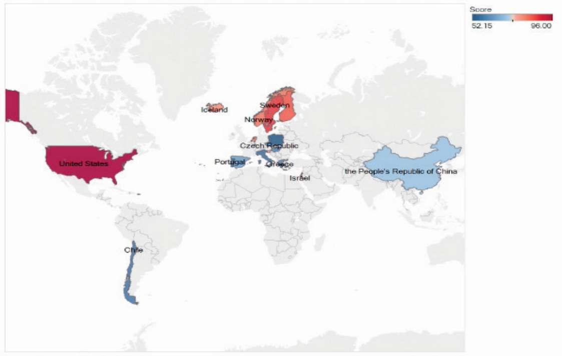


Fig.1 Unstandardized scoring

Finally, the obtained scores are normalized to obtain the evaluation results of the health status of the higher education system.[6]

Applying this model to the evaluation matrix extracted in this paper, the scores obtained are shown in Table3.

Tab.3 Scores of 18 countries

Country	Score
Israel	0.92519
Sweden	0.88066
United States	0.96001
Finland	0.84997
Iceland	0.78816
the People's Republic of China	0.70484
Norway	0.81864
Slovenia	0.76721
Netherlands	0.80214
Czech Republic	0.58642
Italy	0.55871
Luxembourg	0.66203
Portugal	0.54130
Spain	0.64619
Hungary	0.59451
Greece	0.59907
Poland	0.52151
Chile	0.57465

4. CONCLUSION

Based on grey correlation analysis and TOPSIS theory, this paper establishes an evaluation model of higher education quality suitable for various countries, and evaluates higher education in 18 countries such as the United States, Italy and China. The traditional higher teaching quality evaluation is subjective and cannot be applied to various countries, which cannot objectively reflect the teaching quality of universities in various countries. In this paper, the TOPSIS-grey correlation model is established. Based on different data indicators in various countries, the quality of higher education is quantified, which reduces the subjectivity of evaluation to a certain extent, enhances the credibility of the model results, and provides a feasible method for the quality evaluation of higher education in various countries.

REFERENCES

[1] Yifan Sui. Rational thinking on the modernization of higher education. Higher education research, 2014, 35 (10):1-10.

[2] Guo Qiang. Construction of Quality Evaluation System for Financial Talents Training in Applied Undergraduate Colleges Based on Factor Analysis. Consumer Journal, 2018, 000 (008): 110-111.

[3] Sun Jihong, Wang Chuanhui, Zhao Xiaoyun. Research on Comprehensive Evaluation of Education Quality in Double First-Class ' Universities Based on Intuitionistic Fuzzy Model. Journal of Chaohu University, 2019, 21 (06): 133-139.

[4] Yuehong Ma, Yige Li, Wenchao Sun. Application of comprehensive evaluation system based on grey correlation analysis and TOPSIS theory [J]. Electronic technology and software engineering, 2018 (10): 184-187.

[5] Xiaomin Peng, Guiyuan Yang. Combination forecast analysis of China 's higher education enrollment based on IOWGA operator [J]. Journal of Jingchu Institute of Technology, 2017, 32 (06):66-7

[6] Wang Ling, Gongliang Hu, Cufang Zhang, Tiehua Zhou. Higher Education Forecast Analysis and Application Based on Educational Big Data [J]. Wireless Internet Technology, 2018, 15 (22): 65-66.

Food Optimization System Based on Fair and Sustainable Development

Zhihui Zhou[1, 2*], Jiajia Liu[1, 2], Shuang Li[1, 3]
[1]Mathematical Modeling Innovation Lab, North China University of Science and Technology, Tangshan 063210, China;
[2]School of Science, North China University of Science and Technology, Tangshan 063210, China;
[3]School of Economics, North China University of Science and Technology, Tangshan 063210, China
[*]Corresponding Author.

Abstract: Nowadays, the food system has been a huge driving force to change the social economy and environment, and the optimization of the food system is particularly important. In this paper, the re-optimization of food system is analyzed by establishing reasonable mathematical models. Firstly, from the perspectives of politics, economy, health, environment and social sciences, a food optimization model based on the dimensions of various disciplines is constructed with 11 indicators to measure equity and sustainable development. Established the TOPSIS model based on entropy weight method. It was found that the higher the optimization rate, the more perfect the overall food system was. By establishing the CCR model. Then, take the optimization rate of 10% as the optimization target of the food system. Using the better one of the three gray prediction models to predict that the food system will reach the optimal rate in 2025 without intervention measures. Secondly, the US is selected as the reference object in combination with the defined Fair Distribution Index (FDI), and the target of food supply optimization is zero hungry people. Through the establishment of the ARIMA model, it is predicted that it is difficult to reduce the number of hungry people to the target value in a short time. The final analysis shows that the optimized food supply system has a small impact on the interests and costs of developed countries, but a greater impact on developing countries.
Keywords: GM (1, 1); TOPSIS; CCR Model; ARIMA

1. INTRODUCTION

The current food system does not meet the needs of a large segment of society, and a global food system that prioritizes efficiency and profitability is vulnerable even in the world's recognized, well-served regions. Thus, it's urgent to evaluate the overall optimization of the current food system.

2. EQUITY SUSTAINABILITY MODEL

2.1 Selection of indicators

Eleven indicators of equity and sustainability were identified within the five discipline areas: political, research input (IISR), government safeguards (GS); Economically, grain price anomaly index (AGP), fair distribution index (FDI), food loss index (GLI); Environment, greenhouse gas index (GGI), forest cover index (FCI), water shortage degree (WSD); In terms of health, the development coefficient of population quality (DCPQ) and the rate of undernutrition (UR); Socially, agricultural orientation index (AO). The eleven indexes are analyzed quantitatively to reconstruct the food system based on the dimensions of various disciplines.

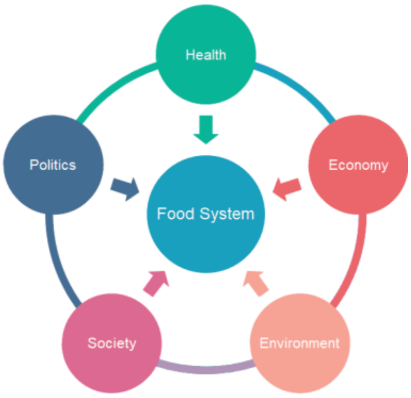


FIG. 1 Five disciplines

2.2 TOPSIS model based on entropy weight method

The optimization ratio of 2%, 5%, 7% and 10% was selected to optimize the original food system, and four new data sets were obtained. According to the original data group and the new data group, the TOPSIS model was established.

Calculating and the weights of 11 indicators are respectively: 0.0002, 0.1427, 0.1427, 0.1427, 0.1427, 0.1427, 0.0002, 0.1427, 0.0002, 0.1427, 0.0002.

Finally, the scores of the original system and the four types of optimized systems were obtained: 0, 0.0833, 0.2083, 0.2917, 0.4167. It can be found that the higher the optimization rate, the higher the degree of optimization, and the more perfect the food system as a whole.

2.3 C^{2}R model of data envelopment analysis

Data envelopment analysis (DEA) is a kind of method to evaluate the parameters, it only depends on the input and output indicators to evaluate relative effectiveness of decision-making unit[1-4].

Finally, it can be changed into an equivalent linear programming problem:

$$max\ \ V_{j_0} = \mu^T Y_{j_0},$$
$$s.t. \begin{cases} \omega^T X_j - \mu^T Y_j \geq 0, \quad j = 1, 2, \dots n, \\ \omega^T X_{j_0} = 1, \\ \omega \geq 0, \mu \geq 0. \end{cases} \tag{1}$$

The CCR model of data envelopment analysis is used to analyze and evaluate the optimization effect of grain optimization system, to explore the optimal optimization scheme. Set input amount: 11 indicators; Output: rating score; There are five DMUs, or five types of data sets. The related evaluation results corresponding to the five DMUs were obtained through data envelopment analysis.

Table 1 Relative evaluation result

DMU-1	DMU-2	DMU-3	DMU-4	DMU-5
1.00000	1.00000	1.00000	1.00000	1.00000

It can be seen from the table that the relative evaluation result corresponding to the five DMU is 1, and all decision-making units are effective with weak DEA, indicating that the optimization measures implemented for the food system are effective, that is, the actions taken and the benefits obtained will achieve satisfactory results.

2.4 Grey prediction model

According to the results of data envelopment analysis, the optimal rate of 10% is taken as the optimization goal of the food system, and the time to reach the optimal rate without intervention is predicted. Taking the indicator AO as an example. Defines the smoothness ratio of the original sequence $x^{(0)}$:

$$\rho(k) = \frac{x^{(0)}(k)}{x^{(1)}(k-1)} \quad (2)$$

The test graph of the quasi-exponential law is obtained:

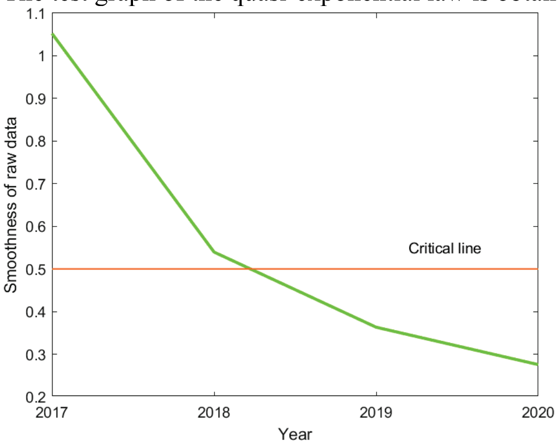


FIG. 2 Quasi-exponential test graph

According to this figure, it passed the quasi-exponential test. Trained three GM (1, 1) model, the traditional GM (1, 1) model, new information GM (1, 1) model, metabolism GM (1, 1) model to predict the time, choose the smallest model of the SSE, the forecast effect is the best model as the prediction results.

Let $X^{(0)}$ be the original data sequence, that is, the GM(1, 1) modeling sequence,

$$X^{(0)} = \left(x^{(1)}(1), x^{(0)}(2), \cdots x^{(0)}(n)\right) \quad (3)$$

$X^{(1)}$ is the 1-AGO sequence of $X^{(0)}$, due to

$$X_k^{(0)} = x_k^{(1)} - x_{k-1}^{(1)}, k = 1, 2, 3, 4 \cdots n \quad (4)$$

Then get:

$$X^{(1)} = \left(x^{(1)}(1), x^{(1)}(2), \cdots x^{(1)}(n)\right) \quad (5)$$

$$X^{(1)}(k) = \sum_{i=1}^{k} x^{(0)}(i), k = 1, 2, \cdots, n \quad (6)$$

Let $Z^{(1)}$ be the sequence generated immediately adjacent to the mean of $X^{(1)}$[2]:

$$Z(1) = \left(z^{(1)}(2), z^{(1)}(3), \cdots, z^{(1)}(n)\right) \quad (7)$$

$$Z^{(1)}(k) = 0.5x^{(1)}(k) + 0.5x^{(1)}(k-1) \quad (8)$$

Then the grey differential equation model of GM(1, 1) is

$$x^{(0)}(k) + az^{(1)}(k) = b \quad (9)$$

In the formula, a is the development coefficient and b is the grey action. The least square method is used to find the estimated value of parameters a and b. Solve the white differential equation:

$$\hat{x}^{(1)}(k+1) = \left[x^{(1)} - \frac{b}{a}\right] e^{-ak} + \frac{b}{a}, \quad k = 1, 2, \cdots, n \quad (10)$$

$$\hat{x}^{(0)}(k+1) = \hat{x}^{(1)}(k+1) - \hat{x}^{(1)}(k) \quad (11)$$

Comparing the results of the three models, it is found that the prediction result of metabolism GM(1, 1) model is better, so the time prediction chart of indicator AO is obtained:

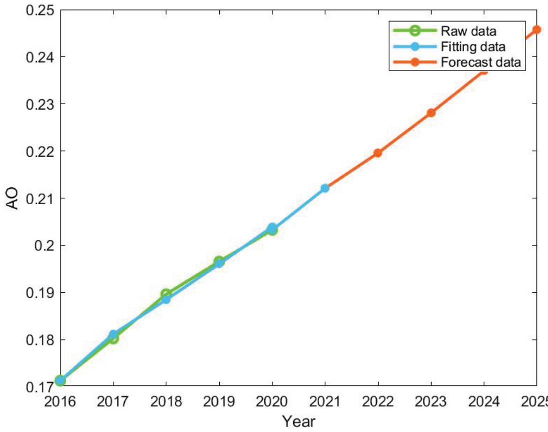


FIG. 3 Time prediction chart of AO

When the optimization rate of the food system is 10%, AO will reach the optimization goal in 2023.

Residuals are all below 0.01, suggesting that the fitting degree of the model to the original data was good.

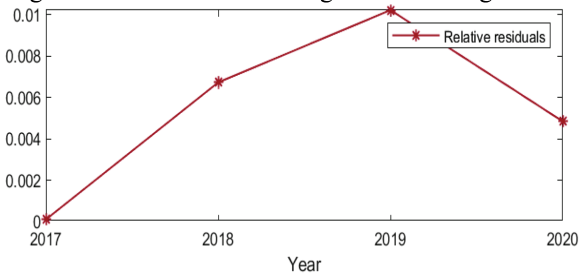


FIG. 4 Residual test chart

Time Predictions

Similarly, the time prediction results of the other 10 indicators are as follows:

Table 2 Target year prediction

IISR	GS	AGP	FDI	GLI	GGI
In 2022	In 2023	In 2021	In 2023	In 2022	In 2023
FCI	WSD	DCPQ	UR	AO	
In 2023	In 2023	In 2025	In 2023	In 2023	

Without intervention measures, when the optimization rate of the food system is 10%, it is expected that by 2025, all indicators will basically reach the target state, and the new optimization system will be implemented.

3. SUPPLY OPTIMIZATION MODEL

3.1 Optimizing supply target

The problem of serious food insecurity involves 55 countries and regions in the world[3]. There are certain problems in the existing food system distribution and food supply chain, and after the outbreak of the epidemic, the drawbacks of supply have been exposed again. In order to solve the problems in the supply chain, an optimized supply model that uses the number of hungry as an indicator to measure the reasonable degree of the supply chain is established.

Combined with the Fair Distribution Index (FDI).If this value is greater than 0, the country's food is considered to be sufficient. FDI is defined in detail as follows:

$$FDI = \frac{CLP \times P \times YP + I - E}{P} - API \quad (12)$$

Among them, CLP means Cultivated land per capita; P means number of people; YP means yield of cultivated land per hectare; I means number of imports; E means number of exports; API means annual standard per capita intake.

The United States was selected as the reference object. Given the FDI>0 in the United States, the relevant data show that there is a hungry population in the US, so the goal of food supply optimization is to clear the hungry population.

3.2 ARIMA model

Time series refers to the sequence formed by arranging the values of the same statistical indicator in the order of their occurrence time. Its main purpose is to make predictions about the future based on existing historical data[4].

ARIMA model is also called differential autoregressive moving average model, which is a combination of AR(p) model and MA(q) model. The "I" in ARIMA means the difference processing of the unstable time series, and the parameter d in ARIMA model can be determined by the difference method. It reads as follows:

$$y_t' = \alpha_0 + \sum_{i=1}^{p} \alpha_i y_{t-i}' + \varepsilon_t + \sum_{i=1}^{q} \beta_i \varepsilon_{t-i} \quad (13)$$

$$y_t' = \Delta^d y_t = (1-L)^d y_t \quad (14)$$

$$(1 - \sum_{i=1}^{p} \alpha_i L^i)(1-L)^d y_t = \alpha_0 + (1 + \sum_{i=1}^{q} \beta_i L^i)\varepsilon_t$$
(15)

Where, p is the number of autoregressive terms, q is the number of moving average terms, and L is the hysteresis operator.

With the target of eliminating the number of hungry people in the United States, the time series prediction of ARIMA model is carried out based on the existing data. Test the white noise of the residual:

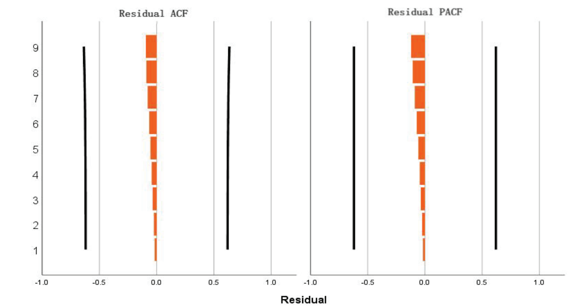


FIG. 5 White noise test diagram

As can be seen from the ACF and PACF graphs of residual, the autocorrelation coefficients and partial autocorrelation coefficients of all lag orders have no significant difference from 0.Q test on the residual results in a p-value of 0.689, which means that the null hypothesis cannot be rejected and the residual is considered to be a white noise sequence. Therefore, this ARIMA model can better identify the hungry population data in the United States.

The time prediction of the food supply optimization target for the zero clearance of hungry people is obtained as follows:

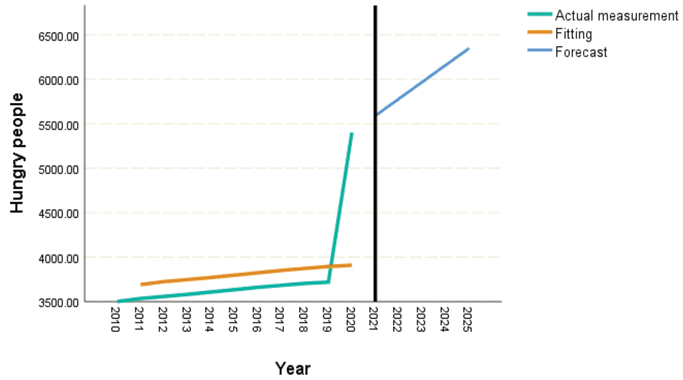


FIG.6 Time prediction chart

It can be seen from the figure that the number of hungry people in the United States will continue to increase in the future, but the growth trend will slow down. The results show that without policy intervention, it is difficult to reduce the number of hungry people to the target value in a short time, and it is also difficult to achieve the goal of zero hungry people.

3.3 Differences between developed and developing countries

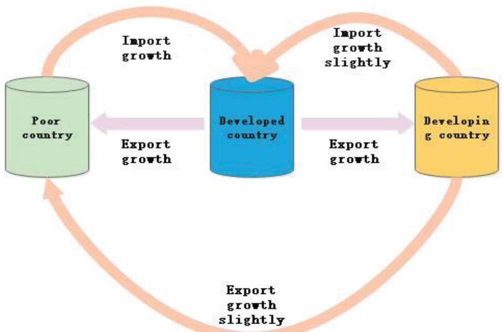


FIG.7 Food Trade Strategy Chart

For developed countries

For developed countries with large food production of FDI>0, the basic principle of food supply definition is: take the number of hungry people as the goal, they should first meet their own food demand, and then conduct reasonable export to develop their own food trade. For the global food supply chain to work efficiently, such developed countries should do their part to help poor countries fight hunger, while also exporting some to developing countries.

For developed countries with FDI>0 but low food output, the basic order of food supply definition is as follows: the goal of eliminating the hungry population is zero. Under the original national policy, the food demand of the country should be met first, and the domestic food trade should be developed by exporting to a lesser extent. These countries have low food supply rates and import more than rich countries with higher yields. Imports to poor and developing countries have increased to a lesser extent, while exports should fall.

For developing countries

The FDI to developing countries may be less than 0.The basic sequence of food supply definition is as follows: The goal is to minimize the number of hungry people, export less to a lesser extent and properly increase import to develop domestic food trade on the premise of not affecting their own economic conditions. Such countries mainly rely on food imports. In order to avoid the huge economic impact on developing countries after the change of supply order, they need to maintain their original economic trade, appropriately increase imports on this basis to reduce the number of hungry people, and appropriately increase exports to help poor countries.

4.EVALUATION AND PROMOTION OF THE MODEL

Grey prediction model is suitable for the system with complex research mechanism, many levels and difficult to establish an accurate model for quantitative measurement. Time series prediction model has been widely used in meteorology, medicine, transportation, agriculture and forestry and other research fields, and achieved good results.

REFERENCES

[1] Li Yunhan, Ai Wei, Wang Aohang. Research on Labor Allocation Efficiency of Private Economy in Sichuan Province Based on Data Envelopment Analysis [J]. Resource Development and Market, 2020, 36(2):119-122, 184.

[2] LIU Shishi, PENG Caiyun, HU Weifang, et al. Statistical Analysis of Residential Consumption Structure in Xiangxi Autonomous Prefecture Based on ELES and Grey Prediction Model [J]. Journal of Lanzhou University of Arts and Sciences (Natural Science Edition), 2020, 34(2):27-32.

[3] Liu Juanjuan, Li Baofeng, Ning Yunfei, et al. Study on American Food System Planning [J]. International Urban Planning, 2013, 28(5):103-108.

[4] Wang Lei, Yang Xingyue, Gao Shan. Safety and Environmental Engineering, 2020, 27(2):216-220.

LTL Freight Distribution Problem

Wen Feng, Rui Fu, Jialong Li
School of Civil Engineering, North China University of Science and Technology, Tangshan, Hebei 063210, China

Abstract: With the development of society, the status of transportation and logistics industry is becoming more and more important. The distribution of less than carload goods is oriented to scattered demand and complex routes. Unreasonable planning can easily lead to high distribution costs. This paper studies the single vehicle distribution problem and TSP problem of LTL goods in transportation organization. Combined with the example of the required solution, the problem is first transformed into mathematical language, the mathematical model is established, and finally the greedy algorithm is used to solve the problem.
Keywords: LFT; Freight; Greedy Algorithm

1. PROBLEM ANALYSIS

This question needs to give the shortest path and distance according to the conditions of the question. Through analyzing the question, first determine the idea, and write a small program using the idea of greedy algorithm to answer. First, the problem is converted into mathematical language and a mathematical model is established [1-3]. Then use the greedy algorithm to solve, combined with this problem, list the flow chart of solving the problem, and use C language for program design. Finally, the data of similar TSP questions were randomly selected to test the written program, and the correct results were still obtained, indicating that the model is very reliable, that is, the answers given are very reasonable, as Figure 1.

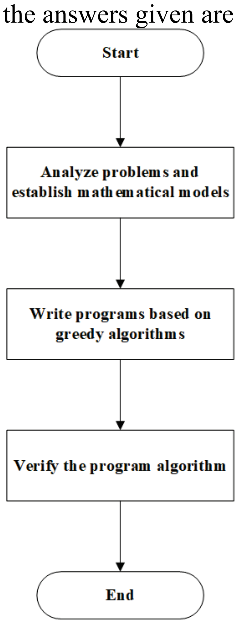


Figure 1: Less-than-Carload Freight Greedy Algorithm Problem analysis

2. MODELING SOLUTION

2.1 Model establishment

Greedy algorithm is a simple and fast design method to solve some optimization problems. Greedy algorithm is characterized by gradual, often according to the current situation, according to an optimization measure to make the best choice, without considering all possible global situation, eliminating the need to do everything possible to find the optimal solution. It's time-consuming. Greedy algorithm uses top-down iterative method for continuous greedy selection. Every time a greedy choice is made, the problem becomes a smaller problem. Through every step of greedy selection, we can get the problem. The best solution. Although every step must ensure that the local optimal solution can be obtained, sometimes the global solution is not necessarily optimal.

First of all, according to the topic, the idea of the algorithm is sorted out. The first step is to build a mathematical model to describe the problem. The second step is to divide the problem into several sub problems. The third step is to solve each subproblem and get the part of subproblem. The fourth step is to combine the local optimal solution of the subproblem into the solution of the original problem.

Start to build a mathematical model: first, three customer points B, C and D must be visited; second, in order to make the total path shortest, each customer point should be visited only once. According to these two requirements, the TSP problem model can be established.

Let the decision variable indicate whether the link (I, J) is online or not, that is, whether vertex i and vertex J are directly connected. $X_{ij}=0$ Indicates that there is no path from I to j; indicates that there is a path from I to J. The variable matrix corresponding to figure 1 is as follows:

$$X=\begin{bmatrix} x_{11} & x_{12} & \cdots & x_{14} \\ x_{21} & x_{22} & \cdots & x_{24} \\ \vdots & \vdots & \vdots & \vdots \\ x_{41} & x_{42} & \cdots & x_{44} \end{bmatrix}$$

Let C_{ij} denote the price paid by the vehicle through the corresponding road section (i, j), such as time, distance or expense. The cost of each point in Figure 1 is represented by Table 1, and the cost matrix C can be derived from the table.

Table 1: The distance between the site and each customer point

Customer points	A	B	C	D
A	0	22	31	45
B	22	0	18	27
C	31	18	0	38
D	45	27	38	0

$$C=\begin{bmatrix} 0 & 22 & 31 & 45 \\ 22 & 0 & 18 & 27 \\ 31 & 18 & 0 & 38 \\ 45 & 27 & 38 & 0 \end{bmatrix}$$

With the minimum total travel distance as the goal, the objective function can be written:

$$\min Z=\sum_{i=1}^{n}\sum_{j=1}^{n}C_{ij}X_{ij} \quad (1)$$

Each customer point only needs to be visited once, that is, the sum of each row and column in the path adjacency matrix must be 1, and the following constraints can be established:

$$\sum_{i=1}^{n}X_{ij}=1 \quad (\forall j=1,2,\cdots n) \quad (2)$$

$$\sum_{j=1}^{n}X_{ij}=1 \quad (\forall i=1,2,\cdots n) \quad (3)$$

$$X_{ij}\in\{0,1\}$$

2.2 Solving the model

First, sort out the process of programming, as shown in Figure 2:

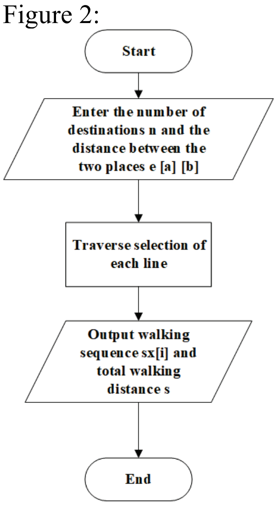


Figure 2: Block diagram of the problem-solving process

First determine the number of destinations. If the number of destinations is n, the number of walking steps should be n+1, because you need to return to the distribution center in the end. Then enter the path distance between the two to generate the adjacency matrix C of the path. Next, it is necessary to select the route, that is, to traverse and filter in the adjacency matrix. The restriction condition is: each row and each column can only be selected with one value. According to the idea of greedy algorithm, first define a path with an infinite distance. Starting from the distribution center, use the for loop to select the current shortest path (the current number of steps is 1, cur is the selected destination). The book array can be used to mark the array that has been filtered. If the selected target is found to be marked, it will re-enter the loop. Continue the cycle of filtering until the end of the traversal. The condition for the end of the traversal is that the current number of steps is n+1, that is, all destinations have been traversed. So far, the calculation of the result is completed, and finally the result is printed out.

2.3 Analysis of results and answers to questions

After solving the model, the path selection plan and the total driving length are obtained. The path selection plan is: A→B→C→D→A, and the total path length=22+18+38+45=123. (See the appendix for the specific program operation process). After comparing with the correct answer, we found that our program operation result is correct. Finally, I randomly selected similar TSP questions to verify the model and found that the program operation result is still correct, which is enough to explain The model is reliable and the calculated results are very accurate.

Therefore, the question can be answered. After calculation, the optimal delivery path is: 1→2→3→4→1, and the total path length is: 22+18+38+45=123.

3. MODEL VERIFICATION

A similar TSP question was randomly selected for verification. The questions and results are as follows:

It is stipulated that the vehicle departs from node 1 and finally returns to node 1. The distances between cities are as follows:

Table 2: Distance between cities

Distance	1	2	3	4
1		8	5	6
2	6		8	5
3	7	9		5
4	9	7	8	

The route of the vehicle is: 1-3-4-2-1. The results of the program operation are: 1-3-4-2-1, which is consistent with the answer to the question, indicating that the written program is very reliable and has a certain degree of generalization.

4.THE ADVANTAGES AND DISADVANTAGES OF THE MODEL

4.1 Advantages of the model

The selected algorithm is very simple, easy to understand and highly maneuverable.

The established model has solved the problem and is easy to promote.

The written program is very concise and easy to understand.

After the model was established, the model was tested using scientific methods, which further explained the feasibility of the model.

4.2 Disadvantages of the model

There is no guarantee that the solution is the best, because the greedy algorithm always starts from the part and does not consider the whole.

For problems with high precision requirements, the degree of completion may not be high.

The programming algorithm can still be further improved.

REFERENCES

[1] Lu Xiaoli, Guo Wanshan. Statistics and Decision of Comprehensive Evaluation Index System of Urban Economic Vitality [J], 2007, (11).

[2] Zhao Guojie. Preliminary Study on Quantitative Analysis of Enterprise Vitality [J]. Quantitative and Technical Economic Studies, 1992, (2).

[3] Li Shanmin, Chen Wenting, Chen Yugang, Yu Pengyi. Construction of Evaluation Index System for Innovative Enterprises: Based on the Innovation Status of Guangdong Enterprises [J]. Technological innovation, 2011, (30).

Ganzhou Zhanggong District fitness Club Personal Fitness Instructor Investigation and Analysis of Development Status

Zhipeng Gu, Xuebing Bai
School of Science, Jiangxi University of Science and Technology, Ganzhou 341000, Jiangxi, China

Abstract: In this paper, literature, questionnaire, mathematical statistics and interviews were used to investigate and analyze the development status of private fitness instructors in four fitness clubs in zhanggong district, Ganzhou City. The result shows that at present, the team of private fitness coaches in zhanggong district Fitness Club of Ganzhou City is relatively young, with more male coaches than female coaches, and the overall educational background and ability level of private fitness coaches are relatively low. The market of qualification certification of private fitness coaches is chaotic, and the income of private coaches is higher than the same educational background, but the social rights and interests are not effectively guaranteed. Faced with these problems, this paper puts forward a series of solutions, in order to promote the better development of personal fitness instructors in zhanggong district, Ganzhou, and promote the healthy development of fitness market in zhanggong district, Ganzhou, and effectively serve the public's fitness.
Key words: Ganzhou City; Health Club; Personal Fitness Instructor; Status Quo.

1.INTRODUCTION

With the continuous development of society, the enhancement of the country's overall strength, the continuous improvement of Chinese people's living standards and the change of their own quality of life, the fitness industry is constantly expanding, and the demand for personal fitness instructors is also constantly increasing. However, the fitness instructor market is not perfect, and the instructor's own ability needs to be improved. This phenomenon exists all over the country. Based on the investigation of some existing problems of personal trainers in zhanggong district Fitness Club of Ganzhou City, this paper analyzes the factors affecting the development of personal fitness instructors in zhanggong district Fitness Club of Ganzhou City and puts forward some relevant suggestions, striving to provide reference theory and basis for the development of personal fitness instructors in zhanggong district Fitness Club of Ganzhou City.

2.RESEARCH OBJECT AND METHODS

2.1 research object

In this paper, the development status of private fitness coaches in zhanggong district Fitness Club of Ganzhou City is taken as the research object, and 50 private fitness coaches in Jinshibao Fitness Club, Jiafu International Fitness Club, Yongchun Fitness Club and Hongdong Fitness Club of zhanggong district of Ganzhou City are taken as the research object.

2.2 research methods

2.2.1 method of documentation

In Jiangxi University of Science and Technology Library, China Digital Periodical Network and China Full-text Periodical Database, etc., we read all kinds of literature about this subject, understand the development of personal fitness instructors in Ganzhou Fitness Club, and collect relevant background materials to provide theoretical support for this paper.

2.2.2 interview method

50 personal fitness instructors, 5 managers and 20 private members from four large-scale fitness clubs, namely Jinshibao Fitness Club, Jiafu International Fitness Club, Yongchun Fitness Club and Hongdong Fitness Club in zhanggong district, Ganzhou City, were visited and investigated, and the development status of personal fitness instructors was also investigated.

2.2.3 questionnaire survey method

The coaches of fitness clubs in Ganzhou were responsible for distributing questionnaires and collecting them. A total of 100 questionnaires were distributed and 95 were collected, all of which were valid questionnaires with a recovery rate of 95%.

2.2.4 mathematical statistics method

The collected questionnaires are systematically sorted out, and the effective questionnaires are routinely counted and analyzed.

3.RESEARCH RESULTS AND ANALYSIS

3.1 Basic situation of private fitness instructors in zhanggong district Fitness Club of Ganzhou City

3.1.1 Age Structure of Personal Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

The overall age structure of personal fitness instructors in Ganzhou zhanggong district Fitness Club tends to be younger. There are three influencing factors: First, the fitness industry has only become more popular in Ganzhou in recent years, and its demand for private fitness instructors has only arisen. Private fitness instructors will attract young people to study and engage in this industry; Second, the fitness industry belongs to the service industry. Fitness consumers have certain requirements for the body image of coaches, and young coaches will be more energetic and more likely to infect members; The last point is that personal fitness instructors usually work from 2 pm to 10 pm, which is suitable for young people. These young people are often not married yet, and their time will be relatively free. Therefore, personal fitness instructors tend to be younger.

3.1.2 Male/Female Ratio of Private Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

At present, the gender structure ratio of private fitness instructors in zhanggong district Fitness Club in Ganzhou City is higher than that of women. The reasons are as follows: male members will be the majority in the fitness club, male members will be more inclined to practice equipment, and the protection of equipment will be safer for men; The weight of men will be more convincing than that of women, and the strength of men will be more convincing in the process of relaxation and stretching; As the opposite sex attracts each other, many female members will be attracted by the appearance of male coaches, and they prefer to choose male coaches. These factors will cause the market of female coaches to be worse than that of male coaches, and affect the ratio of male to female coaches.

3.1.3 Education Structure of Personal Fitness Coach of zhanggong district Fitness Club in Ganzhou City

The overall educational level of personal trainers in zhanggong district Fitness Club of Ganzhou City is not high, and most of them have high school and college education, so there is still a lot of room for personal trainers to improve their own level.

3.2 Ganzhou zhanggong district Fitness Club Personal Fitness Instructor Qualification Certification Structure

Among the 50 private fitness coaches surveyed, there are few types and few holders, and most of them are unlicensed coaches. The qualification certification system of private fitness instructors in zhanggong district Fitness Club is not perfect and has great defects. For the better development of fitness instructors, the relevant departments should strengthen the regulation and control of the fitness instructor market, and the fitness instructors themselves should pay attention to the cultivation of self-ability.

3.3 Investigation on the Overall Ability of Private Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

3.3.1 Investigation on Personal Fitness Instructors' Theoretical Ability of zhanggong district Fitness Club in Ganzhou City

The personal fitness instructor of Ganzhou zhanggong district Fitness Club thinks that there are deficiencies in the theoretical professional knowledge of human anatomy, sports health care, sports psychology and sports nutrition. Analysis of the reasons: their own education is not high, professional knowledge contact is relatively small; Not graduated from formal physical education colleges, and the popularity of professional knowledge is small; Personal coaches have short working years and have no systematic understanding of professional knowledge; In addition, some gymnasiums pay little attention to the professional level of coaches and invest less in their professional training, which leads to the coaches ignoring the improvement of their theoretical knowledge.

3.3.2 Investigation on the Insufficient Teaching Ability of Private Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

Through the investigation of the lack of teaching ability of personal fitness instructors in zhanggong district Fitness Club of Ganzhou City, we can know that most of the personal trainers are lacking in teaching ability, among which the sports prescription, innovation ability and teamwork ability are lacking. The phenomenon of insufficient teaching ability of private fitness coaches in zhanggong district Fitness Club of Ganzhou City is not caused by the coaches in zhanggong district, but similar situations exist in other regions. Personal fitness instructors should pay more attention to the improvement of their theoretical and practical teaching ability, so that they can develop in an all-round way.

3.3.3 Investigation on the Satisfaction of Private Education Members to Private Fitness Instructors of Ganzhou zhanggong district Fitness Club

The personal trainer members of zhanggong district Fitness Club in Ganzhou are generally dissatisfied with the personal trainer. The influencing factors are: lack of service concept of personal trainer[1]; Some coaches don't have the corresponding qualification, and their professional ability is insufficient[2]. Lack of communication skills and lack of good cooperation with members. Personal fitness instructor is a relatively free and hard and rigorous job. Personal instructors should constantly strengthen their sense of service, strengthen their self-professional accomplishment and the ability to communicate with others, so as to constantly create good performance.

3.4 Investigation on Monthly Income of Private Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

The monthly salary of personal fitness instructors in zhanggong district Fitness Club of Ganzhou City is on the high side. The reasons for the analysis are as follows: (1) the private education fitness industry will not rise in Ganzhou, and fitness enthusiasts will blindly follow the trend to buy private education, and there is irrational consumption; Private teaching is the consumption of rich people, who have such purchasing power and virtually open the market for personal trainers; Clubs usually recruit coaches with high salaries, and often provide accommodation packages and working meals, which is conducive to saving coaches' daily expenses. Personal trainer is a new industry, which belongs to service industry [3]. With the continuous development of society, the fitness industry will become more and more popular, and the people's consumption concept will also be enhanced. The salary of personal trainer will increase steadily, and the future market will be good.

3.5 Protection of Social Rights and Interests of Private Fitness Instructors in zhanggong district Fitness Club of Ganzhou City

The number of personal fitness coaches in zhanggong district Fitness Club of Ganzhou City signed social security contracts is small, about 76% of them did not sign contracts with gymnasiums, and about 70% of the coaches did not sign social security contracts with employers. It can be concluded that the posts of personal coaches are not guaranteed by the society, and there is a great risk[4]. It is suggested that relevant departments should standardize the system of fitness industry, and coaches should strengthen their awareness of prevention in this respect.

4.CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

4.1.1 the private fitness coach team of fitness club in Zhanggong District of Ganzhou City is relatively young, male coaches are more than female coaches, and the difference is relatively large, and the overall education of private fitness coaches in fitness clubs is low.

4.1.2 the market of fitness coach qualification certification in Zhanggong District of Ganzhou City is chaotic, the development is relatively backward, and the quality needs to be improved.

4.1.3 The professional theoretical level and teaching ability of private fitness instructors in zhanggong district Fitness Club are low, and the concept of serving members is not strong.

4.1.4 the salary of private fitness coaches in fitness clubs in Zhanggong District of Ganzhou City is much higher than that of people with the same educational background, but their social rights and interests protection is lower than those in other posts.

4.2 suggestions

4.2.1 strengthen the construction of professional level and gender ratio of young coaches.

The male proportion of private fitness coaches in Zhanggong district is higher than that of women. Only by neutralizing the proportion of male and female can we continuously inject strength into the private fitness industry of Zhanggong district [5]. At the same time, the relevant departments of the gym should increase the investment in the professional training of coaches; the coaches themselves should constantly enrich themselves, strengthen the study of professional knowledge, and participate in more fitness related training.

4.2.2 the relevant departments should strengthen the management of the qualification certification of fitness coaches in Zhanggong district and adjust the market order. There is no unified audit organization and standard for the qualification certification of private fitness coaches in fitness clubs, and the issuance and certification of certificates are in confusion [6]. Therefore, it is necessary to standardize the fitness market and improve the relevant rules, so that the fitness industry in Zhanggong District of Ganzhou City will develop towards institutionalization and standardization [8].

4.2.3 private fitness coaches should constantly improve their professional knowledge and quality, improve the scientificity and effectiveness of private education courses, and make the members of private education satisfied and trusted.

The professional requirements of personal fitness coaches are very strong. Therefore, personal coaches should have a heart of continuous learning and progress, learn more from others, learn from each other's strengths, study professional knowledge, and have a good relationship with members, and serve members sincerely.

4.2.4 improve the social security system.

Social management departments should strengthen the management of social rights and interests protection of fitness instructors, improve the relevant security system, and let fitness instructors truly enjoy the protection of social rights and interests, so that they can enjoy the benefits of society equally and work with peace of mind.

REFERENCES

[1] Du Xiru, Gao Yuhua. Current situation and analysis of personal coaches in some health clubs in Beijing, Shanghai and Guangdong [J]. journal of shanghai university of sport, 2005(4):32-35

[2] Li Yan. Discussion on some problems in the development of aerobics market. Capital Institute of Physical Education [J].2004(1):27-30

[3] Chen Aimin, Yu Weiping. Current situation and development suggestions of Shenzhen fitness clubs [J]. Journal of Physical Education, 2006, 13(4):44-46.

[4] Zhao Xuefeng, Feng Xiaohui. Investigation and analysis on the current situation of personal trainers in some large-scale fitness clubs in China [J]. Journal of Shandong Institute of Physical Education, 2009, 28(4):106-109.

[5] Hua Lian Lin. Research on the Development Status of Xi 'an Fitness Club [J]. Contemporary Sports, 2019, 18:44.

[6] Cui Yayun. Investigation and analysis of the status quo of Ningbo fitness clubs. Journal of Ningbo Institute of Education, 2009(2):1-11

[7] Zhu Liang, Huang Yaling. Principal-agent: the transition from "isomorphism" to "decoupling" in community sports fitness clubs [J]. Journal of Beijing Sport University, 2019, 7:65-73, 94.