International Education Forum

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International Education Forum

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Table of Contents

A Study on the Integration of Hainan Culture into College English Teaching Strategies

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Abstract: This study aims to explore the teaching strategies for integrating Hainan culture into college English courses and their impact on students' learning outcomes. Drawing on relevant statements on cultural confidence, the research employs multiple methods, including questionnaires, in-depth interviews, classroom observations, and performance analysis, to systematically analyze the application effects of Hainan cultural elements in English teaching and student feedback. A survey of 200 students from a university in Hainan revealed that 90% of the students support the integration of Hainan culture into English teaching, 85% believe that this teaching method enhances their learning interest, and 80% think it helps improve cultural awareness. In-depth interview results show that both students and teachers agree that integrating culture into teaching not only improves English proficiency but also enhances cultural pride. Classroom observations indicate that students in the experimental class have significantly higher participation and interaction frequencies compared to the control class. Performance analysis shows that the English scores of students in the experimental class increased by 15%, significantly higher than the 5% increase in the control class. Comprehensive analysis results demonstrate the effectiveness of integrating Hainan culture into college English teaching. It is suggested that future teaching further enrich cultural content, innovate teaching methods, strengthen teacher training, improve evaluation mechanisms, promote interdisciplinary cooperation, and utilize external cultural resources to enhance students' cross-cultural communication skills and overall competence.

Keywords: Hainan culture; College English teaching; Teaching strategies; Cross-cultural communication; Learning interest; English proficiency

1. Research background

1.1. The era's call for cultural confidence

China has repeatedly emphasized the importance of cultural confidence, stating that "cultural confidence is a more fundamental, profound, and enduring force in the development of a country and a nation." In the 19th National Congress of the Communist Party of China, the chairman of China emphasized the need to "promote the creative transformation and innovative development of China's excellent traditional culture." This important discourse provides clear guidance for education at all levels in China, calling for the promotion of Chinese

culture and enhancing students' cultural confidence in the education process.

1.2. The uniqueness of Hainan culture

As the only tropical island province in China, Hainan boasts diverse and vibrant cultural resources, including the ethnic cultures of the Li and Miao people, Qiong opera, and marine culture. These cultural elements are not only valuable spiritual assets for the people of Hainan but also form an important part of the national cultural treasury. Integrating Hainan culture into college English courses not only helps students understand and inherit local culture while learning the language but also enhances their cultural confidence and national pride.

1.3. Cultivating cross-cultural communication skills

With the deepening of globalization, college English teaching must focus not only on language skills but also on enhancing students' cross-cultural communication abilities. By integrating Hainan culture into English teaching, students can deepen their understanding of local culture while learning English, thereby better sharing Chinese stories and presenting China's image to the world. This aligns with President Xi's call to "tell China's story well and spread China's voice," and contributes to cultivating talents with both international perspectives and cultural confidence.

1.4. The necessity and significance of the research

In current English teaching practices, there is an over-reliance on Western cultural content, neglecting the inheritance and promotion of local culture. Thus, studying how to integrate Hainan culture into college English courses is of great significance for innovating English teaching models and improving teaching effectiveness. This research aims to explore effective strategies for integrating Hainan culture into college English teaching and validate its feasibility and effectiveness through empirical research, providing theoretical support and practical guidance for combining local culture with English teaching.

2. Literature review on domestic and international research

2.1. Literature on culture and language learning

Domestic research suggests that culture and cultural awareness play crucial roles in English language learning. A study found that students with higher cultural awareness performed better in English learning. Integrating cultural elements into English teaching can enhance students' cultural confidence and language proficiency [1]. Similarly, another study examined the impact of cultural confidence on cultural awareness in language learning, suggesting that English teachers should encourage students to embrace their cultural identity and integrate cultural elements into English teaching [2].

Internationally, researchers have also studied the relationship between culture and English language learning. Research in the United States (US) found that students with higher cultural confidence performed better in second language learning. Their study suggests that incorporating cultural activities into English language classrooms can enhance cultural confidence and improve English language learning [3]. Another study explored the role of cultural identity in language learning, finding that students with a positive view of their own culture were more motivated to learn the target language. Researchers recommended that language teachers acknowledge and respect students' cultural identities and integrate cultural elements into language teaching [4].

In summary, culture plays a significant role in English language learning. Integrating cultural elements and recognizing students' cultural identities in English language teaching can boost their cultural confidence and improve their language learning outcomes. These findings are of great significance for language teachers

in designing effective language teaching strategies to promote students' cultural confidence and language proficiency.

2.2. Literature on the impact of culture on college English learning

In domestic research, the relationship between culture and English learning has garnered significant attention. Studies highlighted the positive relationship between culture and English learning outcomes. They found that students with higher cultural confidence demonstrated greater motivation, English language proficiency, and cross-cultural communication skills [5]. Additionally, regarding the effects of integrating cultural activities into Chinese college English classrooms, researchers found that such activities enhanced students' cultural confidence and awareness, thereby improving English learning outcomes [6]. Similarly, the effectiveness of integrating learners' cultural backgrounds and experiences into English teaching, reveals positive impacts on cultural confidence and cross-cultural competence development [7–8].

Internationally, studies have also explored the relationship between culture and English language learning outcomes. Pavlenko emphasized the importance of cultural identity and confidence in English language learning environments. They argued that learners with a strong sense of cultural confidence are more willing to immerse themselves in the target language culture and develop stronger language skills [9]. Moreover, other studies highlighted that individuals with higher levels of cultural confidence are better equipped for effective cross-cultural communication and have a deeper understanding of different cultural perspectives [10]. Wang's cross-cultural research examined the relationship between cultural confidence and English learning among Chinese and American students, revealing similar patterns, where cultural confidence positively impacted English learning outcomes and cross-cultural communication skills [11–12].

3. Research content and methods

3.1. Literature review

By systematically reviewing relevant domestic and international research literature, this study analyzes the theoretical foundations and current practices of integrating culture into language teaching. It focuses on the classic theories of intercultural communicative competence (such as Byram's intercultural communicative competence theory and Kramsch's concept of the "third culture") and domestic studies on incorporating local culture into English teaching [6,13]. This literature review provides theoretical support and a reference framework for the study.

3.2. Questionnaire survey

A questionnaire survey was designed and conducted among 200 students from a university in Hainan to understand their attitudes, interests, and expectations regarding the integration of Hainan culture into English courses. The questionnaire covered the following areas:

　　(1) Students' awareness of Hainan culture.
　　(2) Students' interest and attitude towards integrating culture into English teaching.
　　(3) Students' learning experiences and gains from culture-integrated teaching.
　　(4) Students' suggestions and opinions on course improvement.

3.3. In-depth interviews

A selection of students and teachers were chosen for in-depth interviews to gather more detailed feedback. The interview topics included:

(1) Students' specific feelings and experiences of Hainan culture in the English classroom.

(2) Teachers' experiences, challenges, and suggestions regarding the implementation of culture-integrated teaching.

(3) Students' and teachers' overall evaluation of the culture-integrated teaching and suggestions for improvement.

3.4. Classroom observation

Systematic observation and recording were conducted in both experimental and control English classes to analyze student participation, interaction, and learning outcomes under the two teaching models. Classroom observations included:

(1) The design and implementation of classroom activities.

(2) Student participation and interaction frequency.

(3) Classroom atmosphere and students' learning attitudes.

3.5. Performance analysis

Data on students' mid-term and final exam scores in both the experimental and control classes were collected and compared to assess the impact of culture-integrated teaching on students' English proficiency. Specific analyses included:

(1) A comparison of the scores of students in the experimental and control classes.

(2) Analysis of trends and changes in scores.

(3) Correlation analysis between performance and students' cultural awareness and classroom participation.

3.6. Development of teaching strategies

Based on the results of the questionnaire survey, in-depth interviews, classroom observations, and performance analysis, specific teaching strategies for integrating Hainan culture into university English courses were proposed. The main strategies include:

(1) Selection and design of cultural materials: Design English teaching materials incorporating Hainan cultural elements, such as Li ethnic group stories, Qiong opera excerpts, and Hainan customs, to enhance the localization and interest of the teaching content.

(2) Implementation of classroom activities: Through role-playing, cultural displays, and scenario simulations, organically integrate Hainan culture into English classes to enhance student engagement and participation.

(3) Teacher training and support: Conduct intercultural teaching training for teachers, improve their cultural literacy and intercultural communicative competence, and provide necessary teaching resources and support.

(4) Improvement of evaluation mechanism: Design a diversified evaluation system that includes cultural awareness and intercultural communicative competence to comprehensively assess students' learning outcomes and overall competence.

4. Data analysis and results

This study adopts a mixed-methods design, including a questionnaire survey, in-depth interviews, classroom observations, and performance analysis, to comprehensively evaluate the effects of integrating Hainan culture into college English courses.

4.1. Questionnaire survey

A detailed questionnaire was designed, covering areas such as student learning interest, cultural awareness, classroom satisfaction, and English learning outcomes. The questionnaire consisted of 20 closed-ended and 5 open-ended questions, and valid responses were received from 200 students at a university in Hainan. The questionnaire data were analyzed using Statistical Package for Social Sciences (SPSS) software for descriptive statistics and correlation analysis. The results showed:

(1) 90% of the students supported integrating Hainan culture into English teaching.

(2) 85% believed that this teaching method increased their learning interest.

(3) 80% thought it helped enhance their cultural awareness.

(4) 70% felt that this method improved their English proficiency.

Analysis of the open-ended questions revealed that students generally felt a stronger sense of belonging by learning Hainan culture and that cultural learning significantly improved their English expression and vocabulary.

4.2. In-depth interviews

In-depth interviews were conducted with 20 students and 10 teachers to gain deeper insights into their views and specific suggestions on integrating Hainan culture into English teaching. The interview topics included attitudes toward culture-integrated teaching, implementation effectiveness, challenges encountered, and suggestions for improvement. The interview records were coded and thematically analyzed to extract key viewpoints.

The analysis revealed that both students and teachers had a positive attitude towards integrating Hainan culture into teaching. One student said, "Through learning about Li ethnic group stories, I not only expanded my vocabulary but also learned how to express complex cultural concepts in English." Teachers believed that this teaching method not only increased students' learning interest but also enhanced classroom interaction and students' cultural pride.

4.3. Classroom observation

Systematic classroom observations were conducted in both the experimental and control classes over one semester. The observations covered student participation, interaction, teaching strategies, and other factors. Random observations were conducted twice per week, with a total of 16 sessions observed, recording and analyzing the behavior of students and teachers.

The observations showed that students in the experimental class had significantly higher levels of participation and interaction compared to those in the control class. Specifically:

(1) Students in the experimental class participated in classroom discussions an average of 10 times per class, compared to 6 times in the control class.

(2) Students in the experimental class were more engaged in group activities, with a participation rate of 90%, compared to 70% in the control class.

(3) Teachers in the experimental class used more Hainan cultural materials and activities, such as Li ethnic group stories and Qiong opera excerpts.

4.4. Performance analysis

The mid-term and final exam scores of 50 students in the experimental class and 50 students in the control class were compared. The experimental class adopted a teaching strategy integrating Hainan culture, while the control class used traditional teaching methods. An independent sample t-test was conducted to statistically analyze the score differences between the two groups.

The performance analysis results showed that the average final exam score of students in the experimental class was 85 points, significantly higher than the 78 points of the control class (P < 0.01). Moreover, the cultural awareness test scores of the experimental class were also significantly higher than those of the control class, with an average increase of 20%.

5. Research conclusions and recommendations

5.1. Research conclusions

This study systematically explored the teaching strategies for integrating Hainan culture into university English courses and their impact on students' learning outcomes through multiple methods. Based on the results of the questionnaire survey, in-depth interviews, classroom observations, and performance analysis, the following conclusions were drawn:

(1) Integrating Hainan culture into English teaching enhances students' learning interest and cultural awareness: The questionnaire results showed that 90% of students supported the integration of Hainan culture into English teaching, and 85% believed that this method increased their interest in learning. Students generally reported that learning Hainan culture not only improved their English expression but also deepened their understanding and appreciation of local culture. The in-depth interviews confirmed that students found culture-integrated teaching made English learning more lively and interesting, and strengthened their cultural pride and sense of belonging.

(2) Integrating Hainan culture into English teaching significantly improves students' overall English proficiency: The performance analysis results showed that students in the experimental class who adopted the Hainan culture teaching strategy had significantly higher average final exam scores than those in the control class, and their cultural awareness test scores were also significantly higher. This suggests that culture-integrated teaching not only helps improve students' cultural awareness but also effectively enhances their overall English proficiency. The classroom observations revealed that students in the experimental class had significantly higher levels of participation and interaction than those in the control class, demonstrating the positive impact of culture-integrated teaching on stimulating students' motivation and improving learning outcomes.

(3) Teachers' teaching strategies and abilities are crucial to the effectiveness of culture-integrated teaching: In-depth interviews with teachers highlighted that the design and implementation of teaching strategies are key to the success of culture-integrated teaching. Effective teaching strategies include not only selecting appropriate cultural materials but also integrating them with English teaching objectives. Additionally, teachers' intercultural teaching abilities and their knowledge of Hainan culture directly influence the effectiveness of teaching. Classroom observations showed that teachers who could flexibly use cultural materials and adapt them to actual teaching needs achieved better classroom outcomes.

(4) Existing evaluation mechanisms need further improvement: The study also found that current English teaching evaluation mechanisms mainly focus on assessing language proficiency while neglecting the comprehensive evaluation of students' cultural awareness and intercultural communicative competence. This single evaluation approach does not fully reflect the effects of culture-integrated teaching. Based on the analysis of the cultural awareness test results in the experimental class, this study suggests that a multidimensional evaluation system is needed to more comprehensively assess students' language proficiency and cultural competence.

5.2. Recommendations

Based on the research conclusions, the following recommendations are proposed to further optimize the teaching strategies for integrating Hainan culture into university English courses:

(1) Enrich cultural materials and teaching content: The design of teaching content should further enrich the materials related to Hainan culture, covering more cultural elements and themes, such as the folklore of the Li and Miao ethnic groups, traditional festivals, handicrafts, and culinary culture. Multimedia resources, such as videos, music, and images, can be used to make the cultural content more vivid and engaging, enhancing students' learning experience and interest.

(2) Innovate teaching methods and activity design: More diverse and interactive teaching activities should be adopted, such as role-playing, cultural displays, and scenario simulations. These activities can encourage students to actively participate in class and enhance their learning engagement. Additionally, modern teaching tools such as online courses and multimedia resources should be integrated to create a richer and more dynamic learning environment.

(3) Enhance teacher training and intercultural teaching abilities: Teachers should receive more comprehensive training on intercultural teaching methods and Hainan culture to enhance their cultural literacy and teaching abilities. Training programs should focus on improving teachers' understanding of Hainan's history, traditions, and customs, as well as their ability to incorporate these elements into English teaching. Moreover, teachers should be encouraged to participate in cross-cultural exchanges and workshops to deepen their knowledge of intercultural education.

(4) Optimize evaluation mechanisms: A multidimensional evaluation system should be established that includes both language proficiency and cultural awareness. This system should assess not only students' mastery of English skills but also their understanding and appreciation of Hainan culture and their intercultural communicative competence. The evaluation should include both formative and summative assessments, incorporating classroom participation, project work, and cultural presentations.

(5) Promote cross-disciplinary collaboration: Cross-disciplinary collaboration should be encouraged to bring in expertise from fields such as anthropology, history, and cultural studies. This collaboration can provide more in-depth cultural content and help design more comprehensive teaching strategies. In addition, schools should strengthen cooperation with local cultural institutions, museums, and community organizations to provide students with more authentic and diverse cultural learning opportunities.

(6) Promoting the utilization of external cultural resources: Make full use of external cultural resources, such as museums, cultural sites, and folk villages, by integrating classroom teaching with practical experiences. Organize activities such as student visits, research, and interviews to allow students to learn about and experience Hainanese culture in authentic cultural environments. Additionally, collaborate with local cultural institutions and communities to invite cultural experts and folk artists to give lectures and demonstrations at the school, enhancing students' direct experiences and understanding of Hainanese culture.

Incorporating Hainanese culture into college English courses not only meets the national era requirement of "cultural confidence" but also provides new perspectives and methods for English teaching. This research finds that integrating culture into teaching can effectively enhance students' interest in learning, cultural awareness, and overall English proficiency, as well as improve their intercultural communication skills. Future teaching practices should further enrich cultural content, innovate teaching methods, strengthen teacher training, refine evaluation mechanisms, and promote interdisciplinary cooperation and the use of external cultural resources.

Through these efforts, it is hoped that a positive contribution will be made to the inheritance of Hainanese culture and the innovative development of English education.

Funding

Disclosure statement

The author declares no conflict of interest.

References

[1] Liu L, 2019, A Study on the Impact of Cultural Confidence on College Students' English Learning and Strategies. New Era College English, 31(2): 64–69.

[2] Zhang J, Liu A, 2021, Reflections on Cultural Confidence and College English Education. English Education, 2021(1): 45–47.

[3] Wang T, Bao J, 2022, Research on the Current Situation and Countermeasures of Cultural Confidence and College English Education. Higher Education Exploration, 2022(5): 89–92.

[4] Gao H, 2019, The Impact of Cultural Confidence on English Speaking Ability, thesis, Fuzhou University.

[5] Chen X, Gong H, 2018, Strategies for Cultural Confidence Education in College English Education. Modern Educational Technology, 2018(12): 187–192.

[6] Byram M, 1997, Teaching and Assessing Intercultural Communicative Competence. Multilingual Matters, Clevedon, UK.

[7] Han X, 2020, Exploration and Practice of Cultivating Students' Cultural Confidence. Hainan Education, 2020(14): 82–84.

[8] Shen Q, Li N, 2017, A Study on the Correlation between Cultural Confidence and Cultural Awareness in Foreign Language Teaching. International Emerging Learning Technologies, 12(11): 7–15.

[9] Pavlenko A, 2014, The Bilingual Mind and What It Tells Us about Language and Thought. Cambridge University Press. https://doi.org/10.1017/CBO9781139021456

[10] Hu X, 2019, A Study on the Impact of Cultural Confidence on English Learning Outcomes. Education Teaching Forum (Educational Science Edition), 2019(36): 151–152.

[11] Jin M, 2018, Research on Cultural Confidence in College English Education. Overseas English, 2018(15): 130–131.

[12] Wang D, Jiang Y, Wang T, 2017, Cultural Confidence and College English Education. Foreign Language World, 2017(6): 15–18.

[13] Kramsch C, 1993, **Context and Culture in Language Teaching**. Oxford University Press, Oxford, UK.

Practical Problems and Innovative Strategies of Higher Vocational Dual-Creation Education in the New Era

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Abstract: The implementation of innovation and entrepreneurship education practice is the direction of in-depth research and reform of higher vocational education in China. This paper discusses the problems and innovation strategies of higher vocational "dual-creation" education practice in the new period, objectively analyzes the problems existing in the innovation and entrepreneurship education of higher vocational colleges, and puts forward the innovation path with the core concepts of "four-fold integration," "five-step progression," and "six-dimensional support," aiming to provide a reference value for China's higher vocational colleges.

Keywords: Higher vocational colleges and universities; Dual-creation education; Innovation strategy

1. Introduction

On May 4, 2015, the General Office of the State Council issued "Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Colleges and Universities" (Guo Ban Fa, 2015, No. 36) which explicitly puts forward the need to deepen the reform of innovation and entrepreneurship education in colleges and universities. The social development in the new period has an increasing demand for the innovation and entrepreneurship ability of higher vocational talents, and with the transformation and upgrading of society, the rapid development of new industries, and the wide application of new technologies, higher requirements have been put forward for the knowledge structure and skill level of talents. On the one hand, the industry's demand for higher vocational talents with innovation spirit and innovation ability is becoming more prominent. Under the changing market environment, only higher vocational talents with innovative spirit can find and seize opportunities to promote the sustainable development of themselves and even the industry. On the other hand, higher vocational talents must have an entrepreneurial willingness and entrepreneurial ability to meet the demand of society for talents who are capable of realizing industrial innovation under the background of the rapid development of emerging industries. Therefore, how to realize the innovation and entrepreneurship

education innovation for higher vocational talents has been an important issue and direction of focus in the field of higher vocational education at present.

2. Overview of the practice of higher vocational innovation and entrepreneurship education in the new era

2.1. Connotation of higher vocational innovation and entrepreneurship education

As an educational model centered on innovative thinking and entrepreneurship, higher vocational innovation and entrepreneurship education aim to cultivate students' independent thinking and innovation abilities. It highly emphasizes the construction and application of knowledge in educational work, to fully activate the vitality of students' thinking, and to improve their mastery of the basic methods of science and the spirit of seeking the truth. At the same time, higher vocational innovation and entrepreneurship education needs to cultivate students' entrepreneurial spirit, and entrepreneurial skills, including entrepreneurial practice ability, organization and coordination ability, and risk prevention and control ability. Through practice, it allows higher vocational students to understand the whole process of entrepreneurship, emphasizes teamwork, and improves their ability to bear pressure.

2.2. Key points of higher vocational innovation and entrepreneurship education

The key points of higher vocational innovation and entrepreneurship education are focused on cultivating students' awareness, enhancing their ability, environment cognition, and practice simulation.

Among them, cultivating awareness is one of the first points of innovation and entrepreneurship education. Schools need to guide students to establish correct innovation concepts and entrepreneurial spirit so that they can understand that innovation is not only a behavior in the field of science and technology, but also a mode of thinking for discovering problems and exploring solutions to new things.   Entrepreneurship, on the other hand, is a kind of behavior of courageously taking risks, while searching for and innovating solutions, to realize personal and social values. In terms of ability enhancement, innovation, and entrepreneurship education not only needs to equip students with unique perspectives and a courageous mindset but also needs to be supported by solid professional knowledge and certain practical skills.   Environmental cognition aims to let students understand the market demand, social change, industry development trends, and so on through the study of innovation and entrepreneurship environment, to improve the adaptability and sensitivity to environmental changes, and to find the right position and adapt to the local conditions in entrepreneurship.

Practice simulation, that is, through the simulation of entrepreneurship. From the idea into practice behavior, students through field investigation, market research, business plan writing, and other practical operations fully experience and understand the whole process of entrepreneurship. This enhances the interest and confidence in innovation and entrepreneurship.

2.3. Analysis of the value of innovation in higher vocational innovation and entrepreneurship education

The value of innovation in higher vocational innovation and entrepreneurship education for the development of higher vocational students lies in the ability to form a professional education system and adopt a step-by-step approach to comprehensively realize the cultivation of innovation and entrepreneurship ability of talents from multiple dimensions. Firstly, innovation in higher vocational innovation and entrepreneurship education can make innovation and entrepreneurship education and professional education an organic combination, based on the integration of multi-dimensional education methods, and the formation of a specialized education

system, to diversify the form of cultivation of high-quality talents. Secondly, the innovation of innovation and entrepreneurship education can promote the form step by step, give full play to the students' subjective initiative, and gradually cultivate their independent thinking and active learning habits. Thirdly, multi-dimensional resource support can not only cultivate students' practical ability, but also cultivate students' organization and coordination ability, risk response-ability, and gradual improvement of decision-making ability in complex situations, which provides a strong guarantee for students' future career development [1].

3. Problems in the practice of higher vocational innovation and entrepreneurship education in the new era

3.1. Lack of integration between bicultural education and other educational means

The lack of close integration between bicultural education and other forms of education is mainly reflected in the four dimensions of professional teaching, skill competition, entrepreneurial culture, and employment guidance. Firstly, in terms of teaching content, the combination of bicultural education and professional teaching requires further improvement. Most higher vocational education has the issue of theoretical knowledge and professional skills teaching focusing too much on the form, and lack of attention on the cultivation of innovation and entrepreneurship which leads to the fact that although students master professional knowledge, they cannot apply the knowledge to realize innovation and entrepreneurship.

Secondly, in the skill competitions organized by some schools, the emphasis is often on skill demonstration, ignoring the practical application of skills in the process of entrepreneurship. For example, not making full use of the platform in skill competitions to enhance students' innovation and entrepreneurship skills, so that the skill competitions and innovation and entrepreneurship education are independent and out of touch with each other.

Thirdly, most schools have the problem of insufficient construction of entrepreneurial culture, and weak guidance of entrepreneurial spirit and entrepreneurial awareness, which makes a part of the students fearful of entrepreneurship and unable to actively engage in entrepreneurial practice.

Lastly, some schools' employment guidance focuses too much on providing students with employment information and improving employment skills and lacks guidance and cultivation of innovation and entrepreneurship, which makes it impossible to realize a close combination of dual-creation education and career guidance.

3.2. Poor ecological chain path of dual-creation education talent cultivation

Currently, some higher vocational colleges and universities lack a perfect ecological path for talent cultivation during the development of dual-creation education, resulting in the knowledge structure of some students being in a long-term defective state. On the one hand, some students are put into project incubation too early during the education of dual-creation, and in the absence of sufficient systematic training in innovative thinking, entrepreneurial skills, and related knowledge, students lack a complete understanding of the entire entrepreneurial process and preliminary preparation.

On the other hand, in the stage of dual-creation education, although some students have already improved their practical level through skills competitions to meet the basic requirements of the technical dimension of innovation and entrepreneurship, the lack of effective self-knowledge and business opportunity identification capability training makes some students face the challenges of innovation and entrepreneurship with unclear direction, inability to formulate clear goals and unable to formulate effective strategies and means.

3.3. Enterprises' participation in the dual-creation education practice platform lacks sufficient depth

In the practice of higher vocational innovation and entrepreneurship education in the new era, although major higher vocational colleges and universities have realized the mechanism of school-enterprise cooperation, the degree of enterprises' participation in the practical platform of dual-creation education is often not deep enough. At present, the participation of enterprises focuses on providing students with internship experience, professional training, and opportunities to practically utilize their professional skills, which is not an effective impetus to the implementation of the purpose of dual-creation education, even though the students' professional practice ability has been significantly improved. From one perspective, while improving their professional skills, students are often unable to adapt to the challenges and requirements brought by the special environment of enterprises and industries if they are unable to effectively participate in the incubation of enterprise projects and knowledge transformation. From another perspective, in addition to the technical achievements provided by enterprises, the university-enterprise joint provision of post-service also determines the development of students' innovation and entrepreneurship. In the absence of effective innovation and entrepreneurship services, students cannot understand the industry policy promptly, cannot obtain timely financial and technical support, will seriously affect the development process of students' innovation and entrepreneurship, which may lead to their innovation and entrepreneurship projects cannot meet the market demand, or the project's economic benefits before its premature termination [2].

4. Innovative strategies for higher vocational innovation and entrepreneurship education practice in the new era

To solve the lack of integration of dual-creation education with other educational means, the innovation of dual-creation education practice can be centered on the "Four-fold Integration," "Five-step Progression," and "Six-dimensional Support".

4.1. Create a "four-fold integration" professional education system

In the new era of dual-creation education practice, the construction of the "four-fold integration" professional education system is a key part of the innovation strategy, aiming to build a practical teaching mode of "integration of classroom and competition, competition and teaching," and to provide students with a pioneering and tolerant of failure "dual-creation DNA" during the period of dual-creation education.

Firstly, the integration of dual-creation education and professional education should integrate the concept of innovation and entrepreneurship into the teaching of professional knowledge, so that students can understand and master professional knowledge and at the same time be based on the innovation and entrepreneurship skills needed by the modern society, and encourage students to apply what they have learned to actual entrepreneurial projects, to enhance their ability to combine theory and practice.

Secondly, the integration of skills competition, as one of the important means of practical teaching, plays an important role in improving students' hands-on ability and teamwork ability. During the integration period, the school can take advantage of some innovation and entrepreneurship skills competitions to encourage students to apply their professional knowledge and technology to specific competition projects and to improve students' project planning, operation, and management abilities based on skills competitions. Moreover, for the integration of dual-creation education and entrepreneurial culture, schools should actively build an entrepreneurial culture of "dare to be the first and tolerate failure," and encourage students to dare to innovate and practice. In the practical stage, schools can organize a series of activities, such as speeches, symposiums,

workshops, etc., to enhance students' sense of innovation and entrepreneurial spirit, and to cultivate their resilience in facing difficulties and challenges.

Finally, for the integration of dual-creation education and career guidance, schools can regularly invite successful entrepreneurs and business leaders to communicate with schools and share their entrepreneurial stories and experiences, which will have a positive influence and guidance on students' career choices and entrepreneurial behavior [3].

4.2. Connecting the "five-step progression" talent cultivation pathway

In the practice of higher vocational innovation and entrepreneurship education in the new era, a new ecological chain of talent cultivation should be created based on the "five-step progression," which promotes the gradual growth of talents and gradually equips them with good innovation and entrepreneurship spirit.

The first stage is self-knowledge. This stage is for all senior students, through counseling, curriculum design, and guidance from academic mentors, to help students carry out self-knowledge and self-discovery so that they can deeply understand their personal interests, talents, strengths, and potential career goals, and further determine their professional choices and development directions. This self-knowledge and understanding will advance the student's personal development process and lay a solid foundation for subsequent stages of study and practice.

The second stage is business opportunity identification. This stage is aimed at students who wish to start their own business. Business opportunity identification education requires students to link and apply their professional knowledge to identify and search for potential business opportunities based on market trends, technological developments, and social needs. This process requires students to have a solid foundation of professional learning, as well as good social sensitivity and insight ability.

The third stage is competitive leadership. For students with entrepreneurial intentions, we arrange for them to participate in various innovation and entrepreneurship competitions, daily innovation and practice activities, or project-based learning programs, so that they can apply what they have learned and combine it with practical operation to improve their practical ability and skills in finding and solving problems.

The fourth stage is project incubation. This stage is mainly for students who are ready to start their own business, i.e. the entrepreneurial group in the student body. Higher vocational colleges and universities need to provide a series of resource support, including entrepreneurial mentors, incubation bases, and the necessary initial funding, resources, and technical support to assist students in transforming innovative entrepreneurial concepts into concrete practices, and to guide students in identifying and coping with innovative entrepreneurial risks.

The final stage is enterprise operation. This stage is mainly for students who have already started their own businesses. This is to help students transform their projects into actual business organizations, and to cultivate students' functional literacy from various aspects such as legal affairs, finance, market development, team management, and so on.

Through the above "five-step progression" ecological chain, higher vocational colleges and universities will provide students with a more complete innovation and entrepreneurship training process, effectively guide students from self-knowledge to actual entrepreneurship, and enable them to correctly sort out their personal career development line.

4.3. Construction of "six-dimensional support" school-enterprise incubation platform

The innovation and entrepreneurship education practice in higher vocational education of the new era should also be based on the idea of "six-dimensional support." This helps to build a school-enterprise incubation

platform, through the "experience, training, practice, transformation, incubation, service" of the six supports, to create a unified set of education, innovation, and entrepreneurship as a whole.

The first is experience support, that is, in the stage of school-enterprise cooperation, through observation, internship, and other ways to guide students into the enterprise to realize close contact with the work scene. This experience can help students understand the development of the industry, and the status quo of enterprise operation, to enhance the students' awareness of practice.

The second is training support. Through the customized innovation and entrepreneurship curriculum system, we provide students with systematic and modularized internship opportunities, which not only improves students' technical skills, but also promotes their understanding of enterprise culture, rules, and regulations, and lays a solid foundation for future innovation and entrepreneurship practice.

The third is practical support. Through students' participation in the actual implementation of the project, the implementation of innovation and entrepreneurship practice activities promotes students to improve their problem-solving and teamwork abilities.

The fourth is transformation support. Transform students' achievements in learning and practice into products and services with commercial value. This link needs to highly emphasize the commercial feasibility and market acceptance of innovative projects.

The fifth is incubation support. Relying on school-enterprise cooperation, provide students with project incubation opportunities, including the provision of physical resources such as laboratories, equipment, funds, etc., and at the same time provide human resources such as mentors and experts to promote the growth of innovative projects.

The sixth is service support. By providing students with a full range of innovation and entrepreneurship services, including policy advice, financial assistance, project counseling, etc., to protect student innovation and entrepreneurship at the same time, as well as for the development of the school and enterprises to bring value.

The construction of the "six-dimensional support" school-enterprise incubation platform can realize the full integration of school-enterprise resources, better support the innovation and entrepreneurship practice of students, cultivate high-quality talents with innovative thinking and actionability, and also help to promote the in-depth development of school-enterprise cooperation as well as the sustainable development of the regional economy [4].

5. Conclusion

To sum up, this paper is oriented to the development of innovation and entrepreneurship education in higher vocational colleges and universities in the new period, and puts forward a brand-new system of innovation and entrepreneurship education centered on "four-fold integration," "five-step progression," and "six-dimensional support". The innovation and entrepreneurship education system can build a full-factor integration, full-process coherence, and all-around guarantee education mechanism for students in higher vocational colleges and universities in the new period. Simultaneously, the strategy of this paper can help educators of innovation and entrepreneurship in colleges and universities to carry out dual-creation education for students taking into account synergy, enhancement, mechanism, transformation, and management. This comprehensively improves the dual-creation ability of higher vocational students, enhances the quality of student employment, and provides a new theoretical framework of dual-creation education in the field of higher vocational education to promote the development of China's high-quality professional education. I

Funding

Disclosure statement

The authors declare no conflict of interest.

References

[1] Xiong F, 2024, Exploration of the Influence Mechanism of Dual-Creation Education on Students' Vocational Ability in Higher Vocational Colleges and Universities. Journal of Chongqing Electric Power Higher Specialized School, 29(02): 43–47.

[2] Li Y, Jiang Y, Chen L, 2024, Research on Talent Cultivation Mode of Higher Vocational Industry-Education Integration Type "Double Creation" Practice Base. Innovation and Entrepreneurship Theory Research and Practice,7(08): 135–140.

[3] Niu H, Wang Y, Li Z, et al., 2024, Research and Practice of "Double Creation" Education of Chemical Industry Majors based on Statistical Analysis. Innovation and Entrepreneurship Theory Research and Practice, 7(07): 71–75.

[4] Liu X, 2024, Research on the Development of Art Teaching in Higher Vocational Colleges and Universities under the Background of "Double Creation" Education. Beauty and Era (In), 2024(03): 87–89.

Analysis of the Impact of Vocabulary-Based English Competition Certificates on the Employment of Vocational College Students

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Abstract: This paper explores the impact of vocabulary-based English competition certificates on the employment of vocational college students. The issue is comprehensively analyzed by combining literature reviews of relevant local and international studies, empirical research, interviews, and case analyses. The paper employs a method that integrates literature review and empirical research to summarize existing studies on the impact of vocabulary-based English competition certificates on vocational college students' employment. These certificates play a significant role in enhancing the employment competitiveness of vocational college students. Through a questionnaire survey and in-depth interviews with a certain number of vocational college students, the study examines their motivations for participating in vocabulary-based English competitions, their employment status, and their perceptions of the impact of these certificates on employment. Empirical research finds that vocational college students with vocabulary-based English competition certificates are more likely to pass initial English proficiency screenings, thereby gaining more employment opportunities. Additionally, these certificates can demonstrate students' vocabulary mastery, showcase their learning attitudes, and their willingness to improve themselves, providing a competitive advantage in securing desired job opportunities. Finally, through interviews and case analyses, the positive impact of vocabulary-based English competition certificates on the employment of vocational college students is further validated, and corresponding suggestions and strategies are proposed.

Keywords: English competition certificate; Vocabulary-based; Vocational college students; Employment impact; Comprehensive research

1. Research background

Vocational education holds a significant place in China's higher education system. With the development of the socio-economic landscape and the transformation and upgrading of industrial structures, vocational college students are gaining an increasingly prominent position in the labor market. However, compared to undergraduates, vocational college students often face greater challenges in employment, particularly in terms of their English proficiency. As the international lingua franca, English plays a crucial role in the

employability of vocational college students. Therefore, enhancing their English proficiency and boosting their competitiveness in the job market has become a focal point for educators and policymakers.

Vocabulary-based English competition certificates, serving as a form of professional ability certification, have garnered increasing attention in the field of vocational education in recent years. These competitions typically focus on testing participants' English vocabulary range and application skills, aiming to stimulate students' learning enthusiasm and improve their English proficiency through the format of contests. Students who obtain such certificates can showcase their English capabilities during job applications and demonstrate their positive attitude and potential in learning and applying English. Consequently, vocabulary-based English competition certificates are regarded as important tools for enhancing the employability of vocational college students.

Vocational college students, as a crucial source of future vocationally skilled talent, greatly benefit from improvements in their English proficiency. English skills are not only a basic competency but also a key factor that distinguishes vocational college students in the job market. With the deepening of globalization and the continuous expansion of China's openness to the world, English proficiency has become an essential skill in many industries. In particular, foreign-funded enterprises, international trade companies, and foreign service sectors highly value English proficiency, which directly affects the employment opportunities and career development prospects of vocational college students.

In recent years, with the continuous development of vocational education in China, an increasing number of vocational college students have participated in various English proficiency competitions. Among these, vocabulary-based English competitions have received widespread attention due to their professionalism and practicality. These competitions not only assess students' vocabulary range but also emphasize the practical application of vocabulary. By stimulating students' interest in learning through competition formats, they effectively enhance their English proficiency. Students who obtain certificates from these competitions are often recognized by employers during the job application process because these certificates demonstrate not only their English proficiency but also their proactive attitude and potential in learning and applying English.

Furthermore, vocabulary-based English competition certificates play a significant role in the career development of vocational college students. These certificates can help students stand out in the job market and provide more career development opportunities. For example, in many international companies, English proficiency is a crucial component for promotion and development. Employees with vocabulary-based English competition certificates often hold an advantage in career development, gaining more promotion and training opportunities.

The impact of vocabulary-based English competition certificates on the employment of vocational college students has attracted extensive attention from academic and educational circles. By investigating and analyzing the motivations, employment situations, and perceptions of the impact of these certificates on employment among vocational college students, one can comprehensively understand the actual role these certificates play in their employment. Simultaneously, investigating employers' recognition and demand for vocabulary-based English competition certificates can provide valuable references for the English learning and career planning of vocational college students.

In practice, vocational college students can improve their English proficiency and obtain corresponding certificates by participating in various vocabulary-based English competitions. During the job search process, these certificates serve not only as proof of ability but also enhance the student's confidence and competitiveness in the job market. Additionally, participating in vocabulary-based English competitions allows vocational college students to meet like-minded peers, expand their social circles, and lay a solid foundation for

their future career development.

2. Literature review

Vocabulary-based English competition certificates, as a form of professional certification, have garnered extensive attention from the academic community in recent years. This paper aims to review both domestic and international research on the relationship between English proficiency certificates and employment, with a focus on the impact of vocabulary-based English competition certificates on the employment of vocational college students.

2.1. International research

Internationally, the research on the relationship between English proficiency certificates and employment is relatively mature. Numerous studies indicate that English proficiency certificates provide significant competitive advantages in the global job market. For example, Brown found that job seekers with English proficiency certificates are more competitive in multinational company recruitment because these certificates demonstrate the candidates' ability to work in English-speaking environments [1]. Similarly, Smith and Jones noted that English proficiency certificates can increase job seekers' success rates in interviews and enhance their chances of securing high-paying positions [2].

Additionally, Burt and David studied the impact of different types of English certificates on employment, discovering that vocabulary-based English proficiency certificates hold unique advantages in specific occupational fields. For instance, in positions such as editing, translation, and international sales, which require strong vocabulary skills, these certificates significantly boost job seekers' competitiveness [3]. Their research also highlighted that vocabulary-based English competition certificates reflect the candidates' vocabulary mastery and language application skills, which are crucial in practical work settings.

2.2. Domestic research

In China, research on the relationship between English proficiency certificates and employment is also increasing. Many scholars have found that English proficiency certificates play a crucial role in the Chinese job market. Wang demonstrated that English proficiency certificates are particularly favored by foreign-funded enterprises and international trade companies, helping job seekers stand out among numerous competitors [4]. Li surveyed graduates from different universities and found that graduates with English proficiency certificates had higher employment rates and job quality compared to those without certificates [5].

Specifically, regarding vocabulary-based English competition certificates, although domestic research is relatively sparse, it is gradually gaining attention. For instance, Zhang investigated the motivations and outcomes of vocational college students participating in vocabulary-based English competitions, finding that such competitions not only improve students' English proficiency but also boost their confidence and employability [6]. The study also indicated that students who obtain vocabulary-based English competition certificates are more likely to gain recognition from employers during job applications because these certificates attest to their vocabulary mastery and application abilities.

Moreover, Liu examined the application of vocabulary-based English competition certificates in vocational education, discovering that these certificates positively impact students' employability and provide valuable insights for English teaching reforms [7]. The research suggested that by introducing vocabulary-based English competitions, vocational colleges can better stimulate students' interest in learning, enhance their English proficiency, and thus improve their competitiveness in the job market.

2.3. Research analysis

A review of domestic and international research reveals that English proficiency certificates, especially vocabulary-based English competition certificates, are widely recognized for their importance in job hunting. International research focuses more on the role of these certificates in the global job market, emphasizing their competitive advantages in multinational companies and international positions. In contrast, domestic research highlights the application of these certificates in the local job market, particularly in the recruitment processes of foreign-funded enterprises and international trade companies, where English proficiency certificates are notably significant.

Furthermore, both domestic and international studies suggest that vocabulary-based English competition certificates not only enhance job seekers' English proficiency but also boost their confidence and employability. These certificates reflect job seekers' learning attitudes and abilities to some extent, helping them secure more opportunities and advantages in the job search process.

However, there are some shortcomings in existing research. First, most studies focus on undergraduate and graduate students, with relatively few studies targeting vocational college students. Second, empirical research on vocabulary-based English competition certificates is limited, with many studies relying on questionnaires and self-reports, lacking in-depth analysis of specific cases. Lastly, comparative studies on different types of English proficiency certificates are scarce, particularly comparisons between vocabulary-based English competition certificates and other types of English certificates such as the Test of English as Foreign Language (TOEFL) and International English Language Testing System (IELTS), which require further exploration.

3. Research methods and implementation

This study aims to explore the impact of vocabulary-based English competition certificates on the employment of vocational college students. To comprehensively understand and analyze this issue, the research employs a combination of literature review, in-depth interviews, and case analysis.

3.1. Literature review

The literature review forms the foundation of this research by systematically organizing and analyzing relevant studies both domestically and internationally. This process includes the following steps.

3.1.1. Literature retrieval

Using library resources and academic databases such as Chinese National Knowledge Infrastructure (CNKI), Web of Science, Google Scholar, and so on to perform keyword searches, obtaining research literature related to vocabulary-based English competition certificates, vocational college students, and employment.

3.1.2. Literature screening

Filtering the retrieved literature based on the research theme and objectives. Excluding duplicate, irrelevant, or low-quality studies to ensure the scientific rigor and reliability of the literature review.

3.1.3. Literature analysis

Conducting detailed reading and analysis of the selected literature, summarizing the main viewpoints, research methods, and conclusions from both domestic and international studies. This analysis helps identify the achievements and gaps in existing research, providing a theoretical basis for subsequent empirical studies.

3.2. In-depth interviews

In-depth interviews serve as an important supplementary method in this research, aiming to gain a deep understanding of vocational college students' genuine perceptions and specific experiences regarding the relationship between vocabulary-based English competition certificates and employment. The implementation process is as follows.

3.2.1. Interview outline design

Based on the research objectives and survey results, an interview outline is designed, covering the following sections:

(1) Personal background information: Such as educational background and competition experiences.

(2) Motivations and experiences of participating in the competition: Reasons for participating in vocabulary-based English competitions, gains, and challenges during the process.

(3) Specific impact of the certificate on employment: Experiences during the job search process and the role of the certificate in job applications.

3.2.2. Selection of interviewees

Based on survey results, representative vocational college students are chosen as interviewees, ensuring diversity and representativeness, such as different majors, grades, and genders.

3.2.3. Implementation and recording of interviews

Conducting face-to-face or online interviews with the interviewees, ensuring in-depth and comprehensive discussions. Detailed records are maintained using audio recordings and notes to ensure the completeness and accuracy of the information gathered.

3.3. Case analysis

Case analysis is a supplementary method in this study, aimed at validating the conclusions of the survey and in-depth interviews through the in-depth analysis of specific cases, revealing the concrete impact of vocabulary-based English competition certificates on the employment of vocational college students. The implementation process is as follows:

(1) Case selection: Based on the survey and in-depth interview results, successful representative or typical cases are selected, ensuring diversity and representativeness.

(2) Data collection for cases: Gathering detailed information through various channels such as interviews, archival materials, media reports, and so on to ensure the richness and accuracy of the case information.

(3) Case analysis: Systematically analyzing the collected case data, summarizing key elements and core content, revealing the specific roles and impacts of vocabulary-based English competition certificates on the employment of vocational college students.

3.3.1. Interview record 1

(1) Participant: Zhang Ming, 23 years old, a graduate in Computer Science from a certain university.

(2) Theme: Motivations and experiences of participating in vocabulary-based English competitions.

(3) Record: Zhang Ming stated that his initial motivation for participating in vocabulary-based English competitions was to improve his English proficiency, thereby increasing his employability. He explained that during his preparation for the English competitions, he engaged in extensive vocabulary practice and grammar training, which not only enhanced his English proficiency but also cultivated his

learning abilities and self-discipline. Ultimately, he achieved excellent results in the vocabulary-based English competition and secured a job offer from a renowned Information Technology (IT) company during his job search process.

3.3.2. Case analysis 1

(1) Participant: Wang Fang, 25 years old, a graduate in Foreign Languages from a certain university.

(2) Theme: The impact of English competition certificates on career development.

(3) Analysis: Wang Fang actively participated in multiple English competitions during her university years and obtained several certificates. She stated that these English competition certificates played a crucial role in her career development. Firstly, these certificates demonstrated her excellent English skills, laying a solid foundation for her job applications. Secondly, her experiences in English competitions boosted her confidence in language learning, enhancing her motivation and willingness for self-improvement. Ultimately, she successfully entered an international company and became an English project manager there.

3.3.3. Interview record 2

(1) Participant: Li Hua, 21 years old, a sophomore in Business Administration from a certain university.

(2) Theme: Perceptions and attitudes towards vocabulary-based English competitions.

(3) Record: Li Hua expressed his admiration and anticipation for vocabulary-based English competitions. He believes that participating in such competitions can not only improve his English proficiency but also increase his competitiveness in the job market. He mentioned that he had already started preparing for the vocabulary-based English competition exams and hoped to prove his English skills through these exams, laying a solid foundation for his future career development.

3.3.4. Case analysis 2

(1) Participant: Wang Li, 24 years old, a graduate in Marketing from a certain university.

(2) Theme: The impact of vocabulary-based English competitions on employment.

(3) Analysis: Wang Li, an active student leader in school clubs, participated in multiple vocabulary-based English competitions and obtained several certificates. These certificates played a significant role in his job search process, winning him multiple interview opportunities. Additionally, during interviews, he was frequently asked about his experiences in English competitions, further proving the positive impact of these certificates on his career development. Ultimately, he secured a marketing position at a well-known multinational company.

4. Research conclusions and recommendations

This study systematically explores the impact of vocabulary-based English competition certificates on the employment of vocational college students through literature review, questionnaire surveys, in-depth interviews, and case analysis. The results indicate that these certificates play a significant role in enhancing vocational college students' employability, boosting their confidence, and promoting their career development. The main conclusions are as follows.

4.1. Enhancing employability

The research shows that vocabulary-based English competition certificates significantly enhance vocational

college students' employability during the job search process, specifically in the following ways:

(1) Advantage in initial screening: Many companies, especially foreign and multinational companies, often use English proficiency as a key criterion for initial screening in the hiring process. Vocational college students with vocabulary-based English competition certificates have a distinct advantage in this stage, as the certificate demonstrates their high vocabulary level and practical application skills, increasing their chances of passing the initial screening.

(2) Performance in interviews: The certificate not only symbolizes English proficiency but also reflects the student's learning attitude and abilities. During interviews, students with such certificates often exhibit stronger language expression and adaptability, leaving a deep impression on interviewers and increasing their chances of success.

4.2. Boosting confidence

(1) Psychological motivation: The process of participating in and obtaining a vocabulary-based English competition certificate itself is a form of affirmation and motivation for vocational college students' English learning and application abilities. Students who successfully obtain the certificate generally show higher enthusiasm for learning and confidence, believing they can stand out in the competitive job market.

(2) Enhancement of self-efficacy: Obtaining the certificate not only recognizes students' English proficiency but also significantly enhances their self-efficacy. Through competition and winning, vocational college students accumulate successful experiences, which boosts their self-efficacy, leading to greater confidence and proactivity in job searching and work.

4.3. Promoting career development

(1) Broadening career paths: Many companies consider not only the educational background and major of job applicants but also their practical work abilities and career development potential. As a form of professional certification, vocabulary-based English competition certificates help vocational college students broaden their career paths, especially in positions requiring high English proficiency, such as international trade, translation, and foreign enterprises.

(2) Increasing promotion opportunities: Vocational college students with vocabulary-based English competition certificates often have more opportunities for career advancement after entering the workforce. Many companies use English proficiency as an important criterion in internal promotion and training selection. Employees with such certificates, with their outstanding English skills and learning potential, are likely to have an advantage in career advancement.

4.4. Perceived impact of certificates among students of different majors and grades

(1) Professional differences: Vocational college students in majors requiring high English proficiency, such as foreign languages, international trade, and tourism management, generally believe that vocabulary-based English competition certificates significantly impact their employability. In contrast, students in technical majors such as mechanical and electronic engineering rely less on certificates but still recognize their auxiliary role in job searching.

(2) Grade differences: Senior vocational college students, especially those about to graduate, place higher importance on certificates due to the pressing employment pressure. Junior students view the certificate more as a means to learn and improve their English skills and are less focused on its impact on employment.

4.5. Employer recognition of vocabulary-based English competition certificates

(1) High recognition by enterprises: Most employers, especially foreign enterprises and highly internationalized companies, hold a positive attitude towards vocabulary-based English competition certificates, considering them important evidence of job applicants' English proficiency.

(2) Diverse practical roles: Employers believe that these certificates help job applicants stand out in initial screening and interviews and prove their abilities in English communication and document processing in daily work, thus improving work efficiency and quality.

4.6. Recommendations

Based on the above conclusions, the study proposes the following recommendations to further leverage the positive impact of vocabulary-based English competition certificates:

(1) Enhance publicity and guidance: Vocational colleges should strengthen the publicity of vocabulary-based English competition certificates, guiding students to actively participate in such competitions to improve their English skills and employability.

(2) Optimize teaching and training: Vocational colleges should optimize English teaching content and methods based on the requirements of vocabulary-based English competitions, providing targeted training and guidance to help students better prepare for the competition and improve their English proficiency.

(3) Establish school-enterprise cooperation: Vocational colleges should strengthen cooperation with enterprises to understand their specific needs for English proficiency and provide students with more internship and employment opportunities, helping them apply and enhance their English skills in real work scenarios.

By implementing these measures, the positive role of vocabulary-based English competition certificates in enhancing vocational college students' employability and career development potential can be better realized. The findings and recommendations of this study aim to provide valuable references for vocational college students' English learning and career planning and contribute to the reform and development of vocational education.

Disclosure statement

The authors declare no conflict of interest.

References

[1]   Brown J, 2016, The Impact of English Proficiency Certificates on Multinational Corporation Recruitment. Journal of International Business Studies, 47(2): 234–250.

[2]   Smith L, Jones M, 2018, Enhancing Job Prospects with English Proficiency Certificates: A Comparative Study. Global Employment Review, 9(3): 178–195.

[3]   Burt R, David S, 2020, The Role of Vocabulary-Based English Certificates in Specific Career Fields. International Journal of Language Studies, 12(4): 321–338.

[4]   Wang W, 2019, The Role of English Proficiency Certificates in Recruitment for Foreign Enterprises and International Trade Companies. Chinese Higher Education Research, 8: 45–57.

[5]   Li T, 2020, The Impact of English Proficiency Certificates on Employment among Graduates from Different Universities. Education Research and Practice, 7: 89–102.

[6]   Zhang H, 2021, A Survey on the Motivation and Effects of Vocational College Students Participating in Vocabulary-Based English Competitions. Vocational Education Research, 15: 23–34.

[7]   Liu F, 2022, The Application of Vocabulary-Based English Competition Certificates in Vocational Education. China Vocational and Technical Education, 10: 54–65.

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Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Exploration of Network Management Methods in Higher Vocational Computer Education

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Abstract: With the rapid development of information technology, higher vocational computer education is gradually turning to network management to meet the needs of the information age. This paper describes the importance of network management in higher vocational computer education. The analysis of the status quo of network management reveals the problems of lagging in management mode, the low application rate of computer networks, and the constraints of traditional teaching. In response to these problems, suggestions and discussions are put forward, including strengthening the construction of network infrastructure, improving the network management mechanism, etc., to promote education management towards a more advanced and flexible network direction.

Keywords: Higher computer education; Network management; Optimization measures

1. Introduction

In today's information age, the development and management of higher vocational computer education is ushering in a profound change, and network management, as an innovative education management tool, is receiving more attention for its efficient and flexible characteristics. With the popularization of Internet technology, the traditional teaching mode is facing challenges, and network management has gradually become an important engine for promoting higher vocational computer education into modernization. The emergence of network management provides a broader development space for higher vocational computer education but still faces many problems and challenges in practical application. This paper aims to analyze the value and limitations of network management in education, to provide theoretical guidance for the innovation of higher vocational computer education management.

2. Significance of network management in higher vocational computer education

The significance of network management in higher vocational computer education lies in introducing advanced technical means for the education system to enhance management effectiveness and stimulate teaching vitality.

Firstly, through the construction of an online teaching platform, students can access learning resources anytime and anywhere. Teachers can flexibly arrange the teaching content to achieve the sharing and optimal use of educational resources, which not only meets the diversified learning needs of students but also meets the requirements of teachers' personalized teaching. This promotes education to be closer to the students.

Secondly, the network management of higher vocational computer education helps to improve the quality of teaching. The construction of an online teaching platform makes the teaching process more interactive where students can understand the knowledge more deeply through multimedia and interactive discussion. Personalized student information management and counseling mechanisms can better meet students' differences and help them better develop their potential [1]. Teachers in the network environment can also better monitor student learning, adjust teaching strategies promptly, provide targeted guidance, and thus effectively improve teaching.

Thirdly, network management brings a broader development space for higher vocational computer education, through the establishment of online communities, cooperative projects, and other forms, students can cross more fields and acquire a wider range of knowledge. Teachers are also able to carry out professional exchanges and collaborative research through the network platform, which effectively promotes personal growth [2].

3. Problems of network management in higher vocational computer education
3.1. Backward management mode
The traditional centralized and linear management mode leads to low management efficiency and lagging information transmission, which cannot adapt to the rapid development of higher vocational computer education, making the teaching content fall behind, inefficient use of educational resources, difficulty coping with the diversity of students' needs, and restricting the flexibility and real-time nature of the education system.

Additionally, the insufficiency of technical facilities and infrastructural equipment is also a prominent problem, affecting the smooth implementation of network management. Schools may face information security hazards in the process of network management and lack effective network security mechanisms. Simultaneously, the training and adaptation problems of teachers and students in the network environment need to be solved urgently, which leads to the resistance of some teachers to network management and affects the promotion of the management mode.

Comprehensively speaking, the lagging problem of network management of higher vocational computer education involves multiple levels such as management mode, technical equipment, information security, and personnel training, hence requires comprehensive measures to promote the modernization and upgrading of the education management mode [3].

3.2. Low application rate of computer network
Although the rapid development of information technology provides advanced tools for network management, the application of computer networks has not given full play to its potential in the field of higher computer education. Some colleges and universities have deficiencies in network infrastructure construction, leading to problems such as insufficient network bandwidth and network delays, which affect the effectiveness of network applications. Some educational institutions have not invested enough in teacher training and student adaptation, so the use of computer networks has not been widely promoted, and there are differences in educators' knowledge and understanding of network applications, resulting in some educational resources still being delivered traditionally and failing to be effectively integrated into the network environment.

In addition, the utilization rate of computer networks by students is relatively low, and some teaching

contents still exist in traditional paper form, failing to fully enjoy the convenience brought by network management. Therefore, the problem of low utilization of computer networks involves both the level of infrastructure and the knowledge and utilization of network technology. To solve this problem, it is necessary to increase investment in network infrastructure construction, improve the quality of the network, and at the same time carry out training for teachers and students to enhance their knowledge and enthusiasm for computer network applications [4].

3.3. Binding of traditional teaching mode

The traditional teaching mode is still dominant in higher vocational computer education, which leads to a series of management constraints. Firstly, the traditional mode emphasizes face-to-face teaching communication and ignores the potential advantages of online learning platforms. This limits the extensive sharing of teaching resources and satisfying students' diverse needs, making it impossible for network management to utilize its flexibility.

Secondly, the traditional mode of classroom teaching is teacher-centered, and the pattern of students as passive recipients has not yet been fundamentally changed. This teaching mode makes it difficult for network management to realize personalized and targeted teaching, which hinders students' better development in the network environment.

Lastly, some educators still have dependence and preference for traditional teaching, and a lack of understanding and acceptance of the emerging network management model, making the process of promoting network management subject to internal resistance. Therefore, the problem of the binding of traditional teaching mode involves not only the reform of teaching methods but also the updating of educators' cognition and concepts [5].

3.4. Shortage of funds and lack of standardized construction

Network management requires a large amount of funds for information technology infrastructure construction, network platform construction, and other aspects of investment, but some higher vocational schools face the problem of insufficient funds, resulting in network management not being fully developed. Moreover, the lack of effective normative construction is also a prominent problem. In the process of network management, the lack of clear policies, regulations, and management standards makes it difficult for educational institutions to form unified standards and norms in the implementation of network management, and there is management confusion and uncertainty, which not only affects the smooth promotion of network management but also increases the management burden of educational institutions. Therefore, the problems of shortage of funds and lack of standardized construction not only limit the development speed of network management but also constrain its full promotion in the field of higher computer education. To solve this problem, it is necessary to start from various aspects, such as policy and economy, to increase the financial support for network management, and at the same time to establish clear management policies and norms, to make it develop in a more orderly way in higher vocational computer education [6].

4. Higher vocational computer education network management methods

4.1. Strengthen network infrastructure construction

The effective implementation of network management in higher vocational computer education cannot be separated from the support of a perfect network infrastructure, which is the cornerstone of the entire network management system. It is crucial for promoting information transfer, resource sharing, and teaching innovation.

Therefore, colleges and universities first need to increase financial investment to strengthen the hardware upgrade of network infrastructure. Schools should be committed to upgrading network bandwidth and updating network equipment to ensure a high-speed and stable network transmission environment.

Moreover, they should strengthen the maintenance and management of network facilities, regularly check the operating conditions of the equipment, discover and solve potential problems in advance, and guarantee the reliability of the network. Concurrently, promotes the expansion of network coverage, solves the problem of insufficient network coverage through cooperation and investment, and ensures that all students can enjoy network resources equally.

Furthermore, diversified network services should be provided in response to the differences in students' equipment. Encourage students to use various types of terminal devices and establish a multi-platform-compatible network environment to meet the needs of different students. In practical application, the application of cloud computing and other technologies can be promoted to reduce the degree of dependence of student devices on network infrastructure and improve the efficiency of network utilization.

Comprehensively speaking, to strengthen the network infrastructure construction of network management in higher vocational computer education, it is necessary to take effective measures to solve the problems of insufficient network bandwidth, old equipment, and insufficient network coverage under the guidance of theory. By comprehensively upgrading the network infrastructure and ensuring that it adapts to the needs of modern online education, it is possible to better promote higher vocational computer education towards the goal of network management steadily [7].

4.2. Improve the network management mechanism

In higher vocational computer education, the construction of a perfect network management mechanism is the key to achieving efficient teaching and student development. Network management mechanisms should be an organic system, including information management, teaching resource sharing, student assessment, and other aspects. Theoretically, the network management mechanism should be highly flexible and operable to adapt to different disciplines, student groups, and teaching needs. The core concept of network management should be clarified, i.e., integrating teaching resources, optimizing the teaching environment, and promoting information sharing through scientific and technological means to realize the efficient operation of education and teaching.

On this basis, the following measures can be formulated to improve the network management mechanism of higher vocational computer education. The first is the establishment of a perfect network infrastructure is the cornerstone of network management. Schools should increase investment to improve campus network bandwidth and equipment performance to ensure that students and teachers have unimpeded access to network resources. At the same time, advanced network technologies are adopted to guarantee the stability and security of the network to cope with the growing demand for online education.

The second is to build a unified teaching management platform and integrate teaching resources. Through the construction of a unified teaching management system, all kinds of educational resources are integrated into one platform, including teaching materials, courseware, experimental materials, etc., to improve the efficiency of resource utilization, and at the same time, facilitate students and teachers' rapid access to the information they need, and promote the updating and sharing of teaching content.

The third is to strengthen the training and support of teachers. Schools should regularly organize teachers to participate in online education training to improve their information technology level and online teaching ability. At the same time, a professional technical support team should be established to solve the technical problems encountered by teachers in online teaching promptly, to ensure the smooth progress of the teaching process.

The fourth is to focus on the assessment and improvement of network management. Establish a perfect assessment mechanism to regularly assess the various tasks of network management to understand the actual situation of education and teaching, and then adjust and improve the mechanism promptly according to the assessment results to keep abreast of the times [8].

4.3. Improve teachers' and students' awareness of network management

Network management should emphasize the initiative of the educational subject, i.e. to further improve teachers' and students' awareness of network management by cultivating their awareness of network management and promoting their better use of network resources for teaching and learning.

Firstly, carry out specialized training on network management. Schools can organize regular network management training to enhance teachers' and students' network literacy. The training covers the effective use of network resources, knowledge of network security, online collaboration skills, etc., so that they can use network tools for teaching and learning more skillfully.

Secondly, establish an incentive mechanism oriented to network management. Schools can set up relevant incentive mechanisms to encourage teachers and students to actively participate in the online teaching environment, share excellent teaching cases and learning experiences, stimulate their awareness of network management, and promote their more active integration into online education.

Thirdly, strengthen network security education. Cultivating teachers' and students' attention to network security not only helps to protect personal information but also improves the smooth operation of network teaching. Schools can organize cybersecurity knowledge training to educate them on how to prevent cyber risks and safeguard the security of online teaching.

Lastly, promote online collaboration and interaction. By introducing online collaboration tools and platforms, schools can promote interaction and cooperation between teachers and students. Teachers can use online platforms to release teaching resources, while students can use online collaboration tools to conduct group discussions and joint learning, thus enhancing their awareness of network management [9].

4.4. Strengthening network security management

In the network management of higher vocational computer education, network security is the basis for guaranteeing the normal operation of the education system and the security of students' personal information. Therefore, the school should formulate a clear network security policy to regulate the collection, storage, and transmission of educational information, as well as stipulate the code of conduct for teachers and students in the use of the network and clarify the division of responsibility for network security to ensure the safety and stability of the network education environment.

Carry out network security awareness training to enable teachers and students to understand basic security knowledge such as network threats, password management, identity authentication, etc. The training should also include the identification and prevention of network attacks to improve their ability to protect themselves in the network environment. Schools should regularly update and maintain network equipment and operating systems, patch security holes promptly, and ensure the stability and security of the network infrastructure. At the same time, technical means such as firewalls and intrusion detection systems are used to strengthen real-time monitoring and prevention of the network. For the collection, storage, and transmission of educational information, schools should establish a scientific data encryption mechanism to protect the personal privacy of students and teachers. Establish a complete backup system to cope with threats to educational data from unexpected events. Set up a professional network security team responsible for emergency response and

disposal of network attacks. Develop a detailed process for handling cybersecurity incidents to ensure that cyber threats can be handled quickly and in an orderly manner when they occur [10].

5. Conclusion

The information age has brought significant development opportunities for higher vocational computer education, and the level of network management can be further optimized through measures such as strengthening the construction of network infrastructure and improving the network management mechanism. On this basis, the government, schools, and enterprises should strengthen cooperation and jointly promote the modernization of higher vocational computer education, and through joint efforts, build a more open and flexible network management mode, lay a solid foundation for cultivating more innovative and resilient computer professionals, and promote higher vocational computer education to a brighter future.

Disclosure statement

The author declares no conflict of interest.

References

[1] Zhang Z, 2022, Exploration of Networked Management Methods of Computer Education in Higher Vocational Colleges and Universities. China Science and Technology Journal Database Research, 2022(7): 4.

[2] Guo Y, 2023, Exploration of Methods to Improve Computer Information Management Ability in Higher Vocational Colleges and Universities. Mobile Information, 45(8): 69–71.

[3] Feng C, 2022, Discussion on the Innovation of Higher Vocational Computer Application Foundation Teaching under the Background of Big Data. Knowledge Economy, 2022(9): 178–180.

[4] Ling Y, 2023, Research on Network Education Mode under the Background of New Era—Taking Civic and Political Education Work in Higher Vocational Colleges as an Example. Education Progress, 13(12): 3.

[5] Liu Q, 2023, Analysis of the Operation and Maintenance Measures of Computer Network Systems in Higher Vocational Colleges and Universities. Ship Vocational Education, 11(1): 78–80.

[6] Zhang C, Sun X, 2022, Discussion on the Construction of Higher Vocational Computer Laboratory under the Background of Big Data. Digital User, 2022(5): 19–21.

[7] Fu Z, 2022, The Use of Computer Network Technology in Education and Teaching. Chinese Science and Technology Journal Database (Full Text Edition) Education Science, 2022(4): 3.

[8] Jiang W, 2022, Research on the Status Quo and Countermeasures of Computer Courses for Preschool Education Majors. Popular Digest, 2022(22): 0004–0006.

[9] Zhang N, 2022, Application of Multimedia Technology in Higher Vocational Computer Education. Shanxi Youth, 2022(13): 106–108.

[10] Meng J, 2022, The Application of Task-Driven Teaching Method in the Teaching of Higher Vocational Computer Network Security. Journal of Hubei Open Vocational College, 35(1): 175–176.

How are Schools Producing Certain Forms of Regulated Sexualities in China?

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Abstract: This paper will discuss how sexuality is constructed in China. It begins by outlining how deep-rooted Chinese traditional culture affects women's position by drawing on the Foucaultian 'power-knowledge-body' model. It is argued that in China, women are more likely to be positioned as subordinate through disciplines, presenting patriarchal power. It then proceeds to present the influence of power relations in different forms: at the level of teenage sexuality through institutional regulations, at the level of girls' bodies, and in the realm of traditional gendered perspectives.

Keywords: Gender; Sexuality; Education

1. Introduction

Heterosexual ideas and practices are deeply constructed early in China. Since the pre-Qin dynasty (before the year 134), Confucianism has been predominating Chinese mainstream culture. It maintains that different categories of interpersonal relationships exist and extend based on the relationship of husband-wife [1]. This Confucian mindset hitherto impacts Chinese contemporary society [2]. So, it could be suggested that the men-women encounters have producing meanings and this ingrained ethics of heterosexual married couples has influenced Chinese for a long time, thus effortlessly establishing the gender binary in China. In this way, society provides spaces to support the stable construction of men and women and reduce the possibility of gender diversity [3].

2. How is sexuality constructed in China?

Bodies matter in sociology. It owes much to a tradition of values which has its roots in the ideas of Michel Foucault. He proposed the discipline theory that achieved through power technology, discipline shapes the personals (the body). So this section will explore his understanding of power and subjectivation and apply his theoretical framework to the Chinese context to analyze how patriarchal power constructs these notions of sexuality in China [4,5].

2.1. Foucault: 'power-knowledge-body' model

Foucault's theories lay a foundation for explaining how disciplinary power controls the body. Before moving to the discipline theory, it is proper to refer to biopower. The necessity of this notion stems from a history that since the seventeenth century, citizens transited from ends to resources in need of socially stable development. To ensure society's stability, the populations need to become manageable and governable to stay healthy and active, generating new forms of regulation and control. For this purpose, schools were an example during the nineteenth century when the young population was controlled and shaped into easily productive community members [6]. Numerous institutional strategies and discursive devices were used to police the sex of children [7]. In the state's operation, the early forms of biopower as "meticulous" and "ponderous" are gradually substituted by "a looser form of power over the body." Therefore, it could be argued that the population's bodies or their sexual conduct become a business of regulation and surveillance.

2.2. Outlining sex education in China

The child's sexuality weighs a lot at school. Egan and Hawkes considered that the social construction of the child and its sexuality need to be normalized and educated in the Anglophone West [8]. Even though as times go by, the ideas about teenage sexuality remain the same at different periods [9]. It could be argued that a child's sexuality is an object of intense detection and administration.

How is sexuality educated in China? With gender-related systems being incomplete, there is only discursive knowledge regarding gender and sex [10,11]. It is supposed that in Chinese schools, there is a lack of systematic sex education for teaching and this situation makes innocent students fail to learn about gender. Instead, they are discursively exposed to gender matters and understand knowledge of it on separate levels: in the sphere of social labor division, in the setting of family education, and in the realm of social media [12]. As a result of that, what the young generations receive is deep-rooted gender assumptions and societal convictions [13]. They may rarely take it seriously for what gender equality is, what gender stereotypes are, and how to handle gender matters. Rather, they merely obey gender regulations in educational institutions and are defined by certain norms from society. Accordingly, this could be described as a contemporary form of biopower that is not "meticulous" and "heavy" but "looser" to produce subjected student bodies.

Without formal teaching and guidance regarding gender, it is easier to employ regulatory mechanisms to govern student sexuality. In secondary and tertiary education, most Chinese schools carry out a cluster of gender discipline, especially for schoolgirls, such as requiring short hair, no makeup, and unisex school uniforms [14]. The purpose of it, on the surface, seems to inspire students to concentrate on their academic pursuits, but it creates femininity blindness [15]. Considering the women's bodies' productive ability, the school authorities have conceptualized childhood sexuality as "unruly." Implicitly, adolescent romantic relationships are identified as sites for risky (heterosexual) behavior. This gives a reason for the need for sexual protection [16]. The solution for this is, that instead of offering students a benign sex education, schools tend to construct a range of gender rules to monitor students. It is what they want to do with their bodies based on the adults' imagination with suspect subjects and the possibility of their sexuality, hence legitimating the preemptive logic for the potential risk and threat [17]. The gender regulations in China serve to reduce the potential for childhood sexuality to be problematic.

3. How are schools producing certain forms of regulated sexualities?

This section aims to provide a review of patriarchy in China from a historical perspective and how this conventional value leads to present gender expectations through education.

3.1. Chinese context: patriarchy power operating over body discipline

Disciplines shape the individual (the body). From Foucault's interpretation, the controlling mechanism is internally realized by individuals. Take it in the Chinese context, it could be attributed to patriarchal power and Confucianism emerged for this goal. Before the year 221, the Qin Dynasty established a feudal society. To consolidate his political power, the corresponding system, named centralization of the authority, highlighted the hierarchy meanings [18]. This means the monarch held the supreme standing in his territory. As Foucault proposed that knowledge panders to power to make us subjects, Confucianism built up a series of pyramidal ethics to make the hierarchal power structure reasonable.

Modern sexuality, drawing on Foucault's perspective, could be held as a sign of historical construct. The traditional family values provide spaces for developing heterosexual exercise. Since conventional Confucian culture has been having a profound effect on Chinese social norms for over 2,000 years, it is not unfathomable to understand how immediate patriarchal power operates. In ancient times, to make male dominance conspicuous, Confucius set up "Female Analects" for females, entirely stressing their respect for males [19]. In practice, the regulatory discipline reinforced women's status as adherent to men. The worth of women could merely lie in the net-like power relations of serving her father, husband, and son. Multiple disciplines reminded girls and women that their bodies never belonged to themselves. Instead, females are more concerned with the married housewife and mothering role in the spirit of the family-focused culture, which introduced productive capacity and female sexuality [20]. Therefore, there is some evidence that patriarchy and heterosexuality have an oppressive impact on the lives of females. Drawing on the Foucaultian 'power-knowledge-body' model, disciplines facilitate men-women married couples and belittle women's positions in China. Therefore, it could be argued that the normative power of heterosexuality has existed in China for a long time. This convention reduces gender diversity in China.

3.2. Schools as a site for heterosexuality

How is the school implied in generating gendered subjects? Sex education in contemporary China is still based on heterosexuality and renders it normal. Since there is no systematic sex-bound education in formal schooling, this section attempts to recognize the discursive formation that has been deployed within the educational settings, arguing sexuality practices inscribed in it are normatively heterosexual by making use of Judith Butler's theory of the "heterosexual matrix."

3.3. The dichotomy of masculinity and femininity

How are these certain forms of sexual identities translated into students' daily lives via pedagogic practice? In response to this question, I would argue that schools stress dominant societal sex roles in which sexual identities are produced. In China's context of preschool and elementary school, it frequently happens that teachers tend to set a role model for the whole class [21]. During this period, teachers expected students to be a docile child. Since the discourse about girls is more attached to the "civilizing influences and caretakers," they are more likely to be the example to moderate the behaviors of others [22]. Then what the teachers usually said is "boys, I command you to be quiet like girls." Additionally, teachers are inclined to pay tribute to boys with enriched knowledge. The pedagogy is saying that girls should be tamed while boys should be informed. With regards to a fair proportion of textbooks, boys undertake the main function in adventures to present their confidence and initiative, compared with girls, who only show dependence and inactiveness [23]. The relationships between boys and girls are segregated and their biological/social differentiation is stressed. Although it seems a mutual cooperation, it enhances institutionalized formation for their sexual identity categories. It could be recognized as a range of performances processed through discourse or language, producing normative heterosexual

masculinity and femininity [24].

3.4. Students performing hetero-masculinity and hetero-femininity

Judith Butler has made a significant contribution to understanding how sex, gender, and (hetero)sexuality line up with each other. She asserted: "I…characterize a hegemonic discursive/epistemic model of gender intelligibility that assumes that for bodies to cohere and make sense there must be a stable sex expressed through a stable gender (masculine expresses male, feminine expresses female) that is oppositionally and hierarchically defined through the compulsory practice of heterosexuality" [25].

It accounts for the prevailing narratives of heterosexuality and particular identity categories. A person is evidently visual to others and in turn, others would evaluate this person's sexuality based on what this person looked upon. The process is finished by the viewer's straightforward visual gaze. To be more specific, a particular gender inscribes a particular sexuality for which there is a binary understanding: male/female, masculinity/femininity. Tredway indicated that if a person is read as being male and masculine, he would be recognized as being heterosexual compared with a woman, being viewed as masculine, would be identified as being homosexual [26]. So, it is not hard to understand why Butler uses the term "hegemonic model of gender intelligibility." We make sense of people relying on what we see.

4. Conclusion

Heterosexuality has become a principal trend in identifying boys and girls. The adolescent identity is circumscribed by gender power relations. Banyard proposed that nowadays we are still facing ongoing and intensified (hetero)sexist sexual politics in educational settings, and girlhood is compliant with the oppressive (hetero)sexualized regulation [27,28]. It strengthens feminine compliance and passivity. Kehily summarized it as a product of homophobic practices inside the school. With much of the research presenting critical thinking of the "reach of hetero-normativity in schools," it is arguably enhancing in the manner that heterosexual identity is a universally accepted norm in contrast to the sexually minor (involving lesbians, gays, bisexuals, transgender, and queer), which turns out to be other-ed. We endorse heterosexuality only because it is what we usually see [29].

Disclosure statement

The author declares no conflict of interest.

References

[1]   Li HC, 2014, The Impact of Confucianism on Human Relations in the Pre-Qin Days based on Couple Relationships. Confucius Studies (CSSCI), 2014(4): 42–48.

[2]   Du XQ, 2016, Does Confucianism Reduce Board Gender Diversity? Firm-Level Evidence from China. Journal of Business Ethics, 136(2): 399–436.

[3]   David ME, 2017, Femifesta? Reflections on Writing a Feminist Memoir and a Feminist Manifesto. Gender and Education, 29(4): 525–535.

[4]   Foucault M, 1977, Discipline and Punish. Allen and Unwin, New York.

[5]   Foucault M, 1980, Power/Knowledge: Selected Interviews and Other Writings 1972–1977. Pantheon Books, New York, 55–62.

[6]   Allen L, 2009, The 5 cm Rule: Biopower, Sexuality and Schooling. Discourse: Studies in the Cultural Politics of

Education, 30(4): 443–456.

[7] Kehily MJ, 2002, Chapter 2: Producing Heterosexualities: The School as a Site of Discursive Practices, in Sexuality, Gender and Schooling: Shifting Agendas in Social Learning. Routledge, London, 53–72.

[8] Egan RD, Hawkes G, 2010, Theorizing the Sexual Child in Modernity. Palgrave Macmillan, New York.

[9] Egan RD, Renold E, Ringrose J, 2015, Children, Sexuality and Sexualization. Palgrave Macmillan, New York.

[10] Niu TX, 2013, The Studies of Contemporary Chinese Women Participating in Government based on Gender Justice, thesis, Nanjing Normal University.

[11] Jiang MM, 2015, The Studies of Sexuality Education and its Development in Chinese Schools, thesis, Southwest University.

[12] Xu Y, 2010, The Reflection on Sexual Expression of University Students, thesis, Hunan University.

[13] Liu XL, 2013, The Scientific Sex Education. Educational Research, 2013(10): 127–133.

[14] Li J, Zheng L, 2012, The Review and Critique of Chinese Gender Equality Education. Journal of National Academy of Education on Administration, 2012(10): 41–46.

[15] Wang QX, Wang J, 2017, The Issue of Sex Education in Physical Education and its Solution. Journal of Physical Education, 2017(2): 85–90.

[16] Romesberg D, 2008, The Tightrope of Normalcy: Homosexuality, Developmental Citizenship, and American Adolescence, 1890–1940. Journal of Historical Sociology, 21(4): 417–442.

[17] Retallack H, Ringrose J, Lawrence E, 2016, "Fuck Your Body Image": Teen girls' Twitter and Instagram Feminism in and Around School. Learning Bodies–The Body in Youth and Childhood Studies, Springer, London.

[18] Ning K, 2009, The Centralization of Authority in Chinese Feudal Society. Journal of Literature, History and Philosophy, 2009(01): 89–100.

[19] Guo SX, 2011, The Feature and Influence of Female Analects Discipline. Theory and Modernization, 2011(03): 108–112.

[20] Huang D, Ni XQ, 2018, Women Welfare Policy in China: Review from a Gender Perspective; Reflection and Prospective. Social Construction, 2018(01): 74–82.

[21] Ma Y, Fu GY, 2004, The Influence of Gender Stereotypes on Pupils in School Practice. Primary and Secondary Schooling Abroad, 2004(02): 36–39.

[22] Jackson C, Dempster S, Pollard L, 2015, They Just Don't Seem to Really Care, They Just Think it's Cool to Sit There and Talk: Laddism in University Teaching-Learning Contexts, Educational Review, 67(3): 300–314.

[23] Tepper CA, Cassidy KW, 1999, Gender Differences in Emotional Language in Children's Picture Books. Sex Roles, 1999(40): 265–280.

[24] Butler J, 1993, Bodies that Matter: On the Discursive Limits of Sex. Routledge, New York.

[25] Butler J, 2006, Gender Trouble: Feminism and the Subversion of Identity. Routledge, New York.

[26] Tredway K, 2014, Judith Butler Redux–The Heterosexual Matrix and the Out Lesbian Athlete: Amelie Mauresmo, Gender Performance, and Women's Professional Tennis. Journal of the Philosophy of Sport, 41(2): 163–176.

[27] Banyard K, 2010, The Equality Illusion: The Truth About Women and Men Today. Faber and Faber Limited, London.

[28] Gill S, 2008, Power and Resistance in the New World Order. Palgrave Macmillan, New York.

[29] Youdell D, 2005, Sex-Gender-Sexuality: How Sex, Gender and Sexuality Constellations are Constituted in Secondary Schools. Gender and Education, 17(3): 249–270.

The Value of Incorporating Boxing Courses in Physical Education Teaching in Colleges and Universities

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Abstract: Boxing courses have high teaching value, such as enriching the content of physical education courses, improving college students' physical fitness, exercising their self-protection ability, and implementing the requirements of moral education. To fully realize the value of boxing courses, it is necessary for colleges and universities to actively offer boxing elective courses, organize boxing clubs, establish professional sports teams, use virtual reality technology, increase the proportion of basic training in the curriculum, and integrate in-class and out-of-class activities to expand the spatial and temporal scope of boxing teaching.

Keywords: Physical education; Colleges and universities; Boxing course; Teaching value; Teaching methods

1. Introduction

Boxing plays a positive role in the development of human potential. Yet, the development of boxing in China started late and the pace of boxing courses in colleges and universities lags behind many Western countries. The reason for this is that the full value of boxing has not yet been explored, and optimizing the curriculum system and carrying out teaching activities based on this value is essential. Therefore, this paper analyzes the multiple values of boxing courses in college physical education, and based on the results of the analysis, puts forward the basic methods to leverage the advantages of boxing and improve the content of boxing courses.

2. The value of boxing courses in college physical education teaching

2.1. Enrichment of curriculum content

Many college students lack the motivation to engage in sports. By incorporating boxing courses, which are already of interest to students, colleges can make this emerging sport a focal point of their physical education programs. This approach will capture students' attention and increase their enthusiasm for the course. At the same time, boxing is divided into two categories: professional boxing and amateur boxing, and many other

courses can be extended around the requirements of different boxing events, competition regulations, and forms of competition and performance. The content of the lessons can be further enriched, and it can also continuously mobilize students' enthusiasm [1].

2.2. Improvement of students' physical fitness

Boxing has high requirements for the individual's explosive force, physical flexibility, and coordination, so the teacher will carry out targeted teaching and training in the boxing class. Students can improve their physical quality through the normative guidance of teachers and coaches as well as regular study and training. For example, in boxing, individuals should have relatively stronger absolute strength, faster punching speed, and better body stability and flexibility. To achieve this, teachers typically conduct upper and lower limb strength training, core stability training, and reaction force training. After a long period of self-weighted and instrumental strength training, students' muscular endurance will be maintained at a high level; and through flexible training with more external stimulus sources, students can quickly judge the landing point of their opponent's punches, apply techniques and tactics according to the opponent's punching angle and strength, and adjust their punching strategy or body shape and footwork in a timely manner. In this kind of practice, students' body functions will be fully mobilized, and the body's strength, reaction, and flexibility potentials will be greatly developed. At the same time, practical investigations have shown that even if students only complete the basic physical and endurance training according to the teaching program, there will be significant increases in their lung capacity, body flexibility, and resistance strength.

2.3. Training of students' self-protection ability

Boxing is equivalent to hand-to-hand combat, the two sides of the sport are offensive and defensive confrontation, which has high physical requirements, individual reaction speed, and mental concentration. After continuous, disciplined boxing learning and training, the human brain will form a conditioned reflex, and the muscles will also acquire the memory of confrontation or recoil. In this way, once students encounter danger, their bodies can react quickly based on the results of their usual learning and training, and students will have a stronger self-protection ability. For example, teachers will often let students conduct one-to-one group training in boxing class, requiring students to react according to the distance and speed of the opponent's punches. This kind of training in "danger" will stimulate human potential and improve students' ability to anticipate and react to danger. Students will be able to react more easily when they encounter similar dangers in their lives. Continuous physical exercise will enhance students' endurance. In situations where they need to run or jump to avoid danger, their improved cardiorespiratory function and willpower can be crucial [2].

2.4. Implementing the fundamental task of cultivating moral integrity in colleges and universities

Lifelong learning is the primary teaching task of colleges and universities; and boxing, as a sport that can sharpen the will, beautify the body and mind, and promote friendship, naturally helps institutions to implement the fundamental task of lifelong learning and promote the teaching of civic and political education. For example, to achieve better athletic results, teachers in boxing courses will not only teach the basic techniques and organize practice sessions but also introduce other sports and exercise methods such as track and field, rope skipping, and gymnastics. They will require students to gradually increase the intensity of their exercises, challenging the limits of their bodies and wills. During the training process, students' perseverance and determination can be inspired by the spirit of struggle and an indomitable will. Teachers explain the organization of boxing matches and refereeing rules, requiring students to participate in intra-group or intra-

class matches or simulated matches. This approach helps cultivate students' moral qualities, such as modesty, courtesy, adherence to rules and coaches, and respect for opponents. These qualities, developed through boxing, contribute to a healthy outlook for college students.

3. The methods of leveraging the value of boxing courses in college physical education teaching

3.1. Offering boxing elective course

To give full play to the educational value of boxing courses, colleges and universities should first expand their coverage. Both general colleges and sports colleges and universities should base on the resource advantages of existing sports teaching and offer boxing elective courses. The courses should take into account the interests of students of different ages and bases in boxing, and set up basic interest courses and technical enhancement courses in a hierarchical manner. Instead of a single division of theoretical knowledge, practical training courses should be included. The goal of teaching is to let students fully understand the boxing culture, the origin and development of boxing, the current development of modern boxing, agree with and respect the rules of boxing and refereeing methods, and be able to watch and understand boxing matches.

The elective courses should be open to students of all grades to cater to different student needs. For example, assuming a student is in their second year of college but still need to strengthen their boxing foundation, they can choose to enroll in basic elective courses to continue consolidating their skills. Teachers will then judge the students' fundamentals through a period of teaching observation and performance evaluation, and recommend that students who have grown more rapidly or have a firmer grasp of boxing techniques take the Technical Enhancement Course in the second half of the course. In the technical enhancement class, the primary focus is on combination exercises, hand target hitting, and target holding. After a period of practice, students will be allowed to wear protective gear to participate in more dynamic drills. This approach helps students experience the enjoyment of learning boxing at different stages and facilitates the transformation of theoretical knowledge into practical sports skills [3].

3.2. Organizing boxing clubs

Club activities have always been a kind of after-school and on-campus activities that attract college students' interests; orderly club activities can help to stimulate students' enthusiasm for learning and exploring and turn after-school time into learning time, so as to improve their skills. Therefore, colleges and universities can also organize campus boxing clubs to leverage the value of boxing courses.

Unlike elective courses, the methods of boxing learning within the club are flexible, and students of different genders and basic levels can participate in it. Schools can provide guidance and assistance for the establishment of clubs and the development of club activities, such as hiring professional boxing teachers and coaches within the school as club instructors or inviting athletes and managers from boxing clubs outside the school as club teachers. Teachers, based on students' proposed plans for club activities, work with them to develop club activity programs and club boxing training class programs. In boxing learning, the instructor can use both online and offline means, such as offline one-on-one special techniques for club members, to provide them with ways to learn boxing knowledge and gain boxing skills according to students' individual differences; or using online remote observation and guidance to understand the daily training of the boxing club and to monitor and guide the training process of the students. Schools should also provide training venues for club activities and the necessary training equipment to support the school clubs under the premise of safety exchanges and competitions, broaden the horizons of students' boxing sports, and improve their boxing skills [4].

3.3. Forming professional sports teams

Professional sports teams that compete and win prizes not only boost students' pride and self-confidence in boxing but also enhance amateur boxing teaching and training activities. This, in turn, helps elevate the overall quality of boxing instruction at the school. Therefore, colleges and universities should also set up professional boxing teams around the requirements of the National University Boxing Championships.

Before forming the team, it is essential to conduct comprehensive and strategic planning. This includes defining the team size and equipping it with coaches, nutritionists, a medical team, and suitable training venues and equipment. Additionally, training plans should be developed in alignment with the competition schedule. One of the members of the sports team can be selected from the school. A strict and scientific assessment plan is developed in accordance with the standards of sports events. Students with outstanding physical quality, strong will, and a love of boxing are selected to join the sports team [5]. Secondly, excellent boxing talents can be selected from grassroots sports schools and added to school boxing. Thirdly, it is also possible to independently recruit athletes who have the certificate of national level 2 athletes and above, or who have achieved excellent results and outstanding performance in boxing events above the provincial level after the sports team is formed. The management mode of the sports team should be in line with the management mode and methods of boxing teams at the provincial level and above, reasonably arranging cultural classes, training classes, and rest time for the players, and providing indispensable medical and other services and guarantees. At the same time, schools should actively promote the boxing culture and sport on campus around the training achievements and tournament results of the sports team and organize campus cheerleaders to cheer for the school's boxers. It is also possible to form professional sports teams to participate in boxing elective classes regularly, so as to further enhance students' understanding of boxing through humanistic exchanges and interactions, and to give them a concrete and intuitive knowledge of the charm of boxing.

3.4. Use of virtual reality technology

Virtual reality (VR) technology can create a virtual environment without the limitations of actual teaching, make up for the shortcomings of the traditional teaching and training mode, and promote the innovation of boxing teaching. Therefore, colleges and universities should try to coordinate funds, technology, and other resources to promote VR technology in the boxing classroom.

Some examples include the use of desktop computers, VR glasses, VR all-in-one machines, strike pad training, and sparring training. Strike pad training involves students holding handles and striking illuminated spots on a humanoid target. The position and flashing frequency of these spots are randomized to enhance students' reaction time, improve punching speed, and increase training intensity by keeping their focus sharp [6]. As for the sparring training, two students wear VR glasses at the same time to enter the virtual match scene and practice sparring according to the time and rules of the match to improve students' motivation to train and reduce the fatigue of the body by mobilizing the brain. At the same time, the VR equipment will be connected to the big data platform, the data collected by the equipment terminal such as students' punching speed, reaction speed, heart rate, etc. will be calculated by the big platform, presenting the students' practice status and results when compared with the physical analysis and other models. Teachers will then adjust the training plan for the next stage by combining each student's age, physical foundation, and daily boxing learning.

3.5. Increasing the proportion of basic training

Since most students have no systematic contact with boxing before college, and their physical quality is relatively general, teachers should appropriately increase the proportion of basic training in boxing teaching in colleges and universities [7]. Through this basic training, students can adapt to the intensity of boxing, laying

a solid foundation for the sport. This gradual development of their skills ensures they build confidence and stamina without becoming overwhelmed or exhausted.

First of all, teachers and coaches should establish an ideal basic training system based on the academic situation, unify the training concept, and prepare and implement the basic training program in stages. For example, basic training can be divided into general physical training and special physical training. General physical training is divided into strength, endurance, speed, agility, flexibility, and other quality training. The use of training tools can be sit-ups, push-ups, 5 5-kilometer running, variable speed running, and a variety of stretching activities. Special physical training is divided into speed strength, strength endurance, anaerobic endurance, and reaction speed. The means of training may include rapid flat thrusts, lunge jumps, pulling elastic bands for punches, hitting moving hand targets, and alternating between interval training, circuit training, and complete training methods. Basic training can be done weekly, with 2–3 training events a week, progressing sequentially. For example, the first week could be air striking + live pairing training, prepped by jumping rope and dynamic stretching. The training would mainly consist of wearing boxing gloves and helmets for practical exercises. Teachers can allow students to jog or perform slow swing jump rope exercises for recovery. This decision should be based on visual observation or data monitoring to ensure that students have reached approximately 85% of the training intensity [8].

3.6. Integrating in-class and out-of-class activities

Effective use of boxing curriculum resources to improve teaching quality also requires adherence to the basic model of integrating in-class and out-of-class activities. That is, under the principles of interaction, supplementation, and effectiveness, the extension of the boxing curriculum is expanded [9].

For example, it is better to explain the rules of boxing in classroom teaching than to integrate in-class teaching with out-of-class observation of the match; before the class, students are informed of the main form, objectives, and content of this course through the activity list, and they are asked to preview the coursework and video on their own to understand the boxing match. At the beginning of the lesson, students travel to the arena to observe a boxing match. After the observation, students are required to write a report on their learning experience from a perspective of their choice. It can be written from the refereeing point of view, using the pre-course knowledge to analyze and discuss the refereeing results and methods of the match [10]. Students can also analyze and discuss the technical level and results of both fighters from the perspective of boxing technology application. Teachers then organize online discussions for students to communicate freely to create a positive atmosphere for open learning. It not only further stimulates students' interest in boxing, but also meets the boxing learning needs of different students.

4. Conclusion

To sum up, boxing has diversified values in physical education teaching in colleges and universities, so it is necessary for colleges and universities to adjust the teaching mode based on the value and advantages of boxing. Students can learn about boxing through a combination of in-class and out-of-class activities, as well as online and offline experiences. This approach helps generate interest and enthusiasm for sports, including boxing. Active participation in boxing not only enhances physical fitness but also improves exercise quality and fosters the development of valuable social skills.

Disclosure statement

The author declares no conflict of interest.

References

[1]   Yu Q, 2018, Research on the Value and Strategy of Setting Boxing Courses in Physical Education of Colleges and Universities. Guide to Happy Life, 2018(6): 11.

[2]   Luo M, 2021, The Necessity and Feasibility of Boxing in Colleges and Universities. Computer Purchasing, 2021(27): 178–180.

[3]   Li J, Lu X, Lv J, 2023, Value Connotation, Influencing Factors and Cultivation Path of Sports Health Literacy of College Students. Boxing and Fighting, 2023(13): 82–84.

[4]   Cao E, 2019, On Boxing under the Perspective of Core Values. Boxing and Fighting, 2019(18): 4.

[5]   Qiu T, Zhang Z, 2021, Research on the fitness value of boxing. Silk Road Vision, 2021(32): 63–64.

[6]   Qin Z, Sun Q, Yang X, 2023, Study on the Dilemma and Countermeasures for the Development of Ethnic Traditional Physical Education Courses in Universities in Jiangsu Province—Taking Nanjing University of Science and Technology as an Example. Contemporary Sports Science and Technology, 13(25): 134–137.

[7]   Li H, 2021, Research on the Characteristics and Development of Boxing Option Course in Physical Education of Higher Vocational Colleges and Universities. Science and Technology Wind, 2021(14): 54–55, 61.

[8]   Chen C, Yuan Z, 2022, Unity of Opposites and Unity of Attack and Defense: The Importance of Teaching and Training Measures of Attack and Defense Techniques in Boxing. Sports Pictorial, 2022(7): 26–27.

[9]   Wang J, Yu M, 2021, The Role and Strategy of Technical Sparring in Junior Boxing Teaching and Training. New Education Era Electronic Magazine (Teacher's Edition), 2021(31): 132–133.

[10]   Zhou A, 2021, Research on the Design and Application of Teaching Program of University Boxing Course. Tennis World, 2021(18): 107–108.

A Study on the Language Localization Process of English for Chinese Students Studying in the UK: A Case Study of Slang

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Abstract: With the end of the pandemic and a further increase in the number of Chinese students studying in the United Kingdom (UK), many Chinese students are confronted with a range of challenges in terms of English proficiency and cross-cultural shock. As the creativity of Internet cyber buzzwords is high, the occurrence and variability of slang are very high too. Through questionnaires and interviews with fifty-four Chinese international students on their use of slang in the UK, this study summarizes the characteristics of contemporary Chinese international students' learning and use of British slang and explores the relationship between the use of British slang and the language localization of Chinese international students. According to the results of this research, 70% of the interviewees have come into contact with British slang in their daily lives, but have not specifically studied or thought about its specific role in language localization, so the promotion of language localization by learning and using British slang is worthy of further study. This study provides researchers with a theoretical basis for optimizing the learning method of slang by Chinese international students and opens up ways to promote the language localization of international students.

Keywords: British slang; Overseas Chinese students; Language localization; International students in the UK

1. Introduction

Some scholars consider slang to be a varied lexical field of vivid words and phrases that embodies the characteristics of various social and professional groups when communicating within certain speech communities. Simultaneously, Baratovna also considers Slanguage to be a language characterized by slang, defined as a variety used by speech communities [1]. Although slang has been controversial for years, some linguists believe that the source of slang is a unit of various jargon, representing a collection of popular but unqualified words and phrases that are widely used in media language and colloquialism. Slang is always overlooked because of its lexicographic registration, but Rusfandi reckons that slang is integrated into the local culture and is part of it, and Guzel believes that slang is a rich source of linguistic innovation, with communicative effects, with its unique prosody and appropriate expression of stylistic characteristics [2,3].

Based on the prior studies, the term slang used in this study is defined as an informal language that is not commonly found in upper-class formal communication, is ubiquitous in mass life and entertainment, and is constantly enriched and expanded according to social development. Slang has the role of identity and can sometimes represent the expression style of certain social groups. Besides, the language localization process in this research only refers to the use of local language by foreign students who study in a non-native country. In the context of this research, the language localization process is the process by which Chinese students are not familiar with local English expressions at the beginning to be able to communicate in English authentically.

The large number of Chinese students in the UK has to face many cross-cultural conflicts, causing a challenging language localization process. Cross-cultural pressures are generally most acute when international students arrive in their destination country and diminish with the length of their studies. They may encounter challenges in the academic environment as they are unfamiliar with the education system. Another social challenge in the localization process is the language barrier, as English is a second language for international students. In a past survey, local students in the UK had the highest percentage of students obtaining a good degree at 69%, while only 34% of Chinese students received a good degree [3]. Language proficiency also has an impact on the loneliness of Chinese students, with the majority of Chinese students feeling lonely during their studies. Hence, this study aims to examine the situation of slang usage among international Chinese undergraduates who are studying in the UK and corresponding learning strategies to better localize within the UK.

2. Literature review

From a sociolinguistic perspective, slang is a complex, difficult, and unattainable linguistic phenomenon [3,4]. Its emergence is always caused by changes in the social, historical, and cultural life of different linguistic communities [3]. Although many linguists believe that slang is not very accepted in society, the use of slang expressions in movies, television, newspapers, and magazines has increased significantly in the lives of young people [2,5]. The interpersonal function is the most basic function of language, and as for the interpersonal social function of slang, the most important point is to promote communication between people [6]. The younger generation is using and creating slang more frequently. Students often use slang in writing in daily conversations through social networks and WhatsApp apps [7]. In recent decades, there has been more research on slang from a sociolinguistic perspective, and they are almost divided into two large categories.

The first category is the use of slang in the local language by native speakers in their motherland. This category has been studied in different countries, with the largest proportion of slang research, such as the United States. American slang is one of the language varieties in American English, which argues that American slang is characterized by humor, conciseness, originality, and stability [8]. The study conducted by Zhou found that two social functions of American slang exist in general American speakers, the first of which is the pursuit of self-identity, and the second is to express the emotional feelings of slang users for their psychological needs [6]. Regarding the slang usage of young people in Asia and Africa, Hendrajat studied the phenomenon of Indonesian university students being influenced by slang and argues that using slang increases Indonesian creativity, but also decreases the quality of Indonesian language formalism [9]. Similarly, in the sociolinguistic research of Egyptian slang conducted by Falaky, the social impact of Egyptian slang provides various opportunities for marginalized social groups to express their novelty and uniqueness [10]. In brief, the studies in the first category reveal that slang has local features when it is used by different language speakers, especially young native speakers.

The second category is about the use of slang by non-native language speakers. Pongsapan focused on the slang usage in Indonesian university students who are non-native English speakers in an English study program [11]. As for the reasons for the slang use, Pongsapan found seven reasons, and the prime reason is to create new words to enrich the language [3]. Laganhon compared the relationship between Philippine English as Foreign Language (EFL) students' familiarity with Facebook slang and their English writing and reading skills through a group study [9]. The results of the study indicated that there was no significant relationship between students' familiarity with Facebook slang and their reading and writing skills [12]. Dinçay suggests incorporating slang into the Turkish EFL classroom, which he believes is the only way to increase young learners' confidence and increase interactions with native speakers [13]. Murray argues that with correct knowledge of the language, it is difficult for second-language English students in foreign countries to understand the different cultural idioms, slang, and black languages that are so popular in today's American mass media [14]. Regarding international students, García shows that slang is a vocabulary known and mastered by native speaker groups, but little research has focused on the topic regarding the situation of non-native speakers of slang. García examines the level of knowledge of L2 learners of both English and Spanish and analyzes the impact of the study abroad period on the first group of learners. This study shows a higher level of ignorance of slang among Spanish L2 students [15].

Language reflects the features of the nation. The reflection can be seen in different aspects of a language system: vocabulary and sentences (including proverbs and slang). Intercultural barriers exist in terms of rich vocabulary and sentences. Although words and word meanings are almost identical, sentences made up of these words express different meanings. This is difficult for Chinese students to understand. As this study suggests, Chinese students are hindered in reading and everyday conversations that include slang [16]. Chinese scholar Wang studied the mistakes made by Chinese English learners when understanding unfamiliar English slang [17]. The study aimed at English majors in China, and although the research group is different from this article, Chinese students in English majors also face the problem of unfamiliarity with English slang in the next stage of their studies. To solve this dilemma, Wu used a similar research method to this study for non-English majors and proposed that English slang teaching in an English classroom in an appropriate way can help students deeply understand the cultural connotation and cultural differences in English vocabulary [18].

Previous studies have not mentioned the use of slang by Chinese international students in various countries, nor has there been any mention of the concept of language localization. Based on the increasing number of Chinese students in the UK, this research fills the gap on the impact of international students' use of slang on language localization.

3. Research question

(1) What are the features of student slang used by international Chinese undergraduates who are studying in the UK?
(2) How do Chinese students learn slang in the UK?
(3) What effect does slang have on localizing the UK for Chinese students?

4. Methodology

The study adopted mixed methods of quantitative and qualitative approaches. To be specific, questionnaires and semi-structured interviews were conducted. To obtain the most realistic and objective data, in the first stage, a macro survey of 51 Chinese students in the UK was conducted by a self-designed online questionnaire

to obtain the familiarity of Chinese students of different ages, genders and learning states with British slang. Simultaneously, the online questionnaire inquired them about their first acquaintance with British slang, the situation of learning slang and using slang, and then combine the self-comment of their language localization. In the second stage, to get more precise information, four international students with different duration of studying in the UK were selected to conduct a one-on-one interview, mainly focusing on the experience and impact of using slang in daily life, the specific process of learning slang, the reasons for choosing different slang learning methods as shown in **Table 1**.

The interview was conducted with the consent of the interviewees. The interviews were conducted in Chinese to bring the Chinese interviewees closer to each other so that they could better understand our questions. The questionnaires were distributed online and were mainly conducted on a one-to-one invitation basis. The interviewees consisted of 25 male students and 26 female students, including four students under the age of 18, 27 students aged 18 to 22, and 20 students aged over 22. More than half of them were completing undergraduate degrees, 15 were completing postgraduate degrees and eight were studying for a Doctor of Philosophy (PhD). 27 students had studied in London for one to three years, 10 students had studied in London for three to five years and 14 students had studied in London for more than five years. 45% of the respondents were studying arts, 41% were studying science and technology, and 11% were studying business.

Table 1. The demographic information of the four interviewees

Code	Age	Gender	University
Interviewee A	20	Male	University of Oxford
Interviewee B	22	Male	University College of London
Interviewee C	19	Female	University of Westminster
Interviewee D	22	Male	University College of London

5. Results and discussions

5.1. The features of student slang used by international Chinese students who are studying in London

The primary feature is that Chinese students are passive when it comes to studying and using London slang, although slang is related to social class, age, education, and ethnicity. According to the questionnaire, 78.43% of respondents had not learned slang specifically to integrate into British culture, even though 50.98% of them answered "yes" when they were asked about whether they had difficulties in communicating with local people if they cannot use slang. In the one-to-one interviews, respondents reported that the social impact of learning to use slang varies from person to person, as Interviewee C said "The social impact depends on the individual. Some people spend most of their time with their Chinese student friends, so it doesn't matter if they learn slang or not. But for me, it has an impact, if I know a few words I can talk to my friends with fewer barriers." By contrast, some international students are not affected by slang, as Interviewee D said "It doesn't affect me much. My friends are all Chinese people. I don't have any chance to use it. I do speak bilingually when I talk to my friends, but it's just some simple slang that I've used for a long time." Although the first time Interviewee D met slang was with locals, since most of Interviewee D's friends are Chinese, even if he ever encountered a situation where communication was affected because he had not mastered slang, it would only have a small impact and would not affect Interviewee D's normal social life. The situation in Interviewees C and D shows that if a Chinese student does not actively approach local people or seek more social interaction with local

people, then he or she has no need to use slang and will not learn it further. It means the factor of social patterns has a direct impact on the motivation of using slang.

5.2. The use of slang by Chinese students is affected by the spread of slang itself.

As shown in **Table 2**, the slang in the survey is divided into three categories from top to bottom, they are slang words that appear frequently in interviews or conversations among Chinese students and are commonly recommended by Chinese students. The remaining three series of samples are coming from the daily conversations of London locals and are recommended by London locals, but rarely used by Chinese international students. Slangs in the third group are the most unfamiliar group. In the survey, interviewees told us "The originality of nyash, is from the Nigerian language Yoruba, and we adopted it and used it here. People always say "she's got nyash/bunda." It's a kind of compliment. Compared with nyash, "muppet(s)" is often used by white people among English people (English people here means that more than just the nationality is British, such as being born in the UK, but not of this race). It's funny and rude, just like they often say somebody is silly or stupid, and people shouldn't be mad at it. There are five different words that London people use in daily life to express different kinds of stab, and they are increasing over time while English adopted more words from other usages, for example, "shank" is normally used when you are trying to kill someone using a knife or a sword. "Poke" is used to replace "stab" in some of the sentences like "I will poke you with a stick."

Table 2. The three groups of London slang samples

Group	Samples of slang	Familiarity 1-5 (Unfamiliar to familiar)
The initial group	Mate (peer)	3.86
	Innit	3.22
The second group	Clapped (very ugly)	2.25
	Buss me (pass me)	2.67
	On my ones (to be by oneself)	2.8
	Wet (cringe and weird/embarrassing)	2.75
The third group	Muppets (you clowns/you idiots)	2.1
	Cheff/shank/wet/poke/dag (to stab)	1.98
	Nyash/bunda (big bum)	1.84
	Average Score	2.61

According to Kerswill, mate and innit are two slang words that are widely known in the UK, especially among the young, meaning that studying in the UK have access to them. Hence, the first group includes these two slangs [19]. Innit means "isn't it," a British slang that was widely known and has been popular among young people in certain areas of the UK since the 1970s, followed by a long period of changes in which the use of innit grew. In later years, innit ceased to be a feature of a particular group and its status in slang has established that is now used by people of all classes [20].

"Mate" is used in a variety of contexts and has many different interpretations depending on the situation [8]. "Mate" in British context, is categorized as a nickname. Typically, the slang term "mate" is used to refer to male pals, although it is also used to refer to female friends [21]. Working-class boys in London led the use of "mate" and "men" to address others, and they function as pragmatic markers. When working-class London girls discussed other people's affairs, especially other girls, they also used this kind of address [19]. Similarly, in this research,

Interviewer A stated "Learning British slang does not affect my social life. Maybe I am surrounded by the upper class and everyone is civilized, but I can understand when people say slang." Middle and upper-class Chinese young people, especially those who have studied at high-ranking junior and senior high schools in the UK, they have been taught to use the language from an international perspective since they were young and have developed a mindset towards the use of slang. After surveying for 8 years, New Oriental found that many highly educated families support their children to study abroad, with a bachelor's degree or above accounting for more than 50% and 13.4% of parents who have studied abroad support their children to study abroad, which means that they have better economic conditions from the beginning [22].

When asked about whether young people use slang just because they think it is cool, Interviewer A explained that "slang is generally used by uneducated people, and the upper class knows better words. I don't think young people will learn slang because it's cool. Maybe some people will learn it to fit in with punks, or maybe your classmates talk like that, and some rap music you'll be exposed to." Almost all the young people around him use slang in their daily lives, but their parents seldom use it. Additionally, some old people use slang in purpose to fit in with the young people in England.

The second feature is that the familiarity of Chinese students with slang is affected by the time they spend in the UK. **Table 3** shows the familiarity of the same slang among Chinese students with different lengths of stay in the UK. From the data, it can be found that the familiarity with slang of the interviewed Chinese students tends to increase according to the length of study in the UK. These students have studied in the UK for different lengths of time and their familiarity with different slang is still influenced by the spread of the slang itself in **Table 2** as mentioned perviously.

Table 3. Comparison of dwell time and familiarity

Samples of slang	Stay in England (over five years)	Stay in England (three to five years)
Mate (peer)	4.86	4
Innit	4.64	3
Clapped (very ugly)	2.93	2.2
Buss me (pass me)	4.07	2.7
On my ones (to be by oneself)	4	2.9
Wet (cringe and weird/embarrassing)	4.14	2.3
Muppets (you clowns/you idiots)	2.86	2.3
Cheff/shank/wet/poke/dag (to stab)	2.5	2.3
Nyash/bunda (big bum)	2.14	2.3
Average score	3.57	2.69

Note: Familiarity 1 to 5 (Unfamiliar to familiar)

The third feature is that Chinese students learn London slang mainly through offline learning from local friends and online social media. According to the survey, 70.59% of Chinese students expressed they had met London slang in their daily lives. In addition to using social media, most Chinese students often learn about London slang from local friends in London. In one-to-one interviews, three respondents mentioned that the first they got to know London slang was through communication with local people. For instance, Interviewee A said, "My first exposure to London slang was playing in the yard with my neighbor's children when I was a child." As well as local people in London, London people in China are also spreading London slang, such as the

experience of Interviewee C who says "My science teacher was from London and he said slang every day, so was my English teacher and he would tell us some fun London slangs when we were chatting after class."

Table 4. The methods respondents used to learn slang

Methods	Percentage
Learn from a local friend	60.78%
Chinese students in UK	27.45%
Teachers and schools in the UK	11.76%
Social media platforms	62.75%
Video sites	49.02%

Additionally, a small number of Chinese students learn about London slang through their Chinese friends. Interviewer D said that he spends most of the time with Chinese students, "There is nothing I need to say about slang in my daily life. It is indeed bilingual when I talk to friends, but it is just some common, some ordinary, long-used words."

Most Chinese students thought they hadn't learned about slang through their schools and teachers in the UK. In response to this finding, the researcher inserted a relevant question in the one-to-one interviews, "Does learning London slang affect your academic writing or presentation?" Interviewee A states "Teachers have not recommended slang to students since secondary school, especially in public schools. I've used slang in academic writing before, but I'm not likely to make the mistake again. I was corrected by my English teacher at the time and I've been careful about using it since! Unless you want to act humor, but not my style." By contrast, Interviewee B declared, "Using slang in academic writing is not very useful, but presentation can sometimes be. However, you have to consider the possibility that the audience who are listening to your presentation may not understand your slang."

It revealed that most teachers prefer to use formal language to teach students and teach academic writing and presentation skills on formal occasions. It means that slang is not taught by teachers formally and needs to be acquired in society, such as by neighbors, local friends, and social media.

5.3. Chinese students have a clear selection preference when it comes to using Internet media to study UK slang

Table 5. The methods respondents used to learn slang

Social media platforms	Percentage
Instagram	84.31%
WhatsApp	52.94%
Twitter	23.53%
Snap chat	31.37%
Facebook	5.88%
Other	17.65%

The data in **Table 4** shows that 62.75% of Chinese students learn slang through social media platforms, so in **Table 5** we have selected current popular social media platforms, which include Instagram (1.386 billion

users), Facebook (2.85 billion users), YouTube (2.29 billion users) and WhatsApp (1.6 billion users), which is ranked as the fourth most popular social network. Manovich mentioned that in the five years from 2013 to 2017, Instagram grew by 630 million monthly active users [23]. According to the latest announcement from Facebook, Instagram's parent company, Instagram is now known to have 1 billion monthly active users (MAU) and 500 million daily active users (DAU). WhatsApp, a completely different style from Instagram, is also chosen by more than half of Chinese students in our survey. Interviewee A, in response to a question about the specific social media platform he encounters with slang most, "There is also Snapchat, but I refuse to use it because it sucks, bad interface design, limited functionality."

Surprisingly, only a few people chose Twitter, and only three people chose Facebook. For the situation why Chinese students do not use Facebook and Twitter, Interviewee A claimed that "Facebook is outdated and Twitter is very outdated, proprietary, and lack of freedom." Interviewee C said "I don't use Facebook. I'm probably more used to using Instagram and Twitter. Twitter is mainly used to see the pictures drawn about anime, Instagram is convenient, then there are more people of the same age using it, I feel that Facebook is more for middle-aged people." Interviewee D mentioned, "Facebook is out, Twitter is not good, I mainly read news that I can't find elsewhere." Aside from some mainstream media in Western countries, nine people offered other ways to learn slang, including the popular Chinese social media apps WeChat, Xiaohongshu, and Zhihu.

Table 6. Preference of video types

Video types	Percentage
Television (TV) series	39.22%
Movies	15.69%
Short videos	78.43%
Talk show	54.9%
Other	11.76%

The data in **Table 4** shows that 49.02% of Chinese students learn slang through video sites. The data in **Table 6** further analyses the types of videos Chinese students watch through. Of these, 78.43% of the respondents believe that they usually learn slang by brushing up on videos (cited by the amount of time spent on videos).

5.4. The detailed use of slang can promote the language localization of Chinese students in the UK

Table 7. The extent to which the use of British slang affects Chinese students

Impact extent	Percentage
No impact	0%
Weak impact	17.65%
Moderate impact	35.29%
Strong impact	25.49%
Significant impact	21.57%

Table 7 shows Chinese students' evaluation of whether learning to use slang helped them integrate into

the local culture. Most of the respondents thought that learning to use slang had a moderate or greater effect on their integration into the local culture, and no respondents thought that learning to use slang did not affect their integration into the local culture. Only nine respondents thought that learning to use slang had little effect on their integration into the local culture, and they said that they had never learned slang to integrate into the local culture, so it is easy to see that the extent of the effect is influenced by the respondents' own subjective awareness and social habits.

Table 8. Chinese students' evaluation of their localization

Degree of localization	Percentage
Low	17.65%
Poor	13.73%
Moderate	39.22%
Good	27.45%
High	1.96%

According to **Table 8**, nine respondents said they felt they had a low level of localization, five of them had lived in London for less than a year and seven of them said they had never encountered any British slang before. For the nine slang words on the questionnaire, their familiarity level was almost all around 1.2, and they had all been exposed to British slang exclusively on the internet. They hardly used slang in real life and had never learned it to fit in with the native British culture. Fifteen respondents said they felt they had a high or good level of localization, eight of them had lived in the UK for more than five years, 13 thought they had encountered British slang in their day-to-day life, and their familiarity with "mate" and "innit" was almost close to 5. Also, they had come across British slang through British friends, and nearly half of them had deliberately tried to learn British slang.

Globalization has come a long way in the world, and the problem of foreigners localizing in foreign languages is becoming more serious. Preece examines the linguistic diversity of minority undergraduates at a new London university, there is an exploration of how the students adopt bidialectal identity positions to contrast the standard English practices of the academic community with the vernacular English language (slang) practices of their peers [24]. The study demonstrates the impact of learning slang on students' social and multilingual identity.

6. Conclusion

This study focuses on three aspects of Chinese students in London: the characteristics of using slang, learning styles, and the impact of learning slang on Chinese students' language localization. In the process of obtaining research data, this study selected 51 Chinese international students in London and conducted a questionnaire survey to address the core issues. To obtain the core information more intuitively, four Chinese international students were interviewed about learning and using slang in the UK, and two other local students were interviewed about the relationship between slang, youth culture, and class. By summarizing the research of other scholars in the same field, together with the research results of this study, the following points are presented.

The study found that Chinese students studying English slang in the UK have four main characteristics. Initially, Chinese students are passive in learning and using London slang, even though slang is related to social

class, age, education, and ethnicity. Chinese students seldom learn London slang actively, and always discover and implicitly learn how to use slang when they are passively exposed to it. The use of slang by Chinese students is influenced by the spread of the slang itself. The degree of Chinese students' familiarity with slang is influenced by the people who use it, for example, slang that is popular among Britain people is likely to be unknown to Chinese students due to the limitations of their social circles. Additionally, Chinese students' familiarity with slang is also affected by the familiarity of the vocabulary involved in slang.

Chinese students learn British slang mainly through offline learning with local friends and online social media. Chinese students have a clear choice of preference when using internet media to learn British slang, with Instagram and WhatsApp dominating in particular, while Chinese students who use Facebook and Twitter to learn slang are few. Furthermore, learning and using slang can promote the language localization of Chinese students in the UK, and proactively reaching out and finding ways to learn slang can accelerate the language localization process of Chinese students.

This study has obtained the characteristics, ways, and roles of Chinese international students in learning and using British slang, which fills the gap of current related research, provides practical examples for Chinese international students who want to learn and use London slang, and provides a theoretical basis for scholars who want to study Chinese international students and language localization. The next stage of research should focus more on finding innovative and efficient ways to help Chinese students learn slang.

Disclosure statement

The author declares no conflict of interest.

References

[1]   Baratovna HD, 2021, Youth Slang in the Speech of Modern Students. Galaxy International Interdisciplinary Research Journal, 9(12): 272–276.

[2]   Kurniati E, Rusfandi R, 2020, The Use of Slang on EFL Students' Instagram Statuses: Do They Perceive It Essential? 2nd Annual Conference on Social Science and Humanities (ANCOSH 2020) - Advances in Social Science, Education and Humanities Research, 542: 106–109.

[3]   Mattiello E, 2005, The Pervasiveness of Slang in Standard and Non-Standard English. Semantic Scholar, 2005: 7–41.

[4]   Sabbagh AR, 2018, A Close Look at the Function of Slang. Undercurrents: A Journal of Undergraduate Composition, viewed August 13, 2024. https://blogs.umb.edu/undercurrents/2018/08/05/a-close-look-at-the-function-of-slang/

[5]   Maitland J, 1891, The American Slang Dictionary. R.J. Kittredge and Co., Chicago.

[6]   Zhou Y, Fan Y, 2013, A Sociolinguistic Study of American Slang. Theory and Practice in Language Studies, 3(12): 2209–2213. https://doi.org/10.4304/tpls.3.12.2209-2213

[7]   Hasanah V, 2022, A Study of English Slang Words Used by 8th Semester Students in Daily Conversations Through Social Network at English Study Program of FKIP UIR, thesis, Universitas Islam Riau.

[8]   Rendle-Short J, 2009, 'Mate' as a Term of Address in Ordinary Interaction. Journal of Pragmatics, 42(5): 1201–1218. https://doi.org/10.1016/j.pragma.2009.09.013

[9]   Hendrajat E, Zahrok S, Subali E, et al., 2023, The Impact of Slang Usage on Indonesian from a Sociolinguistic Perspective, Journal of Development Research, 7(1): 104–109. https://doi.org/10.28926/jdr.v7i1.302

[10] Falaky MSE, 2015, Yes We Are: A Sociolinguistic Study of Egyptian Slang, International Journal of Language and Literature, 4(2): 75–84.

[11] Pongsapan NP, 2022, An Analysis of Slang Language Used in English Students Interaction, Jurnal Onoma:

Pendidikan, Bahasa, Dan Sastera, 8(2): 917–924. https://doi.org/10.30605/onoma.v8i2.2359

[12] Laganhon, MLA, Amador D, Flores K, et al., 2023, Familiarity of Facebook Slang Words and Reading and Writing Practices of BA English Students. International Journal of Social Science And Human Research, 6(3): 1392–1400. https://doi.org/10.47191/ijsshr/v6-i3-07

[13] Dincay T, 2012, Why Not Teach Slang in the Classroom? Dil Dergisi, 2012(155): 24–34. https://doi.org/10.1501/Dilder_0000000164

[14] Murray R, 2016, The Acceptance of Slang and Ebonics as Proper Language as Used in American Media and the Affect on the Foreign Language Student. International Scientific And Practical Correspondence Conference of Teachers and Postgraduate Students "Competence Potential of the Discipline Foreign Language at Non-Linguistic Faculties in the Conditions of Integrative Education" Pskov, 2016: 173–179.

[15] Garcia EB, 2017, Slang Knowledge Among Non-Native Students of English and Spanish, thesis, Universitat Jaume I.

[16] Lin W, 2004, A Study on Cross-Cultural Barriers in Reading of English. Asian EFL Journal, 6(2): 3.

[17] Wang H, Lu M, 2022, Annual Report on the Development of Chinese Students Studying Abroad No. 8. Social Science Literature Press, China.

[18] Wu L, 2015, Teaching of English Slang in Class and its Influence on the Study of English Learners, thesis, Shanxi Normal University.

[19] Kerswill P, 2013, Identity, Ethnicity and Place: the Construction of Youth Language in London. Space in Language and Linguistics, 128–164.

[20] Pichler, H. (2021) Grammaticalization and Language Contact in a Discourse-Pragmatic Change in Progress: The Spread of innit in London English. Language in Society, 50(5): 723–761. https://doi.org/10.1017/S0047404521000257

[21] Agsa J, Ambalegin A, 2020, The Form of Slang Terms in the "Kingsman: the Golden Circle" Movie. Linguistic English Education and Art (LEEA), 3(2): 400–413.

[22] New Oriental School, 2022, The 2022 White Cover Book on Chinese Students Studying Abroad. New Oriental Vision Overseas.

[23] Manovich L, 2017, Instagram and Contemporary Image, viewed June 25, 2023. https://manovich.net/content/04-projects/165-instagram-and-contemporary-image/instagram_book_manovich_2017.pdf

[24] Preece S, 2009, Multilingual Identities in Higher Education: Negotiating the 'Mother Tongue', 'Posh' and 'Slang'. Language and Education, 24(1): 21–39. https://doi.org/10.1080/09500780903194036

Footwork Training Path in Tennis Technique

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Abstract: In modern tennis, more than 70% of lost points are often due to inadequate footwork. As the saying goes, the technique is the foundation, but footwork is the key. Without proper footwork, even the best technique cannot fully exploit competitive advantage. This paper examines the footwork training path in tennis technique, aiming to provide a reference for China's tennis coaches and professional talent training organizations. The goal is to further enhance China's tennis player development system and to produce high-quality tennis athletic talents for the sports world.

Keywords: Tennis technique; Footwork training; Lateral movement; Forward movement; Meter movement

1. Introduction

Since the first National Games in 1950, China officially recognized tennis as an official sport. Within a short period, provinces and cities across China developed a systematic tennis player cultivation system, achieving notable results in world-class competitions. However, compared to Europe and the United States, China's tennis development started later and faces challenges, including differences in the athletes' physical qualities. There remains a gap between China's tennis training system and those of traditional powerhouses like the United States. Footwork training, a crucial element in tennis, is an area that requires significant attention from Chinese players. Therefore, studying the training paths for tennis footwork is a valuable endeavor to improve China's tennis training system and enhance the technical level of its athletes.

2. The influence of footwork training on tennis players' skills

In competitive tennis, footwork determines whether players can move quickly and efficiently into position for effective shots and tactical execution. Analyzing this further, the impact of footwork training on tennis players' skills includes improved court coverage ability, stroke stability and power, enhanced mental resilience and court presence, and injury prevention.

2.1. Improve athletes' field coverage ability

The tennis court is a large area and during competitive matches, the opponent's strokes may be spread all over

the court in various areas. Excellent footwork enables players to move quickly to the optimal hitting point in a short time to execute a return. Through high-frequency, multi-directional footwork practice, athletes gradually develop the ability to move swiftly and position accurately, enabling them to better adapt to different tactical changes of opponents in competitive matches.

2.2. Improve the stability and power of hitting

Good footwork will improve the stability and power of the athlete's stroke. Reasonable footwork can ensure that the athlete's posture and center of gravity are highly stable at the moment of hitting the ball and enhance the strength of hitting the ball through the smooth movement of the body. The coordination of footwork and body posture can maximize the muscle strength and joint flexibility of the player so that every shot has more power and accuracy.

2.3. Enhancement of psychological quality and field adaptability

Footwork training has the effect of improving the athletes' psychological quality and field adaptability. In the process of high-intensity footwork training, athletes need to deal with rapidly changing movements and directions, hence long-term training will improve athletes' reaction speed and instantaneous judgment. This kind of demanding footwork contact can not only enhance athletes' physical fitness but also effectively refine their psychological quality so that they always maintain a confident and calm mindset in a high-pressure competitive environment [1].

3. Research object and pre-test data

3.1. Research object

This study involved 40 athletes from the tennis department of a sports center, consisting of 20 males and 20 females, all of whom have been engaged in tennis training for over a year. Before the experiment, the athletes were tested on their footwork skills, including forward-moving strokes, lateral-moving strokes, and metric footwork movements.

Firstly, specialized coaches administered a test where they sent 20 balls to the athletes in four different directions from a fixed point. The athletes were required to use forward, lateral, and backward footwork during the stroke, and the coaches recorded the number of balls hit within the boundaries.

Secondly, the 5 m return run and meter-fixed route exercises were timed, and technical scoring was applied to evaluate the footwork during various movement phases. This was done to assess the appropriateness of different footwork techniques used by the athletes in various directions.

Finally, a meter-fixed route movement time test was conducted to analyze the athletes' proficiency in applying different footwork techniques. The scoring was carried out by professional athletes from sports schools.

In terms of statistical methods, the scores of the three kinds of footwork were counted, and the score was "+1" given if the ball was hit within the boundary during movement. The athletes' footwork scores were documented in a table, and the time taken for the meter-fixed route movement was recorded. After collecting the raw data, Microsoft Excel and Statistical Package for the Social Sciences (SPSS25.0) were used for data analysis and processing to obtain accurate statistical results.

3.2. Hitting the ball within the boundary test while moving

Table 1 shows the statistics of the results of the 40 research subjects' pre-experimental hitting within boundary

while moving test:

Table 1. Results of hitting the ball within the boundary while moving test ($N = 40$)

Sex	Test indicator	Test results
	Forward movement	6.35 ± 2.33
Male ($N = 20$)	Lateral movement	6.12 ± 1.83
	Backward movement	6.05 ± 1.65
	Forward movement	5.62 ± 2.22
Female ($N = 20$)	Lateral movement	5.12 ± 1.83
	Backward movement	6.02 ± 1.63

During the test, the coach and the athlete worked in pairs, with the coach sending a ball near the net and another high ball to the backcourt. The athlete needed to move back and forth to hit the ball at the net and the baseline. Based on the pre-test in **Table 1**, it can observed that in the forward movement hitting test, the scores for male and female athletes were 6.35 and 5.62, respectively. In the side-to-side movement hitting pre-test, the scores were 6.12 for males and 5.12 for females, while in the backward movement hitting pre-test, the scores were 6.05 for males and 6.02 for females.

3.3. Evaluation of the application of three footwork techniques

Table 2 shows the pre-test data of the rationality of three types of footwork.

Table 2. The results of the rationality of three types of footwork test ($N = 40$)

Sex	Test indicator	Test results
	Forward movement	7.52 ± 0.32
Male ($N = 20$)	Lateral movement	7.05 ± 0.33
	Backward movement	7.88 ± 0.47
	Forward movement	8.12 ± 0.42
Female ($N = 20$)	Lateral movement	7.03 ± 0.22
	Backward movement	8.02 ± 0.41

The rationality of the athletes' footwork was assessed by two professional athletes from the School of Physical Education. During the assessment, the reasonableness, accuracy, and consistency of the footwork used by the athletes during movement were evaluated using a 10-point system. The main aspects observed included running, sliding, padding, cross-stepping, crunching, jumping, and other tennis footwork techniques.

3.4. Meter movement time test

A comparison of the time taken for a fixed-route movement over a distance of one meter was conducted with 40 athletes. The statistical results of the pre-test are shown in **Table 3**.

Table 3. Results of meter-fixed movement time test ($N = 40$)

Sex	Test indicator	Test results
Male ($N = 20$)	Traveling time	75.86 ± 3.18
Female ($N = 20$)	Traveling time	72.55 ± 5.97

Based on the results of **Table 3**, it can be concluded that the average time for completing the fixed-route movement is 75.86 s for male athletes and 79.55 s for female athletes.

4. Training path

This study proposes a training path focusing on basic physical quality development for athletes, including lateral, forward, backward, and forward-backward step movements, to enhance their overall footwork ability.

4.1. Basic physical quality training

The basic physical quality aims to improve the sensitivity and speed quality of tennis players during various footwork use.

4.1.1. Sensitivity training

Sensitivity training includes two forms: rope ladder training and rubber band reaction training. During the rope ladder training, the coach lays out the ladder on the ground, and athletes use various steps (such as single-legged jumps and crossover steps) to quickly traverse the ladder, focusing on speed and accuracy. In the rubber band reaction training, the coach attaches a tennis ball to one end of a rubber band. The athlete stands in a fixed position and uses their hands or feet to quickly respond to the sudden changes in the rubber band's direction.

4.1.2. Speed quality training

Speed quality training includes sprinting and shuttle running. In the sprinting and starting training, athletes perform short-distance sprints ranging from 30 m to 50 m, with a focus on starting response and initial acceleration. High-intensity sprints are conducted in intervals to improve explosive power. For shuttle running training, coaches set up multiple markers on the field, spaced 5 m to 10 m apart. Athletes run quickly and change direction rapidly within the designated path to cover the specified distance [2].

4.2. Lateral movement footwork training

Lateral movement footwork practice includes two types of exercises: lateral movement with a ball and lateral movement without a ball. Lateral movement without a ball includes using side-sliding steps and obstacle side step exercises designed to enhance coordination and speed in basic footwork. During training, two markers were set up 5.0 m apart. Athletes moved quickly between the markers using side-sliding steps, maintaining a low center of gravity and slight knee bend to ensure consistent movement and footwork. The training consisted of 3 sets of 10 round trips each. For the obstacle side step exercise, cones were placed as obstacles in a zigzag pattern on the field. Athletes navigated around each cone, focusing on maintaining footwork continuity and stability.

Lateral movement with a ball focuses on using lateral movement to hit the ball, combining lateral movement simulation with quick direction changes. During lateral movement hitting, the coach threw the ball from various positions while athletes moved sideways to hit it. After each hit, athletes quickly returned to the

ready position for the next hit. Training involved 10 strokes per set, with 4 sets in total. Lateral movement simulation involved continuous left and right movements while hitting the ball, maintaining ball quality under high intensity. This training lasted 5 minutes per set, with 3 sets in total. For the lateral quick change of direction exercise, the coach directed athletes to move sideways and hit the ball based on random instructions, requiring quick responses to execute the corresponding movements. Training involved 10 direction changes per set, with 3 sets in total [3].

4.3. Forward movement step training

Forward movement step training includes sprint running inspired by football practice. During the training, the coach held a tennis ball at the penalty line and the players were positioned at the baseline. When the coach dropped the ball from shoulder height, the athletes sprinted forward to catch it. Athletes were required to catch the ball 5 times each in front, to the right front, and to the left front. Additionally, the training included 50 m sprints with a racket, with each session consisting of 3 sets, with 3 sprints per set.

4.4. Backward moving step training

During backward moving step training, the athlete stood in the middle of the serving line on the tennis court, holding a tennis ball. The trainer placed one tennis ball each at the left foot, right foot, and baseline focus. The athlete then moved backward, using a side step to the left foot to exchange the tennis ball with the one on the ground. Next, the athlete moved to the right foot to exchange the tennis ball again, then to the midpoint of the baseline to exchange the tennis ball with an adjusting step, and finally returned to the starting point. This completes one set of the exercise. The training is performed in 3 sets each time.

4.5. Comprehensive training of forward and backward moving steps

In the comprehensive training of forward and backward moving steps, coaches and athletes start by facing each other. The coaches send balls to the front of the net and retrieve high balls from the backcourt. Athletes must move quickly back and forth between the net and the baseline to hit the ball. During this period, athletes are required to use the cross-running method [4].

5. Analysis of test results

After 40 athletes completed a two-month training program based on this regimen, their ability to hit the ball within the boundaries, the rationality of their use of the three types of mobile footwork, and their performance in the metric movement were tested. The results are shown in **Table 4** to **Table 6**.

Table 4. Test results of hitting the ball within boundary while moving before and after the experiment ($N = 40$)

Sex	Test indicator	Pre-test results	Post-test results	p-value
Male ($N = 20$)	Forward movement	6.35 ± 2.33	7.68 ± 1.12	0.0312
	Lateral movement	6.12 ± 1.83	8.46 ± 1.98	0.0275
	Backward movement	6.05 ± 1.65	7.39 ± 1.12	0.0126
Female ($N = 20$)	Forward movement	5.62 ± 2.22	6.88 ± 1.72	0.0483
	Lateral movement	5.12 ± 1.83	7.53 ± 1.57	0.0076
	Backward movement	6.02 ± 1.63	6.38 ± 1.65	0.0432

Table 5. Rationality test results of the three types of footwork before and after the experiment ($N = 40$)

Sex	Test indicator	Pre-test results	Post-test results	*p*-value
Male ($N = 20$)	Forward movement	7.52 ± 0.32	7.62 ± 0.44	0.0046
	Lateral movement	7.05 ± 0.33	7.48 ± 0.23	0.0125
	Backward movement	7.88 ± 0.47	8.14 ± 0.43	0.0173
Female ($N = 20$)	Forward movement	8.12 ± 0.42	8.56 ± 0.37	0.0018
	Lateral movement	7.03 ± 0.22	7.61 ± 0.22	0.0112
	Backward movement	8.02 ± 0.41	8.21 ± 0.50	0.0132

Table 6. Test results of meter-fixed movement time before and after the experiment ($N=40$)

Sex	Test indicator	Pre-test results	Post-test results	*p*-value
Male ($N = 20$)	Traveling time	75.86 ± 3.18	71.16 ± 8.23	0.0265
Female ($N = 20$)	Traveling time	79.55 ± 5.97	74.88 ± 3.12	0.0315

Based on the data analysis in **Table 4** to **Table 6**, after a two-month footwork training program following the present protocol, the results showed significant improvement in hitting the ball within the boundary while moving for both 20 male and 20 female athletes. There were notable improvements in forward, lateral, and backward movements ($p < 0.05$). Female athletes showed a particularly significant enhancement in lateral movement, improving from 0.12 to 7.53 ($p < 0.01$). Additionally, the rationality of using the three types of footwork improved significantly for all 40 athletes after the training, especially in the forward movement test, with a very significant difference observed, and the results for male and female athletes were comparable ($p < 0.01$). Finally, the meter-fixed route movement times for both male and female athletes were significantly reduced post-training ($p < 0.05$).

6. Conclusion

Based on the two-month training of 40 tennis players using the proposed footwork training program, it can be concluded that performance in hitting the ball within the boundary while moving, the rationality of using the three types of footwork, and the meter-fixed route movement times were all significantly improved. This demonstrates the feasibility of the training program outlined in this paper. Tennis coaches should emphasize footwork training in their programs and consider using the proposed training program in conjunction with the athletes' specific needs and conditions to enhance their overall competitive level.

Disclosure statement

The author declares no conflict of interest.

References

[1]   Chen W, 2023, The Practice of Footwork Training in Tennis Training[J]. Tennis World, 2023(12): 86–88.

[2]   Yin H, Kim IJ, 2023, Application Strategy of Footwork Training in College Tennis Teaching. Tennis World, 2023(06): 93–95.

[3] Kang H, 2021, Practical Research on Tennis Footwork Training in Colleges and Universities. Boxing and Fighting, 2021(11): 98–100.

[4] Zhou X, Yang Z, 2020, The Application of Migration Phenomenon in the Teaching of Tennis Warm-Up Activities—Taking the Means of Football Footwork Practice as an Example. Hubei Sports Science and Technology, 39(06): 561–564.

The Correlation between Bullying, Academic Emotion and Teacher Support in Baccalaureate Nursing Education

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Abstract: *Objective:* To investigate and analyze the relationship between bullying, academic emotion, and teacher support in the nursing education of undergraduate nursing students. *Methods:* A convenient sampling method was adopted by conducting a questionnaire survey on undergraduate nursing students of a university from October 2022 to December 2022. Spearman's correlation was used to analyze the relationship between bullying, academic emotions, and teacher support of nursing students, with a significance level of $\alpha = 0.05$. *Results:* The total score for educational bullying was 12.51 ± 8.71, the total academic emotional score was 284.25 ± 34.69, and the total teacher support score was 80.76 ± 14.39. A negative correlation was found between nursing students' bullying and teacher support, $s = -0.20$, $P < 0.01$, while a positive correlation was observed between academic emotion and teacher support, $s = 0.21$, $P < 0.01$. Additionally, bullying in nursing education was positively correlated with academic emotion, $s = 0.25$, $P < 0.01$. *Conclusion:* The academic emotion and teacher support of nursing students are at a moderate level. Part of the challenges in nursing survival is due to bullying in nursing education. Nursing educators should prioritize the stable development of nursing staff.

Keywords: Teacher support; Bullying behaviors in nursing education; Academic emotion

1. Introduction

Bullying behaviors in nursing education are negative actions experienced by nursing students in the educational environment, and there is no consensus on the prevalence of bullying in nursing education in China [1]. Bullying behavior seriously affects the physical, psychological, and mental health of the victims, leading to symptoms such as anxiety, depression, low self-esteem, and in severe cases, post-traumatic stress disorder and suicidal behaviors [2]. The impact of this traumatic experience on nursing students evolves over time, not only straining interpersonal relationships, and diminishing academic performance and health, but also causing long-term negative effects on their careers, career play a role, leading to increased turnover rates and adverse nursing events [3–5]. Teacher support has been shown to effectively buffer the adverse effects of bullying, improving students' academic emotions and stabilizing the nursing workforce [6,7]. Currently, there is insufficient attention

to bullying in nursing education in China. To better understand whether nursing students experience bullying during their education and to support the stable development of the nursing workforce, a survey was conducted involving 344 undergraduate nursing students in a university. The results are reported as follows.

2. Objects and methods

2.1. Subjects of the survey

Between September 2022 and December 2022, 344 undergraduate nursing students of a university in Henan Province were selected as research subjects by convenience sampling method. Inclusion criteria were: (1) age ≧ 18; (2) undergraduate nursing major; (3) voluntary participation. The exclusion criteria were: (1) Invalid responses to the questionnaire; (2) current use of anti-anxiety or anti-depressant medications.

2.2. Research tools

2.2.1. General information questionnaire

Developed by the researchers based on a review of the literature, it includes information on the respondent's age, gender, grade, place of origin, personality, monthly family income, and parent's education level, among other factors.

2.2.2. Teacher support scale

The scale consists of 19 items across three dimensions and uses a Likert 6-point scale, ranging from "not at all conforming" to "fully conforming," with higher scores indicating stronger perceived teacher support. The internal consistency coefficient of the scale was 0.878, and the Cronbach's α of the scale was 0.927 in this study [8].

2.2.3. Academic Emotions Questionnaire (AEQ)

Developed by Ma Huixia, the scale consists of 88 items across four dimensions and uses a Likert 5-point scale, with five grades ranging from "not at all in line" to "fully in line," with higher ratings indicating stronger academic emotions. The Cronbach's α of the scale ranged from 0.641 to 0.887, and the Cronbach's α of this study was 0.931 [9].

2.2.4. Bullying Behaviors in Nursing Education Scale (BBNE)

Compiled by Cerit *et al.* and translated by Wang *et al.* [10]. The scale consists of 18 items across four dimensions and uses a Likert 5-point scale with five grades ranging from "never" to "always," with higher ratings indicating a greater sense of bullying in nursing education. The Cronbach's α of the scale was 0.921, and the Cronbach's α of the scale in this study was 0.938.

2.3. Data collection

From September 2022 to December 2022, a questionnaire survey was conducted on nursing students in the medical department of a university in Henan Province, using three scales: academic emotions, teacher support, and nursing education bullying behavior. Of the 355 questionnaires distributed, 344 were returned as valid, resulting in an effective response rate of 96.9%.

2.4. Statistical methods

Statistical Package for the Social Sciences (SPSS) 20.0 software was used, and the measurement data were expressed as " ± s," and the correlation between variables was tested by Spearman's correlation, with a test

level of $\alpha = 0.05$.

2.5. Ethical principles

The study followed the principles of favorable harmlessness, informed consent, and confidentiality and was carried out after obtaining the consent of the respondents.

3. Results

3.1. General information situation

There were 55 males (16.0%) and 288 females (84.0%), including 2 freshmen (0.6%), 139 sophomores (40.5%), 114 juniors (33.2%), and 88 seniors (25.7%).

3.2. Nursing students' perceptions of nursing education bullying, academic emotions, and teacher support total scores

The total score for nursing education bullying perceptions was 12.51 ± 8.71, which includes the following sub-scores: academic aggression at 4.12 ± 2.59, educational environment isolation at 2.67 ± 2.42, personality aggression at 3.99 ± 3.19, and direct negative behavior at 1.73 ± 2.07. The total academic mood score was 284.25 ± 34.69 and the total perceived teacher support score was 80.76 ± 14.39. See **Table 1**.

Table 1. Perception score of nursing students bullying, academic mood score, and teacher support score ($\bar{x} \pm s$)

Project	Score
Educational bullying sense total score	12.51 ± 8.71
Academic aggression	4.12 ± 2.59
Educational environment isolation	2.67 ± 2.42
Personality aggression	3.99 ± 3.19
Direct negative behavior	1.73 ± 2.07
Total teacher support score	80.76 ± 14.39
Total academic emotional score	284.25 ± 34.69

3.3. Correlation analysis of nursing students' perception of nursing education bullying, academic emotions, and teacher support

Nursing students' perception of nursing education bullying was negatively correlated with teacher support, $s = -0.20$, $P < 0.01$. Academic mood was positively correlated with teacher support, $s = 0.21$, $P < 0.01$, and perception of nursing education bullying was positively correlated with academic mood, $s = 0.25$, $P < 0.01$. See **Table 2**.

Table 2. Correlation analysis of nursing students' perception of nursing education bullying, academic mood, and teacher support (s)

	Nursing education bullying feelings	Academic emotions	Teacher support
Nursing education bullying feelings	1		
Academic emotions	0.25	1	
Teacher support	-.20**	0.21	1

Note: ** is $P < 0.01$.

3.4. Correlation analysis of nursing students' academic mood and scores of each dimension with perception of nursing education bullying

Nursing students' academic mood was positively correlated with their perception of nursing education bullying, $s = 0.25$, $P < 0.01$. The negative high arousal dimension and negative low arousal dimension were positively correlated with the perception of nursing education bullying, $s = 0.32$, $s = 0.36$, $P < 0.01$, while the positive high arousal dimension and positive low arousal dimension were negatively correlated with it, $s = -0.21$, $s = -0.19$, $P < 0.01$. See **Table 3**.

Table 3. Correlation analysis of nursing students' academic mood and scores of each dimension with perception of nursing education bullying ($s = -0.21$)

	Nursing education bullying feelings	Academic mood	Negative high arousal dimension	Negative low arousal dimension	Positive high arousal dimension	Positive low arousal dimension
Nursing education bullying feelings	1					
Academic mood	0.25**	1				
Negative high arousal dimension	0.32**	0.89**	1			
Negative low arousal dimension	0.36**	0.64**	0.71**	1		
Positive high arousal dimension	-0.21**	0.29**	0.03**	-0.39**	1	
Positive low arousal dimension	-0.19**	0.29**	-0.05*	-0.25**	0.75**	1

Note: ** is $P < 0.01$.

4. Discussion

4.1. The current situation of nursing students' perception of nursing education bullying

The survey results indicated that the total score for nursing students' perception of nursing education bullying was 12.51 ± 8.71. Approximately 37.5% of nursing students reported experiencing nursing education bullying, which is lower than findings from Wang *et al.* [11]. This discrepancy may be due to differences in the stages of the survey respondents. Intern nursing students, facing significant role transition, experience greater role pressure and a more complex clinical environment, leading to a higher perception of bullying compared to the study population [12]. Despite this, undergraduate nursing students in this study did report experiencing nursing education bullying, a traumatic experience that can contribute to instability in the nursing workforce and significant turnover [13]. Data show that the healthcare sector loses up to $200 billion due to nursing shortages caused by bullying [14]. As nursing students are crucial to the future of healthcare, their stability directly impacts the healthy development of healthcare systems and costs. Therefore, nursing educators should enhance their educational practices and address the issue of nursing education bullying to support the healthy and stable development of the nursing workforce.

4.2. Nursing students' perceptions of nursing education bullying, academic mood, and teacher support are closely related

This study found that nursing students' perception of nursing education bullying was negatively correlated with teacher support, $s = -0.20$, $P < 0.01$. Bullying experiences can lead to emotional isolation and helplessness, such as low self-esteem, despair, and loneliness, resulting in heightened psychological sensitivity [15].

Teachers, as one of the closest contacts for students, play a crucial role in preventing and intervening in school bullying [16]. Teacher support acts as a protective factor against nursing education bullying among nursing students [6], effectively improving students' academic mood, learning engagement, and self-regulation [17–19]. It is also effective in alleviating students' negative moods, enhancing nursing skill competence, and professional identity [20–22], and maintaining the stable development of the nursing workforce [7]. In this study, students' academic emotions were positively correlated with teacher support ($s = 0.21$, $P < 0.01$), but the correlation was much lower than that of Li's study [23]. This discrepancy may be due to the mediating effect of the sense of bullying, which may weaken the correlation between the two variables.

Additionally, this study found a positive correlation between nursing students' perception of nursing education and academic mood, $s = 0.25$, $P < 0.01$. This result contradicts the pre-existing hypothesis that higher perceptions of bullying would lead to lower academic mood. Literature indicates that a sense of bullying typically affects academic performance and reduces learning ability [24]. It is possible that the bullying experienced by students stimulates a reverse increase in academic mood, leading to differing results. The increase in academic mood observed in this study was predominantly in negative arousal ($s = 0.36$, $P < 0.01$), which might explain the weaker correlation between academic mood and teacher support, a conjecture that warrants further investigation.

5. Conclusion

Nursing students may experience bullying behavior during their nursing education, and nursing educators should address this issue and provide additional faculty support to maintain the health of the nursing workforce. This study investigated only nursing students at a single university, which limits the sample size and representativeness of the findings. Additionally, the weak correlation between variables suggests the potential influence of other confounding factors, such as mediating variables, which require further investigation.

Disclosure statement

The authors declare no conflict of interest.

References

[1]   Cerit K, Keskin ST, Ekici D, 2018, Development of Instrument of Bullying Behaviors in Nursing Education based on Structured Equation Modeling. Asian Nurs Res, 12(4): 245–250.

[2]   Di Y, Jiang R, Zhou M, et al., 2012, A Retrospective Study of Bullying Behavior and Suicidal Ideation Among College Freshmen. Chinese Journal of Health Psychology, 20(08): 1260–1262.

[3]   Bajet JB, Alquwez N, 2021, Psychometric Properties of the Arabic Version of the Bullying Behaviours Instrument in Nursing Education. J Taibah Univ Med Sci, 16(3): 440–447.

[4]   Lee YJ, Bernstein K, Lee M, et al., 2014, Bullying in the Nursing Workplace: Applying Evidence Using a Conceptual Framework. Nurs Econ, 32(5): 255–67.

[5]   Arnetz JE, Neufcourt L, et al., 2022, Nurse-Reported Bullying and Documented Adverse Patient Events: an Exploratory Study in a US Hospital. Journal of Nursing Care Quality, 35(3): 206–212.

[6]   Luo Z, Li L, 2021, The Relationship Between Middle School Students' Sense of Safety, Perceived Teacher Support, and Traditional Bullying Behaviour. Occupation and Health, 37(09): 1247–1251 + 1256.

[7]   Guo W, Su M, 2021, A Study on the Impact of Teacher Support on College Students' Learning Engagement in Online

Learning Space—Based on the Mediating Role of Academic Self-Efficacy. Educational Theory and Practice, 41(30): 50–54.

[8] Ouyang D, 2005, A Study of the Relationship Between Teacher Expectations, Academic Self-Concept, Students' Perceived Teacher Supportive Behaviours and Academic Achievement, thesis, Guangxi Normal University.

[9] Ma H, 2008, Development of a General Academic Mood Questionnaire for College Students. Chinese Journal of Clinical Psychology, 16(06): 594–596 + 593.

[10] Wang F, Wang M, Liu B, et al, 2021, Sinicisation and Reliability Test of the Nursing Education Bullying Perception Scale. Journal of Nursing, 36(02): 58–61.

[11] Wang F, 2020, The Chinese Version of the Bullying Behaviour Scale for Nursing Students and its Preliminary Application to Nursing Interns, thesis, Henan University.

[12] Huang Y, Li C, Chen D, et al., 2023, Analysis of the Current Situation and Influencing Factors of 234 Undergraduate Nursing Students in Nursing Education Who Suffered from Bullying. Journal of Nursing, 30(14): 1–6.

[13] Smith CR, Gillespie GL, Brown KC, et al., 2016, Seeing Students Squirm: Nursing Students' Experiences of Bullying Behaviors During Clinical Rotations. J Nurs Educ, 55(9): 505–513.

[14] Balevre SM, Balevre PS, Chesire DJ, 2018, Nursing Professional Development Anti-Bullying Projects. J Nurses Prof Dev, 34(5): 277–282.

[15] Condon BB, 2015, Incivility as Bullying in Nursing Educations. Nurs Sci Quart, 28(1): 21–26.

[16] Zeng L, 2022, The Relationship Between Teacher Support and School Bullying: The Mediating Role of Trait Emotional Intelligence. Chinese Journal of Health Psychology, 30(10): 1524–1529.

[17] Burr J, Beck DGL, 2019, The Relationship of Emotions and Burnout to Medical Students' Academic Performance. Teach Learn Med, 31(5): 479–486.

[18] Luan L, Dong Y, Liu J, 2022, A Study on the Impact of Instructor Support Strategies on College Students' Commitment to Online Learning. Modern Education Technology, 32(03): 119–126.

[19] Liu B, 2018, Research on the Impact and Intervention of Teaching Interaction on College Students' Online Self-Regulated Learning, thesis, Shaanxi Normal University.

[20] Zhang L, Li X, 2022, The Effects of Parental Autonomy Support and Teacher Autonomy Support on Adolescent Mental Health: the Mediating Role of Psychological Flexibility. Educational Theory and Practice, 42(17): 12–16.

[21] Wang W, Xu H, Wang B, et al., 2019, The Mediating Effects of Learning Motivation on the Association between Perceived Stress and Positive-Deactivating Academic Emotions in Nursing Students Undergoing Skills Training. J Korean Acad Nurs, 49(4): 495–504.

[22] Wu Y, Yu L, Wang A, et al., 2021, Mediating Effects of Nursing Students' Clinical Placement Stress in Perceived Teacher Support and Professional Identity. Guangxi Medicine, 43(14): 1741–1745.

[23] Li R, Lv L, Du N, et al., 2022, Correlation Between Online Academic Emotions and Perceived Faculty Emotional Support Among Undergraduate Nursing Students. Chinese Nursing Education, 19(10): 898–902.

[24] Riffle LN, Kelly KM, Demaray ML, et al., 2021, Associations Among Bullying Role Behaviors and Academic Performance Over the Course of an Academic Year for Boys and Girls. J School Psychol, 86: 49–63.

Harmonizing Code and Canvas: The Role of Generative AI in Aesthetic Education for Vocational Students

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Abstract: This paper delves into the pivotal role of generative artificial intelligence (AI) within vocational aesthetic education, specifically focusing on its capacity to augment artistic expression and cultivate technical proficiency. As AI undergoes continuous evolution, it catalyzes significant transformations in educational paradigms by amalgamating creativity with digital acumen, thereby equipping the workforce with adeptness in navigating technologically driven landscapes. The study critically examines how AI reconfigures educational frameworks, enriching learning experiences through tailored, collaborative, and globally oriented approaches. Additionally, it scrutinizes the ethical, pragmatic, and pedagogical hurdles intrinsic to AI integration, encompassing concerns such as data privacy, bias mitigation, and the imperative for perpetual curriculum innovation and educator empowerment. The findings underscore that the realization of AI's potential in advancing vocational aesthetic education hinges upon strategic deployment, ongoing evaluation, and inclusive discourse among all educational stakeholders, ensuring alignment with educational objectives and responsiveness to global labor market exigencies. This analysis underscores AI's capacity to optimize educational outcomes and equip students for a multifaceted and evolving future, advocating for proactive and inclusive strategies to harness AI's advantages within educational milieus.

Keywords: Generative artificial intelligence; Aesthetic education; Vocational education; Artistic expression; Skill acquisition

1. Introduction

The advent of generative artificial intelligence (AI) heralds a significant paradigm shift in educational methodologies, particularly within the sphere of aesthetic education [1–3]. This paper delves into the transformative influence of generative AI on aesthetic education frameworks in vocational training settings, with a focus on its dual utility for enhancing artistic expression and technical skill acquisition.

Defined by its capacity to autonomously generate novel content from extensive data inputs, generative AI offers unprecedented opportunities for creative exploration [4]. In vocational educational contexts, where practical skill development is paramount, AI not only augments the creative process but also prepares students for a future dominated by digital fluency [5]. However, this technological integration is fraught with challenges, including ethical quandaries and the necessity for innovative teaching strategies [6].

The relevance of this inquiry is underscored by its potential to provide educators, curriculum designers, and policymakers with critical insights into effective AI utilization for optimizing educational outcomes in the arts [7]. This investigation aims to thoroughly assess how AI can act as a facilitative tool in aesthetic education, enhancing both the creative and vocational capabilities of students.

This paper is structured, beginning with an extensive review of existing literature on the application of generative AI in various educational contexts. Subsequently, it will delve into the theoretical frameworks that justify integrating AI into aesthetic education. The later sections will explore AI's specific roles and impacts, confront the challenges it presents, and propose directions for its integration into educational practices. This layout allows for a thorough exploration of AI's transformative potential in aesthetic education, particularly within vocational training environments.

This paper finally seeks to elucidate the symbiotic relationship between advanced technology and artistic pedagogy in vocational settings, encapsulated in the conceptual fusion of "code" and "canvas." By dissecting the strategic incorporation of AI into educational practices, it aims to highlight how such technologies can enrich learning experiences and equip students with the skills necessary for navigating the complexities of a rapidly evolving professional environment.

2. Literature review

This section delves into the significant literature regarding the application of generative AI in both creative and educational spheres, highlighting how these technological advances are redefining aesthetic education and integrating seamlessly with established arts education.

2.1. Generative AI in creative contexts

The influence of AI in creative domains is profound, transforming artistic expression and educational approaches [8]. Studies indicate that advanced technologies like deep learning algorithms and neural networks are being harnessed to create innovative forms of art, music, and literature, thereby extending the frontiers of traditional creative processes [9–11]. Within educational settings, AI plays a pivotal role in developing customized learning environments and interactive tools that enhance creativity among students [12]. Further analysis, such as Ragot *et al.* and Utz and DiPaola highlight the utility of AI-generated artworks as pedagogical resources, enriching students' grasp of art history and creative practices [13,14].

2.2. Aesthetic education theories

Muzyka *et al.* have profoundly influenced aesthetic education, emphasizing the critical role of the arts in developing sensory and emotional capacities that are crucial for personal and cognitive growth [15]. Advocating for experiential learning, other scholars have championed direct, active engagement with artistic works. However, the emergence of digital technologies, particularly AI, is reshaping these established educational frameworks [16–18]. Fan and Zhong examined how AI is revolutionizing the way students interact with and interpret art, introducing innovative methods that broaden and enrich these engagements [19]. This shift in aesthetic education is not merely expanding the reach but also enhancing the depth of educational experiences

through the integration of advanced technological methods [20].

2.3. Technology and artistic integration

The integration of technology within arts education is not a novel concept, as evidenced by the historical use of film and television in educational settings. However, the advent of AI introduces a novel dimension to this integration. Contemporary theoretical models, such as those articulated by Aris *et al.*, posit that AI can function both as a medium and a method within the realm of artistic creation and critique [21]. These models advocate for AI's capability to seamlessly integrate technical skills with creative pursuits, thereby enriching the educational landscape for students [22]. Moreover, scholarly discussions extend beyond AI's utility in creating digital art; they explore its capacity to enable more profound analytical and interpretative experiences of artwork through advanced interactive technologies [23].

The literature review reveals a dynamic interplay between generative AI, aesthetic education, and the integration of technology in the arts, highlighting significant advancements and the broadening of educational and creative horizons. However, despite these insights, there remains a notable gap in the comprehensive understanding of how these technologies are practically implemented within vocational training environments specifically. Much of the existing research focuses on theoretical potential or isolated case studies without addressing the systemic integration of AI into curricula that cater to vocational students' unique needs.

The gap between theory and practice in educational technology underscores the significance of this investigation, which endeavors to meld theoretical frameworks with tangible applications. This research conducts a thorough exploration of how AI can simultaneously foster creativity and enhance technical skills in vocational education settings. By delving into this intersection, the study contributes a nuanced view of the academic discourse on technological integration in education. It provides critical insights into the adept use of AI tools that not only augment aesthetic education but also bolster practical training. This work aims to not only advance academic discussions but also offer practical guidance for educators, curriculum planners, and policymakers dedicated to effectively weaving these technologies into educational structures.

3. Role of generative AI in aesthetic education for vocational students

This section scrutinizes the transformative impact of generative AI in refining aesthetic education for vocational learners. As educational institutions increasingly deploy advanced AI technologies, they catalyze significant enhancements in student creativity and collaboration. These technological tools are crucial for fostering a workforce adept at navigating a digitally enriched professional landscape.

3.1. Theoretical framework

The incorporation of generative AI into aesthetic educational practices is underpinned by a hybrid theoretical approach that integrates educational psychology, advances in technology, and vocational training objectives. Diverging from traditional educational tools, generative AI actively engages in the educational dynamics, serving as a robust catalyst in the learning process. This methodology is anchored in constructivist learning theories, which advocate for an immersive, hands-on learning experience enriched by AI interaction. It also incorporates digital pedagogy principles, highlighting the indispensable role of cutting-edge technology in augmenting educational effectiveness. By positioning AI at the core of educational strategies, this framework not only boosts the interactive quality of learning experiences but also ensures they are more aligned with evolving professional demands.

3.2. Creative facilitation

Generative AI significantly boosts the creative abilities of vocational students by incorporating a range of tools that not only simplify but also refine the entire artistic process. This technological adoption enriches students' engagement, allowing them to delve deeply into both innovative expressions and extensive artistic explorations. For instance, in design and visualization realms, AI algorithms lend a hand by crafting complex designs and visualizations that marry historical insights with current trends. These AI tools advise on color schemes, layouts, and design elements, empowering students to either refresh traditional styles or create completely new artworks.

Additionally, generative AI's capabilities extend to simulation and modeling, especially beneficial in areas like architectural design and fashion. In these disciplines, AI aids in the virtual visualization and testing of materials and settings, promoting a broad exploration of creative concepts without the usual limits set by physical resources. This feature not only conserves materials but also speeds up the experimental stages of creative projects, allowing students to refine their designs through fast-paced iterations. This process of iterative creativity is supported by AI's ability to swiftly produce various iterations of a concept, encouraging a deep dive into a myriad of creative possibilities.

AI tools are also equipped with dynamic feedback mechanisms that actively transform the learning landscape. These systems deliver critiques in real time, each tailored to a wide range of aesthetic standards, which is instrumental for students as they refine their artistic techniques. This on-the-spot guidance is essential—it not only helps students adjust their creative methods but also illuminates subtle areas for improvement that might otherwise go unnoticed. Moreover, these AI systems extend the reach of learning by demystifying complex artistic techniques, making them accessible and manageable for students across all skill levels and physical capabilities. This inclusivity ensures that every student has opportunities to engage deeply with the artistic process and develop their skills effectively.

For educators, generative AI acts as an invaluable ally by serving as a co-instructor. It supplies comprehensive analytics about each student's creative journey and progress, which enables educators to tailor their instructional approaches with greater precision. This customization not only advances personalized learning but also assures that educational strategies are aligned accurately with each student's unique needs and learning styles.

3.3. Personalization of learning

In the varied world of vocational education, where students come with distinct career ambitions and varied educational histories, the customization capabilities of AI stand out as a game changer. By tapping into a wealth of data from student interactions, AI systems are tailored to individualize the learning journey, adjusting content and its presentation to meet each student's specific needs. This flexible approach doesn't just cater to different learning styles; it also ensures that the course content is directly relevant to the precise skills required across various vocational disciplines.

For instance, in a graphic design program, AI can track each student's progress with design tools and concepts, adjusting project difficulty and providing targeted resources as needed. This responsive system keeps students consistently challenged, encouraging continuous engagement and steady advancement. Similarly, in technical fields like automotive mechanics, AI-powered simulations introduce a series of diagnostic challenges that replicate real-life issues, gradually increasing in complexity. This method allows students to build their problem-solving skills progressively, in scenarios that closely simulate actual work environments.

Beyond adapting to individual competencies, AI significantly shapes career-oriented learning pathways.

By analyzing labor market trends and the evolving demands of specific industries, AI systems can recommend specialized courses and skills training that directly correlate with students' intended career paths. This targeted educational strategy ensures that learning is not only relevant but also pragmatically applicable to students' future professional environments, thereby boosting their motivation and engagement.

Integrating augmented reality (AR) and virtual reality (VR) with AI-driven tools significantly enriches the educational landscape. These technologies immerse students in interactive and controlled virtual environments where they can tackle complex vocational tasks without the usual risks or costs. For instance, students in electrical engineering or plumbing can use VR simulations to practice detailed installations and repairs. This safe, virtual practice space allows them to hone their skills confidently and efficiently.

In addition to these immersive experiences, AI plays a crucial role in mentoring. Through natural language processing, AI mentors provide tailored feedback, advice, and emotional support that align with each student's current progress and specific circumstances. This tailored mentorship does more than refine skills—it boosts confidence and fosters a nurturing learning environment that is essential for student success in vocational training programs.

By leveraging these sophisticated capabilities, AI revolutionizes vocational education into a highly adaptive and personalized journey, effectively equipping students for the demands of their chosen careers. This strategic application of AI not only optimizes educational outcomes but also significantly improves student satisfaction and retention, which are critical for the success of vocational programs.

3.4. Collaborative learning

Generative AI profoundly transforms the collaborative learning environment within vocational education, particularly within aesthetic disciplines, by providing advanced tools that facilitate both synchronous and asynchronous interactions. These AI-powered platforms allow students in fields such as graphic design, multimedia arts, and other creative sectors to engage in real-time activities like brainstorming on digital whiteboards and editing projects collaboratively, irrespective of their physical locations. This flexibility is crucial for students who often juggle academic schedules with internships or part-time creative roles, enabling them to participate in group projects at their convenience.

AI also bolsters team dynamics, particularly in environments focused on creative education. It taps into detailed analyses of each student's unique strengths and educational background, assigning roles within group projects that best utilize their individual artistic and technical skills. This strategy not only enhances the overall effectiveness of the team but also cultivates an environment ripe for creative growth and learning. Moreover, the AI continuously oversees and fine-tunes team interactions, suggesting improvements that can lead to better harmony and increased productivity among group members. Such active management of team dynamics ensures that collaborative artistic endeavors are well-balanced and supportive, making them ideal spaces for creative exploration and development.

In addition to improving team collaboration, AI provides students with realistic simulated work environments that mirror the challenges found in actual creative projects. For example, students enrolled in vocational courses like interior design or architecture might find themselves navigating virtual project sites. Here, they collaboratively tackle design challenges, manage resources, and ensure compliance with aesthetic standards. These simulations are intricately designed to reflect the complex and unpredictable nature of real-world artistic endeavors, offering students vital practice in handling creative pressures and making collaborative decisions. This type of simulation is invaluable, as it prepares students to navigate the complexities of professional artistic environments, fostering skills that are crucial for their future careers in the creative

industries.

Furthermore, AI systems significantly advance the learning experience by establishing an ongoing feedback mechanism. They meticulously evaluate both individual learners and entire groups, providing detailed critiques focused on enhancing communication skills, resolving conflicts, and embracing diverse artistic perspectives. This precise feedback is crucial for developing the collaborative skills that are essential in today's creative industries.

Additionally, AI-driven tools facilitate global connections, exposing students to a wider array of international artistic norms and practices. This global exposure is vital in a job market that increasingly values cross-cultural collaborations and understands diverse artistic expressions, preparing students to effectively engage and succeed in international creative ventures.

Through these integrated approaches, generative AI does not merely enhance the collaborative capabilities of vocational students in aesthetic fields but also thoroughly prepares them for the complexities of modern creative professions. This seamless integration of advanced technology into educational settings not only improves educational outcomes but also equips students with the interpersonal and professional skills essential for their future artistic careers.

The previous sections have delineated the transformative role of generative AI in aesthetic education, particularly within vocational training contexts. AI technology fosters dynamic team environments, engages students in detailed immersive simulations, and supports personalized learning trajectories essential for cultivating both artistic sensibilities and technical proficiencies. By incorporating advanced tools such as AR, VR, and sophisticated AI-driven feedback mechanisms, this technology equips students to navigate the complexities of modern creative professions effectively. It prepares them comprehensively for the challenges of a globally interconnected job market. The subsequent section will delve into the broader implications of embedding AI within vocational aesthetic education frameworks. It will scrutinize potential challenges and critical considerations, aiming to enrich our understanding of AI's optimal integration strategies. This discussion will ensure that the deployment of AI technologies not only maximizes educational outcomes but also addresses ethical, practical, and pedagogical issues effectively.

4. Implications and considerations

The adoption of generative AI within vocational aesthetic education introduces a complex array of implications that necessitates scrutiny. This section delves into the ethical, practical, and pedagogical challenges integral to effectively harnessing AI in these educational settings. It aims to outline the necessary considerations that educators, policymakers, and technologists must evaluate to ensure that AI integration is conducted ethically, effectively, and with a clear educational purpose.

4.1. Ethical considerations

As we integrate artificial intelligence into aesthetic education programs, safeguarding student data emerges as a paramount concern. Institutions dedicated to the arts must implement robust data protection strategies to ensure that students' personal and creative work remains secure. Moreover, the risk of AI systems reflecting societal biases presents a unique challenge in fields driven by subjective interpretation and creative expression. Art and design schools must deploy AI algorithms that are transparent and continually assessed for fairness. This vigilant approach helps prevent any unintentional reinforcement of biases that could influence artistic evaluation and student success. Regular oversight and adjustments to these algorithms are essential to ensure they enrich the educational landscape, promoting an equitable learning environment where all students can

thrive creatively.

4.2. Practical challenges

Successfully implementing AI within vocational arts education necessitates not only robust technological infrastructure but also a dynamic approach to curriculum development. Institutions must prioritize significant investments in high-quality hardware and reliable internet access to accommodate AI functionalities effectively. Additionally, the rapid pace of AI technology development demands that educational curricula are adaptable, incorporating new technological advancements as they become available. This requirement extends to educator training—ensuring that instructors are well-equipped to integrate AI tools into their teaching practices requires continuous professional development focused on the intersection of technology and educational methodology.

4.3. Pedagogical adjustments

Adopting AI within educational settings, particularly in the arts, calls for a profound revision of existing teaching methodologies. Educators must not only refine their technical acumen but also deeply embed these sophisticated tools into their teaching practices. This evolution in pedagogy demands carefully designed professional development programs that blend contemporary technological applications with traditional educational strategies. These programs should empower educators to think creatively and modify their teaching approaches dynamically, incorporating AI as a core element of the curriculum rather than merely an adjunct resource. By doing so, they can create enriching learning environments that promote both creative inquiry and technical proficiency, utilizing AI to enhance the educational experience profoundly.

4.4. Preparing for a globalized job market

In the realm of aesthetic education within vocational settings, AI-driven tools are pivotal for enabling global collaboration and exposing students to international artistic standards and practices. As the global job market becomes increasingly interconnected, educators need to cultivate intercultural competencies among students. Integrating global artistic trends and cultural insights into the curriculum equips students for cross-cultural collaborations and opens up international career opportunities, ensuring they are well-prepared to navigate and succeed in diverse, multinational environments.

4.5. Long-term sustainability

For AI to effectively benefit aesthetic and vocational education, institutions must be committed to ongoing evaluation and flexibility. It's essential to build structured frameworks for continuous assessment, which will scrutinize the impacts of AI on how educators teach and students learn. These assessments should leverage solid empirical data, embrace extensive feedback from all involved in the educational process, and remain attuned to the shifting landscapes of the creative industries. By instituting a regular cycle of updates and refinements, educational institutions can ensure AI tools not only retain their relevance but also actively contribute to enriching the educational environment. This ongoing process of review and enhancement is crucial for perpetually improving student preparedness and securing enduring educational advancements.

This section delved into ethical concerns such as safeguarding data privacy and combating algorithmic bias, alongside practical challenges like upgrading infrastructure and revising curricula. Such discussions underscore the critical need for a carefully strategized approach to the integration of AI in educational settings. Additionally, it spotlighted the necessary pedagogical shifts, advocating for educators to adeptly weave AI into creative educational frameworks. Moving forward, we will consolidate these insights and formulate strategic recommendations that aim not merely to augment the educational landscape but to align it with the expansive

goals of preparing students for an increasingly globalized job market. The concluding segment will distill the core themes explored throughout this paper and chart a future course for AI's role in advancing educational practices.

5. Conclusions

The discussions within this paper have highlighted a significant shift in educational approaches, particularly through the use of generative AI in vocational aesthetic education. This concluding section draws together the ethical, practical, and pedagogical considerations discussed earlier to project a future path for AI's role in educational systems.

Generative AI offers remarkable potential to transform aesthetic education, merging creative and technical skills development in ways uniquely suited to the modern workforce's needs. This technology's integration into vocational programs not only broadens the scope of artistic and technical instruction but also equips students to succeed in a diverse, globally interconnected professional world. AI tools enhance learning by breaking through the confines of traditional education settings, promoting intercultural skills, and enabling worldwide collaboration.

However, the introduction of AI technologies into the educational systems brings significant challenges. Ethically, the utmost importance must be placed on protecting student data and addressing biases that AI systems may perpetuate. Practically, deploying AI effectively calls for a robust technological foundation and continuous updates to educational content, which require a committed investment and strategic foresight. Pedagogically, AI necessitates a fundamental shift in how education is delivered, pushing educators to continuously refine their methods and adapt to new teaching models.

Looking forward, it is imperative for educational institutions to actively shape the integration of AI into teaching and learning processes. This involves establishing continuous evaluation mechanisms to refine AI applications, ensuring they remain aligned with educational goals and responsive to the evolving needs of the academic community. Moreover, fostering a multidisciplinary dialogue among educators, technologists, policymakers, and students is essential for leveraging AI to its fullest potential in aesthetic education. Such collaborative efforts will ensure that AI not only enhances educational practices but also progresses in harmony with broader educational and societal objectives. Embracing this proactive and inclusive strategy will enable the effective and ethical transformation of educational landscapes through AI.

In conclusion, as artificial intelligence advances, its careful integration into vocational aesthetic education promises to reshape educational practices and outcomes profoundly. Addressing both the challenges and opportunities that AI presents is crucial for educational institutions aiming to leverage it as a force for innovation and a foundational tool for student preparation in a diverse and evolving global landscape. This endeavor will demand a dedicated commitment to ongoing enhancement and collaborative efforts, ensuring that the merger of technology and artistic expression within educational settings not only bolsters learning but also catalyzes creativity and innovation across society.

Funding

Disclosure statement

The authors declare no conflict of interest.

References

[1] Epstein Z, Hertzmann A, et al., 2023, Art and the Science of Generative AI. Science, 380(6650): 1110–1111.

[2] Yang J, Zhang H, 2024, Development And Challenges of Generative Artificial Intelligence in Education and Art. Highlights in Science, Engineering and Technology, 85: 1334–1347.

[3] Zhou E, Lee D, 2024, Generative Artificial Intelligence, Human Creativity, and Art. PNAS Nexus, 3(3): 052.

[4] Resnick M, 2024, Generative AI and Creative Learning: Concerns, Opportunities, and Choices. MIT Exploration of Generative AI. https://doi.org/10.21428/e4baedd9.cf3e35e5

[5] Spöttl G, Windelband L, 2021, The 4th Industrial Revolution—Its Impact on Vocational Skills. Journal of Education and Work, 34(1): 29–52.

[6] Ma J, 2019, The Challenge and Development of Vocational Education Under the Background of Artificial Intelligence. 2019 5th International Conference on Humanities and Social Science Research (ICHSSR 2019), 2019: 522–525.

[7] Holmes W, Tuomi I, 2022, State of the Art and Practice in AI in Education. European Journal of Education, 57(4): 542–570.

[8] Chung JJY, 2022, Artistic User Expressions in AI-Powered Creativity Support Tools. Adjunct Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology, 2022: 1–4.

[9] Avdeeff M, 2019, Artificial intelligence and Popular Music: SKYGGE, Flow Machines, and the Audio Uncanny Valley. Arts, 2019: 130.

[10] Deruty E, Grachten M, Lattner S, et al., 2022, On the Development and Practice of AI Technology for Contemporary Popular Music Production. Transactions of the International Society for Music Information Retrieval, 5(1): 35–50.

[11] Miller AI, 2019, The Artist in the Machine: The World of AI-Powered Creativit. The MIT Press, Massachusetts.

[12] Chen L, Chen P, Lin Z, 2020, Artificial Intelligence in Education: A Review. IEEE Access, 8: 75264–75278.

[13] Ragot M, Martin N, Cojean S, 2020, AI-Generated Vs. Human Artworks: A Perception Bias Towards Artificial Intelligence? Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems, 2020: 1–10.

[14] Utz V, Dipaola S, 2021, Exploring the Application of AI-Generated Artworks for the Study of Aesthetic Processing. 2021 IEEE 4th International Conference on Multimedia Information Processing and Retrieval (MIPR), 2021: 393–398.

[15] Muzyka O, Lopatiuk Y, Belinska T, et al., 2021, Modern Aesthetic Education and its Further Directions. Linguistics and Culture Review, 5(S4): 12–21.

[16] Zhang W, Shankar A, Antonidoss A, 2022, Modern Art Education and Teaching Based on Artificial Intelligence. Journal of Interconnection Networks, 22(Supp01): 2141005.

[17] Leonard N, 2020, Entanglement Art Education: Factoring Artificial Intelligence and Nonhumans Into Future Art Curricula. Art Education, 73(4): 22–28.

[18] How ML, Hung WLD, 2019, Educing AI-Thinking in Science, Technology, Engineering, Arts, and Mathematics (STEAM) Education. Education Sciences, 9(3): 184.

[19] Fan X, Zhong X, 2022, Artificial Intelligence-Based Creative Thinking Skill Analysis Model Using Human-Computer Interaction in Art Design Teaching. Computers and Electrical Engineering, 100: 107957.

[20] Li Y, Sun R, 2023, Innovations of Music and Aesthetic Education Courses Using Intelligent Technologies. Education and Information Technologies, 2023, 28(10): 13665–13688.

[21] Aris S, Aeini B, Nosrati S, 2023, A Digital Aesthetics? Artificial Intelligence and the Future of the Art. Journal of Cyberspace Studies, 7(2): 219–236.

[22] Tang T, Li P, Tang Q, 2022, New Strategies and Practices of Design Education Under the Background of Artificial Intelligence Technology: Online Animation Design Studio. Frontiers in Psychology, 13: 767295.

[23] Cetinic E, She J, 2022, Understanding and Creating Art With AI: Review and Outlook. ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM), 18(2): 1–22.

Global Competency Development for Graduate Students from the Perspective of Internationalization at Home

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Abstract: With the advancement of economic globalization, cultivating globally competent international talents has become a key task for domestic universities. As international exchanges gradually return to pre-pandemic levels, the post-pandemic era has introduced challenges due to reduced cross-border movement, making cross-border educational exchanges more difficult to implement. In this context, "internalization at home" becomes crucial for developing internationalized talent. It offers a cost-effective approach and is particularly important as global competence is a core quality for such talents. This study aims to review and analyze relevant practices both domestically and internationally, using specific cases from various universities to discuss global competency training programs for postgraduates and to provide recommendations for advancing internationalization in China's higher education sector.

Keywords: Global competence; Internationalization at home; Graduate students

1. Introduction

Currently, the world is experiencing accelerated changes, with the ongoing pandemic having a profound impact. International unilateralism and anti-globalization trends have reemerged [1]. The global economic recovery is weak, and economic globalization faces significant challenges. This weakened recovery and the backlash against globalization represent a new reality that must be addressed, profoundly altering the landscape and processes of global educational openness. Major global powers and educationally advanced countries are increasingly emphasizing the promotion of educational openness, continuously adjusting and improving their policies to respond to global changes. They aim to cultivate and attract top-notch innovative talents and develop internationally competent individuals.

Highly developed economies view internationalized human resources as crucial strategic assets for their economic and social advancement. China, which has become more interconnected with the world in recent years, needs to attract and utilize global talent. However, the post-pandemic era has intensified

global talent competition, presenting unprecedented challenges for talent acquisition in China and revealing a shortage of internationalized talent. As international exchanges and cooperation resume, the reduction in cross-border movement has created difficulties for cross-border educational exchanges, making cross-border internationalization challenging. In this context, "internationalization at home" (IaH) becomes particularly important for developing internationalized talents.

2. Concept of internationalization at home

The concept of internationalization at home has its origins in Europe, where the process of European integration accelerated as the region lost its world dominance after World War II and sought economic recovery. The European Union (EU) was created to "promote peace, pursue a prosperous life for its citizens, achieve sustainable socio-economic development, ensure fundamental values, and strengthen international cooperation." In this process, collaboration and exchanges among EU Member States have been strengthened to promote the common economic and social development of each country. To support this process, there is a growing demand for internationally competent human resources, and the development of internationalized education has become a major trend. After a long time of internationalized curriculum and unified institutionalization in Europe, the development of internationalized education is becoming more mature. In 1998, the Swedish scholar Nilsson first put forward the concept of internationalization at home, and defined it as "all activities related to international affairs in the field of education, except for students' overseas mobility" [2]. Beelen and Jones have further enriched the concept by describing in situ internationalization as "the process of consciously incorporating international, cross-cultural content into formal and informal curricula for all students in domestic learning environments" [3]. The concept is also rapidly moving into national practice with the wide dissemination and professional support of the European Association for International Education (EAIE).

Since the introduction of the concept of in situ internationalization in China in this century, China's in situ internationalization has gradually developed, but the overall development is in the stage of fragmentation and lacks systematicity. The impact of the pandemic has provided a significant impetus for the development of China's internationalization at home, serving as a crucial catalyst for its progress. Following the spread of the pandemic and its eventual decline, the number of Chinese students studying abroad has dropped significantly, with nearly half deciding to postpone their study plans and some opting to change their study destinations. The internationalization of higher education in China has been accelerated by the rise of anti-globalization trends brought about by the pandemic, leading to international embargoes and restrictions. In reality, with China's economic and social development, the internationalization of higher education is an issues that would have needed to be addressed sooner or later. The pandemic has significantly advanced the timeline for the internationalization of higher education in China. China is now entering a crucial stage in the development of higher education internationalization.

3. Current status of China's internationalization at home development

However, internationalization at home in higher education refers to the fact that as the internationalization of higher education is becoming more obvious, universities are making full use of the existing international education resources (international scholars, international students, international books, international programs, diversified courses, and international academic conferences, etc.) to build campuses with internationalization at home characteristics, providing opportunities for teachers and students to come into contact with cross-cultural and international elements in their localities, and thus realizing the goal of cultivating high-level

internationalized talents. This is to realize the goal of cultivating high-level internationalized talents. According to Yuhao Cen, "internationalization at home of higher education" refers to all educational activities related to international affairs that take place in higher education institutions, except for the overseas mobility of faculty and students [3]. "Internationalization in the field is not just another study program, but an integrated and systematic practice of international education."

In recent years, China has made new historic achievements in economic and social development, realized new historic leaps and bounds, comprehensively enhanced its status as a major world economic power, and significantly increased its international influence. The conditions for internationalization at home are becoming increasingly mature.

China will become the third largest study abroad country in the world and the largest in Asia even before the onset of the pandemic in 2020. In the post-pandemic era, the flow pattern of international study will be reorganized, and the status of China and other East Asian countries in international education will be further enhanced. International students and foreign scholars from various countries will help establish a local internationalized academic environment in China. International students and scholars come from various countries, and they use different languages in daily life, and their cultures are also different. Their arrival in China will firstly help local students to improve their language and communication skills, and secondly promote cultural diversity in China and help students to get in touch with the world's outstanding cultures.

The development of information technology and online education also provides a realistic guarantee for internationalization at home. With the recent economic and technological upgrading in recent years, China's institutions can actively explore and broaden the mode of cooperation with foreign institutions of higher learning, open up the learning channels of foreign online courses, jointly develop online courses, and launch a new mode of international education cooperation based on localization. To sum up, the implementation of internationalization at home in China already has considerable conditions and a realistic foundation.

4. Main forms of internationalization at home

The development of internationalization in the field is mainly divided into three main forms: firstly, it is necessary to build an international exchange platform as the basis for international exchanges, and secondly, it is necessary to establish a scientific and internationalized curriculum system, which is an important carrier for the development of the program in the empire and plays an important role in the development of internationalization in the field. Simultaneously, the majority of teachers and students create an international academic atmosphere, and more academic exchanges, to participate in international academic conferences. In this way, the development of internationalization at home is achieved.

4.1. International exchange platform building

The construction of an international exchange platform is the foundation of internationalization at home development. International exchange platform is an important carrier of international academic exchanges and scientific research cooperation. When the construction of the international exchange platform is complete, the teachers and students have the basic conditions for international exchanges. Colleges and universities need to expand channels in their schools and build exchange and cooperation platforms with other top colleges and research institutions in the world, combining online teaching with offline lectures. Build international exchange platforms, provide international exchange programs, build talent training bases, give students opportunities for cross-cultural exchanges, connect with the world, contact with the world's top science and technology, and cultivate students' international vision.

For example, Tsinghua University closely integrates global competency development with students' intercultural communication skills [4]. It is believed that mastering proficient foreign language communication skills, understanding the history of internationalization in other countries, and having an open international mindset. This is the core skill of global competence. To this end, China offers nearly 1,000 English-language courses and a series of general knowledge courses. It has also developed online teaching platforms in collaboration with top universities and research institutes worldwide to share teaching resources and provide students with access to internationalized courses in science, technology, culture, and other areas.

Zhejiang University builds international exchange platforms, provides international exchange programs, and establishes "Zhejiang University Internationalized Specialized Talent Cultivation Bases" which give students opportunities for cross-cultural exchanges, connect them with the world, expose them to the world's top science and technology, and cultivates their international outlook [5]. The university has formulated a scientific international student enrollment plan, continuously optimized the structure of international student sources, expanded cooperation globally, and created an open, inclusive, and harmonious international atmosphere for its institution.

4.2. Internationalized curriculum development

Curriculum is an important vehicle for the implementation of internationalization in the field, and curriculum development is the core of achieving educational goals. Internationalization of the curriculum is an important part of and a core initiative to promote "internationalization in the field." This includes reading foreign literature and taking courses in English. Internationalization of the curriculum requires a comprehensive and systematic reform of the content, language, materials, and methods of teaching. Teachers need to integrate cross-cultural and global dimensions into the teaching content and learning outcomes of the courses, place the courses in the context of global development, incorporate the enhancement of students' global competence into the learning objectives of the courses, and incorporate elements of internationalized content into the design of the courses. Based on the different aspects of the role of the curriculum in talent cultivation, curriculum development is a multidimensional breakthrough.

Firstly, develop a Chinese culture curriculum to enhance students' self-confidence through learning culture and understanding the long history of Chinese civilization. Culture is the soul of a country and a nation, and only by achieving cultural self-confidence and self-improvement can we better disseminate our own cultural values to the world. Thereby fully demonstrating to the world the eternal charm and contemporary value of the excellent traditional Chinese culture.

Secondly, the International Exchange Program is designed to cultivate students' international outlook, global vision, and open-mindedness in response to the times. The content of the program takes students to learn about the diversified cultural contents of countries around the world and to understand and learn about the world's outstanding cultures. The aim is to cultivate high-level internationalized talents with a global perspective.

Thirdly, set up foreign language communication improvement courses. Global discourse ability is the core of outstanding talents with global vision and world vision [6]. And language serves as a bridge of communication. To become an internationalized talent, cross-cultural communication ability is the core. Effective expression is based on an effective understanding of other cultures, the ability to put forward one's own opinions on global issues, and participation in global governance.

For example, Zhejiang University has a unified all-English course system taught by international teachers, which is a good way to train students' language ability and enhance their international communication skills. To

lay the foundation for participation in globalized governance, Huazhong University of Science and Technology, South China University of Technology, and Xi'an Jiaotong University have all proposed to build several basic, cutting-edge, cross-cutting, and widely benefited all-English courses. This will enhance the internationalization level of talent cultivation of the whole university.

4.3. Internationalized academic environment creation

The creation of an internationalized academic environment is equally indispensable to the development of internationalization at home, including participation in international academic conferences and cross-border cooperation projects. At present, most of the universities in China do not pay much attention to internationalization at home, and the means of cultivating internationalized talents is mainly limited to sending a few students to study abroad or exchange programs. There is a lack of internationalization at home education resources on campus. Colleges and universities need to prepare complete internationalization resources, hold online or offline international academic conferences, and undertake cross-border cooperation projects.

Tsinghua University offers a large number of full English degree programs, attracting a large number of international students to study for their master's degrees, and the increase in the number of international students has also created an academic atmosphere on campus. Additionally, Tsinghua University employs a large number of overseas scholars to give lectures at the university, and these lectures provide excellent opportunities for students and faculty members to realize that they can have access to a lot of international cutting-edge scientific knowledge without having to leave their country.

To optimize the layout of the global cooperation network, Zhejiang University has developed a special global cooperation network. It allows students and faculty members to engage with the international frontiers through online forms. The university also takes the initiative to build an exchange and cooperation platform with the world's top universities and research institutions, so that teachers and students on campus can jointly participate in research and development of relevant science and technology. Concurrently, focusing on the community of human destiny, the university has cooperated with universities in countries along the "Belt and Road" to create a model university for international education in China.

South China University of Technology, on the other hand, makes full use of its location advantages and vigorously invests in international cooperation to build an international scientific research platform. In recent years, South China University of Technology has constructed joint laboratories for science and technology research centers with America, France, Hong Kong, and many other countries, and dispatched excellent research teams from the university to participate in research and development. Through the establishment of numerous laboratories and research centers on campus, the international academic atmosphere is brought directly into the campus.

5. Relevant practices in domestic and international universities

5.1. Europe and America

In 2014, internationalization in the field was included for the first time in the EU's comprehensive strategy for the internationalization of higher education, European Higher Education in the World, making Europe a top priority for internationalization. Today, more than half of European universities have included internationalization at home in their strategic plans and are taking concrete actions to develop it [7]. In 2018, the "Erasmus +" program funded the research project "Approaches and Tools for IaH" which developed a self-assessment tool, a curriculum, and a framework for communicating the progress of internationalization in the field [2]. The research project has now been applied on a large scale in Europe, which is now the most mature

region for internationalization at home in the world.

In America, people recognize the benefits of multicultural interaction for personal growth and social development during social interactions and identify with these benefits. This identification in turn makes colleges and universities regard locally accessible cultural diversity as a kind of educational resource, which is mainly manifested in the emphasis on the recruitment of students and teachers of different colors from different countries and cultures. Also, the fact that students of different cultures can live together in mixed housing, attend classes, participate in on-campus and off-campus activities, and multilingualism coexists in public spaces, thus integrating multicultural elements into daily teaching and learning. The main manifestations of this are the importance of recruiting students from different countries and cultures of different colors, the integration of multicultural elements into daily teaching and learning, and the development of internationalization in the local context by allowing students to not only learn about their own cultures in the course of their studies but also to engage in intercultural exchange.

In addition to the differences mentioned above, one of the commonalities between universities in Europe and America regarding the development of internationalization at home is that they attach great importance to the online development of internationalized education. The University of Bradford, United Kingdom (UK) has developed international exchange initiatives to support students in international exchange and cross-border study life [8]. These include the Bridges Academic Transition Program, which provides exchange students with an understanding of the learning and teaching environments of other UK higher education institutions, and helps them to develop the academic and interpersonal skills that will lead to a successful experience. Enabling students to participate in activities including outdoor activities, sports, training, campaigning, volunteering, and initiating social change. As well as being exposed to international seminars where students can enhance their employability skills as they participate.

Internationalization has been a growing focus at the University of Leeds Business School (LUBS) [8]. While the School has an established and vibrant undergraduate study abroad program, postgraduate teaching has historically had few opportunities to engage in internationalization. After beginning to expand opportunities for postgraduate students through study tours, the University of Leeds developed the 2020VIP program to respond to the pandemic and develop on-the-ground internationalization. The program is essentially virtual meetings held online and is designed so that the university can continue to provide students with global business experiences, cultural insights, and professional development opportunities.

The University of Kentucky in the United States has introduced plans to transform short-term global health experiences into virtual global health experiences for globalization and currently plans to offer virtual experiences annually after the pandemic for students who cannot travel [8]. This online experience has opened the door to internationalized education for many economically disadvantaged students. It reduces the cost of international education, improves the effectiveness of international learning, and expands the scope of cultural exchanges while vigorously pursuing local nationalization.

5.2. Asia

The development of internationalization at home in Asian countries is more government-led, with Japan and India serving as typical examples. There are two core ways to develop internationalization in Japan through English Medium Instruction (EMI) and international co-curricular programs. Japan attaches great importance to the construction of an internationalized curriculum system, and one of the important means is the construction of an all-English curriculum system. Japan regards language ability as the core quality of internationalized talents. To enhance the cultivation of internationalized talents, the Japanese government has particularly

emphasized the importance of English as an international common language, and this recognition has triggered an emphasis on the development of the EMI curriculum.

Nowadays, Japan's EMI programs are fully open to local students, and national students are encouraged to minor in all English specialized courses. In 2021, the Japanese government launched the "Project for Acceleration and Globalization of Internationalization at Home in University Education through the World Network of Shared Education" to establish international shared education programs that enable students from diverse cultural and linguistic backgrounds to collaborate and promote mutual support, thereby contributing to the development of internationalization at home in Japan and the cultivation of more internationalized human resources [7]. The Japan International Exchange Program integrates and utilizes the resources of international students and the internationalized curriculum system to promote the rapid development of internationalization at home in Japan.

As a developing country in Asia, India, like China, relies on significant attention and coordination at the national government level to implement internationalization at home. Since Prime Minister Narendra Modi's government came to power, there has been a shift in approach. India has moved away from its previous conservative and closed attitude, actively opening access to international universities and institutions. Additionally, the government has set clear goals for internationalization at home, integrating it into the national strategic objectives for international education. Secondly, national policy support. With a major push towards an internationalization agenda for higher education, India has embarked on a process of re-engineering the domestic education landscape.

Prime Minister Narendra Modi has repeatedly stated to society and the public that he wants to build India into a global center of higher education. The National Education Policy 2020 (NEP 2020), the most important education policy in India in the 21st century, demonstrates the Indian government's ambition to become a "global knowledge superpower" and a "global learning destination" and for the first time, it includes the concept of "internationalization at home" [9]. It also incorporates for the first time the concept of "internationalization at home" into the national macro-policy level, which provides policy guidance for the shift of strategic focus on the internationalization of higher education in India in the future.

6. Challenges in the development of China's internationalization at home

The development of internationalization at home in China faces significant challenges. Although many domestic universities have introduced internationalization courses and academic lectures to meet standard internationalization indices, surveys indicate that most students do not participate. Additionally, there are issues with the alignment between the evaluation standards for internationalization at home and actual practices. The Opinions of the State Council of the Central Committee of the Communist Party of China on Strengthening and Improving the Ideological and Political Work of Colleges and Universities in the New Situation lists "international exchanges and cooperation" as one of the important missions of universities, along with "cultivation of human resources, scientific research, social service, and cultural inheritance and innovation" which is also understood as the fifth function of universities.

Many domestic universities have included internationalization in their evaluation criteria. The evaluation criteria primarily include the number of Chinese-international cooperative schools and international collaborations. Consequently, many colleges and universities focus mainly on foreign cooperation as their primary direction for internationalization development. This emphasis on increasing the number of foreign partnerships often leads to a superficial approach to internationalization, where students' internationalization

skills are not effectively cultivated, making it challenging to meet the practical needs of internationalization in China.

The investment in internationalization academic lectures often results in many of these lectures being superficial. A significant number of students attend these lectures merely to fulfill university requirements, without genuine interest in academic exchange. Scholars observe that interactions between international and local students are infrequent and often deemed ineffective. Students tend to prefer homogeneous social circles rather than engaging with cross-cultural groups. This tendency is also evident in the management of international student communities. Some institutions manage international students in a closed and isolated manner, fearing that integration might introduce risks. This approach reflects a lack of experience in managing international affairs and results in a waste of resources intended for internationalization.

Currently, online learning has become a key component of China's internationalization efforts, allowing students to engage in international academic exchanges from home or school via the Internet. This method breaks down time and space barriers. However, it also presents several challenges. Communication between teachers and students is limited to audio and video, and online meeting functions are relatively basic. This results in insufficient interaction and makes it difficult to supervise students effectively, thereby affecting the overall learning outcomes.[10]

Insufficient synergy in the development of internationalization within universities is a significant issue. Many Chinese colleges and universities are eager to advance internationalized education. However, due to constraints such as limited funding and insufficient expertise, their efforts often remain superficial. Most institutions merely establish international exchange offices or international education institutes, and some universities only address internationalization in policy documents without practical implementation. As a result, internationalization efforts are often treated as cosmetic projects rather than integrated into the core functions of the institution. This lack of coordination and collaborative effort between departments and colleges hinders the effective development of internationalization in universities.

7. Recommendations

7.1. Development of a scientific institutional system

The development of internationalization in universities requires a well-structured institutional system. Colleges and universities must create comprehensive regulations to enhance students' global competence, tailored to their specific development conditions. This includes setting clear cultivation objectives, establishing a global competence framework, and implementing a long-term working mechanism to develop students' global skills.

For instance, in 2016, Tsinghua University introduced its Global Strategy to attract global talents and foster a new generation of globally competent and innovative leaders. This strategy is grounded in "high-end positioning, Chinese perspective, and Tsinghua characteristics" to support national strategy and the creation of top-tier universities. In 2021, Tsinghua University updated its global strategic plan with the Tsinghua University Global Strategy 2030. This plan addresses the broader context of national rejuvenation and global changes, proposing a three-pillar strategy: developing a globally competent student body, building an outstanding international faculty, and enhancing the university's internationalization capacity to serve national needs and contribute to a global community.

7.2. Improvement of the relevant curriculum system

The scientific curriculum system is crucial for advancing internationalization in higher education. To enhance students' international communication skills, universities offer full English courses focusing on listening and

speaking skills to prepare students for cross-cultural exchanges [11]. Additionally, other languages, particularly those of countries along the "Belt and Road," are offered as minors to align with national development strategies. Universities also encourage students to engage in international academic exchanges and conferences to improve both their professional skills and foreign language proficiency. For example, Zhejiang University's 2018 "Global Open Development Strategy" aims to enhance the university's international profile and development. The strategy focuses on the following main areas.

Firstly, academic innovation system (research). Zhejiang University is building an international innovation platform through partnerships with top universities and research institutions. This includes collaborative research and development, university-enterprise cooperation, and projects related to the "Belt and Road Initiative." These efforts are intended to enhance the university's global influence and foster collaboration with leading institutions worldwide.

Secondly, infrastructure and institutional environment (culture). To support the strategy, Zhejiang University has developed a university-wide collaborative system and a global open school system. This includes establishing special funds to support exchanges and cooperation and providing financial aid for master's and doctoral students to train at top international institutions.

Similarly, the South China University of Technology (SCUT) prioritizes internationalization through its curriculum. SCUT integrates internationalized courses into its talent cultivation plan, focusing on foreign language instruction and cross-cultural communication. The university offers bilingual and all-English courses across various majors, ensuring that students are well-prepared for global engagement.

7.3. Establishment of a sound teaching staff

Faculty development is crucial for advancing internationalization in higher education, including fostering exchanges with foreign scholars and international students. Both graduate education and in-situ internationalization rely heavily on teachers, scholars, and strong research teams. Teachers play a central role in enhancing students' global competency and are key participants and beneficiaries in this process.

To support this, universities can introduce outstanding foreign scholars to complement their existing faculty. Local teachers should also enhance their global competencies through international training and collaboration with global research institutions. They should focus on incorporating international perspectives and concepts into their teaching.

For instance, Zhejiang University has implemented several initiatives to build a world-class faculty and globally competitive talent team. The university's strategies include, firstly, talent acquisition. Zhejiang University has enhanced its talent introduction system, including a program to attract high-tech talents and a convergence plan for overseas academic masters. This approach aims to optimize the faculty structure and bring in young international talents.

Secondly, talent cultivation. The university has developed a special program focused on cultivating exceptional talents, aiming to improve students' research and innovation skills. This includes recruiting outstanding doctorates and postdoctoral fellows in collaboration with leading foreign universities and sending top faculty members abroad for exchange and further study. These initiatives are designed to create a supportive environment for talent development and foster global competence and international competitiveness among students.

7.4. Provision of relevant infrastructure

In addition to the core strategies, other fundamental measures are also essential. Universities should implement

relevant exchange policies based on their specific needs and provide opportunities for eligible teachers and students to participate in international exchanges and training. Collaborating with leading global universities and research institutions to jointly establish research platforms is crucial. Universities should also equip their libraries with international literature, create large-scale international academic exchange platforms, and integrate global resources to continuously advance the development of internationalization at home.

For example, South China University of Technology (SCUT) has leveraged its location to significantly invest in international cooperation, establishing joint laboratories and research centers with institutions from the United States, France, Hong Kong, and other countries. SCUT has also partnered with many renowned foreign universities and research organizations to build comprehensive research platforms. Moreover, SCUT actively promotes its international exchange student program, sending students abroad during the summer to engage with cutting-edge science and technology, access the latest academic information, and broaden their international perspectives. The university has developed the "South China University of Technology Full-Time Undergraduate International Joint Cultivation Student Management Measures" to support these activities, offering financial assistance and institutional backing for students' international training.

Zhejiang University has also established a support system to enhance internationalization, focusing on promoting multicultural exchange and communication. The university has implemented measures such as creating an information database for foreign faculty and students, improving multilingual signage on campus, and organizing a series of cultural exchange activities with second-level colleges. These initiatives aim to foster a community where international and local students and faculty can engage, spread cultural knowledge, and build an internationalized academic environment on campus, thereby advancing the university's internationalization efforts.

8. Concluding remarks

Internationalized talents are an important foundation for China's participation in globalized governance, and China's economy has shifted from high-speed development to high-quality development and is gradually toward the center of the world stage. Cultivating internationalized talents with global competence has become an important task for universities. From the perspective of further development of internationalization at home, universities should formulate a scientific system, establish a sound faculty, improve the construction of relevant courses, and coordinate the cooperation of all functional departments to provide relevant basic guarantees for the development of internationalization at home, and provide assistance for the cultivation of internationalized talents [12].

Funding

Disclosure statement

The authors declare no conflict of interest.

References

[1] Zhou J, 2023, "Anti-globalization" Cannot Stop the Historical Momentum of Economic Globalization. Guangming Daily. 2023(01): 11.

[2] Fang Y, 2024, Trends in the Development of Internationalization at Home of Higher Education in Major Developed Countries. World Education Information, 37(01): 12–21.

[3] Cen Y, Yang Y, 2022, Local Internationalization: An Effective Path for Master's Students' Global Competency Cultivation. Academic Degrees and Graduate Education, 2022(07): 19–27.

[4] Liu C, 2024, A Comparative Analysis of the Global Strategy of Tsinghua University and Yale University on the Cultivation Strategy of International Talents. University Education, 2024(03): 144–148.

[5] Li M, Hao R, 2022, The Internationalization Strategy of Empowering Connotative Construction: An Experience from Zhejiang University. Science and Education Development Review, 2022(00): 27–35.

[6] Jiang F, 2020, Community of Shared Future for Mankind and University Responsibilities. University President's Forum, Shanghai International Studies University, published November 26, 2020. https://info.shisu.edu.cn/86/ff/c575a34559/page.htm

[7] Sun T, Gao H, 2024, The Main Points of the Policy and Practice of Internationalization at Home of Japanese Higher Education. Comparative Education Research, 46(02): 93–102.

[8] Jones E, 2021, Internationalisation at Home—Developing Global Citizens Without Travel, UUKi Publications.

[9] Wang J, Yang Y, 2022, Internationalization in Place: The Latest Strategy for Internationalization of Indian Higher Education. Journal of Northwestern Polytechnical University (Social Science Edition), 2022(04): 36–46.

[10] Li W, Zhang J, 2024, The Evolution of the Connotation of Local Internationalization of Higher Education in China, the Development Dilemma and the Practical Logic. Heilongjiang Higher Education Research, 42(03): 26–32.

[11] Liao Y, 2023, Construction of Foreign Language Intercultural Talent Cultivation Mode Based on the Perspective of internationalization at home. Journal of Higher Education Research, 46(04): 30–35 + 120.

[12] Huang W, 2023, Research on the Construction of Global Competence Literacy Framework and Cultivation Path of College Students in the New Era. Jiangsu Higher Education, 2023(12): 94–100.

Study on the Application of Integrated Medical and Nursing Care Model in the Postoperative Period of Patients with Sclerotherapy for Esophageal Varicose Veins

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Abstract: *Objective:* To explore the application effect of medical and nursing integration management mode in the postoperative period of patients treated with sclerotherapy for esophageal varices. *Methods:* Randomly divided 64 cases of esophageal varices patients admitted to our hospital from October 2022 to October 2023 who underwent surgical treatment into two groups, and gave 32 cases of patients in the control group postoperative implementation of basic nursing care, and 32 cases of patients in the research group postoperative implementation of healthcare integration management mode, and compared the effect of the nursing care of the two groups of patients. *Results:* There are differences in nursing satisfaction, incidence of postoperative rebleeding, complication rate, and patients' knowledge of disease-related common grip scores between the two groups of patients with esophageal varices after nursing care (P < 0.05), which is statistically significant. *Conclusion:* The implementation of integrated medical and nursing management mode for postoperative patients with sclerotherapy for esophageal varices has a significant effect on the prognosis of patients, reduces the occurrence of complications, and shortens the length of hospital stay.

Keywords: Integrated medical and nursing management mode; Esophageal varices sclerotherapy; Applied research

1. Introduction

Esophageal varices are mainly caused by portal hypertension due to liver diseases (portal vein obstruction, cirrhosis, hepatic vein obstruction, etc.). The portal vein flows into the heart through the anastomotic branch of the portal vein, which often triggers the dilatation and bruising of the venous plexus of the lower esophagus, and the rupture of the esophageal varices causes the patient to suffer from jet-like vomiting of blood, black stools, and shock, which affects the patient's life safety and is a common clinical emergency. Systematic esophageal varices sclerotherapy (EVS) can effectively prevent variceal rupture and bleeding, and make the varices disappear or reduce as much as possible to prevent rebleeding [1–4]. Integrated healthcare nursing is

a new nursing model, that regards physicians and nurses as a whole, and improves the professionalism and scientificity of nursing work through mutual collaboration and cooperation [5]. To analyze the effectiveness of the integrated healthcare management model on the care of patients after sclerotherapy for esophageal varices, our hospital carried out a nursing analysis for 64 cases of esophageal varices patients admitted to our hospital, and is reported as follows.

2. Data and methods

2.1. Clinical data

64 patients with esophageal varices treated with endoscopic sclerotherapy admitted to our hospital from October 2022 to October 2023 were randomly divided into two groups: 32 patients in the control group had a male-to-female ratio of 18:14, with an age distribution of 42 to 79 years old, and a mean value of (59.68 ± 5.46) years old. The other 32 patients in the study group had a male-to-female ratio of 17:16, with an age distribution of 43 to 78 years old, and a mean value of (59.65 ± 5.52) years old. Statistical analysis of the basic data of the two groups of patients with esophageal varices showed that the differences between the groups were small and comparable.

2.2. Methods

32 patients in the control group were given postoperative basic nursing care. The study group implemented medical and nursing integrated care where doctors and nurses jointly checked the room, discussed and assessed the condition, and formulated individualized diagnosis and treatment and nursing measures. Preoperative precautions and preparations were explained, and psychological guidance was provided for individual conditions. After the operation, the responsible nurse will strengthen the monitoring of the patient's vital signs and condition, assess whether there are high-risk factors that may lead to bleeding again, observe and record whether there are signs of bleeding, such as active bowel sounds, accelerated heart rate, blood pressure abnormality, abnormal blood counts, and so on. If the patient has bleeding signs, inform the doctor the first time, and cooperate with the doctor to make the corresponding treatments. The doctor and nurse jointly guide the patient's diet, informing the patient of the importance and significance of a postoperative gradual diet. Postoperative dietary restrictions include providing warm water to patients, ensuring no active bleeding, and monitoring for any discomfort symptoms. Gradually transition patients from liquid food to semi-fluid food and then to soft food. Additionally, provide thorough education to patients and their families about the disease and postoperative dietary guidelines. Nursing staff should work with the doctor in charge to keep abreast of the patient's postoperative recovery, formulate intervention countermeasures and discharge guidance plan in combination with the patient's individual situation, inform the patient and his/her family in detail of the post-discharge diet, medication, and rest and activity matters, and review the patient's condition regularly.

2.3. Observation indicators

Compare the differences in nursing satisfaction, the incidence of postoperative rebleeding, the incidence of complications, and patients' scores of disease-related knowledge after the care of esophageal varices in the two groups.

2.4. Statistical analysis

Using Statistical Package for the Social Sciences (SPSS) 23.0 software for processing, when the P is less than 0.05, that indicates that the difference is statistically significant.

3. Results

The patients' disease-related knowledge mastery score after nursing in the control group was (69.38 ± 5.47), and the patients' disease-related knowledge mastery score after nursing in the observation group was (78.26 ± 6.13). Comparing the two groups, t-value = 6.16, P-value = 0.00, and the differences between the two groups of esophageal varicose vein patients' satisfaction with nursing care, the incidence of postoperative rebleeding, and the incidence of complications after nursing care were significant (P < 0.05), which is statistically significant. The data is shown in **Table 1**.

Table 1. Nursing satisfaction, incidence of postoperative rebleeding, and complication rate after nursing care of esophageal varices patients in two groups, n (%)

Group (n)	Satisfaction with care	Incidence of postoperative rebleeding	Incidence of complications
Control group (32)	23 (71.88)	6 (18.76)	10 (31.25)
Observation group (32)	31 (93.94)	1 (3.03)	3 (9.09)
X^2	5.63	4.18	4.99
P	0.02	0.04	0.03

4. Discussion

Integrated healthcare management mode mainly refers to the process of mutual cooperation between doctors and nurses. Both doctors and nurses can recognize and accept the scope of their respective behaviors and responsibilities and can protect the interests of both parties and jointly achieve the goal, while there is a division of labor between health care workers, close contact and information exchange, mutual collaboration, mutual promotion and supplementation of the cooperative relationship.

In this observation, the integrated care model was given to endoscopically treated patients with esophageal varices, in which doctors and nurses checked the room together, formulated diagnosis and nursing measures together, and implemented health education together, which eliminated the doubts of the patients and their families, enhanced the communication between the doctors and nurses, and improved the trust of the patients and their families to the nursing staff, so that the patients felt a sense of security, which in turn improved the satisfaction with the nursing care. The integrated medical and nursing care model has a comprehensive grasp of the patient's disease. The doctor and nurse in charge communicate with the patient in a timely and proactive manner, patiently explaining and introducing the patient to relevant knowledge of the disease, diet and medication, rest and activities, special examinations, etc., so that the patient constantly learns and grasps the knowledge of the disease, thus avoiding the causative factors and lowering the reoccurrence rate of re-bleeding and complications.

5. Conclusion

In conclusion, the application of an integrated medical and nursing care model in the postoperative period of patients with sclerotherapy of esophageal varices has a significant effect, which can significantly improve the patient's nursing care satisfaction and reduce the incidence of postoperative rebleeding and complications, and it is recommended to promote this implementation in the clinic.
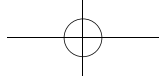
Disclosure statement

The authors declare no conflict of interest

References

[1]   Tangcheewinsirikul N, Suankratay C, 2019, Acute Pulmonary Embolism Following Endoscopic Sclerotherapy for Gastroesophageal Variceal Hemorrhage: A Case Report and Literature Review. SAGE Open Med Case Rep, 7: 2050313X19838946.

[2]   Michael PG, Antoniades G, Staicu A, et al., 2018, Pulmonary Glue Embolism: An Unusual Complication Following Endoscopic Sclerotherapy for Gastric Varices. Sultan Qaboos Univ Med J, 18(2): e231–e235.

[3]   Frassei JDS, Franco CS, Brambilla VR, et al., 2021, Cyanoacrylate Pulmonary Embolism After Endoscopic Sclerotherapy of Gastric Varices. Einstein (Sao Paulo), 19: eAI5778.

[4]   Belramman A, Bootun R, Lane TRA, et al., 2019, Endovenous Management of Varicose Veins. Angiology, 70(5): 388–396.

[5]   Leng Z, Cai B, Wu Y, 2018, Nursing Complementary Interventions on Postoperative Effects of Esophageal Variceal Ligation in Cirrhotic Patients. Chinese Journal of Digestive Disease and Imaging (Electronic Version), 8(6): 271–274.

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