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Exploration of the Training Model for Outstanding Talents in New Agricultural Sciences in Local Universities in the Guangdong-Hong Kong-Macao Greater Bay Area

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Abstract: In the context of the new agricultural science and rural revitalization era, there have been a series of changes in the demand for talent in agricultural science professional positions and their social service functions. In response to the problems of insufficient understanding of agriculture, rural areas, and farmers by teachers and students, inadequate curriculum system to meet the development needs of agriculture, rural areas, and farmers, insufficient extension of practical teaching links, and a shortage of agricultural talents who can practice and innovate, this study focuses on the cultivation of undergraduate talents in veterinary medicine. It proposes a new model for cultivating outstanding talents in agriculture in the Guangdong-Hong Kong-Macao Greater Bay Area, which is of great significance for promoting the rural revitalization of veterinary talents and improving the quality of talent training.

Keywords: New agricultural science; Veterinary medicine discipline; Talent cultivation mode

1. Introduction

The construction of "new agricultural science" requires the cultivation of outstanding agricultural and forestry talents, focusing on improving students' innovation consciousness, innovation ability, and scientific research literacy, and cultivating a group of high-level, and international innovative talents [1]. New agricultural science marks the new era of China's higher education reform of agriculture and forestry, aims to cultivate innovative talents to meet the needs of modern agricultural development, pay attention to the integration and application of interdisciplinary knowledge, aims to cultivate students with good agricultural service quality, and can solve the problem of complex "three rural" comprehensive application talent [2,3]. As a systematic and multi-disciplinary intersection and integration, new agricultural science involves the crossover integration of

modern agricultural technology, leisure agriculture management, smart agriculture, and agricultural big data analysis [4].

Since 2019, under the backdrop of new agricultural and rural revitalization, there have been significant changes in the demand for agricultural professionals and the social service functions of agricultural professions. In response to these changes, China's higher education in agriculture and forestry has faced profound transformations and challenges related to quality enhancement. Agricultural universities have actively advanced the construction of new agricultural science, achieving notable phased results [5,6]. Agriculture-related colleges and universities undertake the important mission of cultivating high-level talents and providing intellectual support for rural revitalization. However, in the actual process of talent cultivation, the goals of training often deviate from the practical needs of society. The teaching content lacks integration with intelligent agriculture, and the disconnect between universities and enterprises, as well as between disciplines and industries, remains a prominent issue [7,8].

Accelerating the reform of new agricultural talent training in universities and realizing the synchronous development of new agricultural education and social reform is an effective way to solve the problem of disconnection between the current agricultural industry chain and the talent ecological chain [9]. The major of animal medicine at this university is the national first-class major construction point. In 2024, the top 150 veterinary disciplines entered the "World First Class Discipline Ranking" in the world. This study starts from the perspective of new agricultural science, based on the reform of new agricultural science talent training mode in the Guangdong-Hong Kong-Macao Greater Bay Area, and provides a reference for cultivating high-quality excellent veterinary professional talents of new agricultural science.

2. Optimize the talent training plan and innovate the talent training mode of "strengthening agriculture and developing agriculture"

2.1. Adhere to the guidance of the Communist Party of China (CPC) building and improve teachers' ideological and political education ability

Given the ideological and political guidance for addressing weak moral cultivation, the focus is on the "Double Leaders" Party Branch Secretary Studio cultivation project and the implementation of the ideological pilot mass project for teachers and CPC members. The key discourse of General Secretary Xi Jinping on education and the study of the "Four Histories" will be integrated into the daily lives of the teaching staff. The Party branch of the teachers will lead in strengthening their ideals, beliefs, and political direction. Attention will be paid to the publicity and development of the Huang Danian teaching team, as well as the establishment of the "Mentoring" Teaching Base in the teaching and research section. Furthermore, the strengths of provincial teaching experts will be leveraged to enhance the teaching and ideological education abilities of new and young teachers.

2.2. Adhere to a learning-oriented curriculum and establish the main framework for the "production, learning, and research" course

Agricultural programs at local colleges and universities serve regional agricultural economic development. They actively leverage school educational resources and think tanks to promote agricultural development, which is key to the transformation and upgrading of agriculture. The integration of production and talent training is central to the deepening of educational reform at local universities and the realization of high-

quality, applied personnel training that meets social demands.

To achieve the new agricultural talent training goals, the 2022 version of the talent training program will be divided into general education courses, subject-based core courses, professional core courses, and specialized courses. The program is designed to train "applied, innovative, and entrepreneurial" talents, with a modular curriculum system that integrates both general and professional education, making it easier for students to understand.

Emphasis will be placed on practical teaching. Some traditional experimental courses will be adjusted to combine experimentation with hands-on practice, and new practice-based courses, such as cognitive practice, will be added to enhance students' practical abilities. The construction of teaching practice bases will be actively promoted, with agreements signed with several units. The practice base will serve as a platform for building an integrated practice teaching system of "production, learning, and research," jointly guiding practice to ensure a seamless connection between practice and employment.

2.3. Adhere to demand-driven guidance and establish a talent training model based on the needs of the new agricultural science industry

Training new agricultural talents should focus on serving rural revitalization, with the integration of industry and education and collaborative education as key priorities. This approach should explore new training models for agricultural talent that respond to the innovation-driven development of agriculture and rural areas, aiming to cultivate interdisciplinary talents who can meet the demands of agricultural and rural development in the new era.

Key enterprises in the veterinary medicine industry should be consulted to understand their needs better. Enterprises' expertise should be fully utilized, and employers' feedback on graduates' quality should be valued. Collaboration between educational institutions and enterprises should be strengthened. The curriculum system should be employment-oriented, aligning closely with societal and industry needs, providing students with opportunities to select curriculum modules and career pathways, and fostering the development of students' individual talents.

2.3.1. Focus on integrating scientific research and teaching to educate through the synergy of science and education

Rooted in veterinary medicine, the discipline blends engineering and agricultural characteristics, demonstrating strong interdisciplinary attributes. Graduate supervisors' research, innovation, entrepreneurship training, and enterprise collaboration projects serve as key drivers. A tutorial system guides students beyond the classroom—into laboratories and research groups [11]. Grounded in practical clinical challenges, students engage deeply in scientific research by identifying problems, exploring solutions, summarizing findings, and refining approaches. This process fosters their curiosity and ability to pursue knowledge independently.

Efforts are directed toward integrating educational and research resources, selecting and training dual-role mentors, and supporting student internships and employment. By leveraging industry advantages and professional expertise, collaboration with rural science and technology correspondents is organized to involve students in exploratory practices during summer and winter. These activities, in partnership with government, enterprises, and research institutes, contribute to rural revitalization and agricultural development. Through innovative projects and collaborations, students transition from campus to real-world applications, fostering

creative thinking. The model of collaboration between schools, enterprises, government, and students ensures a mutually beneficial outcome.

2.3.2. Enrich practical platforms to enhance innovation and entrepreneurship skills

Starting from the entry point of professional education, students should be encouraged to actively participate in national, provincial, and school-level innovation and entrepreneurship competitions, as well as discipline-specific contests. Events such as the "Challenge Cup" Extracurricular Academic Science and Technology Competition, "Youth Internet +" competition, business plan competitions, discipline-specific skills competitions, social practice initiatives, and career planning activities serve as platforms for innovation and entrepreneurial practice. Through preparation and participation in these activities, students can enhance their professional skills and foster their capacity for innovation and entrepreneurship.

To support career development and comprehensive skill-building, three key lecture series are established: the "Enterprise Aviation Lecture Hall," the "Easy Wisdom Lecture Hall," and the "Student Science Lecture Hall." These platforms aim to broaden students' horizons, enhance their academic abilities, and develop their professional competencies. Since the establishment of the Animal Husbandry and Veterinary Seminar in 1997, this initiative has functioned as a "second classroom," inviting industry experts and enterprise leaders to the university. These events offer a series of professional academic and practical activities designed to improve students' professional skills, enhance their practical knowledge, and cultivate their overall career readiness.

2.4. Building an innovation and entrepreneurship platform through school-enterprise cooperation

To strengthen innovation, entrepreneurship, and employment education, we invite entrepreneurial leaders and enterprise experts to serve as off-campus employment mentors. Leveraging various "cloud platforms," we enhance online teaching, guidance, and interaction. A "Five Online" platform is developed, incorporating online courses, projects, mentorship, training, and competition preparation. Universities, research institutes, enterprises, and training bases collaborate to foster talent development, actively engaging in innovation and entrepreneurship competitions. This approach continuously optimizes the construction and application of comprehensive online education platforms.

The school-enterprise cooperation model is expanded through a "Four-Linkage" collaborative education framework: connecting schools and enterprises, teachers and students, on-site and remote learning, and classrooms with teaching practice bases. This model integrates clinical production practices, enhancing students' innovation abilities and entrepreneurial qualities. By aligning school teaching with clinical practice, we ensure the integration of knowledge and the achievement of shared educational goals.

Under the "Intelligent +" Internet of Things framework, the strengths of schools and enterprises are combined to create a complementary education platform. This platform stimulates students' enthusiasm and awareness for innovation and entrepreneurship while supporting the development of new, high-quality agricultural talent.

3. Conclusion

In the Guangdong-Hong Kong-Macao Greater Bay Area, the training model for exceptional agricultural

professionals emphasizes school-enterprise cooperation. By utilizing "cloud platforms" for innovation, entrepreneurship, and employment education, we strengthen the integration of agriculture, science, and education. Collaboration across government, industry, academia, and research enhances innovation. The "Five Online" entrepreneurship platform and "Four-Linkage" collaborative education model further support the development of veterinary professionals and agricultural talent, advancing education and social service initiatives in local universities.

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Narrative Structure in Reading Engagement of Senior High School Students

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Abstract: The purpose of this study is to determine the students' perceptions of the roles of narrative structure in reading engagement of senior high school students. This study used qualitative method of research and descriptive approach as its research design, in addition to a set of structured interview questions to gather data from senior high school students of Pinagtongulan Integrated National High School, located at Lipa City, Batangas. These structured interview questions were carefully designed to cover various dimensions of the study, including the roles of narrative structure in the reading engagement of the students, how narrative structure affects the reading engagement and proposed activities to engage other students in reading using narrative structure. The results revealed that students perceived narrative structure as a crucial role as it serves as an organizer and backbone of each literature and through this, it helps the readers to easily understand the story in a more comprehensible way. It also allows reader to decode the information given and shows the sequence, organization and the flow of the story. This study also showed how narrative structure affects the reading engagement of the students as it enhances comprehension and gives students drive to learn more. Furthermore, it also affects reading engagement of the students in terms of motivation, character development and creates impact with their emotion. Lastly, students also concluded varied activities to engage other students to read using narrative structure. These includes activities like alternating/rewriting ending and making predictions, creating story boards and interactive materials and sharing experiences through reading, visualizing and group storytelling. By integrating these approaches, students concluded that other students will be more engaged to reading and it can help them to express themselves.

Keywords: Narrative structure; Reading engagement; Motivation; Character development; Emotional impact

1. Introduction

Reading is one of the macro skills aside from speaking, listening, writing, and viewing. It pertains to one's ability to look at a series of written symbols and convert them into words, sentences, and paragraphs. An individual can be able to improve his or her communication skills through reading by building vocabulary, grammar, and comprehension which enhances both verbal and written communication.

Reading is the process of understanding written symbols, like letters, punctuation, and spaces, to construct meaning. It is a fundamental language skill that helps people learn, communicate, and enjoy stories.

Reading involves people's full attention, their own interests, and feelings to comprehend what they are reading. For instance, students who are fond of literature may most likely read the text to understand what it is all about, while those who are not, might just flip the pages right away. Proficiency in reading is very essential to students as they need it not just inside the four corners of the classroom but in the real world.

Moreover, students are engaged in reading if they are interested in the topic or stories being presented. According to Ho, reading engagement is important for developing students' reading literacy [1]. Children who enjoy reading and are engaged in reading activities are more likely to become fully skilled readers which in turn perform well in reading assessments. Students' reading engagement primarily lies on how good a certain work is or depends on the student's preferences. On top of that, narrative structure plays an important role in the reading engagement of the students. Narrative structure is the way a story is organized, including the order of events and how the plot is presented. It helps the readers to understand what is happening and to keep them engaged, page after page. Furthermore, this research will focus on understanding the roles of narrative structure in students' reading engagement.

2. Research questions

This study aims to determine the roles of narrative structure in reading engagement of senior high school students. Specifically, it sought to answer the following questions:
(1) What are the students' perceptions about the role of narrative structure?
(2) How do the roles of narrative structure affect the reading engagement of the students?
(3) What activities can be proposed to engage other students in reading using narrative structure?

3. Significance of the study

This study explores the roles of narrative structure in promoting reading engagement among senior high school students. Findings from this study will contribute insights into how narrative elements impact student interest and comprehension, with great implications for educators, curriculum developers, and future researchers on the promotion of effective reading practices.
(1) Teachers: This study will enable teachers to understand how different narrative structures affect student's reading engagement. Knowing which structures foster greater interest and comprehension will enable educators to design lessons and select texts that motivate students and promote deeper engagement with reading materials. This knowledge can also guide teachers in developing strategies to make reading more enjoyable and meaningful.
(2) Students: The findings will benefit students by making them realize the types of narratives that make them more attentive and interested in reading. In this way, through increased awareness of how the

elements of a narrative impact their reading, students will learn to concentrate and pay attention to texts, thus leading to better academic performance and lifelong interest in reading.

(3) Researchers: The findings would be useful for education and literacy studies researchers in understanding how the structure of a narrative may influence reading engagement. The insights from these findings can help shape new instructional approaches and interventions aimed at improving student engagement and learning outcomes.

(4) Future researchers: The study will provide a base for future research that studies the narrative structures and the way they affect student engagement. The findings and recommendations might inspire further investigations and help develop a basis for researching other factors that contribute to reading motivation and comprehension to promote the advancement of effective literacy practices.

4. Scope and limitation

This study specifically focused on determining the role of narrative structure in reading engagement of students. The researchers employed the qualitative method of research and interviews as the major data gathering instrument. The respondents of the study are composed of five senior high school students of Pinagtongulan Integrated National High School at Lipa City, Batangas.

5. Literature review

This literature review presents key related literature and studies relevant to the paper that provide the researcher with sufficient ideas and insights that served as a frame of reference and the insights that led to the conceptualization and formulation of the research.

5.1. Narrative structure

Narrative structure is a cornerstone of storytelling, influencing how readers engage with and interpret a text. This chapter explores the idea of narrative structure and looks at how it helps readers follow a story's plot, characters, and ideas. Readers can better appreciate the deliberate design of a story and its influence on both emotional and intellectual engagement by comprehending the narrative framework, which includes components such as exposition, rising action, climax, falling action, and resolution.

Taylor considered narrative structure as the foundation that keeps the story strong [2]. This can be also used by planners, by planning an outline or to have a fully written manuscript and to know what the next step are, then narrative structure can be a guide. She also gave six types of narrative structure.

(1) The three act narrative structure: The three-act structure begins with exposition followed by an inciting incident and ends act one with a turning point. Act two continues the journey through complications and ends on a second turning point. Finally, the act three builds to the climax and ends with the denouement as the writer ties together all the strands of the story.

(2) Linear plot structure: A linear plot is one that's presented in chronological order. This is a traditional plot structure and easy for the reader to follow.

(3) Non-linear narrative story structure: In a non-linear story, the plot is not tied to chronological order. The last scene chronologically may be presented first. This can be confusing for the reader but can offer a sense of satisfaction when the plot is finally tied together.

(4) Parallel narrative writing structure: Parallel narrative structures have more than one plot presented simultaneously. These may, or may not, intersect.

(5) Circular narrative: In a circular narrative, the plot ends where it begins. This is a common structure for children's stories.

(6) Interactive narrative plot: The story adjusts to the whims of the reader. An example of this is a "Choose your own Adventure" books. These book types are popular with chapter books for middle-grade children.

In addition, the Reedsy Editorial Team defined narrative structure as the sequence in which the events of a story are told [3]. In order to maximize suspense, interest, excitement, or mystery, a writer can hang various scenes and story pieces on this framework. Majority of stories often begin at the beginning of the story ("once upon a time") and end at the end ("and they lived happily ever after"). In theory, though, a story can be recounted in any sequence. For instance, by leaving out specific facts or releasing information out of order, authors might set up their story elements to build suspense. Storytellers occasionally start in the middle and "cut to the chase" before giving away the backstory. In summary, if used carefully and thoughtfully, narrative structure is a potent instrument that authors can use to great effect. They also mentioned four types of narrative structure.

(1) Linear: Linear narrative structure is exactly what it sounds like — when a story is told chronologically from beginning to end. Events follow each other logically and you can easily link the causality of one event to another. At no point does the narrative hop into the past or the future. The story is focused purely on what is happening now. It's one of the most common types of narrative structures seen in most books, movies, or television (TV) shows.

(2) Nonlinear: On the flip side, a nonlinear narrative is when a story is told out of order — where scenes from the beginning, middle, and end are mixed up, or in some cases, the chronology may be unclear. With this freedom to jump around in time, new information or perspectives can be introduced at the point in the story where they can have maximum impact. A common feature of this type of narrative is the use of extended flashbacks.

(3) Parallel: A parallel narrative is where two or more stories are told concurrently, though they may not always be happening at the same time. This is common in stories with multiple lead characters and viewpoints. They tend to be interconnected, though how they relate may not be immediately obvious. Eventually, the story threads in a parallel structure will dovetail, resulting in some kind of plot twist or revelation. As a result, parallel structures are often used in thrillers or historical fiction novels.

(4) Episodic: You can think of episodic narratives as interconnected short stories that contribute to a larger story arc. Each individual story has a beginning, middle, and end, but the larger arc unites them in some way. Usually, this type of structure follows the same set of characters in a specific setting or situation. You'll recognize this type of narrative in TV programs like sitcoms and medical dramas, where episodes can, broadly speaking, be watched in any order.

5.2. Roles of narrative structure that affect reading engagement of the students

Motivation is a crucial factor in reading engagement, and narrative structure has a great influence on it. As pointed out by Mandler and Johnson, the coherence and predictability that are derived from well-structured stories containing clear beginnings, climaxes, and resolutions attract the reader's interest [4]. Thus, this

structural integrity guides the reader to understand a story while enjoying it so that they do not derive their attention. Moreover, Gerrig and Egidi underlined suspense and pacing within a story [5]. They found that suspenseful storylines enhance curiosity and sustain attention, making readers eager to discover the outcome.

According to Reeve, intrinsic motivation is typically elicited by stories that present problems or mysteries since these motivate readers to become more interactive in reading to solve the puzzle [6]. The same goes for the use of cliffhangers and plot twist. These make the structure engaging because they stimulate cognitive engagement and emotional investment.

Another important feature of narrative structure that affects the reading engagement is character development. According to McAdams, for the story to have a connection with the reader, it must be present believable and complex characters [7]. It is through the transformation and growth of characters within the text that readers feel themselves being transformed vicariously and hence become more deeply invested in the text.

Busselle and Bilandzic suggested the concept of "transportation," in which the reader becomes more involved in the story that they start feeling as if they belong to the world in the story [8]. This is much more powerful when characters are better developed, so readers can sympathize with hardships, triumphs, and feelings that characters have to experience. In the process of watching characters facing problems, readers often start thinking about their own experiences, which further increases the involvement level and the meaning-building process.

The affective impact of a narrative is inextricably found to its structure and plays a major role in the retention of the reader's interest. According to Oatley, "narratives can be considered as emotional simulations, allowing readers to travel through a vast range of emotions in a safe, controlled environment" [9]. For example, the use of flashbacks, non-linear storytelling, and dramatic irony always evoke highly emotional feelings of sympathy, amazement, or catharsis, so keeping the reader interested in the story.

Brewer and Lichtenstein probed the structural elements-conflict resolution-which formed the basis of emotional involvement in an individual [10]. Evidence indicates that the more there is an emotional trend of the stories, the higher their chances of being remembered. Thus, better memorability and higher enjoyment for such stories as opposed to the ones without much emotional involvement are ensured. Therefore, the effect of the resonance is stronger when the stories portray themes common in humans that are common across all human beings.

5.3. Activities proposed to engage other students in reading using a narrative structure

Reading engagement activities are essential for fostering a love of reading and improving literacy skills in students. These activities can include interactive read-aloud sessions, where students actively participate by predicting story outcomes or discussing characters' motivations. By providing diverse and dynamic opportunities, educators can help students connect with books in meaningful ways, promoting both enjoyment and comprehension.

Unlacay concluded that students can enhance their writing and reading comprehension skills as well as their critical thinking and analytical abilities by studying text structures [11]. It has five main categories of informative structures—comparing and contrasting, sequencing, description, problem and solution, and cause and effect—are covered in this compilation of highly engaging and interesting materials. The author also mentioned 16 different engagement activities in reading. These include comparing and contrasting, scavenger

hunt text structure resource, making flipbooks and the like.

6. Research design

The study employed a descriptive research design as chosen by the researchers. The descriptive method involves observing, documenting, and analyzing behaviors, events, or phenomena without manipulating them. According to McCombes, a descriptive research design can use a wide variety of research methods to investigate one or more variables [12]. Therefore, the flexibility of descriptive research design is vital for producing valuable insights in a wide range of disciplines and research situations. It proves to be a valuable tool for collecting students' perceived ideas about the role of narrative structure in reading engagement.

7. Data collection

In this study, data were collected to know the roles of narrative structure in the reading engagement of the students. The researchers utilized a set of structured interview questions to gather insights from the respondents. These questions were carefully designed to cover various dimensions of the topic, including the roles of narrative structure, how does it affect the reading engagement of the students, and possible activities to help other students to be engaged into reading. Generally, the interviews serve as an efficient and flexible data collection, allowing students to respond at their convenience. This method also ensured a streamlined process for compiling and analyzing the responses, enhancing the accuracy and reliability of the data collected.

8. Data analysis

After the researchers gathered all the answers of the respondents through interview, all the contents of the interviewees' statements were translated into words, sentence by sentence, classified, and inferred. Colaizzi's 7-step analysis method was adopted to summarize the common concepts as the theme of this study [13]. The details were as follows.

(1) thoroughly understanding the interview data of this research.
(2) extracting meaningful viewpoints from the data.
(3) encoding ideas that repeatedly occur and conform to the phenomenon of this study.
(4) clustering the views after coding.
(5) providing a detailed description of the clustered views without omission.
(6) identifying similar viewpoints and forming theme concepts.
(7) returning the data to the interviewees for verification.

During the analysis, new data were divided or generated as a new topic. The entire data analysis process was completed by two researchers and verified throughout the process of this study.

9. Discussion

This study presents the discussion and interpretation of data gathered from the respondents through structured interview questions.

9.1. Students' perception about the role of narrative structure

Three participants perceived that narrative structure has crucial role that plays as an organizer and backbone of each literature and through this, helps the readers to easily understand the story in a more comprehensible way.

"As a student, I perceive that narrative structure has a crucial role for everyone who writes and reads, especially to those who are involved in literary writing or storytelling. It plays as an organizer that helps us construct pieces and have a comprehensible output or literary piece."

-Participant 1

"In my own understanding, narrative structure is the way a story is told. It is the order and organization of events in a story. It is more like the story's beginning, middle, and end, it's like the backbone of each literature like story, it's the pattern and the most easiest way to understand a story."

-Participant 2

"My perception about narrative structure is that it is a comprehensible way to tell a story to make the scenarios organized."

-Participant 3

Additionally, one of the participants mentioned that narrative structure allows the reader to decode the information given.

"My perception of narrative structure is that, it is important if we want to create an organize set of information, it allows reader to decode the information given, allowing them to follow the pattern given by the author/writer of a narrative."

-Participant 4

Plus, one of the participants stated that narrative structure shows the sequence, organization, or flow of the story.

"Narrative structure is the way of telling a story. It shows the sequence and organization presented to the readers or audience. It is used to have a guide for how the story happened or to easily identify the flow of the story."

-Participant 5

9.2. How narrative structure affects the reading engagement of the students

One of the participants emphasized that the role of narrative structure enhances comprehension and gives the drive to learn more.

"Students nowadays mostly understand something when an activity is interactive. The roles affect their reading engagement in many ways. Specifically, it enhances their comprehension and gives them the drive to learn more."

-Participant 1

On the other hand, four participants answered that narrative structure affects the reading engagement of the students in terms of motivation and character development, and creates an impact on their emotions. Motivation keeps the students reading more. Also, students were able to connect with the characters, and with that, they were able to relate their emotions with them.

"Narrative structure plays a big role in keeping students engaged while reading. Motivation drives their curiosity as they follow the story's goals or mysteries which I find so exciting. Through character

development, students can connect with the characters, making the story more personal and relatable to themselves. The emotional impact also hooks them by stirring feelings like joy, sadness, or even suspense. By combining these elements, I believe stories become more meaningful and enjoyable, encouraging students to stay focused and interested."

-Participant 2

"These roles make stories more engaging for students by keeping them interested. Motivation will keep readers curious and listen attentively. Character development helps them connect with the changes that happened to the characters. Emotional impact makes the story memorable and relatable since the story can reflect the readers own experience. Together, these will keep students hooked and eager to read more."

-Participant 3

"The following roles affect students' reading and engagement. First, motivation. The narrative structure should motivate students to continue reading. The story should be captivating, with an interesting and relatable plot that draws students' attention. Next is character development. Students should connect with the characters, observing noticeable changes that contribute to the characters' purpose in the story. Lastly, creating emotional impact has a huge effect. The emotions students feel while reading can deeply engage them, prompting them to read more. Every emotion they experience is important, determining the narrative's effectiveness."

-Participant 4

"Motivation encourages students to understand and also relate their own experiences and emotions. Because of character development, students become more attached to the characters and it help them to reflect on their own personal development. Lastly, through creating emotional impact, students develop interest in reading and most of them are likely to share their thoughts and opinions about the stories."

-Participant 5

9.3. Effective activities to engage other students to read using narrative structure

Three participants believed that activities like alternating/rewriting ending and making predictions will help students to be engage in reading.

"The activities like writing alternate endings to make the story unique then group discussions after the narrative. So that we can assess the students' insights about the story."

-Participant 3

"I'd suggest rewriting the ending of the narrative activity where the reader is given a chance to change the ending of the narrative as what they want it to end. By having this activity, the reader is motivated to read the whole narrative in order for them to create a mindful ending based on what they have read."

-Participant 4

"I will go with rewriting the ending and making predictions, these are great ways to get students into reading. When they rewrite the ending, they can be creative and see how different choices change the story. Asking them to guess what happens next keeps them curious and excited to read more. It also makes them think deeper about the characters and what might happen. These activities turn reading into a fun and interactive experience, not just something they have to do, in that way, they will enjoy plus they will learn too."

-Participant 2

On the other hand, one of the participants stressed that activities such as creating story boards and interactive materials will be a great help for the students to be more engaged to reading.

"Realistically speaking, activities such as creating story boards and interactive materials (big books, flipbooks, scrapbooks, pop-up books) can help students in reading using narrative structure."

-Participant 1

Moreover, one participant mentioned that sharing experiences through reading, visualizing and group story telling can boost their confidence and imagination. Also, it can help them to express themselves.

"The activity that I think of is sharing experiences through reading, giving them advices or experiences might help them engage in reading. Visualizing can also help students to improve their reading comprehension. I can also suggest the group storytelling, in this activity, it can help students to boost their confidence and imagination."

-Participant 5

10. Conclusion

The following conclusions were drawn based on the findings.

(1) This study revealed that students perceived narrative structure as a crucial role as an organizer and backbone of each literature and through this, it helps the readers to easily understand the story in a more comprehensible way. It also allows reader to decode the information given and shows the sequence, organization and the flow of the story.

(2) The narrative structures affect the reading engagement of the students as it enhances comprehension and gives students drive to learn more. Furthermore, it also affects reading engagement of the students in terms of motivation, character development and creates impact with their emotion. Addressing these effects, it can be seen that narrative structure positively helps students to be engaged into reading.

(3) The students concluded varied activities to engage other students to read using narrative structure. These includes activities like alternating/rewriting ending and making predictions, creating story boards and interactive materials and sharing experiences through reading, visualizing and group storytelling. By integrating these approaches, students will be more engaged to reading and it can help them to express themselves.

Disclosure statement

The authors declare no conflict of interest.

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The Role Positioning and Survival Status of "Contractor" Style Curators in Contemporary China

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Abstract: In the context of the thriving development of contemporary art, the curators' authority in exhibitions is increasingly strengthened, leading to a growing demand for professionals in art curation. The number of curators continues to rise, and their status and role within the art ecosystem are widely acknowledged. However, the working environment and conditions for contemporary art curators in China are not optimistic. Their development has not been as ideal as expected, with both subjective and objective issues and contradictions present. In light of the various problems and contradictions facing the curator community in China, it is essential to conduct an in-depth analysis of these issues to gain a clear understanding of the art curation industry and to truly respect the work of art curators.

Keywords: "Foreman" curator; Art exhibition; Art ecology

1. Introduction

In China, the curator community is typically divided into two types: institutional curators and independent curators. Institutional curators work within art institutions such as museums, galleries, and art centers, focusing on exhibition planning. They often hold permanent positions, like museum and gallery curators. In contrast, independent curators are not affiliated with any institution. They serve not only as theorists and critics but also as event planners, organizers, and communicators. They are involved in art exhibitions from the initial concept and planning stages to the final conclusion, acting as witnesses to the birth and end of the exhibition, as well as creators in every aspect. Independent curators engage in curatorial practices with a distinct autonomy, playing a unique and indispensable role in contemporary art. This article focuses on the group of independent curators engaging in curatorial practices in China, exploring their current status and analyzing their characteristics, aiming to provide a comprehensive presentation of this group's overall landscape and unique value within the contemporary art context [1].

2. The "role positioning" of the "foreman" curator

In China, the roles of most independent curators are ambiguous, and many hold other positions as well. Some curators have different primary professions but remain active in the curatorial field for extended periods while others may only occasionally "guest" as curators. The composition of the curatorial community includes critics, magazine editors, university teachers, gallery managers, collectors, artists, and more. If we were to strictly identify the "identities" within this group, we would find that there are very few true "independent curators" in China. Some even argue that there are no purely independent curators existing in the country at all.

Renowned curator, Feng Boyi once expressed that the ideal state for curators is to be "directors," while the reality is often that of "contractors" [2]. The "contractor" style curator is primarily characterized by the way they seek out opportunities for curatorial activities, much like a contractor seeking projects. They explore various aspects of the art curation field, and once they successfully secure a project, they proceed to coordinate the various tasks involved in the curatorial process, much like distributing responsibilities in a construction project. This cycle continues, as they navigate the intricate interplay and balance between commercial interests and artistic integrity. This reflects the circumstances faced by most independent curators today.

The existence of "contractor" curators is fraught with uncertainty. They operate independently of established systems, lacking fixed job security and long-term stable sources of income. Often, after completing one exhibition, they find themselves unsure of where the next one will come from, necessitating a return to seeking new opportunities, akin to the nature of contractors. They constantly transition from "0" to "1," and after concluding one exhibition, they revert to a "0" state. This cycle of moving from "0" to "1" not only tests their professional capabilities but also challenges their psychological resilience and resource integration skills. Pursuing curation as their sole profession without other financial support can be quite difficult, which is a significant reason why many independent curators in China hold part-time jobs in other fields. In the art world, resources and connections are crucial for "contractor" curators. They need to continually build relationships with entrepreneurs, art institutions, artists, and other groups to seize exhibition planning opportunities when they arise. This requires them to have not only excellent planning skills but also strong communication abilities and social skills. Only by excelling in these areas can they stand out in the highly competitive art market and secure more project opportunities.

Curating is akin to a large and complex project. When a curator takes on an exhibition project, it is similar to a contractor undertaking a construction job. From the moment they receive the task of planning the exhibition, they need to meticulously devise the overall framework and layout of the exhibition, determining the theme, style, and anticipated artistic effects, much like a contractor carefully designing a building blueprint [3]. Next, curators must actively reach out to artists, art institutions, sponsors, and various relevant professionals, much like a contractor who organizes a construction crew. They communicate with artists about the selection and presentation of works, understanding their creative intentions and expectations, negotiate with art institutions for venue rental and equipment provisions, seek financial support from sponsors while ensuring a balance between their interests and the artistic quality of the exhibition, and coordinate with lighting designers, installation workers, and other professionals to create an environment that perfectly showcases the charm of the artworks. Throughout the preparation process, various unexpected problems and challenges inevitably arise. Just as a construction project may encounter material shortages,

delays, or technical challenges, curators may face issues such as artwork not being delivered on time, last-minute changes to the venue, or discrepancies between the installation effects and expectations.

At such moments, curators must tackle these problems with the same problem-solving skills, experience, and communication abilities as a contractor on-site, quickly finding solutions to ensure the smooth progress of the exhibition. Whether it's mediating conflicts of interest or dealing with technical difficulties, curators are at the forefront, navigating through various stages and working tirelessly to ensure the final presentation of the exhibition. This is why people jokingly refer to curators as "contractor curators." This title, however, embodies the numerous responsibilities and enormous efforts that curators undertake during the preparation process. Like the contractor in a construction project, curators are the key linchpins and core drivers that lead to the successful completion and splendid unveiling of an exhibition.

3. The current situation of contemporary "contractor" curators

The curatorial industry today is experiencing a prosperous period of growth, showcasing a vibrant landscape. With a surge in various cultural activities, the number of curatorial projects is increasing daily. This trend undoubtedly presents unparalleled opportunities for numerous curators, allowing them to showcase their talents on a broader stage and transform various art exhibitions into significant platforms for cultural dissemination and exchange. The government plays a vital role in the development of the curatorial industry, actively creating diverse platforms for communication and learning, and enabling curators to break through geographical and resource limitations. This fosters deeper exchanges of techniques and insights among peers, continuously broadening their perspectives and enhancing their professional skills.

In today's era, governments, enterprises, and commercial institutions increasingly value the organization of cultural and artistic activities, presenting unprecedented opportunities for "contractor" curators. Various commercial exhibitions are emerging rapidly, often focused on specific brands or products, using artistic display formats to attract consumer attention [4]. Thematic exhibitions are also proliferating, focusing either on particular cultural themes or showcasing the cultural style of specific historical periods. Curators are actively involved in the commercial realm, planning artistic and commercial fusion events for large commercial complexes, and enhancing the cultural atmosphere and appeal of commercial spaces through the clever integration of artworks and commercial settings. In the cultural field, curators participate in folk culture exhibitions, local exhibitions, and other activities that aid the transmission and innovation of traditional culture. In the technological domain, curators plan technology achievement exhibitions, emerging technology experience exhibitions, and more, perfectly merging technology and art to showcase the allure of technology. The curation industry has gradually become a focal area of broad social interest, with the acceleration of globalization leading to increased domestic and international cultural exchanges.

This trend has opened a door for curators to the world, providing them with more opportunities to access a rich array of international resources, including works by renowned foreign artists and cutting-edge curatorial concepts and methodologies. These valuable resources offer innovative ideas and methods for their curatorial work. Currently, the curatorial industry is in a period of benefit brought forth by the tide of the times, with numerous opportunities arriving one after another. However, the curatorial community presents a mixed landscape. Despite the abundance of opportunities, there remain many questions about whether curators can successfully plan high-level exhibitions that demonstrate outstanding capabilities. In China, a

considerable portion of curators is still in the initial stage of "contractor" curation, constituting the main force of independent curators. They come from diverse backgrounds, covering various industries, and include many individuals with non-professional backgrounds. Most members not only lack curatorial experience but some have absolutely no curation experience, leading to a vague and unclear understanding of the core connotations and essence of exhibitions [5].

Their non-professional and non-career characteristics make it challenging for them to contribute constructive and unique insights at the academic level, and they are unable to conduct in-depth and systematic research and exploration in the academic field. This undoubtedly restricts the overall progress of the curation industry towards a higher level of professionalism to some extent.

At the moment, the country is vigorously promoting the standardization process of the curatorial industry, adhering to the philosophy of fostering the healthy development of the curatorial community more effectively. Official organizations, professional art institutions, and university-affiliated museums have taken the lead in organizing a series of activities aimed at art curators. These efforts have successfully established a high-quality platform for mutual learning, exchange, and collaboration among curators, intending to promote the overall healthy development and professional skills enhancement of the curatorial industry.

In October 2014, the "Youth Curator Relay Project" was launched in Beijing, where the chief planner, Yu Xiangming, invited ten curators including He Guiyan, Hang Chunxiao, and Xia Kejun, while also publicly recruiting young curators to plan exhibitions within the area, with guidance and training provided by instructors. This initiative offered a platform for emerging curators to showcase their work and gain practical experience. In the same year, the Shanghai Contemporary Art Museum held the "Youth Curator Project," and in 2016, under the promotion of the Ministry of Culture and Tourism, the "National Art Museum Youth Curator Support Program" was successfully launched, which has been running for seven years now. This program has become a benchmark in the curatorial field and a milestone for the growth of young curators, having supported the realization of 73 exhibitions. In 2020, the "Hedong Power—The First Jinan International Biennale Youth Curatorial Project" was an innovative attempt to structure a biennale, providing a curatorial platform for the domestic youth curator community and exploring contemporary art issues from various perspectives.

In addition to various training programs organized by different institutions, the China Federation of Literary and Art Circles (CFLAC) Art Research Institute has organized the "Art Curators Training Class," and the CFLAC is hosting the "CFLAC Visual Arts Curators Advanced Training Class." Jointly promoted by the Curatorial Committee of the China Artists Association and the China Millennium Monument Art Museum, the "Curating and the Future" series of academic activities for young curators explores the group characteristics and development trends of Chinese curators. These activities either focus on theoretical research to uncover the deep connotations and values of curatorial art or emphasize practical exploration, aiming to apply learned theoretical knowledge to actual curatorial work. This teaching model that integrates theory and practice enables participants to gain a comprehensive and multi-faceted understanding of the latest developments and cutting-edge trends in the curatorial field. In the dual context of globalization and localization, it is essential to accurately grasp the pulse of the times, integrating traditional Chinese culture with modern artistic concepts to plan exhibition activities that embody both contemporary spirit and national characteristics.

In addition, there are projects funded by the National Arts Fund such as the "Youth Art +" project and

the "Support and Promotion for Young Artists" project. For example, from October 23 to December 21, 2016, the "Key Project of the China Federation of Literary and Art Circles—National Youth and Middle-Aged Visual Art Curators Workshop in the USA" took place, where 20 outstanding young and middle-aged curators from various parts of the country embarked on a learning and exchange program in New York, United States of America (USA). This project has cultivated a group of young and middle-aged curatorial talents in China who possess high professional standards, strong communication skills, and an international perspective. Subsequently, this project was recognized as an important event in the field of visual arts in China.

The 2023 projects include "Virtual Curation Talent Training at Art Museums" and "Training for Young and Middle-Aged Visual Art Curators," along with the 2024 project "Training for Talent Research in 'Curatorial Theory in the New Era of China'." The state, through the platform of artistic fund projects, has gathered active young curators from across the country for centralized training and guidance.

Apart from national policies and relevant artistic platforms focusing on the training of curators, higher education institutions have started to emphasize cultivating curatorial talents. For example, at the master's degree level, the training of curatorial talent mainly arises from three professional directions: Arts Management, Cultural Industry, and Museum Studies. Some comprehensive art colleges have already specified "Art Curating" as a research direction and relevant research topics in their admission professional catalogs.

Moreover, many domestic art institutions and universities are placing greater emphasis on practical training for curators, providing opportunities for practical operations and internships to enhance the professional skills of students in related fields. Furthermore, the internal evaluation standards and critique systems within the industry are gradually being built and improved. The aim is to establish clear guidelines and norms to draft a blueprint for orderly operations in the curatorial industry, ensuring a healthy and fair competitive environment.

In today's field of art curating, Lü Peng sharply points out a phenomenon that cannot be ignored: young people today generally lack resilience and perseverance. They find themselves in a fast-paced and impatient era, often unable to take the time to research and accumulate experience in curating. Most curators are unable to wait to cultivate themselves, and many young curators are eager to take on more projects, particularly those that attract attention, hoping to achieve quick fame while completely overlooking the deep foundations and long-term commitment that a career in art curation requires. As a result, they appear fragile when faced with the test of time. In contrast, the attitudes and approaches of the predecessors in the field of art curation are markedly different and thought-provoking.

Gao Minglu and Li Xianting, two pivotal figures in the art curating field, have only curated a little over ten exhibitions throughout their lives. They deeply understand the weight that each exhibition carries—not just a simple arrangement of artworks, but a responsibility to understand and communicate the essence of art accurately. Due to their cautious consideration of the current industry ecology, they are now almost no longer involved in curatorial activities. This steadfastness in maintaining their reputation and artistic pursuit reflects their high professional ethics and resilience. They approach every aspect of curating with an almost extreme attitude, from the selection and layout of works to the organization and writing of documentation, all showcasing their reverence for art and their profound professional expertise as seasoned curators. Under such encouragement and guidance, we are inspired to place greater emphasis on our own professional and ethical standards, striving to enhance the quality and content of exhibitions, and ultimately driving the entire

curatorial industry towards a more professional, standardized, and high-quality direction.

4. Conclusion

From the perspective of the professional qualities required of curators, the journey of learning and growth for curators is undoubtedly long and arduous. Curating is far from a task that can be accomplished overnight. It demands a significant investment of time, energy, and financial resources. This requires curators to possess a solid theoretical knowledge foundation, with an in-depth understanding and mastery of a wide range of knowledge systems including art history, art theory, and cultural studies. They also need to have strong psychological resilience and unwavering determination. Curators must solidly establish their foundations through theoretical learning, continuously strengthen their personal qualities, and consistently enrich themselves, holding themselves to high standards and strict requirements. They should strive to cultivate an artist-like sensitivity and creativity, to uncover the deeper social significance and cultural value embedded within artworks. Moreover, young curators should have a strong sense of social responsibility, recognizing the important role they play in the dissemination of art and the inheritance of culture. They need to adopt a proactive and responsible attitude to promote the healthy development of the art sector, contributing their efforts to build a richer, more diverse, and deeply meaningful art world. In this era filled with temptations and challenges, the new generation of curators must first "sink down" and accumulate knowledge and experience before emerging onto the art stage. Only by doing so can they navigate the path of curation steadily and far, achieving a truly valuable and meaningful artistic career, and injecting continuous vitality and momentum into the prosperity and flourishing of cultural and artistic endeavors.

Disclosure statement

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Teaching Reform of Interior Furnishing Design Course Based on Traditional Culture in the Perspective of Aesthetic Education

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Abstract: In the teaching of interior furnishing design courses, the integration of traditional culture is one of the most important things, which not only helps to improve the students' aesthetic literacy, but also promotes the inheritance and promotion of traditional culture, and achieves the effect of improving the quality and level of teaching. Therefore, the promotion of interior decoration design teaching from the perspective of aesthetic education needs to deeply integrate traditional culture to improve students' design ability and cultural identity on this basis and achieve the purpose of improving the quality and effect the teaching reform. Hence, in the paper, the value connotation of aesthetic education is deeply analyzed and researched, the significance of integrating traditional culture into the teaching of interior furnishing design courses is explored, and corresponding teaching countermeasures are put forward according to the challenges faced, to help strengthen the quality of education in interior furnishing design courses and enhance the effectiveness of talent cultivation.

Keywords: Aesthetic education perspective; Traditional culture; Interior design course; Teaching reform

1. Introduction

The teaching reform of interior furnishing design courses under the perspective of aesthetic education should actively integrate traditional culture to drive teaching innovation, inspire students' motivation to learn and appreciate traditional culture, enhance their aesthetic literacy and design skills, and foster national cultural confidence. As an important educational link to cultivate students' ability to discover and perceive beauty, the important role of aesthetic education in the teaching of interior design courses should not be ignored, which not only helps to promote the reform and innovation of the teaching of interior design courses but also improves the effect of talent cultivation.

2. Analysis of the value connotation of aesthetic education

Aesthetic education is an important form of education combining emotional teaching and aesthetic teaching, through which students can enhance their ability to recognize, understand, appreciate, and create beauty, which is an important part of cultivating excellent talents with comprehensive development of morality, intellectuality, physicality, aesthetics, and labor in the context of the new era. In aesthetic education, artistic means and forms of beauty can be effectively used to cultivate students' aesthetic concepts, enhance students' aesthetic ability and aesthetic feelings, gradually promote the discovery of beautiful things in life, and enhance students' ability to appreciate beauty on this basis, which is also the key educational content to promote the all-round development of students. The core value of aesthetic education is to promote the improvement of students' individual aesthetic quality, and on this basis, gradually cultivate students to form good aesthetic emotions and moral sentiments, and enrich the spiritual world of students through aesthetic education, to stimulate students' innovative thinking and critical thinking, and to achieve the effect of improving the level and quality of education.

3. Significance of traditional culture in the teaching of interior furnishing design courses

3.1. Conducive to the inheritance and innovation of traditional culture

Traditional culture, a treasure of the Chinese nation, embodies its rich spirit and wisdom accumulated over five thousand years. Integrating traditional culture into the teaching reform of interior furnishing design courses is crucial for promoting teaching innovation, fostering cultural inheritance, and inspiring students to incorporate traditional elements into modern interior design. This approach not only enhances the cultural depth and modern appeal of design works but also enables the creative transformation of traditional culture, enriching the social and cultural atmosphere. Furthermore, this integration enhances students' understanding of cultural connotations, strengthens their sense of cultural pride and belonging, and improves the overall effectiveness of talent cultivation.

3.2. Conducive to improve students' aesthetics and literacy

Integrating traditional culture into the teaching reform of interior furnishing design courses enhances students' aesthetic ability, artistic literacy, and professional competence. The rich aesthetic concepts within Chinese traditional culture help guide students' appreciation of art, fostering correct aesthetic perceptions and improving their taste and appreciation skills. This integration strengthens the course's educational quality and promotes the inheritance of traditional culture. Moreover, incorporating traditional elements inspires innovative design ideas, enabling students to create works that blend traditional Chinese culture with modern design. This process develops students into well-rounded, innovative design talents suited for the modern era.

4. Challenges of teaching traditional culture in interior furnishing design courses under the perspective of aesthetic education

4.1. Challenges brought by insufficient knowledge of cultural differences

From the perspective of aesthetic education, integrating traditional culture into the teaching reform of interior furnishing design courses faces certain challenges, particularly cultural differences and insufficient

knowledge of traditional culture. These issues affect the teaching quality and hinder the broader inheritance and promotion of traditional culture. In the context of globalization, increasing cultural exchanges introduce Western influences, which impact students' perceptions and create additional challenges in incorporating traditional culture effectively. Many students have a superficial understanding of traditional culture, lacking the depth required for meaningful engagement. This limits the teaching outcomes, reduces the value and role of traditional culture, and weakens the effectiveness of interior furnishing design education. Addressing these challenges requires fostering students' deeper understanding and appreciation of traditional culture within a multicultural framework.

4.2. Challenges brought about by the difficulty of integrating teaching resources

From the perspective of aesthetic education, integrating traditional culture into the teaching reform of interior furnishing design courses also faces challenges related to the integration of teaching resources. Overcoming these challenges is crucial for the success of teaching reform and talent cultivation in interior furnishing design. With over five thousand years of historical inheritance, China's traditional culture offers a vast and rich repository of resources. However, identifying and incorporating the most suitable elements into the interior furnishing design curriculum has become a critical task for educators. This requires continuous exploration and practice. The significant disciplinary gap between traditional culture and interior design further complicates this integration, demanding strong interdisciplinary knowledge from teachers. This increases both the difficulty of teaching and the complexity of effectively embedding traditional cultural elements into the curriculum.

4.3. Challenges of integration and innovation of traditional culture and modern design

The integration of traditional cultural elements into the teaching reform of interior furnishing design courses faces challenges in blending traditional culture with modern design innovation. From the perspective of aesthetic education, students must focus on highlighting the aesthetic qualities of their designs to create unique interior furnishing works. This integration demands higher design capabilities, requiring students to innovate while incorporating traditional cultural elements. Successfully merging traditional culture and modern design involves distilling the essence of traditional culture and aligning it with modern design principles. This poses significant challenges, including higher expectations for teachers' instructional abilities and students' design skills, innovative thinking, and imagination. Achieving a seamless integration of traditional cultural elements and modern design remains a key challenge in interior furnishing design education.

4.4. Challenges brought about by the construction of evaluation system

From the perspective of aesthetic education, integrating traditional culture into the teaching reform of interior design courses faces challenges in constructing an effective teaching evaluation system. The innovation of this system is crucial to determining the success of the reform. Traditional evaluation methods in interior design courses often focus on students' mastery of knowledge and technical skills, neglecting cultural literacy and innovative thinking [1]. This limitation fails to reflect the impact of traditional culture on the teaching reform. Thus, there is an urgent need for a more comprehensive and diversified evaluation system that assesses not only students' professional knowledge and practical skills but also their understanding and

application of traditional culture, alongside their innovative thinking and cultural literacy. Developing such an evaluation system has become a significant challenge for the teaching reform of interior design courses.

5. Suggested countermeasures for teaching reform of interior furnishing design course based on traditional culture in the perspective of aesthetic education

5.1. Strengthen traditional culture education, enhance the sense of cultural identity

From the perspective of aesthetic education, the primary task of integrating traditional culture into the teaching reform of interior decoration design courses is to strengthen traditional culture education and enhance students' cultural identity. This can be achieved through traditional culture courses or regular lectures, providing students with a foundational understanding of the historical value, spiritual connotation, and aesthetic characteristics of traditional culture [2]. For instance, activities centered on traditional culture or field trips to engage with folk art and artisans can offer students firsthand experiences of cultural inheritance and its unique charm. Additionally, teaching can incorporate case studies of interior design that blend traditional cultural elements with modern design, enhancing the effectiveness of course reform while fostering students' cultural identity and improving the quality of talent cultivation.

5.2. Integrate teaching resources and build a multi-cultural curriculum system

The integration of curriculum resources is crucial for the teaching reform of interior design courses and for incorporating traditional culture through aesthetic education. Schools should focus on integrating internal and external resources to build a diversified curriculum system that fosters students' deep understanding of both interior design and traditional culture [3]. For example, schools can strengthen partnerships with public cultural institutions like museums and cultural centers, organizing regular visits and collaborative learning opportunities. These activities, guided by teachers, help students grasp the connotation and value of traditional culture, enabling its preservation and promotion. On top of that, interdisciplinary integration is essential. Interior design courses should intersect with disciplines like history and art to create a holistic educational system, enhancing course quality while supporting the widespread inheritance and dissemination of traditional culture.

5.3. Promote industry-university-research cooperation, strengthen the cultivation of practical and innovative ability

From the perspective of aesthetic education, integrating traditional culture into interior furnishing design courses should rely on an industry-university-research cooperation model to enhance students' practical and innovative abilities, ultimately improving the quality of education [4]. Schools need to actively establish school-enterprise cooperation models and develop practice and training bases. Through deep collaboration with social industries, students can engage in real interior design projects, bridging theory and practice to create a continuous cycle of "theory guiding practice, and practice feeding theory." This approach effectively enhances the quality and impact of interior furnishing design curriculum reform. Furthermore, schools and enterprises should jointly develop design products with traditional cultural elements, integrating these projects into interior furnishing design cases to deepen students' understanding of traditional culture and strengthen talent training.

5.4. Improve the evaluation system, pay attention to the comprehensive ability and quality assessment

When integrating traditional culture into the teaching reform of interior furnishing design courses, the evaluation system should be enhanced to focus on students' comprehensive abilities and quality assessment to ensure successful reform outcomes [5]. In practice, beyond traditional knowledge and practical skills evaluation, it is essential to emphasize cultural literacy, innovative thinking, and teamwork. The evaluation approach should combine both final and process assessments, assessing students' performance in areas such as traditional culture understanding, learning attitudes, and project outcomes. Through diversified evaluation methods, students' progress is holistically reflected, enabling personalized guidance to continuously improve their professional skills and ensure high-quality interior furnishing design education.

6. Conclusion

In summary, in the context of globalization, the importance of protecting and inheriting traditional culture is becoming increasingly significant. Integrating traditional culture into the teaching of interior furnishing design courses has emerged as a crucial measure. This approach not only helps students inherit and carry forward China's rich traditional culture but also enables them to recognize and deeply explore the value of traditional cultural heritage during their learning of interior furnishing design. By doing so, it enhances the educational quality of interior design courses and strengthens students' national cultural confidence. Therefore, this paper proposes corresponding countermeasures to improve the teaching quality of interior design courses and promote the integration and dissemination of traditional culture, addressing the challenges faced in this process.

Disclosure statement

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Study on the Cultivation of College Students' Autonomous English Learning Ability Based on OBE + PBL Teaching Principle

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Abstract: It is an important requirement for education and individual development to apply the Outcome-Based Education (OBE) + Problem-Based Learning (PBL) teaching principle to cultivate college students' autonomous English learning ability in modern society, which has become a new development trend in foreign language teaching in the new era to optimize the teaching structure of college English courses and transform students' English learning results. Based on the concept of OBE + PBL, this study adopts a combination of quantitative and qualitative analysis methods to reveal whether the four components of self-directed learning files, namely learner desire, learner wit, learner initiative, learner perseverance, and 22 sub-components, have a positive and significant correlation with college students' English scores. This paper explores the internal needs of college students for independent English learning. It guarantees the steady improvement of college students' independent English learning ability by introducing a student-centered project system.

Keywords: OBE + PBL teaching principle; College students independent learning; English proficiency; Correlation analysis; Project teaching

1. Introduction

Self-directed learning is the ability to self-manage, that is, to make decisions and deal with problems related to learning. Independent learning is based on cultivating talents with independent learning ability and adapting to social development. It is a kind of learning ability and a learning strategy [9]. The establishment of a learner-centered teaching viewpoint makes it the consensus of educators to cultivate learners' autonomous learning abilities. In addition to enabling students to master the necessary knowledge and skills, modern teaching pays more attention to improving students' learning ability, especially their independent learning ability, to lay a solid foundation for their lifelong learning [6]. Therefore, cultivating students' ability to learn

English independently is not only the main goal of English teaching but also the focus of educators and researchers.

In January 2009, the Key Points of 2009 issued by the Department of Higher Education of the Ministry of Education mentioned for the first time the promotion of the curriculum planning of college English independent education and made clear the basic requirements for promoting college students' independent learning and training using information technology [2]. In February 2017, the General Office of the Ministry of Education issued a notice on the "Key Points of Education Informatization Work in 2017," which will build independent learning networks and communities as the focus of higher education reform and development, and based on the different needs of different professional education, detailed new requirements for independent learning and training of higher talents. In March 2022, the launch of the National Higher Education Smart Education Platform and the National Vocational Education Smart Education Platform will provide new impetus for the independent learning and training of higher talents [3].

2. Theoretical basis for the cultivation of English autonomous learning ability of college students in OBE + PBL teaching principle

Outcome-Based Education (OBE) concept is a student-centered, student-oriented learning output, through the evaluation and use of learning output, and continuous improvement of an education model. The Problem-Based Learning (PBL) teaching method was first proposed by American neurologist, Professor Barrows at McMaster University in 1969 and was initially mainly used in medical education. The PBL teaching method is also student-centered. Under the guidance of teachers, it takes problems as the starting point for learning. In other words, it guides students to actively explore and think based on real problem situations, and plans learning content with problem-solving as the core, so that students can seek solutions around problems. A teaching method that trains students to discover, analyze, and solve problems independently. The teaching process of PBL can be used as a transition from solving virtual problems to solving practical problems [4]. It can be said that OBE points out the concept and direction of curriculum teaching, while PBL provides the way of curriculum design and implementation. OBE + PBL integrated education and teaching principle is an innovative teaching mode.

From a demand-oriented perspective, based on the OBE + PBL learning mode to promote the cultivation of college students' independent English learning ability, it will be an inevitable trend to build a multi-interactive curriculum teaching system in the future, which will play a promoting role in better improving the English curriculum teaching system and improving the comprehensive ability of college students' English listening, speaking, reading, and writing. Fully realizing the systematic development of independent learning and practical training of English teaching at all stages to meet the personalized learning needs of college students in the new era of English knowledge. Lay a solid foundation for college students to play their professional advantages in English course learning and adapt to the new environment of independent learning.

3. The dilemma of cultivating English autonomous learning ability of college students in OBE + PBL teaching principle

College English courses cover most of the university majors, and the number of students is large, accounting

for 4 to 6 credits, a period of about two years. With the development of the social economy and globalization, society has put forward higher requirements for the English level of college talents, and college English teaching has gradually failed to meet the needs of social development.

3.1. Disconnection between practical teaching and theoretical teaching

College English courses generally include reading and writing courses and audio-visual speaking courses. The content of the reading and writing course is mainly derived from the text content, focusing on strengthening students' basic vocabulary, phrases, and grammar knowledge, and exercising students' reading, translation, and writing abilities through exercises after class. Many contents of the audio-visual content are fixed, most of the learning content is out of touch with the social times, and the flexibility is weak. Some college English curriculum designs have failed to effectively strengthen students' English learning and expression ability, but unilaterally according to the traditional college English teaching method which mainly focuses on instilling language knowledge and supplemented by ability training, and the practical use of language is not strong in connection with positions, which has been unable to meet the needs of society.

3.2. Practical teaching content lags behind market demand

English is a very practical language tool, requiring students to find their advantages and disadvantages through continuous practice. However, the learning ability and learning methods of many college students are still in the senior high school stage, with weak learning initiative, unclear learning purpose, low enthusiasm and interest in learning, and a large number of students, accounting for 70%, lack of independent learning habits. Most of them are weak in English application and practice due to the lack of practice opportunities. College English, to some extent, is in a state of "only learning but not using." Therefore, in the process of college English learning, the leading and supervising role of teachers is extremely important [1].

3.3. The lack of students' subjective initiative in independent learning

OBE + PBL theory advocates the establishment of a student-centered practice system, a systematic English course education connection, and a "use to promote learning" education mode that emphasizes learners' learning practical ability, which is also an inevitable trend of college English curriculum reform. Based on this situation, the author conducted a college English lecture, the main purpose of which was to understand the current situation of college English teaching. The second is to understand students' needs for independent English learning. Many of these students who do not study well do not want to study well, nor cannot study well, but lack interest in learning. Through the discussion, it is found that the reasons for the lack of interest of most students are mainly concentrated in four aspects:

(1) Students do not understand the close relationship between their major and English, and cannot see the future and prospect of major + English development.
(2) Students do not understand the importance and necessity of the courses in their major.
(3) Students do not know how to learn college English well and to what extent. Students do not know the goals and tasks for each of the two years and four semesters.
(4) Students do not know the goals and tasks of the two years, four semesters, and each stage [7].

4. Multi-dimensional experiment combining OBE + PBL principle and independent learning ability

At the moment, the OBE + PBL integrated education teaching model has not been systematically defined, and most of it is manifested in classroom teaching in the way of practical application. In this study, 190 first-year college students in several colleges and universities in Hunan were investigated by questionnaire, and 169 valid experimental data were obtained (accounting for 89% of the total number). This paper mainly studies the correlation between the independent learning ability and English proficiency of first-year college students. The experimental data is obtained through the collection of actual samples, and the data is analyzed in detail. This study adopts the self-directed learning archives developed by Human Resource Development Enterprises (HRDE). The independent learning file is composed of four parts: learners' desire, learners' wit, learners' initiative, and learners' perseverance, which are further divided into 22 sub-parts with 164 questions [9].

All questionnaire choices were graded on a 10-component scale. The options range from "never" (0 points) to "always" (10 points). Statistical Package for Social Sciences (SPSS17.0) is used to analyze the quantitative data obtained from the questionnaire. During the data analysis, the results of the questionnaire will also be analyzed and compared to better ensure the reliability of the research results [8].

Pearson's correlation coefficient reveals that self-learning files have a positive and significant correlation with students' English scores (Pearson correlation coefficient is 0.247**). The Pearson correlation coefficients of learners' desire, learners' wit, learners' initiative, and learners' perseverance with students' English scores in the college entrance examination are 0.273**, 0.242**, 0.177*, and 0.205* respectively. Among them, learners' desire has the greatest correlation with English scores in the college entrance examination. Additionally, except for "goal orientation," "communication skills," and "goal retention," the other 19 sub-parts were positively and significantly correlated with English scores in the college entrance examination, among which "conflict resolution" was the strongest (Pearson correlation coefficient was 0.315**).

According to the survey data analysis, there is a significant correlation between college students' autonomous learning ability and their English proficiency. It shows the importance of independent learning and that guiding and cultivating students' independent learning ability is also an essential measure to meet the needs of social development [10].

5. Scientific strategies for cultivating college students' autonomous English learning ability based on OBE + PBL

On the whole, this teaching mode is seldom used in the training of college students' autonomous learning ability. This paper intends to combine the traditional foreign language teaching mode with OBE + PBL, hoping to provide innovative ideas and practical paths for the reform of the teaching mode of foreign language application-oriented talent training in local universities under the new liberal arts perspective.

5.1. Adopting a diversified education strategy centered on student growth

Traditional college English teaching assessment is mainly based on written test results, but in college English teaching based on the concept of OBE + PBL, teachers can arrange for students to form a study group first, take charge of a project independently, then design, discuss and summarize the project plan. Teachers carry out scientific educational guidance and content penetration for students' learning results and learning content

in each learning stage, so that students can fully display their learning results in each stage of the project. In the process of completing the project, students can learn more comprehensive knowledge and improve their problem-solving ability, which is of great significance to the development of students [5].

5.2. Diversity of educational evaluation methods for self-directed learning in OBE + PBL teaching mode

The independent learning of OBE + PBL teaching mode requires students to do more independent learning and cooperative learning, and the learning burden of students will increase correspondingly. Teachers can combine formative assessment with summative assessment. In addition to considering students' theoretical knowledge of English, teachers should also take the elements of practical English application ability as an important basis for teaching assessment, to achieve the goal of "taking assessment as the basis and taking students as the center," that is, promoting learning through assessment. Simultaneously, teachers need to change from the traditional teaching mode to the role of leader and mentor. For example, in the classroom, students' performances in debates, activities, competitions, and other aspects in and out of the classroom should be incorporated into the end-of-term evaluation system from multiple perspectives and elements, and students and teachers should conduct two-way evaluation, and combine the evaluation results with the written test results, as a final grade evaluation criterion.

5.3. OBE + PBL teaching model of self-learning training precise positioning

Colleges and universities need to strengthen the training of teachers, improve the application ability of teachers' OBE + PBL teaching methods, and train more OBE + PBL teaching experts. In terms of teaching facilities and resources, further improvement should be carried out to provide a better guarantee for the implementation of OBE + PBL teaching mode, improve students' autonomous learning ability through various ways, and make students better adapt to the requirements of OBE + PBL teaching mode. Strengthen international cooperation and exchanges, learn advanced PBL teaching concepts and experiences from abroad, and promote the better development of PBL teaching mode in local universities.

In the future, universities need to further improve their policies, teaching staff construction, teaching facilities, and resources to promote the better development of OBE + PBL teaching mode in universities. It is believed that soon, OBE + PBL teaching mode will become the mainstream teaching mode in colleges and universities, and make greater contributions to training more compound talents.

6. Conclusion

OBE + PBL integrated education teaching mode analyzes the maximum ability that learners can achieve after learning (learning outcomes), adopts the idea of reverse design and positive support, builds the curriculum system based on learning outcomes, determines teaching strategies and develops evaluation standards, lays more emphasis on students' values, beliefs and attitudes, and pays more attention to what students can learn and how to use it. It is found that the educational concept can fully mobilize students' enthusiasm, initiative, and creativity in learning.

Practice has proved that the combination of the OBE education concept and the PBL teaching method can greatly improve students' learning interest and attention, not only improve the quality of talent training but also realize the transformation of the education paradigm in local application-oriented undergraduate

colleges. The curriculum reform of foreign language teaching should not only absorb the experience of traditional teaching knowledge teaching system, high efficiency, and wide audience. It is also necessary to integrate with the industry and learn advanced creative ideas and operation modes. In teaching, the introduction of the OBE education concept can highlight the student-centered, and build a demand-oriented, student-oriented, ability-oriented, cooperative, and application-oriented classroom teaching system.

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Exploration and Practice of Integrating Curriculum Ideology and Politics into the Teaching of "Urban Railway Operation Equipment"

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Abstract: Organic integration of ideological and political education elements into the teaching of professional courses is an urgent task for the construction and reform of professional courses under the new situation of current vocational education. The article takes curriculum ideology and politics of Urban Railway Operation Equipment as the main body of analysis. Firstly, analyzes the necessity of implementing curriculum ideology and politics, secondly analyzes and digs out the elements of ideology and politics contained in the course, and finally puts forward the strategy of implementing curriculum ideology and politics in the course. It provides a reference for the construction of the elements of ideology and politics into the classroom for the transportation operation management majors of the current higher vocational colleges.

Keywords: Curriculum ideology and politics; Urban rail transit; Operation equipment; Core course

1. Introduction

The cultivation of talents in higher education is a process of unifying the cultivation of people and talents. In the past, ideological and political education in colleges and universities mainly relied on ideological and political courses to carry out ideological and moral guidance and education. It was difficult to connect the ideological and political work system to the entire talent training system [1].

There were "two skins" problems in ideological and political education with professional education. To thoroughly implement the important exposition of General Secretary Xi Jinping on education and the spirit of the National Education Conference, to carry out ideological and political education throughout the talent training system, to comprehensively promote the construction of curriculum ideology and politics in colleges

and universities, to play a good role in educating people in each course, and to improve the quality of talent training in colleges and universities, the Ministry of Education issued the "Guidelines for the Construction of Curriculum Ideology and Politics in Colleges and Universities" on May 28th, 2020 in the Curriculum Ideology and Politics Construction Guidance Program. Starting from the goal requirements, content focus, teaching system, quality evaluation system, and other aspects of curriculum ideological and political construction, it clarifies the work ideas and points out the direction of work for comprehensively promoting the construction of college curriculum ideological and political.

The main form of curriculum ideology and politics construction is to integrate elements of ideological and political education, including theoretical knowledge, value concepts, and spiritual pursuit of ideological and political education into various courses, and subconsciously influence students' ideology and behavior [2]. In the process of curriculum ideology and political construction, teachers of specialized courses should assume the hidden education function, each of them should "keep a good canal and plant a good responsibility field," dig deep into the ideological and political education elements of the major and the course, and organically integrate the elements with professional knowledge, and teach with virtue teaching and moral education in classroom teaching [3,4].

2. Analysis of the need to implement curricular ideology and politics in this course

2.1. Rapidly developing urban rail transit industry needs value leadership

Urban rail transit has become the preferred mode of public transportation for urban residents with its large capacity, high speed, safety, reliability, punctuality, and comfort, and is the backbone of China's comprehensive urban transportation system. At present, China's urban rail transit has entered a period of rapid development.

According to the official statistics of the Ministry of Transportation and Communications, as of the end of October 2024, a total of 54 cities (excluding Hong Kong, Macao and Taiwan) have opened and operated 313 urban rail transit lines, with an operating mileage of 10,455.3 km, and 3.49 million trains in service, with a total passenger volume of 2.77 billion, and an inbound volume of 1.65 billion. Currently, Chongqing has opened 12 urban rail transit lines, with an operating mileage of 538 km. According to the plan, by 2050, Chongqing Municipal Rail Transit will build 18 rail transit lines with a total mileage length of about 850 km. The rapidly developing urban rail transit industry is in urgent need of a large number of passenger service personnel.

General Secretary Xi Jinping in the party's twentieth congress made a report proposed that we should carry out the project of citizen moral construction and promote the traditional Chinese virtues. We will speed up the building of a strong transport country, we should promote the spirit of hard work, struggle, dedication, creativity, diligence, and frugality in the whole society, and foster a new style and appearance of modern times [5]. How can such a large demand for urban rail transit passenger service talents adapt to the talent needs of the new era? In the case of busy and large passenger flow, how do passenger service personnel ensure the safety and efficiency of passenger service work? In addition to excellent professional knowledge and skills, under the guidance of socialist core values, they also need to form sound personality qualities, love for the rail transit industry, the professional orientation of the rail transit industry, as well as the firm professional ethics of "serving the people" and "putting passengers' needs first."

2.2. Course introduction and construction objectives

Station equipment management is a typical work task of urban rail transit operation, one of the core works of urban rail transit passenger transportation organization, and the key to ensuring the operation and production revenue and operation service quality. The course "Urban Railway Operation Equipment" is the professional core course of the urban railway operation management major, and it is opened in the second semester when the professional quality is gradually formed.

To fully implement the spirit of national ideological and political work and carry out the work of curriculum ideology and politics in depth, the teaching team of the course, according to the job requirements, after determining that the core competence of the job is the operation of operation-related equipment, such as passenger equipment, ticketing equipment, and traveling equipment, has deeply explored the ideological and political elements of the course and reorganized the quality objectives of the course teaching. This will cultivate students' serious and responsible work attitude as well as rigorous and meticulous work style, establish teamwork, communication, and coordination awareness, enhance green awareness, and the spirit of innovation, develop the service consciousness of "wholeheartedly for the people," the dedication consciousness of "dutifully for the traffic" and the spirit of "who goes ahead without me," cultivate students' "four all" dynamic security awareness of "all staff, all process, all round, all weather," enhance the sense of achievement, sense of responsibility and sense of professional identity to serve the community, enhance patriotic feelings and national pride for the course of the ideological and political education objectives.

3. Practices and case studies of integrating ideological and political elements into the teaching of this course

3.1. Analysis of teaching objects

The target of this course is the first-year students majoring in urban rail transit operation and management, and the teaching time is the second semester. At this time, the students have already received the "enlightenment" of the professional basic course "Introduction to Urban Railway Transportation," but they do not have a systematic and comprehensive understanding of the core position of urban rail transportation passenger service - station equipment management position. In terms of professional quality, they have not established a sense of service, a sense of responsibility, and a sense of safety for station clerk positions, and they are not enthusiastic enough about the urban rail transit industry and do not have a strong sense of mission for transportation power.

3.2. Developing teaching strategies

To better achieve the above training objectives, combined with the characteristics of rail transit operation management, this course adopts the contextual teaching method, sets up a typical work situation of urban rail transit equipment management, adopts the online + offline hybrid teaching mode, and creates a system of ideology and politics that integrates the psychological education, labor education, and skills. The curriculum focuses on the main line of "keeping the original heart, cultivating originality and cultivating confidence," completes the construction of curriculum ideology and politics resource library, and integrates the spirit of 5S education—focusing on organization, discipline, and continuous improvement— as well as love and dedication to work, excellence and transportation into the curriculum through enterprise cases, task implementation, and classroom competitions. In this way, students can develop the skills of emergency

response to abnormal situations, so that the ideological and political implementation can complete the dual training of students' skills + qualities.

Table 1. Integration of curriculum moral education objectives and ideological and political education elements

Teaching situation	Goal of curriculum moral education	Ideological and political education elements into the point
Learning scenario 1: Urban rail transit lines and station equipment	1. Introduce industry characteristics and typical achievements of local rail transit to form industry identity and stimulate industry pride. 2. Integrate rail transit and local red education spirit to enhance patriotic feelings and national pride. 3. Analyze the significance of transportation modernization and form a sense of mission of transportation power.	1. Chongqing Rail Transit official Douyin video — track knowledge (lines, why can't rail transit trains be like buses, etc.). 2. Accident cases — Nanjing Metro train collision inspection gate incident, Chongqing rail ring line collision accident, etc. 3. Snippet of "Flying Across Mountain City" from the documentary "Journey Through China." 4. The largest subway station in Asia — Nanjing Xinjiekou Station. 5. China's first TOD project — Shapingba Station, China's deepest station from the ground —Hongtudi Station, the first straddle monorail elevated station co-built and co-existing with commercial and residential buildings in China — Liziba Station, and the characteristic culture of Chongqing rail transit "ten lines and one ring" line.
Learning scenario 2: Urban rail transit vehicle equipment	1. Introduce the achievements of China's rail transit vehicles and the characteristics of local rail transit vehicles to further form a sense of identity and inspire pride in the industry. 2. Introduce vehicle-related videos, as well as the cognition and operation of real equipment, to enhance students' care for equipment, love, and dedication to the spirit of Lao Song.	1. Clip of "Chinese Car" from the documentary "Super Project." 2. News report "The first mountain AS train in China, Solving the particularity of mountain cities." 3. Chongqing Rail Transit official Douyin video — safe ride, no storming the door. 4. Emergency equipment for subway cars.
Learning scenario 3: Traction and power supply equipment for urban rail transit	1. Introduce the achievements of local rail transit vehicles to further form a sense of industry identity and stimulate industry pride. 2. Analyze the advantages of electric power transmission, energy saving, and emission reduction in the rail transit industry, and enhance the awareness of green environmental protection.	1. News report "Fill the technology Gap! China's first double-flow system urban (suburban) railway opened." 2. Emergency handling case of power supply tripping fault of Shanghai Metro Line 1.
Learning scenario 4: Urban rail transit signal and communication system	1. Integrate the spirit of model workers and cultivate the professional spirit of practical work and dedication of students. 2. Integrate China's achievements in signal and communication, as well as relevant policies of transportation power and science and technology power, and cultivate students' innovative spirit of pursuing excellence.	1. Ordinary post with unusual job — subway signal worker. 2. Lanzhou Weiwu train derailment case. 3. China breaks foreign monopoly, develops and puts into production a Communication-Based Train Control (CBTC) signal system with completely independent intellectual property rights. 4. Shanghai Metro Line 10 has for the first time realized a fully automated driving mode with the highest automation level (GoA4 level). 5. Interpretation of relevant policies of the Outline for Building a Strong Transportation Country and the Outline for Digital Transportation Planning and Development.
Learning scenario 5: Urban railway station equipment	1. Analyze the rapid development of station equipment in modernization, and further enhance students' innovative spirit of pursuing excellence. 2. Integrate negative cases of station equipment operation to warn students to abide by laws and regulations.	1. Chongqing Rail Transit official Douyin video — track knowledge (station equipment). 2. Clips of "Beijing Subway Network" and "Traffic Network" from the documentary "Super Project." 3. A case of carelessness leading to incorrect ticket payment. 4. History of subway ticket media. 5. Alipay scan code behind the gate secret.

3.3. Teaching case analysis

Take the teaching task of Learning Scenario 5: Urban Railway Station Equipment, Task 2. Automatic Ticket Vending System as an example. At a time when electronic payments such as code payment and NFC payment are prevalent, the number of passengers using automatic ticket vending machines has decreased significantly. When receiving and dealing with passengers using automatic ticket vending machines, station attendants are prone to be inactive and slack in the work process. Firstly, through the negative case of "a passenger transport service negligence and carelessness leading to the damage of passenger interests," students are awakened to the alarm, and initially realize the importance of a rigorous, meticulous, standardized work style. Secondly, theoretical teaching helps students to form a standardized operational awareness, and simulate similar situations in small groups to consolidate and deepen understanding. Finally, through the Chongqing Rail Transit official Douyin video— "Wearing the same red badge, all striving to do ordinary things extraordinarily" they all share a common name: members of the Communist Party of China, as well as themes like "Ordinary positions, extraordinary persistence" and "Travel with warmth, bringing comfort to every place," students are guided with positive influences. The power of role models helps students to establish the work style of "creating extraordinary in the ordinary" and cultivate the sense of "serving the people wholeheartedly."

4. Summary

Curriculum ideology and politics are the main way for college students to realize all-round, all-staff, all-process education, and it is a long-term systematic project to integrate elements of ideological and political education into professional courses [6]. The article takes the transportation operation management of Urban Rail Transit Operation Equipment course as an example and explains that according to the job requirements and talent training objectives to determine the objectives of the course of ideological and political education, combined with the characteristics of the students in the context of the new era. Fully explored the ideological and political elements corresponding to the various lecture scenarios, in a form that is pleasing to the students. Subtly, it assists students in establishing the correct values—such as a strong service consciousness, responsibility, risk awareness, and safety consciousness—required in the rail transit passenger service industry. It also trains qualified talents for the rail transit passenger service industry and provides valuable examples for the ideological and political education of other professional courses in traffic operation management.

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Immersive Experience and Cultural Inheritance: Museum Exhibition Design Based on Metaverse Technology

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Abstract: Based on the current status of museum operations and exhibition display schemes, this paper constructs museum exhibition methods and design proposals utilizing metaverse technology through its innovation and optimization. Further discussions are conducted on the characteristics of metaverse technology and its application strategies, providing novel possibilities for the promotion and content dissemination of museum products.

Keywords: Metaverse technology; Immersive experience; Exhibition design; Operational system

1. Introduction

Currently, museums in various regions are transitioning from traditional business models to digital services, integrating advanced scientific and technological means into their service offerings, with metaverse technology as a representative. This paper explores strategies for applying metaverse technology in museum exhibition content, daily operation plans, and management directions to ensure stable museum operations.

2. Characteristics of metaverse technology

The initial concept of the metaverse originated from abstract science fiction universes and virtual interactive entertainment scenarios. Compared to traditional spatial scenarios, the metaverse-based space better satisfies users' needs for various mechanisms. In terms of connotation and definition, the metaverse differs slightly from current research directions. For instance, in the literary field, the metaverse primarily refers to transforming individual users into digital avatars via real devices and virtual networks, enabling communication between users. From an internet perspective, the metaverse is not merely a communication

technology or interactive platform. It can also evolve into an automated and intelligent operational system with infinite possibilities. Some scholars view the metaverse as the third-generation communication environment based on the internet, enabling not only virtual interactions but also interactions between virtuality and reality, thereby influencing people's daily lives, work, and learning.

In examining the intrinsic nature of metaverse technology, experts note that it is not limited to a single technology but rather represents the core concept of the metaverse technology structure and application system. This includes artificial intelligence, 5G, big data, virtual reality (VR), augmented reality (AR), and other technologies, which can be broadly classified into three types based on their practical applications and fundamental attributes.

Firstly, technologies that expand the real environment, utilizing virtual platforms or augmented reality to achieve technological application effects. Secondly, digital twin technology which maps real-time changes from the physical world to virtual environments, enabling virtual-real interactions. Thirdly, blockchain technology, commonly applied in the construction and optimization of economic structural systems.

Compared to traditional technologies, the metaverse offers distinct advantages and complex characteristics that require comprehensive analysis and research from multiple perspectives.

3. Application strategies of metaverse technology

3.1. Optimizing exhibition methods

Traditional museum exhibitions primarily focus on physical objects, supported by explanatory text, videos, images, and audio. Metaverse technology not only enables virtual exhibit displays but also enriches digital exhibition forms and states through high-definition data. Thus, it emerges as a new exhibition format alongside physical objects.

Utilizing high-precision hardware devices such as 3D scanners, non-contact scanners, and computed tomography (CT) scanners, museums can capture and enlarge details that are not visible to the naked eye, enhancing the viewing and research experience for users. Additionally, metaverse technology optimizes and enhances the perception data of exhibits, enabling various display possibilities like virtual exhibitions and online exhibitions. Combining metaverse technology with physical exhibits creates more exhibition possibilities, such as integrating holographic projections and VR technology for exhibit displays, deepening user impression while protecting the exhibits.

3.2. Scene construction

In the internet development process, scenes primarily arise from the integration of mobile terminal devices, social platforms, big data technology, hardware sensors, and positioning systems. The metaverse further optimizes and expands upon these foundations, encompassing not only the basic platforms of various spaces but also the soft elements of user experience. For museums, reconstructing exhibits and historical scenes is a crucial channel for displaying culture. The emergence of the metaverse provides users with new avenues and possibilities for museum visitation.

Currently, most museums rely on physical exhibition hall screens for virtual scene displays, utilizing technologies like holographic projections or photographs for digital exhibition. While these methods effectively showcase museum culture, they remain disconnected from users' behaviors, serving as mere

digital transformations of physical exhibitions. With metaverse technology, however, museums can integrate users' real-time reactions and visitation states into the virtual exhibition environment. By utilizing extended reality technology, museums can create a virtually and realistically fused environment in the exhibition hall, providing users with a more immersive and realistic viewing experience.

3.3. Forging a new form of venues
3.3.1. Systematic approach
Metaverse technology is a comprehensive technical means that combines modern information and virtual platforms. Essentially, this technology is not merely a reference to a specific technique but rather an amalgamation of modern technological structures. Therefore, when constructing the metaverse, relying solely on a single or specialized technology cannot truly realize its establishment.

In the daily operations of museums, the application of metaverse technology is widespread. Whether it's data collection or exhibition planning, this technology can permeate various processes, forming a fully covered application structure system. Additionally, utilizing the metaverse's virtual-real space exchange, lighting, and projection effects not only provides users with a more authentic and immersive atmosphere but also enhances the technological sensibility of museum exhibitions. This ensures that the displayed content and exhibits become more attractive and interactive, altering users' negative impressions of museums and cultivating a positive, vibrant, and intelligent new museum facade.

Integrating metaverse technology with museums also ensures the original behind-the-scenes cultural and museum work is presented to users. This opens a connecting channel for users to understand the stories behind the museum's exhibition content, deepening their impression of the exhibitions while showcasing the practical effects of scientific and technological means on museums and cultural inheritance.

3.3.2. Personalization
Essentially, museums are the primary service institutions for public culture, with users being the core of their work. To ensure stable and continuous operation in the long-term development of museums, they must establish more equitable relationships with users. Applying metaverse technology in museum exhibition links can accelerate the connection between users and museums, providing more systematic and intelligent viewing services.

Furthermore, metaverse technology, utilizing user perception systems, big data systems, and artificial intelligence technology, can offer more personalized viewing content to users. Through virtual artificial intelligence, users can customize their viewing routes and receive personalized explanations of cultural relics and exhibits. This enhances users' acceptance of the exhibits and museum display content, actively transforming the traditional passive information reception mode during museum exhibitions.

Metaverse technology also enables users to participate in optimizing and improving museum content based on their interests, shifting their role from viewers to creators. This elevates users' enthusiasm and passion for exploring museum culture.

4. Conclusion

In summary, compared to traditional management techniques, the integration of metaverse technology with museums exhibits distinct advantages and characteristics in the display of museum artifacts and cultural

dissemination. The core reason is that this technology effectively establishes a virtual space, offering users more personalized and intelligent viewing services. It fully leverages the social and educational functions of museums. Based on the current application status of metaverse technology, museums across various regions in China primarily focus on metaverse technology in their digital dissemination and innovative paths. They aim to create a cloud exhibition platform that aligns with the museum's operational model, realizing digitalized operations of collections and modern management paradigms.

Disclosure statement

The author declares no conflict of interest.

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Research on the Path of Integrating Chinese Traditional Culture into College English Education and Teaching

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Abstract: In today's increasingly globalized world, college English education is no longer just about teaching language skills. It also carries the important mission of cultural dissemination and exchange. As the spiritual treasure of the Chinese nation, traditional Chinese culture has increasingly demonstrated its unique charm and value on the global stage. Integrating traditional Chinese culture into college English education not only helps enhance students' cultural identity and pride but also improves their cross-cultural communication skills, laying a solid foundation for cultivating high-quality talents with an international perspective. Based on this, the author analyzes and summarizes the significance and strategies of college English education based on traditional Chinese culture, aiming to further promote the inheritance and development of excellent traditional Chinese culture.

Keywords: Traditional Chinese culture; College English education; Cultural dissemination

1. Introduction

Driven by the wave of globalization, college English education faces unprecedented new challenges and requirements. It not only aims to achieve the basic goals of language teaching, namely cultivating students' English application skills but also shoulders the important mission of disseminating excellent traditional Chinese culture to the international community. Integrating excellent traditional Chinese culture into college English education can enrich teaching content and highlight the unique charm of Chinese culture globally, further enhancing China's international influence and cultural soft power. Therefore, this article focuses on analyzing the integration of traditional Chinese culture and college English education work, hoping to inspire relevant educators in the field.

2. The importance of integrating traditional Chinese culture into college English education

2.1. Deepening the demand for college English education

As an important part of cultivating college students' comprehensive literacy, college English education provides strong support for enhancing their overall English proficiency, enabling them to excel in academic research, career competition, and international exchanges. However, in traditional college English teaching modes, teachers often focus too much on vocabulary memorization. Although this approach helps expand students' vocabulary to some extent, the learning process can become boring and difficult to effectively stimulate students' enthusiasm and motivation in the long run.

To break this dilemma, skillfully integrating traditional Chinese culture into college English education and combining cross-cultural factors for teaching is undoubtedly a worthwhile direction to explore and practice. This teaching model can enrich the content and form of English teaching, fully mobilize students' interest in learning English, and allow them to deepen their understanding of the humanistic connotations behind the English language while learning about traditional Chinese culture, achieving twice the result with half the effort in English learning.

2.2. Meeting the demand for external communication of Chinese culture

With the continuous deepening and accelerated development of globalization, international exchanges and cooperation have become increasingly frequent. Cultural exchanges and integrations have also shown unprecedented dynamism. In this context, traditional Chinese culture plays a crucial role in promoting China's national image externally. It is not only a bridge connecting friendship between China and other countries but also an important carrier for showcasing Chinese wisdom and transmitting Chinese values.

As a new force in society, college students have a high degree of acceptance and curiosity about new things and multiculturalism. In the process of college English education, students will inevitably encounter some foreign cultures. These foreign cultures, like a double-edged sword, have a certain positive or negative impact on the establishment of students' worldviews, life views, and values. Therefore, integrating traditional Chinese culture into college English education is mainly to inherit and promote traditional Chinese culture, compensate for students' misconceptions when encountering foreign cultures, and help students consciously achieve critical reflection while accepting foreign cultures, thereby establishing correct worldviews, life views, and values.

2.3. Cultivating talents for external cultural communication

Due to limitations in external influence and language communication barriers, the external dissemination effect of traditional Chinese culture is still not satisfactory, failing to fully and truly showcase its rich connotations to the international community. With the steady improvement of China's international status, promoting the deep integration of traditional Chinese culture with the international community has become an urgent task. Effective cultural exchanges and wide dissemination cannot be separated from the cultivation of professional external communication talents, which is an important mission of college education.

Traditional Chinese culture is profound and covers a wide range of content. However, to be widely disseminated on the international stage, it must cross language boundaries. Strengthening cultural exchanges between China and foreign countries urgently requires cultivating a large number of talents who are proficient in both Chinese and English and have excellent communication skills. In this context, college

English education should focus on strengthening students' international communication skills and cultivating a backbone force for the external dissemination of traditional Chinese culture through the global language of English.

3. Path analysis of integrating traditional Chinese culture into college English education

3.1. Integrating traditional cultural elements into English textbooks

To effectively promote the deep integration of college English teaching and traditional Chinese culture, colleges and universities should timely innovate the content of English textbooks, ensuring that the textbooks fully integrate rich and diverse traditional cultural elements. This creates a superior learning environment for students from different majors to explore traditional Chinese culture in depth. Colleges and universities can invite experts and scholars in the field of English education to collaborate deeply with their English teachers in textbook compilation and integrate traditional Chinese culture naturally with English textbooks through rigorous content review.

3.2. Improving English teachers' traditional cultural literacy

At the intersection of college English education and the dissemination of traditional Chinese culture, to ensure the deep integration of English teaching and traditional Chinese culture and achieve the educational goal of cultivating talents with both moral integrity and professional skills, English teachers must have a high level of cultural literacy and a strong sense of responsibility to inherit traditional Chinese culture. Colleges and universities should regularly organize English teachers to participate in professional training activities that cover profound knowledge of traditional Chinese culture. This enables English teachers to deeply understand and love their own national culture. Advanced teaching methods should also be imparted to help teachers skillfully integrate traditional cultural elements into English teaching.

3.3. Innovating and optimizing English teaching methods

Tailoring teaching methods to students' interests and professional development needs is crucial for promoting the effective penetration of traditional Chinese culture. College English teachers can select suitable teaching methods from modern teaching approaches such as cooperative inquiry, situational teaching, and thematic teaching to activate the atmosphere of English classroom teaching and deepen the integration of English teaching and traditional Chinese culture.

3.4. Expanding extracurricular learning channels

In the vast field of college English education, teachers should place the cultivation of students' learning interests at the core position and actively explore effective ways to deeply integrate traditional Chinese culture with college English education. With the rapid development of technology, the internet provides unprecedented opportunities for education. Colleges and universities should fully utilize this powerful medium to cleverly integrate the essence of traditional Chinese culture into the development of college English education through various platforms and technologies.

4. Conclusion

The deep integration of traditional Chinese culture and college English education is an inevitable trend of modern times. It is also the only way to promote the dual enhancement of college English education in terms of cultural depth and breadth. Based on the specific current situation of college English teaching, this article proposes paths for their integration, hoping to provide new opportunities and platforms for the inheritance and innovation of Chinese culture.

Disclosure statement

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Application of the Flipped Classroom in College English Translation Courses

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Abstract: As the information age progresses, online learning platforms have emerged, enabling students to access higher-quality learning resources. The integration of information technology and traditional classrooms is something that teachers need to explore to develop teaching methods that are modern and creative in the new era. The advent of the flipped classroom not only challenges and enhances teachers' teaching abilities but also represents a significant transformation that helps students shift from passive learning to self-directed learning and overcomes the drawbacks of the traditional lecture-based approach. In light of the negative phenomena in current traditional lectures, such as low motivation, poor classroom participation, and inadequate knowledge acquisition, this paper uses the translation class for English majors as an example to conduct a comprehensive investigation into the potential impacts of the flipped classroom and how to apply the flipped classroom model to the translation class.

Keywords: Flipped classroom; Translation class; Information age; College English teaching

1. Introduction

In keeping with the onward march of the times, the demand for educational reform has become more and more insistent. The issue of how to enable students to learn independently and transform from being passive participants in the classroom to active leaders has emerged as a concern and area of exploration for college teachers. The remarkable expansion of the Internet has provided the people with a solution.

Owing to big data, it has become highly convenient to access both domestic and international information or to seek answers to complex problems. Particularly during the past pandemic period, online classes and courses have strikingly exhibited the vitality of new educational approaches. The emergence of the flipped classroom, based on the principle of "online learning and offline problem-solving" is a fitting response to the need for educational reform. However, this counters the current teaching method of "offline lecturing and offline question and answer" that is prevalent in China. Nevertheless, the unique advantages of

the flipped classroom are by no means negligible. As the old saying goes, "it is better to teach people to fish than to give them fish." In this new era, teachers are obliged to cultivate "new-age students" who possess the abilities of independent learning, self-discipline, and resource exploration. Hence, it is essential to study how the flipped classroom can be integrated into the existing lecture-based classrooms, capitalizing on its distinct strengths.

With the rapid development of online technology and the growing popularity of the flipped classroom, domestic scholars have conducted more extensive research. Most scholars hold the view that the flipped classroom, as a new teaching model, offers a novel perspective for English teaching. The application of the flipped classroom in teaching can enhance the opportunities for classroom communication and interaction and foster students' independent learning capacity and teamwork spirit. As time progresses, the drawbacks of traditional education have gradually become apparent and the flipped classroom can remedy the previous shortcomings and improve teaching efficiency. However, many college and university teachers have not yet formed a correct understanding and approach to cultivating students' translation abilities, and one of the crucial reasons for the low teaching quality in many institutions of higher learning is the antiquated teaching mode.

Han suggests that the flipped classroom is not a newly coined term but has been practiced for a long time [3]. While not denying the benefits of the flipped classroom, he indicates that the seemingly simple concept of flipping has profound implications in practice, considering the long history of education's infatuation with new teaching methods before discarding them and that it might turn into the latest educational fad.

Tucker demonstrated through research that the flipped classroom is highly beneficial for adults learning outside of a second language context and contended that it can combine collaborative activities in the classroom with technology outside of the classroom, allowing teachers to cover all four aspects as planned, with a positive impact on learner training and autonomy [5]. Although there are still several major drawbacks that need to be addressed, the flipped classroom model clearly shows great potential for use in language classes.

This paper analyzes the justification for introducing the flipped classroom into the classroom by examining the literature and reviewing data on the deficiencies of the current traditional lecture method and the increasing calls for reform. The advantages of using the flipped classroom in English courses at colleges and universities are demonstrated through analysis and comparison. This paper is based on the current characteristics of modern times and the learning methods and features of college students. It is of great significance for the development of college students' independent learning and the transformation of the college English classroom.

2. The flipped classroom

The flipped classroom concept involves turning around the conventional sequence of knowledge delivery and knowledge internalization. In this approach, knowledge delivery takes place after class, while knowledge internalization occurs during class [2].

Typically, the traditional teaching process consists of two phases: imparting knowledge and facilitating its internalization. Knowledge is conveyed by teachers during classroom instruction, and students are

expected to internalize that knowledge by doing homework or practicing after class. However, the flipped classroom model has reversed this pattern. With the aid of technology, knowledge is imparted prior to class, and with the joint efforts of teachers and students, knowledge internalization happens in class [14]. Some teachers described the flipped classroom as a teaching mode where teachers mainly offer learning resources in the form of teaching videos. Students watch and study these learning resources like teaching videos before class, and then teachers and students work together in class to complete homework, address questions, conduct collaborative inquiries and engage in interactive communication activities.

The flipped classroom has reached a relatively mature stage overseas, which offers abundant experience for the curriculum design of different disciplines. In 2018, Shin, Lee, and Park came to the conclusion that flipped classroom learning could have a more positive impact in three aspects by comparing the flipped learning groups with the traditional learning groups in terms of independent goal setting and evaluation, self-leadership and problem-solving abilities in surgical nursing practice [6]. Also in 2018, Lee and Wallace applied the flipped classroom to college English teaching in South Korea [4]. Through empirical research, it was discovered that the academic performance of the experimental group was slightly higher than that of the control group, yet there was no significant statistical difference.

In 2012, researches on flipped classroom started in China. Zhang, Wang, and Zhang developed a more refined teaching model on the basis of Robert Talbert's flipped classroom framework [14]. They achieved this by systematically organizing and analyzing the origin, concept, characteristics as well as foreign teaching examples related to the flipped classroom.

Song, Meng, and Yan delved into diverse flipped classroom models put forward by numerous learners from the perspective of cognitive load [12]. Examples of these models include Karplus's Explore-Explain-Apply model, Musallam's Explore-Flip-Apply model, and McCarthy's 4 Mode Application Techniques (MAT) teaching model, and the like. Their exploration aimed to offer assistance for the applied research on the flipped classroom.

Cao probed into certain patterns regarding the application of the flipped classroom in elementary education [10]. The researcher particularly stressed that when recording English videos before class in primary schools, they should be made simple and engaging. In theory, as mentioned earlier, Zhang, Wang, and Zhang established a more ideal teaching model based on the flipped classroom structure proposed by Robert Talbert through sorting out relevant elements [14]. In practice, researchers have integrated the flipped classroom model with online teaching approaches such as MOOC and micro-classes to conduct experiments.

Fan et al. explored the educational function of WeChat and investigated the technical requirements of the flipped classroom [8]. Under the guidance of the construction model, they constructed a comprehensive teaching model and applied it in college public English classes. Through questionnaires and data analysis, they demonstrated that the flipped classroom supported by WeChat could effectively enhance students' learning outcomes.

There are also some researchers who are enthusiastic about exploring the establishment of a subject-related flipped classroom teaching model. It was discovered that the flipped classroom model had a positive impact on students' academic performance, thinking ability, practical ability, as well as their autonomy and cooperation ability. Meanwhile, it was also found that there were numerous issues in aspects such as teachers' pre-class preparation, video production and concept transformation. Zhong, Song, and Jiao described the flipped classroom as a teaching mode where teachers mainly offer learning resources in the form of teaching

videos [15]. Students watch and learn these learning resources like teaching videos prior to class, and then teachers and students jointly complete homework, answer questions, conduct collaborative inquiry and engage in interactive communication activities during class.

Shang and Yuli constructed a flipped classroom teaching model which had three dimensions, namely pre-class preview, in-class practice and post-class cohesion [13]. They achieved this by carrying out classroom experiments and questionnaire surveys. Currently, both local and international research on the flipped classroom have achieved certain outcomes, as detailed below.

Firstly, foreign scholars mainly concentrate their research on the flipped classroom in science and engineering fields. There are relatively few applied researches in liberal arts. As a result, the conclusions drawn from related studies are mostly centered around the practical and operational teaching experiences of the flipped classroom in science and engineering disciplines. Further exploration is still needed regarding its application in liberal arts teaching.

Secondly, numerous studies have investigated the teaching effect of the flipped classroom on students' academic performance, learning interest, and learning awareness when compared with traditional classroom teaching. However, there is a scarcity of in-depth research on the specific principles, strategies, and other detailed aspects of implementing the flipped classroom.

Thirdly, the duration of experimental research on flipped classroom teaching is rather short. This makes it unable to objectively reflect the long-term teaching effect of the flipped classroom as well as the changes in students' learning performance and learning behaviors within the flipped classroom setting.

Finally, the promotion of the flipped classroom is more successful in primary and secondary schools than in universities. Despite the fact that the flipped classroom initially emerged in university classrooms, there are more studies on its teaching effect in primary and secondary schools compared to those in universities.

Local research on the flipped classroom began relatively late but has witnessed rapid development. The research content encompasses both macro theoretical discussions and specific disciplinary applications. The emphasis on theoretical research is significantly greater than that on empirical and applied research. The main aspects of theoretical research include the development, concept, characteristics, teaching model, and other fundamental theories of the flipped classroom. Domestic scholars have already gained a profound understanding of the flipped classroom teaching model. Nevertheless, the current theoretical research lacks practical guidance to some extent, failing to offer effective instructions for front-line teachers when they implement the flipped classroom in teaching practice.

The main features of applied research are as follows. Firstly, the research mainly focuses on science and engineering disciplines and those with strong practical operation. Although some theoretical disciplines like literature and history are also involved, they make up a relatively small portion, which is in line with the research situation in other countries. Secondly, the research lacks both depth and breadth. In some applied studies, the research questions merely touch on the surface of aspects such as the teaching procedures and teaching videos of the flipped classroom, without delving deeply into the changes in teaching ideas and concepts behind it. Thirdly, there is a shortage of experimental research and teaching effect evaluation research on the flipped classroom. Moreover, the existing applied research fails to take into account some teaching influencing factors such as class size, subjects, and students' language ability.

3. Problems in the teaching of college English translation class

In 2007, two chemistry teachers, Bergmann and Sams from Woodland Park High School in Colorado, United States of America (USA), employed video recording software to record their teaching presentations and lectures and subsequently uploaded them onto the Internet [7]. This enabled students who missed classes to access and study the materials. Surprisingly, even those students who had attended the classes in person also availed themselves of these online resources to review and reinforce their learning. Later, the two teachers embarked on an experimental reversal of the traditional teaching model. They required students to watch pre-recorded videos at home prior to the class and then utilize the in-class time to complete assignments. This pedagogical approach, now known as the "flipped classroom" model, yielded results that surpassed expectations after its implementation. Consequently, the flipped classroom concept gained extensive popularity and was widely promoted in schools across the United States. Woodland Park High School is now widely regarded as the originator of the flipped classroom.

3.1. Unreasonable teaching methods

The lecture method, which is commonly used in teaching, involves the teacher directly presenting prepackaged knowledge, experiences, and the process of knowledge formation to students. This is accompanied by essential descriptions, illustrative examples, detailed explanations, visual illustrations, and logical arguments. Students, in turn, engage in learning through listening, observing, and thinking.

Although numerous experts in China have delved into the lecture method, they have reached the conclusion that, in the current educational context, there remains a certain necessity for its application. Some experts posit that due to the inherent limitations of declarative knowledge, grammar, vocabulary, and phonetics are best introduced in the classroom through the lecture method. It has been contended that, in response to the call for curriculum reform, the task of making students the central focus and active agents in the classroom poses a significant challenge for many teachers. Oftentimes, a lesson may seem to conclude with a high degree of apparent interactivity. However, in the absence of the teacher's in-depth and essential knowledge explanations, students' understanding of the key points remains superficial. Other scholars hold the view that the lecture method is particularly well-suited for English teaching. They argue that it not only facilitates the achievement of the primary objective of student learning but also contributes to the cultivation of students' general application skills.

In general, the research in this area primarily revolves around the inevitability of applying the lecture method within specific educational domains. It has been revealed that teaching methods and the curriculum are analogous to the two wheels of a vehicle or the two wings of a bird, in that they are mutually complementary and indispensable. Nevertheless, based on the current state of English teaching in China, there is a conspicuous lack of widespread adoption of diverse teaching methods tailored to different types of courses. The majority of schools still predominantly rely on the lecture method for teaching a wide variety of English classes. Although the lecture method possesses certain advantages that are not easily supplanted by other teaching modalities, it also harbors drawbacks that become particularly evident in the context of teaching procedural knowledge.

In a traditional lecture-based classroom, the teacher assumes a dominant role, with students relegated to the position of passive participants or mere listeners. They attempt to assimilate the knowledge imparted during the class time. This leads to a relatively low overall level of classroom participation. Additionally,

when students fail to adequately prepare for class, the overall efficiency of the teaching and learning process is severely compromised. Not only do they fail to acquire a sufficient depth of knowledge, but they may also become disengaged and bored as they struggle to keep pace with the teaching progress. The same holds true for teachers. If students are unable to collaborate effectively with teachers to complete the classroom teaching activities, it becomes impossible to adhere to the planned teaching arrangements and cover all the necessary content.

Moreover, during the classroom session, teachers are unable to provide highly targeted responses and instruction based on the individual needs and circumstances of students. They are also unable to fully optimize the utilization of teaching time and resources to address students' questions and resolve their learning difficulties. Conversely, teachers are often unable to ascertain in advance whether students have completed sufficient pre-study. As a result, they are compelled to teach knowledge that students may have already mastered in a sequential and perhaps redundant manner. At this juncture, students are more inclined to engage in extensive practice in an attempt to gauge their level of understanding of knowledge points or to have one-on-one question and answer sessions with the teacher, rather than revisiting and reinforcing the fundamental concepts. While the traditional lecture method has its own historical and pedagogical significance, its drawbacks cannot be overlooked or dismissed. There is an urgent need to explore and identify alternative strategies to address the shortcoming of its inability to foster students' ability to build upon their existing knowledge and promote deeper learning.

Bloom's Taxonomy categorized the cognitive thinking goal levels into six distinct tiers, ranging from low to high and from simple to complex: memory, understanding, application, analysis, evaluation, and innovation [1]. Memory and comprehension fall within the realm of lower-order thinking. When students remain confined to these two levels, their learning is superficial, focusing primarily on the literal meaning of the text and relying predominantly on rote memorization as a learning strategy. In contrast, application, analysis, evaluation, and innovation represent higher-order thinking and are associated with deep learning. Deep learning involves not only understanding the intentional content of the learning material but also discerning the author's intended meaning and the underlying significance. It emphasizes the stimulation of intrinsic motivation, active participation, high-level cognitive and metacognitive input, and the establishment of connections between old and new knowledge. The cultivation of deep learning is conducive to the promotion and development of higher-order thinking skills.

For the majority of students, the majority of new knowledge acquired during class typically hovers at the comprehension level. For more complex and challenging knowledge, it may necessitate the teacher expending several lessons on explanation. Even then, students may still be required to independently access relevant information after class, engage in extensive problem-solving, utilize deductive reasoning, and synthesize specific data and conditions in order to achieve a more profound understanding. The drawbacks of this approach are self-evident. Many students are deterred by the effort required and readily abandon the task. This is often due to their inability to identify the appropriate learning approach or access sufficient learning resources to effectively address their learning difficulties.

If the classroom environment could be transformed from one that emphasizes simple memorization and understanding to one that promotes application and innovation, it would not only stimulate students' creative thinking and foster the generation of novel insights during exchanges with the teacher but also serve as a powerful incentive for the teacher. The teacher would no longer be content with merely transmitting familiar

knowledge but would be compelled to engage in further research, consult a broader range of materials, and conduct more in-depth investigations within their academic field.

3.2. The lack of diversity of teaching materials

The advent of the information age has been a powerful catalyst for educational reform. In particular, the current prevalence of online education has witnessed many universities and educational institutions recording relevant courses and making them freely available on a multitude of apps. Today's youth, having grown up in the digital era, have been eyewitnesses to the ubiquity of the Internet and are at the vanguard of leveraging its potential. It has become a relatively effortless task for them to access educational resources and obtain the latest information through a diverse array of channels. However, as with all things, the Internet is a double-edged sword, presenting both advantages and disadvantages. One of the reasons why many schools have been hesitant to adopt the flipped classroom model is related to the Internet.

Many teachers and parents express concerns regarding the integration of the Internet into students' learning. They believe that, on the one hand, students generally lack self-control and are incapable of fully comprehending the consequences of their actions. They predominantly utilize mobile phones for entertainment or leisure pursuits. In the absence of strong self-discipline, they are prone to deviating from the original purpose of using the device. It is not uncommon for students to commence a search for information but gradually and unwittingly transition to engaging in online gaming. On the other hand, the extensive exposure to fragmented information disseminated by the Internet can have a deleterious effect on students' thinking abilities. The current overarching trend of the Internet is towards the dissemination of fragmented information, with the aim of enabling individuals to acquire a cursory understanding of a concept or read a book in the shortest possible time and in the most concise manner. However, this inevitably leads to a diminution in individuals' propensity to engage in active and in-depth thinking. Moreover, attempting to process a large volume of information within a short time frame, in the absence of a solid foundation of detailed knowledge, can result in mental confusion and cognitive overload. Additionally, most individuals tend to shy away from thinking due to their innate aversion to cognitive effort and potential failure, a phenomenon known as "knowing what you know, but not knowing what you don't know."

Conversely, many students are ardent proponents of the "flipped classroom" teaching mode. This is particularly true for college students, for whom self-study in preparation for exams without direct teacher guidance is a familiar practice. Whether it is preparing for the College English Tests Band 4 and 6, computer grade exams, teacher certification exams, or even interdisciplinary exams, the process is predominantly one of self-directed learning. Self-study typically involves scouring the Internet for relevant resources and following online courses. Many students have had the experience of sampling classes on various websites or institutional apps and then selecting the teacher who best aligns with their individual learning preferences and styles based on a comprehensive comparison. This has become an almost commonplace occurrence in our daily lives and serves as a vivid illustration of the profound impact of the Internet. It affords students greater opportunities to access superior teaching resources and expand their knowledge horizons. In a traditional classroom setting, students are required to adapt to the teacher's pace and teaching style. However, online courses can be customized to suit individual students' levels of knowledge and learning needs.

Secondly, the ability to replay online courses at any time offers significant convenience for learning, especially when it comes to grappling with difficult knowledge points. In the context of translation teaching,

if the class is conducted in a traditional offline format, the teacher, taking into account the overall level and teaching progress of the entire class, is unlikely to provide individualized instruction for each student. If students have questions, they are typically relegated to asking them individually after class. However, since students may not have fully grasped a newly introduced knowledge point, they may pose questions that could potentially be resolved with a modicum of further thought and reflection. To a certain extent, this not only represents a waste of precious teaching resources but also militates against the cultivation of students' independent thinking and problem-solving abilities. In contrast, if students access the class online, they can repeatedly review a particular knowledge point until they achieve a comprehensive understanding. Even if there are residual uncertainties, after further study and rumination, they can precisely pinpoint the areas that pose difficulties and then approach the teacher. This approach is more focused and efficient, as it does not disrupt the learning process of other students or impede their opportunity to ask questions, thereby maximizing the overall learning efficiency. Additionally, after conducting an in-depth study of a problem, students can engage in fruitful discussions with the teacher, express their own viewpoints and insights, and potentially arrive at more optimal solutions.

3.3. Unscientific examination patterns

The traditional English teaching model typically employs a rather limited and one-dimensional approach to assessing students' learning abilities and outcomes. The majority of schools rely on midterm and final exams or writing essays as the primary means of evaluating students' semester-long learning. However, such an approach fails to adequately account for the students' efforts and progress throughout the learning process. Instead, it attempts to distill a comprehensive evaluation of the students' complex learning journey into a simplistic and often inadequate format. It is patently clear that this approach is fundamentally unscientific. It cannot discount the fact that students' psychological states and test-taking mentalities can have a significant impact on their final grades. This is not only evident in school-year exams but also in entrance examinations, where numerous candidates underperform due to psychological factors such as test anxiety or stress.

Can one's previous efforts and accumulated knowledge be summarily dismissed or invalidated on the basis of a single suboptimal performance? Obviously, the answer is no. Therefore, in an educational environment such as a school, where the opportunity for comprehensive assessment exists, greater emphasis should be placed on students' genuine understanding and learning efforts rather than relying solely on a single test score to characterize their learning in a particular course. The design of the final exam should be more causally linked to and reflective of the learning process, rather than being an abstract and isolated assessment. Exam results should not be considered in isolation from the learning process but should be integrated and evaluated within the broader context of the entire learning experience.

4. Instructional design in the flipped classroom model

Learning a brand-new foreign language is not only about listening, reading and writing, but translation is also an essential part. When the language is transmitted to one's brain, many times they automatically translate it into their native language before understanding it. When the students have a certain level of mastery of the target language, although they can understand each other very naturally like their native language, there is a potential step of translation, transformation and understanding.

Thus, this step of translation is particularly important. In particular, as globalization increases, not only do people need to hire interpreters to help them communicate with foreigners or to translate their words in a timely manner during political negotiations between two countries, but also a large number of books are being imported, and even the transplantation of laws and regulations requires the help of bilingual people. This is the opportunity for translation courses to emerge. Many people will be puzzled by this: English majors have been training in listening, reading, writing and translating since they entered school, so why do they still need a special course to provide targeted teaching? In fact, this question is very easy to answer. Most students' lack of theoretical knowledge and the input of authentic materials lead to translated sentences or articles that are full of Chinese English.

It is not uncommon to find missing subjects or confusing sentence logic in Chinese to English texts. This is mainly due to the direct difference between Chinese and English. However, most schools are still using the traditional lecture method. The translation teacher stands at the podium and teaches the students how to translate and shows them examples of sentences. If there is enough time, students can also spend time in each class to practice the exercises after the class, and the teacher will then comment on them. But this often does not achieve a good result.

Firstly, the students' pre-study before class is often not focused, and most of them just skim through it. When the teacher is in class, students have little overall grasp of the knowledge of the lesson. It is very difficult to absorb and understand in class, let alone apply. Secondly, translation is a slow and careful job. In the classroom, students are required to complete the translation in a short time, which is undoubtedly a great challenge to their translation ability. Most students are new to systematic translation learning, and often panic to read the sentences as soon as the teacher gives them a question, thinking only to give an answer quickly. This will not only develop students' impatient character but also indirectly wear out their patience to analyze the sentences and polish the translation. Finally, the teacher's explanation may differ greatly from the students' own translation.

This will indirectly lead to two results. On the one hand, due to the time constraint, the teacher and students often cannot discuss in depth to see which aspect is wrong, which is not conducive to the students' thorough understanding of the support. On the other hand, the answer given by the student does not really expose the student's problem, because it is not an answer that has been thought through in a truly valuable way before being arrived at. Nor is the answer arrived at by the student on the basis of his or her own understanding of the point. There is no denying that the lecture method has its own merits, but it is clearly not appropriate in a highly hands-on process such as a translation class.

On the contrary, if teachers adopt the new teaching method of flipped classroom, they not only meet the requirements of quality education, but also fully mobilize students' learning enthusiasm, and better improve students' responsiveness and translation ability. Much of the future of higher education will evolve into purely online education, and college English teaching is facing this trend. As an emerging hybrid teaching model, the flipped classroom represents an important stage of development and will serve as a bridge between traditional teaching and online teaching. In the near future, higher education will gradually shift from teacher-led lecture-based education to student-led "flipped classroom" education. This will not only happen on university campuses, but is likely to spread further to primary and secondary schools. The reason why the flipped classroom has gained such a fierce response in China is due to its own unique advantages.

The implementation of flipped classroom helps to promote the development of reading and thinking

habits. When students preview new knowledge, they first read the textbook carefully and then complete the tasks assigned by the instructional video. Through reading the textbook, students' good reading habits are initially formed and their reading ability can be relatively improved. The ability to read texts is very important for students at all levels. Reading is the process of converting written symbols into abstract concepts and building a system of knowledge in the mind. Systematization is very important for learning all subjects. Almost all books are organized in a system that is unique to it. The mastery of this system is to open up the two veins of the subject learning. When the students look at individual sentences and cannot understand its meaning, it is impossible to talk about forming their own understanding and awareness on the basis of this, and then based on the overall construction of knowledge structure system. What's more, the improvement of reading ability will further improve students' thinking ability. When students read a material in detail, they tend to think about it in a certain way and are interested in reading related books, to think about it from different intellectual aspects. In the process, students' knowledge is expanded and they unknowingly shape their extended thinking as well.

Implementing a flipped classroom facilitates the implementation of a precise and fair teaching style. It cannot deny that there is a sequential difference in the speed of understanding of each individual. In the flipped classroom model, after students have completed their independent learning by watching instructional videos and other materials, they ask questions based on their own difficulties, and the teacher will provide precise answers based on each student's individual questions, which is a reflection of personalized teaching. Additionally, the teacher can also organize a discussion with the students, and then comment after the discussion. On the one hand, students become the master of the classroom and give full play to their role as the main body of the classroom. On the other hand, students' questions can be solved after thinking again.

Learning materials such as teaching videos can be widely shared, which is conducive to the sharing of quality educational resources and has a positive meaning to achieve balanced development of education. Students have the opportunity to have access to lectures by famous teachers from Tsinghua and Peking Universities and even foreign universities. This is of great help to students in places where teaching resources are scarcer. Although they do not have the opportunity to go out of the mountains now, the online resources can provide them with enough teaching resources to "insert the wings of outside help for their dreams, so that they can also stand on the shoulders of giants to see the world." Quantitative changes lead to qualitative changes, and when the time is ripe, it will help them to "stand higher over the mountains to get more profound knowledge and see a wider world."

The adoption of the flipped classroom model fosters the development of a new, liberated, and amicable teacher-student dynamic. This approach revolutionizes the conventional "teacher-centered" paradigm, embracing a "student-centered" philosophy. In this model, students engage with instructional videos autonomously, while face-to-face classroom time is reserved for interaction between teachers and students. The role of the teacher transitions from a taskmaster or planner to a mentor or facilitator. Within the flipped classroom, educators guide students in problem-solving and provide timely assistance through in-depth communication and engagement. Students are empowered to manage their own learning pace, articulate their queries and insights, and engage in discussions with teachers and peers, thus transitioning from passive recipients to active participants in their education. This shift encourages more open communication with educators, as students perceive them less as authoritative figures and more as supportive listeners. Teachers, in turn, are more inclined to assist students in overcoming challenges rather than dismissing their difficulties

with admonishments about inattention or lack of effort. This approach safeguards students' self-esteem and confidence, preventing them from developing a distaste for the subject and avoiding the trap of self-doubt and skepticism about their own capabilities.

4.1. Pre-class

Educators can produce concise, 10-minute video lessons, aiming to convey critical knowledge points efficiently [9]. These videos should incrementally increase in complexity, and students should complete related exercises, achieving a certain level of accuracy before advancing to subsequent content. This ensures a robust understanding of each concept, breaking down difficult points and tackling them progressively. Additionally, teachers should leverage online resources, using aids like PowerPoint presentations (PPTs) to enhance student engagement and prevent boredom from prolonged exposure to monotonous material. Concluding each lesson with links to renowned educators' explanations or analyses of the lesson's historical or cultural context can enrich students' understanding beyond the textbook.

4.2. In-class

During class, teachers can offer tailored explanations and analyses based on students' online responses, addressing complex issues and facilitating peer sharing of strategies and techniques in translation studies. Through discussion, students can uncover and rectify misconceptions in a timely manner, enhancing their understanding and refining their translation skills. This process not only fosters a collaborative learning environment but also deepens students' comprehension and practical abilities in translation. After the lecture, ample time should be allocated for translation practice, with the teacher providing targeted guidance and personalized feedback on individual students' translation challenges.

4.3. After-class

Post-lesson, teachers can utilize class groups to address queries and even produce a dedicated question and answer (Q&A) video at the conclusion of each unit. This video can summarize common or exemplary student questions, elucidating them with specific examples. Such a resource allows students to swiftly review and recall key points during future revisions, linking particular sentences to various questions for effective study.

5. Suggestions for enhancing English translation teaching in universities through the flipped classroom approach

The integration of the flipped classroom model represents a pioneering endeavor for the majority of Chinese universities, demanding a thoughtful and strategic implementation. Educators must avoid the pitfall of prematurely rushing into this pedagogical shift without proper planning and preparation [11]. The essence of the flipped classroom is not merely a rehash of textbook material, it is a transformative educational journey that requires a deep understanding of the cognitive processes, challenges, and learning priorities from the students' perspective.

To effectively harness the potential of the flipped classroom, teachers must adopt a student-centric approach to lesson preparation. This involves a thorough analysis of the subject matter to identify areas of potential difficulty and to prioritize content that requires in-depth exploration. By creating targeted instructional videos that address these specific challenges, educators can provide students with the

opportunity for multiple exposures to complex concepts, facilitating a deeper and more comprehensive understanding of the material.

Moreover, it is crucial for teachers to be attentive to student engagement during lectures, gauging whether the recorded materials have been effectively utilized and whether they have catalyzed active learning. This attentiveness can be achieved through direct observation, classroom discussions, and interactive activities that encourage students to apply their knowledge in real-time.

To further refine and adapt the flipped classroom model, feedback mechanisms are indispensable. At the conclusion of each lesson, teachers can solicit student feedback through formal assessments or by distributing questionnaires. These instruments should be designed to capture students' perceptions of the learning experience, the effectiveness of the video materials, and any suggestions for improvement. By analyzing this feedback, educators can make informed adjustments to their teaching strategies, ensuring that the flipped classroom remains a dynamic and responsive learning environment. In addition to soliciting feedback, teachers should consider the following actions to enhance the flipped classroom experience.

(1) Curriculum customization: Tailor the curriculum to meet the specific needs and interests of the student cohort, ensuring that the content is relevant and engaging.

(2) Interactive technologies: Leverage interactive technologies to facilitate communication and collaboration among students, both inside and outside the classroom.

(3) Peer learning: Encourage peer learning by creating opportunities for students to discuss, debate, and solve problems together, fostering a community of learners.

(4) Formative assessments: Implement formative assessments to monitor student progress continuously and provide timely feedback, allowing for adjustments in teaching methods and content.

(5) Professional development: Invest in ongoing professional development for teachers to stay abreast of the latest pedagogical research and technological advancements in flipped learning.

(6) Cultural sensitivity: Be mindful of cultural differences and learning styles, adjusting teaching strategies to accommodate diverse student backgrounds.

(7) Student autonomy: Promote student autonomy by encouraging self-directed learning and critical thinking, preparing students for lifelong learning beyond the classroom.

By implementing these suggestions, universities can enhance the effectiveness of English translation teaching, fostering a more dynamic, engaging, and student-focused learning environment that prepares students for success in their academic and professional pursuits.

6. Conclusion: embracing the flipped classroom for a holistic educational evolution

The flipped classroom, while a novel educational approach in many educational landscapes, particularly in China, is not without its challenges. It stands at the crossroads of traditional pedagogy and innovative learning strategies, often sparking debate and scrutiny. As teachers navigate this transformative educational path, it is crucial to maintain a balanced perspective. The teacher must neither dismiss the flipped classroom outright due to the resistance it may encounter, nor should they idolize it to the extent that they advocate for its universal adoption without consideration for context. A nuanced understanding is required, one that weighs the merits and demerits of this method on a case-by-case basis.

The traditional lecture method, with its emphasis on direct instruction and teacher-led learning, retains

its value in theoretical courses where students may struggle to independently deduce principles from practice. Conversely, the flipped classroom excels in practical domains, providing an enriched environment where students can engage in hands-on learning, receive immediate feedback, and benefit from targeted guidance. This tailored approach not only enhances the learning experience but also prepares students to thrive in a world that demands adaptability and critical thinking.

In recognizing the potential of the flipped classroom, teachers acknowledge its role as a catalyst for educational reform, particularly in the realm of translation studies. By inverting the traditional classroom structure, they create a space where students can actively engage with content, fostering a deeper understanding and retention of material. This method is not just a shift in teaching technique, it represents a paradigm shift in how teachers view the educational process itself, placing students at the epicenter of their learning journey.

As teachers look to the future, the flipped classroom offers a promising avenue for enhancing translation classroom reform. It encourages a symbiotic relationship between theory and practice, allowing students to bridge the gap between academic knowledge and real-world application. By doing so, teachers cultivate a new generation of learners who are not only well-versed in their academic field but are also equipped with the skills necessary to navigate the complexities of the global marketplace.

In conclusion, the flipped classroom is not a one-size-fits-all solution, but it is a valuable tool in the educator's arsenal. It is a testament to our commitment to evolving with the times, to meeting the needs of diverse learners, and to prepare students for the challenges of tomorrow. As the teachers continue to refine and adapt this approach, they do so with the belief that education is not just about imparting knowledge, it is about empowering students to become lifelong learners, capable of navigating and contributing to an ever-changing world. The journey towards educational excellence is ongoing, and the flipped classroom stands as a significant milestone on that path.

Disclosure statement

The author declares no conflict of interest.

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Research on Teaching Strategies for Geography Principles Course

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Abstract: Geographic principles are highly abstract and generalized representations of geographic phenomena, capable of explaining the objectivity and necessity behind the generation, appearance, development, and change of certain geographic phenomena. The key to learning geographic principles lies in resolving students' cognitive conflicts through methods such as summarizing sensory knowledge, deducing the processes behind principles, and interpreting graphical concepts. By combining geographic principles with the characteristics of the geography discipline, teachers can facilitate in-depth understanding and develop students' core literacy by following a teaching logic strategy of "exploring principles - clarifying principles - applying principles - reflecting on principles" throughout the process of teaching geographic principles.

Keywords: Geographical principles; Teaching strategies; Research

1. Introduction

Geographical principles reflect the essential characteristics, development laws, interrelationships, and changing processes of geographical elements or geographical things [1]. The course on geographical principles refers to the process where teachers and students jointly explore the origins and development of principles, grasp the essence of geographical things, establish a logical chain of causal relationships, and use comprehensive thinking to thoroughly analyze the logical relationships between elements, as well as the formation process and development changes of geographical phenomena. In the design of the high school geography curriculum, it is required that "students gradually learn to use basic geographical principles to explore geographical processes, causes, and laws in organizing and analysis of geographical facts," and in terms of evaluation, it stipulates that students' understanding ability should be evaluated based on "the expression of concepts, principles, and theories" [2].

Exploring laws and identifying problems are the starting points of learning geographical principles.

Acquiring and clarifying these principles is essential, applying them is the core, and continuously reflecting on them leads to deeper understanding. Teachers should integrate the actual teaching content to guide students in exploring the causes of geographical principles, expressing knowledge of these principles, applying them to solve practical problems, and reflecting to learn by analogy—emphasizing that each step is interconnected rather than completely separate. Throughout the process of exploration and research, students engage in cooperative learning to discover and apply cases or problems related to migration [1].

2. Characteristics of geography principles course

2.1. True representation of subject characteristics

The discipline of geography is characterized by its comprehensiveness, regionalism, and dynamism. The exploration and application of geographical principles must revolve around these characteristics of geography. The geographical environment is a complex body composed of many geographical elements, and these elements are related, interconnected, and mutually restrictive, which is the overall nature of the geographical environment.

Under the guidance of the holistic perspective, studying each element itself, and using a comprehensive and connected view to study and analyze the mutual relationships between elements, many geographical principles can be analyzed more targeted. Simultaneously, the analysis of geographical principles cannot be separated from specific regions, both natural and human geography are based on certain regional carriers. When studying geographical principles, we must also start from a regional perspective, integrate the natural geographical elements and human geographical elements of the region, and explore the principles of geographical environmental differences. Under the guidance of the differential perspective, the geographical reasons for the characteristics of different regions are analyzed. The geographical environment also has the characteristic of dynamic change. In terms of the natural environment, the crust material is constantly cycling, and the three major types of rocks and magma are constantly transforming.

The global atmospheric circulation shows the internal circulation and renewal of the atmosphere and has an important impact on global water and heat distribution and changes. The water cycle continuously shapes the surface morphology and affects the global climate and ecological environment. Nature is not immutable either. Due to the development of the socio-economy and the progress of science and technology, human understanding of natural resources is deepening, and the breadth of resource development is continuously increasing. Things that were previously not considered natural resources, such as scenery, are now included in natural resources [2]. In human geography, for example, certain location factors within different regions may change over time, which will change the site selection of these industries.

From the perspective of cost optimization, changes in industrial layout, and the like, industrial transfer occurs. These are all manifestations of dynamic change and they contain many geographical principles. It also encourages us to interpret geographical principles from the perspective of dynamic change. In summary, in the study of geographical principles, we must pay attention to the characteristics of geography: sensibility, regionalism, and dynamism.

3. Disciplinary integration is prominent

"Disciplinary integration" refers to a teaching strategy that, on students' existing multi-disciplinary

knowledge, uses materials, contexts, analysis methods, and thinking processes from other disciplines to solve various problems in the process of geography, to improve students' geographical abilities. As a discipline that combines the characteristics of natural sciences and social sciences, the nature of geography determines that teachers must integrate other disciplines in the teaching process [4]. During the teaching of physical geography, it integrates with mathematics, physics, chemistry, and biology while during geography, it integrates with Chinese, history, and other disciplines.

For example, in physical geography, when explaining the principle of the Earth's orbit, the Earth's path around the Sun is an ellipse, with the Sun located at one of its foci. This results in aphelion and perihelion. The difference in speed between perihelion and aphelion is a challenging concept, requiring teachers to incorporate relevant knowledge from mathematics and physics. When teaching about karst landforms, it is necessary to connect with chemistry, as limestone, a soluble rock primarily composed of calcium carbonate ($CaCO_3$), interacts with water and carbon dioxide. The forward reaction explains how limestone is eroded, forming surface features such as stone buds, solution grooves, stone forests, peaks, peak forests, and solitary peaks; underground erosion results in features like underground rivers and caves.

The reverse reaction explains how limestone deposits form new rocks, such as stalactites, stalagmites, and stone pillars. By introducing chemical equations and principles, along with typical images of karst landforms, students can better understand the concept [3]. When teaching regional geography, such as the Dongting Lake wetland, it can be integrated with the traditional masterpiece Yueyang Tower, using the philosophy and literary elegance of ancient poetry to vividly explain the mutual replenishment principle of lakes and water bodies in geography, the principle of wetlands as de-pollutants, and the principle of water body regulation. This approach makes the teaching more engaging and easier for students to grasp.

4. Core competencies throughout

The core competencies of the geography discipline include regional cognition, integrated thinking, geographical practice, and the view of harmony between humans and the environment. Geographical practice is the cornerstone of the discipline, regional cognition, and integrated thinking are methods to explore principles, and the view of harmony between humans and the environment is the essence of geography. In the process of teaching geographical principles, the explanation, analysis, and application of these principles should be closely aligned with the core competencies of the discipline [4].

A geographical principle may involve one or several core competencies. Starting with a geographical event as the context, and using integrated thinking alongside geographical practice, we can uncover the logical patterns behind geographical principles and ultimately achieve harmony between humans and the environment. This approach aligns with the development pathway of things: understanding nature, transforming nature, solving problems, and achieving harmony between humans and nature. These steps correspond to the core competencies of geography: regional cognition (understanding nature), integrated thinking (transforming nature), geographical practice (solving problems), and the view of harmony between humans and the environment (achieving harmony).

The examination of geographical core competencies has become a critical part of college entrance exams. This requires educators to return to the fundamental characteristics and main content of geography in their teaching, select real-life contexts, identify relevant problems, and enable students to apply the

geographical principles they have learned to solve practical geographical issues. This process fosters and enhances students' core competencies in geography.

Concurrently, geography teachers should continuously improve their teaching skills and methods, demonstrating the ability to extract geographical knowledge from daily life and apply geographical principles to real-world situations.

5. Inquiry: identifying problems and exploring patterns

This segment marks the beginning of the cognitive process, aiming to stimulate students' thinking and initiate teaching. The purpose of identifying problems is to raise awareness of issues, spark students' motivation for learning, guide their thinking, and explore geographical principles.

(1) Utilizing life experiences: Starting from students' feelings and perceptions, connect geography with their life experiences and create problem scenarios based on their existing knowledge and observations. For example, when teaching about lunar phases, the following context and questions can be posed: "When during the month is the moon fullest?" and "When during the month can we see half of the moon?" Students often have an intuitive understanding of lunar phase changes from their life experiences but may not know the specific rules or reasons behind these changes. These relatable problems derived from daily life can effectively spark students' curiosity, encouraging them to explore and master geographical principles.

(2) Connecting with learned knowledge: Extract information from students' existing cognitive structures and create questions that challenge or conflict with their prior understanding to stimulate active thinking. For example, after teaching the principle that "anticlines form mountains and synclines form valleys," a teacher might pose a question based on field pictures: "Do anticlines always form mountains, and do synclines always form valleys?" Students, having learned about geological structures and structural landforms, are aware that rocks are influenced by external forces. By analyzing field pictures of folded rock layers, they may infer cases where anticlines form valleys and synclines form ridges, actively exploring the reasons behind these exceptions.

Such problems, closely related to students' prior knowledge, establish a meaningful connection between existing knowledge and new challenges, providing students with the motivation for deeper exploration [5].

6. Enlightenment: attain principles and clarify true knowledge

This segment serves as the foundation of principle teaching, acting as a bridge between prior knowledge and new concepts. It represents the process through which students acquire geographical principles, fostering geographical thinking and enhancing subject-specific abilities. In this stage, teachers should fully utilize the inductive method, deductive method, and abductive reasoning in geographical teaching. These three methods are distinct yet interconnected and can be applied independently or in combination.

6.1. From phenomena to characteristics: the inductive method

The inductive method, also known as inductive reasoning, involves deriving general conclusions from specific observations. In this context, teachers guide students to focus on interpreting texts and images, extracting useful information to organize and summarize geographical characteristics. Phenomena can be

presented through texts, images, models, animations, experiments, or the use of virtual reality (VR) and augmented reality (AR) technologies, which integrate the virtual world with the real environment to address abstract geographical problems. For example, when teaching the principle of "changes in day and night length," animations can visually illustrate these changes across the four seasons, followed by a discussion to summarize the patterns. Similarly, VR technology can allow students to observe the daily changes in shadow length and direction while studying "daily changes in shadows." For "agricultural location factors," materials about rice cultivation in China's monsoon region can be provided, enabling students to identify the natural and socio-economic factors influencing agricultural location [6].

6.2. From characteristics to causality: the deductive method

The deductive method involves drawing conclusions based on established knowledge and materials. In geography teaching, teachers encourage students to analyze appearances and characteristics to deduce causal relationships. This process emphasizes reasoning and allows students to develop their geographical thinking skills by exploring principles through questioning, group discussions, and cooperative inquiry. For instance, when teaching the formation of "thermal circulation," students can deduce that uneven heating of the Earth's surface is the fundamental cause. This uneven heating results in vertical air movements, which create horizontal pressure differences in the atmosphere. These pressure differences drive horizontal air movement, first at higher altitudes, then at the surface, forming a complete thermal circulation system. Similarly, when discussing "river depositional landforms," teachers might present an image of an alluvial fan at the base of a mountain and pose the question: "How is an alluvial fan formed?" Students can explore the sequence of external forces—erosion, transportation, and deposition—along with the spatial progression from the mountainous area to the mountain outlet [7].

6.3. From causality to phenomenon: the abductive method

The abductive method involves applying existing knowledge to understand specific phenomena in the real world. This approach requires students to fully grasp the concepts underlying a principle and connect them to geographical reality. For example, when teaching the impact of "pressure belts and wind belts on climate," students learn that atmospheric circulation influences climate types, which in turn determine vegetation and soil distribution. For instance, the Mediterranean climate, influenced by the alternating effects of the subtropical high-pressure belt and the prevailing westerlies, is typically found on the west coasts of continents between 30° and 40°. Once students master this principle, they can analyze anomalies, such as the Mediterranean climate found in northern Mediterranean regions and near the Black Sea around 45°N, which deviates from the expected pattern. By applying the abductive method, students can deepen their understanding of geographical principles and further refine their geographical thinking skills [8].

7. Using rationality: knowledge transfer in practice and decision-making

This section focuses on the practical application of geographical principles, serving as the core of principle teaching. It represents the stage of internalization, where students' abilities are better reflected. By closely linking theory with practice, students discover the logical relationships between thinking methods and inquiry practices. The goal is to apply geographical principles to analyze and solve real-world problems,

fostering deep learning. Teachers can enhance students' understanding and application of learned principles by integrating them into relevant life contexts. If acquiring geographical principles represents the process of knowledge formation, applying them signifies the transformation of knowledge into ability. Specific strategies include knowledge transfer, practice, and decision-making.

7.1. Knowledge transfer

After introducing the principle of thermal circulation, teachers should explain its specific applications, such as sea breezes (land and sea winds), mountain-valley winds (mountain winds and valley winds), and urban winds. These examples should include real-life phenomena and geographical poetry references to help students transfer their understanding of thermal circulation into concrete examples. This allows students to connect the formation principle of thermal circulation with its observable effects in the geographical environment [9].

7.2. Practice

When teaching the "change in the solar altitude at noon," students can engage in hands-on activities such as determining the minimum building spacing in a specific location, observing shadows, or solving sundial placement problems. These practical exercises are closely tied to everyday life and are of appropriate difficulty, enabling students to deepen their understanding of the solar altitude principle and improve their ability to apply it to solve real-life problems.

7.3. Decision-making

The study of geographical principles is not only about mastering the formation process of geographical phenomena but also about applying these principles to make informed, scientific decisions. For example, when teaching "disaster prevention measures for natural disasters," students first learn about the formation and characteristics of natural disasters. Based on this knowledge, they can then propose preventive and remedial measures to address disasters before, during, and after their occurrence. This approach encourages students to apply their understanding in practical and impactful ways [10].

By integrating knowledge transfer, practical exercises, and decision-making, this section bridges the gap between theoretical understanding and real-world application. It transforms students' understanding of geographical principles into actionable skills, cultivating their critical thinking and problem-solving abilities.

8. Conclusion and reflection

Teaching principles is challenging and requires a lot of thought. Throughout the process of teaching principles, teachers should continuously reflect on various aspects to understand and enhance their teaching. For example, they can consider innovations in teaching methods, new knowledge points, strategies for organizing lessons, addressing misunderstandings of practical applications, assessing the appropriateness of guidance, and ensuring thorough training. Additionally, teachers should fully acknowledge and affirm the unique insights that students contribute in class. This not only promotes students' innovative methods and ideas but also serves as encouragement for their continued engagement [11]. By employing critical thinking, students can analyze problems from different perspectives, understand the relationship between geographical environments and human activities, and develop a well-rounded worldview and values.

Disclosure statement

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Experience of Standardized Training for Residents in Clinical Pathology Base

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Abstract: Pathology regulation training includes two parts: standardized materials and standardized diagnosis. Pathology has its own characteristics, according to the system but with different requirements. Similarly, diagnosis needs to be classified according to the system, and different systems have different diagnostic criteria. The diagnostic training has various contents, covering various systems. It not only needs to master the diagnostic criteria, but also needs to make the diagnosis with comprehensive clinical information. Hence, the learning task of three years of regular training is heavy. Therefore, our department has summarized the teaching methods of the base, which are practical and effective, and greatly improve the quality of standardized training for resident doctors.

Keywords: Pathology base; Standardized training; Systematic course

1. Introduction

Baoding No. 1 Central Hospital is a large tertiary general hospital integrating medical treatment, teaching, scientific research, prevention, healthcare, pre-hospital emergency care, rehabilitation, and community medical services. It serves as a teaching hospital and postgraduate teaching base for multiple medical schools, as well as a national standardized training base for resident physicians. Its clinical pathology department is a key medical specialty at the provincial and municipal levels. It is also a key laboratory for molecular pathology and early diagnosis of tumors in Hebei Province. Equipped with excellent instrumentation, the hospital handles over 40,000 routine external inspections annually. Every year, it trains three to five resident physicians, with the number increasing year by year. Through systematic teaching and training, the hospital continuously improves the competency of its trainees [1]. It has accumulated rich teaching experience in cultivating resident physicians and achieved good teaching results. The following presents an overview of the experiences gained in this context.

2. Familiarity with pathology workflow and attention to detail are crucial

Upon joining the department, trainees receive induction education emphasizing safety, discipline, and medical ethics. They are also assigned a mentor to whom they can report any issues promptly. In the first three months, trainees familiarize themselves with the pathology workflow, starting from specimen reception. During this period, they learn to pay attention to details, such as verifying specimen information and checking the completeness of application forms [2]. They also become acquainted with various steps of pathology preparation, including dehydration, embedding, sectioning, and Hematoxylin and Eosin (H&E) staining for routine sections, as well as the preparation process for frozen sections, immunohistochemistry, cell room specimens, and molecular room specimens. By learning these technical tasks, trainees understand the precautions to take during preparation, thereby avoiding mistakes in future practical operations.

3. Standardized guidance for sampling and diagnostic criteria

Pathology study consists of two major parts: sampling and diagnosis. For sampling training, we focus on learning the sampling of one system per month. Every Wednesday morning, we provide theoretical knowledge lectures on sampling for that system, emphasizing key points to note. In the afternoon, we conduct sampling demonstrations, and practical operations are allowed. After a round of theoretical courses, trainees are arranged to formally conduct sampling, with each trainee guided by a mentor. This cyclical training approach aims for continuous improvement.

Our base has sub-specialties including lymphoma, breast, gynecology, digestion, respiration, thyroid, renal biopsy, and soft tissue. Trainees can observe and practice sampling on specimens, and then review the slides with their mentors, receiving microscopic explanations. Each time, trainees review slides with different mentors who specialize in different sub-specialties, providing more professional diagnostic criteria and diagnostic thinking. This cyclical mentorship and slide review ensure balanced mastery of various professional knowledge [3].

4. Systematic curriculum completed in a hierarchical and planned manner

A systematic curriculum is developed, with lecture content based on "Ackerman's Surgical Pathology" [4]. It is divided into digestive system, respiratory system, urinary system, lymphohematopoietic system, female reproductive system, male reproductive system, central nervous system, and many more. Different theoretical lecture content is developed based on different grades [5].

Hierarchical teaching is implemented. The first-year focus is on technical theory and sampling techniques. The second year involves learning diagnostic fundamentals and mastering diagnostic criteria for common and frequently occurring diseases. In the third year, based on a solid foundation of diagnosis, students become familiar with the diagnostic thinking and criteria for difficult cases. Every Tuesday, difficult case discussions are held to hone the diagnostic thinking of third-year students. Every Thursday, in-house lectures guide the diagnostic criteria for second and third-year students. Every Friday, morning lectures provide guidance on sampling for first-year students, ensuring standardization.

During practical sessions, third-year students guide second-year students, and second-year students guide first-year students. This approach enhances the competency of upper-grade students and hones their problem-solving abilities.

5. Establishing a professional slide reading library

According to the syllabus requirements, typical pathology slides from each system are re-cut and preserved, categorized by system, and scanned into the library. An electronic slide reading library is maintained, and if mentors encounter classic cases with complete information during their studies, they are included in the electronic library for easy access by trainees. Additionally, the skill assessment for monthly and annual evaluations—slide reading assessment—is retrieved from the electronic slide reading library and slide library, simplifying the assessment process and fully preparing trainees for the practical skills assessment at the end of their standardized residency training.

6. Regular case reports and literature reading

Trainees are arranged to present case reports and read literature every month. In the form of mini-lectures, they create PowerPoint presentations for the entire department, select classic cases, and read the latest developments in relevant cases on PubMed [6,7]. This exercise helps to develop trainees' diagnostic thinking, keeps them updated on the latest advancements in pathological diagnosis, improves their English reading and writing skills, and lays the foundation for pathological diagnosis and paper writing [7].

7. Regular assessments

Monthly assessments are conducted based on the systematic curriculum implemented that month. Different assessment content is developed for different grades, with first-year trainees focusing on sampling assessment, second-year trainees focusing on slide reading assessment of common and frequently occurring diseases, and third-year trainees focusing on slide reading assessment of difficult cases. This allows trainees to better self-test and adjust, achieving better learning outcomes.

8. Quality feedback

Our department uses the Langla pathological system software for trainees' sampling and slide reading training. Data is exported monthly, allowing for detailed statistics on each trainee's monthly sampling and slide reading volume. Additionally, statistics are collected on sampling and slide reading issues to gain a detailed understanding of the systems that require additional training for trainees.

A monthly quality feedback meeting is held to summarize the detailed data. The monthly sampling and slide reading volume for each trainee are quantified, and sampling and diagnostic issues are refined to identify weaknesses and areas that need improvement. Intensive training is provided, and the process is repeated continuously.

The current month's quality feedback is compared to the previous month's quality feedback. If issues have been resolved, the focus shifts to improving new problems. If there is no improvement, the reasons are analyzed, and intensive methods are changed for continuous improvement until the issues are corrected.

9. Urging trainees to learn from online platforms

With the current development of online media and abundant learning resources, we can fully utilize online

platforms to learn from the experiences and classic cases of experts across the country, broadening learning ideas and extending learning content [8].

As precision medicine advances, pathology is also rapidly evolving. New World Health Organization (WHO) classifications are continuously emerging, and new diagnostic terms are constantly updated [9]. With the advent of new detection methods, it is necessary to combine routine, immunohistochemistry, molecular detection, and clinical information to make comprehensive diagnoses [9,10]. This requires pathology trainees to diligently and continuously learn and keep up with the times, so as to master pathological knowledge proficiently.

10. Conclusion

In short, the base aims to improve the competency of trainees so that they can meet the requirements of standardized training program for resident physicians, and at the same time, be competent for the front-line work of clinical pathology, striving to cultivate practical specialized resident trainees.

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The Realistic Dilemma and Path Choice of Deepening National Unity and Progress Education in Universities

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Abstract: Strengthening the education of national unity and progress is an important measure for colleges and universities to forge the consciousness of the Chinese national community, which is of great significance for improving the comprehensive quality of college students, implementing the fundamental task of moral education and cultivating people in colleges and universities, and promoting the great rejuvenation of the Chinese nation. At present, China's universities carry out ethnic unity and progressive education work. There are issues with limited content and forms, an imperfect system mechanism, and insufficient professional quality among teachers. In this regard, colleges and universities can strengthen the top-level design, improve the educational effect by deepening the educational reform, and create a campus atmosphere of national unity and progress in colleges and universities to promote the development of national unity and progress in education.

Keywords: Colleges and universities; National unity; Value analysis; Realistic dilemma; Path choice

1. Introduction

The education of national unity and progress in colleges and universities is of great significance for fostering moral character, nurturing talents, and advancing the great rejuvenation of the Chinese nation. Colleges and universities should regard the education of ethnic unity and progress as a key task. In this process, they should adhere to the central goal of building a strong sense of community among the Chinese people, fully implement the Communist Party of China (CPC) ethnic theories and policies, and effectively promote education on ethnic unity and progress. Furthermore, they should cultivate a campus culture characterized by ethnic unity and mutual assistance, thereby strengthening the sense of a shared Chinese identity among college students from all ethnic groups.

2. Deepening the value implication of national unity and progress education in colleges and universities

2.1. Individual level: building a community of learning and growth for college students of all ethnic groups

College students are in a critical period of personal growth, transition to adulthood, and pursuit of success. During this phase, it is highly significant to help them internalize the concept of building a strong sense of community for the Chinese nation through education and guidance. This process fosters their awareness of national unity, strengthens their sense of belonging to the Chinese nation, and enhances their overall competency and comprehensive development [1]. Ethnic unity and progress education in colleges and universities play a vital role in cultivating a strong sense of ethnic cohesion among students from all ethnic groups. It helps students understand the importance of ethnic unity as a lifeline, builds bridges for communication and integration, and fosters closer emotional connections among them. In an environment characterized by ethnic equality, unity, and mutual respect, students from all ethnic backgrounds support, help, and rely on one another. Together, they contribute to the cause of socialist modernization with Chinese characteristics.

2.2. At the university level: creating a campus atmosphere of ethnic unity in Chinese universities

Young college students represent the future of the nation. Promoting ethnic unity and progress education in colleges and universities is a vital approach to uniting students of all ethnic groups in contributing to national development. University campuses provide students with a shared space for study and daily life, fostering extensive interactions, comprehensive exchanges, and deep integration among students from diverse ethnic backgrounds. At the same time, colleges and universities carry the important responsibility of cultivating socialist builders and successors with well-rounded development in morality, intellect, physical fitness, aesthetics, and labor [2]. To fulfill their educational mission and advance moral cultivation, universities must create an environment characterized by harmonious coexistence, solidarity, mutual support, and collaboration among students of all ethnic groups.

2.3. Ethnic level: Realizing the great rejuvenation of the Chinese nation

Achieving the vision of the Chinese Dream requires the collective efforts of all ethnic groups, particularly the younger generation of college students. Ethnic unity and progress education play a crucial role in fostering the cohesion and centripetal force of the Chinese nation. It nurtures deep bonds of friendship among students of all ethnic groups, encouraging mutual support and collaboration in building the Chinese Dream of national rejuvenation [3]. Through ethnic unity and progress education, universities guide young students to reflect on history, envision the future, and take proactive steps toward promoting national unity and progress, positioning them at the forefront of this historical journey.

3. Deepen the practical foundation of national unity and progress education in colleges and universities

3.1. The content and form of national unity and progress education are relatively unitary

In the education of national unity and progress, the reliance on a single teaching approach and monotonous

content often leaves students passively engaged. This lack of dynamic interaction between teachers and students prevents the establishment of a positive, two-way exchange. As a result, the educational content based on the CPC's ethnic theories and policies may come across as abstract, empty, and unengaging. Moreover, this one-sided educational approach tends to overemphasize theoretical explanations, leading to the "marginalization" of national unity and progress education. It often overlooks the complementary role of the "second classroom"—practical and extracurricular activities—in enhancing education and teaching. The separation of theoretical education from practical application limits the ability of ethnic theories and policies to be validated through real-world experiences, thereby hindering the overall effectiveness of national unity and progress education.

3.2. The training mechanism and top-level design of national unity and progress education are not perfect

The educational work of colleges and universities functions as a diverse yet unified system, encompassing various disciplines and professional fields. National unity and progress education requires collaboration and coordination across multiple disciplines and departments. However, in practice, the importance placed on this education varies significantly among university departments. For instance, schools like the School of Marxism and the School of History and Culture often prioritize national unity and progress education, benefiting from a strong theoretical foundation and a pool of qualified teachers. In contrast, many engineering colleges and technical departments place less emphasis on this education. This lack of attention leads to a shortage of relevant teachers and insufficient focus on promoting national unity and progress within these fields.

3.3. Strengthening the teaching workforce and specialization in national unity and progress education

There are significant shortcomings in the development of the teaching workforce for national unity and progress education. In many colleges and universities, there is a noticeable shortage of teaching elites, academic leaders, and high-quality professionals dedicated to this field. Most teachers involved in national unity and progress education often hold multiple roles, such as teaching Marxist theory courses or serving as counselors. These educators typically lack professional and systematic training in ethnic theories and policies, resulting in a weak theoretical foundation and limited experience in teaching ethnic unity and progress. Furthermore, heavy teaching loads and intense research pressures lead many teachers to deprioritize national unity and progress education. This has created a persistent challenge of inadequate teacher allocation, hindering the overall effectiveness of such educational efforts.

4. Deepening the methods and approaches of national unity and progress education in colleges and universities

4.1. Adhering to CPC leadership and enhancing the top-level design for ethnic unity and progress in colleges and universities

National unity and progress education in colleges and universities is a systematic endeavor that requires a scientific, long-term, sustainable, and effective educational mechanism. This mechanism must enable institutions to fully grasp the contemporary significance of national unity and progress education while

addressing real-world challenges.

Firstly, colleges and universities must adhere to the CPC's leadership in national unity and progress education by establishing a working mechanism under the unified leadership of the university CPC committee, with coordination across various departments. The CPC committee should oversee national unity and progress education based on the CPC's ethnic theories and policies, ensuring that all functional departments and teaching units fulfill their responsibilities. This creates an integrated educational system where different departments collaborate, and the CPC, government, and student organizations work together in a cohesive manner.

Secondly, colleges and universities should develop a robust supervision and management mechanism to ensure effective implementation. A professional supervision and inspection group should be established to oversee and guide the work of national unity and progress education across departments. This group would employ methods such as inspections, investigations, visits, inquiries, and reviews to monitor and evaluate progress, resolve potential uncertainties, and ensure the education system operates smoothly [4].

Finally, institutions should create a comprehensive evaluation and feedback system to enhance the quality of education. This system would encourage democratic feedback from students and teachers, allowing them to provide opinions and suggestions on national unity and progress education. The insights gathered would support ongoing revisions and improvements, making the education more targeted, effective, and relevant [5].

4.2. Improving the national unity and progress education system in colleges and universities

Colleges and universities should enhance the educational methods and content system for ethnic unity and progress. It is essential to keep pace with the times, implement reforms, and innovate how ethnic unity and progress education are delivered, ensuring that it is acceptable and engaging for students.

Firstly, the curriculum for national unity and progress education should be improved, and its coverage should be expanded. In addition to incorporating national unity and progress education in courses such as "Ethnic Theory and Ethnic Policy," universities should also integrate modules on ethnic unity and progress in courses related to traditional culture and national history. Furthermore, universities must consider the diverse characteristics and commonalities of students from different ethnic groups. It is crucial to fully respect the traditional customs and cultures of all ethnic groups, allowing students to learn about and understand the CPC's ethnic theories and policies through their professional courses [6]. Colleges and universities should closely align their national unity and progress education with the regional characteristics of the institution. They should actively explore local features, organize educational resources with ethnic characteristics, and integrate them in a structured and thoughtful manner across all aspects of education.

Secondly, it is essential to innovate the educational approach to national unity and progress. The use of online teaching methods should be effectively applied, with a focus on student-centered education. This approach should prioritize students' enthusiasm for learning and aim to foster meaningful interaction between teachers and students. The goal is to create an education system that encourages student leadership while maintaining a collaborative teacher-student relationship. The internet plays an essential role in the daily life of contemporary college students. Online public opinion and trending topics significantly influence their views and understanding of national unity [7].

Therefore, colleges and universities should make effective use of the online environment and work to create a network space where people of all ethnic groups are closely united. To achieve this, colleges and universities should leverage new media platforms such as Weibo, Douyin, Yiban, and Learning to Strengthen the Country, promote the core national values, publicize the CPC's policies on national unity, and build a network community of young people who support national unity and actively oppose forces that seek to undermine it. In addition, colleges and universities must strengthen the supervision and governance of cyberspace, rigorously countering any ideological intrusions that threaten ethnic relations and national unity. They should guide online discourse with mainstream ideologies and firmly maintain control over online public opinion [8].

Thirdly, colleges and universities should strengthen the development of the teaching staff for ethnic unity and progress education, creating a team with a solid understanding of ethnic policies and theories, extensive experience in ethnic unity and progress education, and a high level of expertise with a firm political stance. To achieve this, colleges and universities should enhance the training of national unity and progress educators, organize seminars and study meetings on ethnic theory, and cultivate leaders and key teachers in this field to drive the continuous development of the entire teaching team for national unity and progress education [9]. Simultaneously, colleges and universities can adopt talent recruitment policies to identify leading figures and elite teams in the field of ethnic studies. These experts could be invited to deliver special lectures and seminars on campus, providing valuable insights and experience to inform the university's national unity and progress education initiatives.

4.3. Creating a campus atmosphere of ethnic unity and progress in universities

The education of ethnic unity and progress in colleges and universities requires a supportive educational atmosphere. Therefore, colleges and universities should actively work to create a campus environment that fosters ethnic unity and progress. One way to achieve this is by organizing diverse cultural activities that highlight ethnic traditions, festivals, customs, sports, and arts. These activities can be presented as engaging campus events, allowing students from various ethnic groups to deepen their connections through cultural exchange and interaction [10]. For example, ethnic cultural performances, festivals, and exhibitions of traditional customs, folk art, ethnic sports, and intangible cultural heritage can be held on campus. Through these activities, vibrant ethnic cultures are showcased, and an atmosphere of cultural integration is woven into every corner of the campus. Ethnic culture thus serves as a foundation for promoting ethnic unity and progress education. In this environment of mutual communication, prosperity, and progress among all ethnic groups, students deepen their understanding of ethnic unity, strengthen their sense of the Chinese national community, and cultivate strong bonds with all ethnic groups [11].

Campus culture should be integrated into both classroom and dormitory culture so that each part of the campus environment imprints the culture of national unity and progress more deeply in students' minds. Students from all classes study and communicate together, while students from different ethnic groups live and learn together, deepening their mutual understanding through interaction. As a result, class culture has a stronger influence than broader campus culture, further enhancing students' awareness of ethnic unity. It helps them form a deeper impression of the Chinese nation as a diverse, unified, and interdependent community with a shared future. This awareness encourages more positive actions in their daily studies and behaviors, guiding their lives with a stronger sense of belonging to the Chinese national community.

Additionally, it fosters respect for the culture of minority students, turning the class into a collective where students feel a sense of belonging and identity [12]. Colleges and universities can actively integrate social practice activities to deepen students' understanding of national unity. Social practice provides students with an opportunity to engage with society and gain a real understanding of national unity. Colleges and universities can collaborate with governments and businesses in ethnic minority areas to jointly organize ethnic unity and progress education activities, and establish "ethnic unity and progress education bases." These initiatives will help students' awareness of ethnic unity and the Chinese national community take root [13,14].

5. Conclusion

Ethnic unity is a source of strength for the Chinese nation and an essential foundation for realizing the Chinese Dream of national rejuvenation. Colleges and universities serve as the cradle for the development of young students and play a significant role in shaping their sense of belonging to the Chinese national community. Therefore, colleges and universities should prioritize the education of ethnic unity and progress, fostering a campus culture that promotes these values. They should instill the idea of ethnic unity in students' hearts and encourage their active participation in the collective effort of all ethnic groups to build socialism and realize the Chinese Dream [15]. Colleges and universities should explore the principles of national unity and progress education, enhance the curriculum system, innovate educational models, create a supportive campus cultural atmosphere, and develop a team of educators with strong theoretical foundations and rich practical experience in this field. By addressing current challenges, advancing national unity and progress education, and empowering young students, they can contribute to the creation of a harmonious and unified society dedicated to building socialism.

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Research on University Physics Teaching Reform through Curriculum Ideological and Political Integration

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Abstract: With the proposal of the fundamental task of "cultivating morality and cultivating people," ideological and political education in universities has ushered in a new opportunity for reform. Given this, universities and university teachers should uphold the ideological and political ideas of the curriculum, give full play to the hidden role of curriculum education, and impart knowledge and skills to students at the same time. Teachers should imperceptibly infiltrate ideological and political education to the students and help them establish correct ideas, concepts, and cognition, to lay a solid foundation for their future comprehensive development. In this regard, this paper briefly analyzes the reform of college physics teaching based on curriculum ideological and political integration, hoping to provide readers with some valuable references.

Keywords: Curriculum thought and politics; College physics; Teaching reform

1. Introduction

In the higher education system, college physics is an important basic course, which is rich in content and involves many fields, which can broaden students' horizons, strengthen their understanding, and lay a solid foundation for improving their professional quality. However, in the past college physics teaching process, some teachers still adopted the traditional and outdated teaching mode, which not only seriously affects the improvement of physics teaching effect but also has a certain impact on the ideological and political construction of the curriculum. Because of this, against the background of curriculum ideology and politics, universities and teachers must reform and optimize the traditional teaching mode and method, stimulate students' interest in learning, mobilize their enthusiasm and initiative, improve teaching effect through various ways and means, help students establish correct ideas and values, and lay a foundation for their all-around development in the future.

2. Overview of curriculum ideology and politics

2.1. Connotation

Curriculum ideology and politics are new educational concepts that align with the requirements for developing the current education field in China. It emphasizes the infiltration of ideological and political education in the teaching of physics teaching, basic subject teaching, and other courses. The main purpose is to cultivate students' social responsibility, help them establish the correct idea, and value cognition. Curriculum ideological and political education is not only a supplement to ideological and political courses, but also a comprehensive optimization and upgrading of teaching content and teaching methods, which emphasizes that physics teachers impart curriculum knowledge and skills to students at the same time, imperceptibly into ideological and political education to shape their excellent character [1].

The main core of curriculum ideological and political education is the organic integration of professional education with ideological and political education. This gives full play to the role of curriculum education so that students can learn professional knowledge at the same time, and have a deep understanding of China's national development process, major development strategies, socialist core values, and many more. This also promotes them to form a sense of identity with China's system, broaden their horizons, form strong national self-confidence and pride, and become compound talents who meet the needs of industry development [2].

2.2. The significance of integrating curriculum ideology and politics into college physics teaching

Firstly, the training of professional talents is in line with the needs of social and enterprise development. Integrating curriculum ideology and politics into college physics teaching can not only impart physics knowledge and skills to students but also effectively strengthen students' sense of responsibility, help them establish correct ideology and value cognition, make them fully realize the important role of their major in the process of social development, to enhance students' sense of service and professional quality. This awareness and accomplishment are of vital importance to their future career development [3].

Secondly, the reform of physics teaching should be promoted. Integrating curriculum ideology and politics into physics teaching can effectively promote curriculum teaching reform. This can not only enrich the teaching content, expand the teaching form, and improve the physics teaching effect, but also enhance the students' professional quality. Simultaneously, in this process, teachers also need to optimize the course teaching design, to meet the needs of students' development in the new era [4].

3. Problems in the process of integrating curriculum ideology and politics into college physics teaching

3.1. Lack of teaching resources

In the process of college physics teaching, teachers rely on teaching materials and other teaching resources to a high degree. Based on this, they integrate physics teaching with ideological and political education through scientific and reasonable teaching methods, to form a complete system of curriculum ideological and political teaching and create a good atmosphere for students to improve their comprehensive literacy [5]. However, from the actual situation, the content of college physics textbooks is relatively old, mainly based on theoretical knowledge, and lacks the content of ideological and political education, which invisibly affects the improvement of the ideological and political effect of the curriculum [6].

3.2. Cognitive bias in teaching

When carrying out physics teaching, some teachers adopt traditional teaching methods and teaching modes and unilaterally believe that they are responsible for physics teaching, cultivating students' physics literacy, and ideological and political education is the work of ideological and political teachers and counselors only. This misinformed cognition leads to a serious "two-layer" phenomenon in the integration of curriculum ideological and political education in physics teaching, which not only seriously affects the improvement of physics teaching effect but also difficult to give full play to the role of ideological and political education in the course [7]. Additionally, some physics teachers believe that the lack or inability to effectively integrate ideological and political elements into the physics teaching process leads to the failure to promote the construction of ideological and political curricula, thus hindering the overall improvement of students' comprehensive literacy [8].

3.3. Single teaching method

As important organizers and participants in teaching activities, teachers should conduct a comprehensive study on curriculum ideological and political teaching with physics teaching. Based on the characteristics of physics teaching and students' learning conditions, teachers should constantly optimize and innovate teaching methods, integrate ideological and political education with professional knowledge in a scientific way, and infiltrate ideological and political education into students while imparting physics knowledge [9]. However, in the past physics teaching process, influenced by traditional thinking, some teachers still adopted a single and outdated teaching method to "indoctrinate" and "preach" to students, resulting in a dull classroom teaching atmosphere, which can seriously affect the improvement of classroom teaching, and at the same time fail to give full play to the role of ideological and political education in the course. Thus, affecting the improvement of students' ideological, political accomplishment, and physics teaching accomplishments [10].

4. The reform and innovation path of university physics teaching under the curriculum ideological and political perspective

4.1. Improve teachers' quality and innovate their ideas

In the process of promoting curriculum ideological and political construction, teachers play an important role. Firstly, universities should organize and carry out relevant training activities regularly, to renew their outdated teaching concepts. Concurrently, excellent teachers in the same industry can be invited to give special lectures to share advanced teaching experience and scientific teaching mode, to improve the teaching quality and ability of physics teachers [11]. Moreover, universities should increase resource investment and establish teacher development centers to provide teachers with personalized career development planning and guidance, to gradually improve teachers' professional quality.

Secondly, universities should also do a good job of introducing talent. In the process of hiring teachers, priority should be given to physics teachers who have rich experience and remarkable educational achievements in ideological and political education. Furthermore, universities can establish in-depth cooperative relations with relevant educational research institutions and introduce experts with advanced and high-level curriculum ideological and political theory and practical experience, to lay a foundation for the smooth promotion of curriculum ideological and political construction [12].

Finally, universities should establish and improve the incentive mechanism to encourage teachers to

make bold explorations and practice in curriculum ideology and politics, to better integrate it into physics teaching, train students' physics knowledge more effectively, strengthen their professional quality, and make them become professionals needed by society and enterprise development. Synchronously, universities can also set up special funds to give appropriate spiritual and material rewards to teachers who have made outstanding achievements in the course of ideological and political education [13]. Also, universities can organize and carry out teaching achievements exhibitions regularly to display the teaching achievements and teaching innovations of outstanding individuals. Through a variety of ways and means, the enthusiasm and initiative of teachers are stimulated so that they will take the initiative to participate in the curriculum ideological and political construction. Likewise, universities should also build a feedback mechanism to encourage students and staff to supervise and evaluate teachers' teaching work. In this way, teachers should be encouraged to reform and optimize their teaching methods and enrich their teaching contents to promote the curriculum ideological and political and bring it into full play [14].

4.2. Exploring ideological and political elements to improve educational effectiveness

To integrate curriculum ideology and politics into college physics teaching, while imparting physics knowledge to students, college teachers should explore ideological and political elements according to teaching content and students' learning situation to lay a solid foundation for promoting curriculum ideological and political construction.

For example, when teaching physics knowledge, teachers can teach students the story of the great physicist, Albert Einstein. Einstein's parents were Jewish, and he was very fond of higher mathematics since he was a child. When he wanted to be ambitious after graduating from college, the cruelty of reality was constantly hitting him. He did not get the job of assistant professor in college as he wished, and he could only get a part-time tutor to earn a living. From a probationary employee to a formal one, Einstein never gave up on his dream and pursued research tirelessly. In March 1905, he published his Quantum Theory, and in May of the same year, he proposed the Special Theory of Relativity [15]. By sharing the stories of scientists, teachers can not only enrich the teaching content and stimulate students' interest in learning but also help students establish correct thoughts, concepts, and cognition, laying a solid foundation for their future learning and development.

4.3. Innovate teaching methods to stimulate students' interest in learning

There is a close relation between teaching methods and teaching effects. In this regard, under the background of ideological and political curriculum, to improve the classroom teaching effect and give full play to the role of ideological and political education, college teachers must innovate the traditional teaching methods, stimulating students' interest and promoting their all-round development as the guidance. Also, use various ways and means to improve the classroom teaching effect and help them shape excellent quality and foundation for their future.

4.3.1. Use multimedia to enrich the teaching situation

At present, with the rapid development of information technology, teachers can organically integrate information technology and physics teaching to enrich the teaching content and stimulate students' interest, improve the classroom teaching effect, penetrate ideological and political education to students more

effectively, and improve the educational effect.

4.3.2. Use the new media platform to expand the area of education

As of now, new media has become an important part of college students' daily study lives. In this regard, teachers can use the new media platform to carry out physics course teaching, which not only imparts physics knowledge to students but also penetrates ideological and political education, to improve the education effect. Accordingly, teachers can also make use of new media tools such as WeChat public account, Weibo, and Douyin to regularly release some popular science knowledge or current affairs related to physics. In this way, teachers can stimulate students' interest in learning, broaden their horizons, and expand the area of education. What's more, teachers can also make use of the data collection and analysis function of the new media platform to collect students' feedback and suggestions, analyze their learning behavior data, and on this basis, timely adjust teaching strategies, to improve the effectiveness of ideological and political education in the curriculum and lay a solid foundation for promoting students' all-round development.

4.4. Optimize the evaluation system and improve the ideological and political effectiveness of the curriculum

As an important part of college curriculum teaching, teaching evaluation plays a very prominent role in improving the teaching effect and developing professional quality. Therefore, in the teaching practice, to better implement the ideological and political elements in the curriculum and integrate them into physics teaching, teachers should combine the characteristics of students' ideological cognition and consciousness to reform the teaching evaluation.

Firstly, teachers should not only pay attention to the assessment and evaluation of physics knowledge and skills, but also build a diversified evaluation system integrating academic performance, practical performance, and emotional attitude as soon as possible. Also, gradually correct students' learning attitudes and ideological concepts with comprehensive evaluation criteria, to promote ideological and political elements to fully penetrate the whole teaching process.

Secondly, physics teachers should adopt a combination of process and result evaluation methods to evaluate students. In this way, teachers can have a more comprehensive and in-depth understanding of students' learning processes and learning results. They should also evaluate their dynamic performance in the learning process while paying attention to their final learning results, to improve the scientificity and accuracy of the evaluation results. Teachers can also encourage students to evaluate by means of self-evaluation and mutual evaluation, so as to cultivate the improvement of students' self-reflection ability.

5. Conclusion

In the new era, to better promote the fundamental task of cultivating morality and educating people, universities and teachers must optimize and reform the traditional physics teaching, based on the development of the modern times, use new thinking and new methods, create a new situation of physics teaching, and promote the all-round development of students.

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Application of Information Technology in Medical Teaching of Secondary Vocational Schools

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Abstract: Nowadays, people have entered the "Internet +" era where information technology has been further developed and widely used. Affected by this, all walks of life began to transform and upgrade in the direction of information, intelligence, and digitalization, and the education industry is naturally among them. Currently, the integration of information technology into China's education field has been underway for some time, with notable improvements in teaching effectiveness. However, in the context of medical education in secondary vocational schools, the full potential of information technology has yet to be realized. This paper primarily analyzes and explores the significance, current status, and strategies for applying information technology in secondary vocational medical teaching, providing insights for reference.

Keywords: Information technology; Secondary vocational school; Medicine; Teaching applications

1. Introduction

The integration of information technology and education leads to the success of education in China to enter the next new stage of development. At the moment, a large number of practices have proved that advanced information-based teaching environments and teaching modes can effectively mobilize students' learning enthusiasm and cultivate their independent learning ability. Nowadays, more schools and teachers have realized the importance of carrying out information-based teaching. Therefore, medical teachers of secondary vocational schools must keep pace with the modern times and actively explore the specific application of information technology in curriculum teaching, to provide better teaching services for students and provide more excellent medical talents for the country and society.

2. The application significance of information technology in medical teaching of secondary vocational schools

The application of information technology in medical teaching in secondary vocational schools is of great significance. Firstly, it can effectively mobilize students' enthusiasm for learning. In the medical information teaching of secondary vocational schools, teachers can use multimedia equipment to provide students with pictures, videos, animations, and other vivid learning resources, which can give students a good audio-visual impact and enrich their learning experience, which is conducive to creating a good classroom atmosphere for them to learn medical curriculum knowledge and mobilize their enthusiasm for learning.

Secondly, it can effectively strengthen the students' learning effect. Different from other professional courses, medical courses have strong theory and practice, which requires students to not only master and apply medical theory knowledge, but also be able to apply what they have learned to practice. However, most of the knowledge points in medical courses are abstract, complicated, and not easy to understand, which is often difficult for secondary vocational students whose thinking and ability are not perfect [1]. Nonetheless, if teachers can apply information technology to medical course teaching, they can vividly and intuitively present the original abstract and complex knowledge points, which is conducive to reducing the difficulty of students' learning and enhancing their interest in course teaching.

Finally, it can provide help for students' review and consolidation. In traditional medical teaching in secondary vocational schools, most teachers explain basic knowledge to students in the form of "oral explanation + blackboard writing" [2]. This teaching method will not only waste a lot of unnecessary time in class but also cannot ensure the continuity of teaching content. By applying information technology to medical teaching in secondary vocational schools, teachers can use PowerPoint (PPT) presentations to help students quickly review what they learned in the last class, help students to review and consolidate the knowledge points, deepen their understanding and memory, and help to improve the problems existing in traditional teaching.

3. The application status of information technology in secondary vocational medical teaching

In recent years, China has introduced a lot of educational policies, aiming to provide more guarantees for the transformation and development of education informatization and education digitization. Nevertheless, from the present point of view, the application of information technology in the medical teaching of secondary vocational schools still inevitably has some problems. Some schools, in their pursuit of expanding the school size and enrollment scale, ignore the construction of an information environment, resulting in the backward construction of hardware and software infrastructure, which makes it difficult to meet the teaching needs, and thus unable to bring good experience to teachers and students [3]. For another example, although some schools attach great importance to the construction of an information environment, they have added a lot of information equipment. Still, teachers are limited in information technology, unable to flexibly and effectively apply information technology to classroom teaching, or rely too much on information technology, and the teaching method is relatively simple and so on [4]. All in all, the existence of the above problems will affect the information-based teaching effect of secondary vocational medicine to a certain extent.

4. The application strategy of information technology in secondary vocational medicine teaching

4.1. Strengthening information infrastructure construction

Under the background of the "Internet +" era, the primary task of secondary vocational schools is to constantly examine themselves, fully recognize the challenges brought by information technology, rationally expand the scale of education and enrollment, and constantly strengthen the information infrastructure according to the actual situation and demand, such as the construction of teachers, hardware and software infrastructure, and many more. Only in this way can we provide a more solid foundation for medical teaching [5]. Additionally, the school should strengthen the training of medical teachers' professional skills and information literacy, and continuously improve their information teaching ability through various training activities, to improve the quality and ability of the school teaching team as a whole. Also, teachers themselves should strive to learn relevant knowledge, understand the real-time dynamics of the medical field and the development of information technology, actively participate in various training or teaching and research activities, and learn from the excellent teaching experience of other teachers, to continuously improve their comprehensive quality and comprehensive ability, to better realize their own professional value.

4.2. Create a good learning environment

Under the current educational environment, secondary vocational education pays more and more attention to the cultivation of students' independent learning ability, aiming at providing better support for students' learning and development [6]. In the medical teaching of secondary vocational schools, the application of information technology in teaching can further expand the scope of teaching services and is conducive to providing students with a good learning environment. On the one hand, given the imbalance in the distribution of educational resources in China, the application of information technology in teaching can effectively promote the exchanges and interactions among various regions and colleges, promote the co-construction and sharing of educational resources, and provide a guarantee for the continuous improvement of medical teaching mechanism, which can be regarded as an effective way to improve the teaching quality of medical courses [7].

On the other hand, the application of information technology in secondary vocational medical teaching can provide a good network communication platform for the online real-time interaction between teachers, students, and life, which can make students' learning no longer limited by time and space, but also can help teachers understand students' learning situation in time and carry out targeted teaching. Plus, teachers can upload medical teaching courseware to the network platform, so that students can watch and learn according to their own needs, and use the platform's comments and other functions to answer their questions in time, to provide students with better information teaching services.

4.3. Integrate information-based learning resources

When applying information technology to teaching, medical teachers in secondary vocational schools should collect more abundant teaching resources from the network based on textbooks and materials, and dynamically present them to students through video, audio, animation, and pictures, among others, to realize effective integration of medical teaching resources [8]. In this way, not only can it expand the students' vision of medical knowledge, but also to a certain extent, mobilize the students' enthusiasm for learning. Moreover, to better help students understand medical knowledge, teachers can also use information technology to try to

restore various medical phenomena, and set questions in combination with some real medical cases to drive students' thinking, increase the interaction between teachers and students, students and students and learning environment [9]. In this process, teachers can use information technology to cooperate with local hospitals to build a typical case database and apply it to daily teaching, to continuously enrich students' medical practice experience.

4.4. Innovate the form of information-based teaching

In the traditional medical teaching of secondary vocational schools, most teachers "inculcate" knowledge points to students in the form of "oral explanation + blackboard writing" [10]. For students, the amount of medical theoretical knowledge they face is huge and very boring. It is difficult to arouse interest in the study of medical courses, let alone master and apply it skillfully. To solve this problem, teachers may wish to make use of information technology to innovate teaching forms and to dynamically and concretely display the original boring, tedious, and obscure medical knowledge points. This has improved students' learning efficiency.

Furthermore, teachers can also use information technology to carry out online and offline mixed teaching, so that students' pre-class preview, learning in class, and review after class can be effectively connected to ensure the continuity of students' learning [11]. To be specific, before class, teachers can use information technology to make micro-lessons and upload them to the online platform. Students are required to watch videos of micro-lessons and complete pre-class tasks. At the same time, they are required to record the problems they encounter in the pre-class process and give feedback to team members and teachers in class. In class, teachers need to import teaching according to the content of micro-lessons, timely understand the learning problems of students, and understand the learning situation of students by analyzing the data in the background of the platform, and then carry out teaching on this basis and according to the purpose, and make targeted knowledge points for students [12].

After class, students can use the platform to review independently and interact with teachers or other students online in real-time. This way not only ensures that students' problems are solved in time, avoids discouraging students' learning confidence, but also effectively cultivates students' independent learning ability.

4.5. Establish an evaluation and feedback mechanism

In the medical teaching of secondary vocational schools, the application of information technology can also be reflected in the establishment of evaluation and feedback mechanisms [13]. Specifically, the establishment of the evaluation system should include multiple dimensional indicators, such as students' knowledge mastery, medical skill operation level, learning attitude, and self-evaluation. In the assessment, teachers can obtain real-time feedback on students' learning status and problems through online tests, online medical simulation experiments, and other methods, to achieve a dynamic assessment of students' learning situation. The establishment of a feedback mechanism should introduce multiple feedback channels, including teacher evaluation, classmate mutual evaluation, and self-reflection [14].

After the class, teachers can use online questionnaires or feedback platforms to collect students' opinions on the course content, application of information technology, and teaching methods to ensure that the feedback is true and effective. On this basis, teachers should hold regular teaching and research meetings

and adjust teaching strategies in a timely and reasonable manner according to this feedback to enhance the adaptability of teaching [15]. For example, teachers can conduct a comprehensive review at the end of each semester, form a data analysis feedback report with the help of big data analysis technology to clarify the achievement of various indicators, and then formulate or continuously improve teaching plans based on this, to achieve the purpose of improving the informatization level of secondary vocational medical teaching.

5. Conclusion

In short, under the background of education informatization and education digital transformation and development, the combination of information technology and secondary vocational medical teaching conforms to the requirements of the development of the modern era and is also one of the effective ways to promote the reform and development of secondary vocational education. In practice, on the one hand, schools should strengthen the information infrastructure construction to provide a guarantee for teachers to carry out information teaching. On the other hand, teachers need to create a good learning environment, integrate information learning resources, innovate information teaching forms, and establish evaluation and feedback mechanisms to promote the organic integration of medical teaching and information technology, to provide students with better teaching services.

Disclosure statement

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Building Cloud Skills: Teaching Innovation and Practice of Automated Operation and Maintenance Courses for Cloud Computing Majors in Higher Vocational Colleges

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Abstract: In the rapid development of cloud computing technology, automated operation and maintenance as its core support is crucial to ensure the efficient and stable operation of cloud services. Given this, higher vocational education must pay attention to the training of automated operation and maintenance skills in the curriculum setting of cloud computing majors. Aiming at the problems existing in automated operation and maintenance teaching in higher vocational colleges, this paper puts forward a series of innovative teaching methods to improve students' mastery of automated operation and maintenance technology. This paper first analyzes the development trend of cloud computing and automated operation and maintenance technology, clarifies the necessity for vocational students to master automated operation and maintenance skills, and then introduces innovative teaching strategies including case-driven, project-oriented, flipped classroom, virtual simulation experiment, and school-enterprise cooperation in detail. These methods aim to improve the interaction of teaching and students' practical operation ability through the close combination of practice and theory. Finally, this paper proposes a mechanism to evaluate and feedback on these innovative teaching methods to ensure continuous improvement and optimization of teaching activities. Through the implementation of these innovative teaching methods, it can be expected that students will better adapt to the technical requirements of the cloud computing era and lay a solid foundation for their future careers.

Keywords: Cloud computing; Automated operation and maintenance; Teaching method; Higher vocational education

1. Introduction

With the rapid development of information technology, cloud computing technology has penetrated every corner of society, and the innovation of its service model and the expansion of its application field have

brought revolutionary changes to all walks of life. In this context, as one of the core technologies of cloud computing, the importance of automated operation and maintenance technology has become increasingly prominent. It is not only related to the efficient management and optimal configuration of cloud computing resources but also a key factor in ensuring the stability and reliability of cloud services. However, the rapid development of this technology has also put forward new challenges to the talent training of higher vocational colleges [1].

Currently, in the cloud computing education of higher vocational colleges, how to closely combine the teaching of automated operation and maintenance with the needs of the industry, and how to improve students' practical ability and innovation ability have become an urgent problem for educators to solve. Therefore, it is of great significance to explore effective teaching methods and build a course system synchronized with the development of the industry for training high-quality technical and skilled talents to meet the future market demand.

2. Analysis of the current teaching situation

At the moment, higher vocational colleges generally face a series of challenges in the teaching practice of automated operation and maintenance courses. Firstly, the disconnection between the teaching content and the actual needs of enterprises is particularly prominent. With the rapid development of cloud computing technology, the skill requirements of enterprises for automated operation and maintenance talents are constantly changing, and the traditional teaching content is often difficult to keep up with the pace of change, resulting in a gap between what students learn and what enterprises need [2].

Secondly, the lack of an effective practical teaching platform is another significant problem. There are many technologies and tools involved in automated operation and maintenance, and many higher vocational colleges are limited by resources and conditions, and it is difficult to provide students with sufficient practical opportunities and simulate the real operation and maintenance environment.

Finally, the unitary teaching method and the lack of innovation are also important factors restricting the quality of teaching. In such a highly dynamic and practical field as automated operations and maintenance, there is an urgent need to introduce more interactive, flexible, and practice-oriented teaching models.

3. Exploration of innovative teaching methods
3.1. Project-driven teaching method
Teachers should first design a series of challenging project tasks according to the curriculum objectives and enterprise needs, which may include the construction of a cloud platform, the writing of automation scripts, the configuration of a monitoring system, fault diagnosis and recovery, and many more. Under the guidance of the teacher, students participate in the whole life cycle management of the project in the form of team cooperation. From demand analysis, scheme design, implementation, and deployment to test optimization, students need to operate each step by themselves and experience all aspects of automated operation and maintenance [3].

Project-driven teaching method also helps teachers to understand students' practical operation ability and adjust teaching strategies in time to better meet students' learning needs and career development. Through regular project reviews and feedback, teachers can ensure that the teaching content is practical and forward-

looking, while students are also able to enhance their self-confidence and clear the direction of future career development through the presentation of project results [4]. Through this teaching method, students can not only combine theoretical knowledge with practical operation but also learn comprehensive professional abilities such as teamwork, communication and coordination, and problem-solving during project practice. Simultaneously, project-driven teaching methods also encourage students to actively explore and innovate, and stimulate their learning enthusiasm and innovative thinking by solving practical problems [5].

3.2. Case analysis method

Teachers need to be prepared with representative automated operation and maintenance cases, which can be actual enterprise operation and maintenance scenarios or simulated operation and maintenance events. For example, by analyzing cases of log anomaly detection and automated response, students can learn how to build a log analysis system using Python and machine learning libraries to realize automatic monitoring of server logs and rapid response to abnormal behaviors. In the teaching process, teachers can guide students to analyze from multiple dimensions such as case background, problem definition, solution design, implementation process, and result evaluation [6]. In the teaching of cloud computing majors, case analysis can help students combine theoretical knowledge with practical operations and enhance their ability to solve practical problems.

3.3. Virtual simulation experiment

A virtual simulation experiment is an efficient teaching means. It simulates the real cloud computing environment so that students can learn and practice automated operation and maintenance without physical resource constraints [7]. Teachers can pre-build the experiment environment on the cloud platform, including virtual machines, network configuration, storage resources, and the like. Students can log in to the environment directly and start the experiment operation. This saves students time in configuring the environment and allows them to focus on learning and practicing operations technology.

Through students' lab operations, lab reports, and online discussions, teachers can assess students' mastery of automated operations technology. Concurrently, teachers can constantly optimize experiment content and teaching methods based on students' feedback. The virtual simulation experiment of the cloud platform can not only improve teaching efficiency but also stimulate students' learning interest and cultivate their practical ability and innovative thinking [8]. This teaching method has important application value for the automatic operation and maintenance course of cloud computing majors in higher vocational colleges.

3.4. School-enterprise cooperation

In the automated operation and maintenance courses of cloud computing majors, cooperating with enterprises to develop courses and provide practical training opportunities is an effective teaching method. This mode of cooperation can ensure that the teaching content is closely connected with the actual needs of enterprises while providing students with a real working environment and enhancing practical combat experience [9]. Schools can work with companies to develop curricula and ensure that the content reflects the latest trends and technologies in the current industry. Companies can provide practical cases and projects for students to learn and practice in the curriculum. This collaboration helps students understand the actual needs of the business and learn the most relevant skills.

Through cooperation with enterprises, schools can provide internship opportunities for students, enabling students to participate in practical operations and maintenance projects in enterprises. This hands-on experience is crucial for students' career development as it helps them understand the real-world application of classroom knowledge and improve their vocational skills. Students who participate in enterprise programs can gain a better understanding of career paths in the field of automated operations, which can be very helpful in their career planning. Teachers can also enhance their professional skills and industry knowledge through cooperation with enterprises, thus improving the quality of teaching.

Through this cooperative model, students can not only gain theoretical knowledge but also improve their skills and competitiveness through practical learning, preparing them for their future careers [10].

4. Teaching methods implementation strategies

4.1. Docking of course content with enterprise needs

Regular communication between professional teachers and businesses is essential to keep educational content current and relevant. Through direct dialogue with industry experts, teachers can stay up to date on the latest technology trends, tools, and best practices, as well as the latest needs of businesses for talent. This close school-enterprise collaboration ensures continuous updating of course content, enabling the education to respond quickly to industry changes, thus producing graduates that meet current market needs.

4.2. Build a practical teaching platform

Schools should establish cloud computing automated operation and maintenance laboratories, equipped with corresponding hardware and software facilities, to provide students with a good practice environment [11]. The practical teaching platform should aim to provide a real, dynamic learning environment closely linked to the industry so that students can learn and apply automated operation and maintenance technology in real projects. The platform should integrate key technologies in the current field of cloud computing and automated operations, such as virtualization technology, cloud platform management, and container technology, to name a few, to ensure that students have access to the technologies currently used by the industry [12]. Through such a practical teaching platform, students will not only be able to improve their technical skills, but also enhance soft skills such as teamwork, problem-solving, and project management, preparing them for their future careers [13].

4.3. Application of diversified teaching methods

Combine project-driven, case analysis, flipped classroom, and other teaching methods to improve the interest and effectiveness of teaching. For example, the use of project-driven design has practical application value for the project, so that students can learn and apply automated operation and maintenance technology in the process of project implementation. The project can involve cloud platform construction, automated script writing, system monitoring and maintenance, and so forth, encouraging students to play different roles in the project and experience teamwork and project management. The use of flipped classrooms increases the interest of the class, such as requiring students to independently learn basic knowledge by reading materials and watching videos or online courses before class [14].

Class time is used for in-depth discussions, solving doubts, doing hands-on work, and applying what has been learned. Teachers act as mentors and facilitators rather than mere transmitters of knowledge.

Stimulate students' interest in learning through gamified learning elements such as point systems, contests, and challenging tasks. Design interactive sessions such as group discussions, role plays, and simulation drills to add interest to the class. Through this diversified teaching method, students can not only learn the skills of automated operation and maintenance in practice but also improve their learning motivation and engagement, while teachers can evaluate and enhance teaching effectiveness more effectively.

5. Add career guidance to the teaching process

Professional teachers should implement career guidance as a very important part of their curriculum [15]. Only when students know what they can do in the future with their learning skills, their motivation and interest in learning will increase. Teachers should pay attention to the latest developments in cloud computing and automated operations, including technology trends, industry reports, and market needs, to provide students with the most cutting-edge information. Teachers should pay attention to the latest developments in cloud computing and automated operations, including technology trends, industry reports, and market demands, to provide cutting-edge information to students and emphasize to students the core skills of automated operations.

For example, scripting (Python, Shell), use of automation tools (Ansible, Chef, Puppet), container technology (Docker, Kubernetes), and operation and management of cloud computing platforms (AWS, Azure, Google Cloud, Alibaba Cloud). Teachers should also help students understand the career development path of cloud computing automation operation and maintenance engineers, including technical experts, team leaders, project managers, and other different directions, suggest students attend industry conferences, seminars, and training, join professional communities, build connections with peers, understand industry dynamics, encourage students to gain practical experience through internships and practical training projects or participation in open source projects. This will help them demonstrate their practical workability when applying for jobs.

6. Conclusion

In the automatic operation and maintenance course of cloud computing major in higher vocational colleges, the reform of teaching methods is the key to improving the quality of education and the competitiveness of students in employment. To train high-quality technical talents who can adapt to the development of the industry, the teaching reform must be closely combined with the latest needs of the industry to ensure the real-time update and practicality of the course content. Through intensive practical teaching, students can apply what they have learned in a real working environment and improve their ability to solve practical problems. Moreover, adopting diversified teaching methods, such as project-driven, case analysis, and flipped classrooms can stimulate students' interest in learning and promote the development of their critical thinking and innovative abilities. Furthermore, effective career planning guidance is crucial for students' long-term development. Teachers should provide guidance on career development paths, help students understand industry trends, and job demands, and make personal career plans. This will not only help students to study purposefully while in school, but also lay a solid foundation for their future careers. Through these comprehensive teaching strategies, higher vocational colleges can cultivate talents with deep professional knowledge, good career skills, and clear career plans to meet the needs of talents in the field of

cloud computing automated operation and maintenance.

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Research on Multi-Dimensional Integration Path of Traditional Chinese Culture and Standard Chinese Language Teaching

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Abstract: In recent years, with the proposed construction of "new liberal arts," some colleges and universities have made breakthroughs in interdisciplinary, curriculum integration, and education and teaching reform in combination with the actual situation and characteristics of their professional development, which has improved the quality of college talent training in the new era. Based on the requirements of "new liberal arts" construction, combined with the actual work of education and teaching, this paper explores the coupling degree of Chinese traditional culture teaching and national common language teaching in the aspects of value guidance, teaching methods, assessment, and evaluation, and applies the survey method and interview method to compare the differences before and after the pilot minority college students learn Chinese traditional culture curriculum reform, using group cooperation. The multi-dimensional teaching paths, such as the contrast of Chinese and Uyghur cultural communication and immersive experience, pay attention to the interdisciplinarity and the virtuous cycle teaching mode, aiming to make cultural education and language education move forward together, provide different perspectives for the cross-integration of cultural teaching and national standard language teaching, and give full play to the role of the construction of new liberal arts in the process of curriculum cross-teaching, teaching mode, and talent training.

Keywords: New liberal arts construction; Chinese traditional culture; Standard Chinese language teaching; Multi-dimensional integration

1. Introduction

The Declaration on the Construction of the New Liberal Arts, released in November 2020, marks the official arrival of the new liberal arts construction period. The main way to build the new liberal arts is to "inherit and innovate, cross-integrate, collaborate and share, and build a multi-disciplinary cross-model with Chinese characteristics within the scope of the social science knowledge system"[1]. In the structure system of the new

liberal arts, the subject is the support and the education as the foundation [2]. The direction of construction is coupling the discipline system, carrying forward Chinese culture, conforming to the development law of the new liberal arts, and deepening the reform of talent training quality is the key [3,4]. As a second language learner minority college students, in addition to mastering the symbolic system of the language, also to learn the cultural knowledge and value system of the language. The carrier of culture cannot be separated from language. Culture and language complement each other, and there is a natural internal connection between them, which is inseparable.

The 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of the 2035 Vision Goals also clearly state that the influence of Chinese culture should be enhanced [5]. Young college students are the lasting force of cultural transmission, and schools are the main positions of cultural transmission. Learning traditional Chinese culture knowledge in schools is one of the most direct and fastest ways. In addition to learning the standard Chinese language at school, minority college students can master traditional Chinese cultural knowledge, which is also a part of improving the quality of standard Chinese language education and teaching. Cultural teaching occupies an equally important position in language teaching. Based on the actual teaching work, the author understands the core of the construction of new liberal arts, pays attention to interdisciplinary and integration, and actively explores and tries new teaching methods, trying to organically integrate Chinese culture teaching and national standard language teaching, mutual benefit, help the construction of new liberal arts, and improve the quality of talent training for minority college students.

2. The proposal of the new liberal arts construction and the development of the context

The concept of new liberal arts was first proposed by Hiram College in the United States in 2017 [6]. It refers to the discipline reorganization of traditional liberal arts, the intersection of ethics, the integration of new technologies into philosophy, literature, language, and other courses, and the provision of comprehensive interdisciplinary learning for students. In August 2018, the contribution level of the discipline reached a new level and continued to promote the high-quality development of education. In October of the same year, the Ministry of Education also issued corresponding policies, adding humanities disciplines such as Chinese language and literature and history for the first time to develop the four new constructions. In April of the following year, the Ministry continued to promote the construction of new engineering, new medicine, new agriculture, and new liberal arts. In November 2020, Shandong University held the National Working Conference on the Construction of New Liberal Arts, and relevant key personnel made a comprehensive deployment and plan for the construction of new liberal arts.

At this point, the construction of new liberal arts has entered the stage of full start-up and implementation. The emphasis of new liberal arts construction lies in the exploration and practice of new majors or new directions, new models, new courses, and new theories. With the idea of new liberal arts construction put forward and deepening day by day, different scholars have a consensus understanding of the new liberal arts but also have personalized thinking [7]. The new liberal arts, with its integration and innovation, surpasses the traditional liberal arts and promotes the reform of education and teaching [8]. This paper attempts to integrate the teaching of Chinese traditional culture with the teaching of the national

common language. By investigating the teaching status of Chinese traditional culture, investigating learners' language and cognitive ability, learning attitude, learning motivation, and learning needs, conducting research and comprehensive assessment from multiple angles, ensuring the accuracy and effectiveness of the collected data, and adjusting the teaching mode of the course in time.

3. Investigation on the teaching status of Chinese traditional culture course

Xinjiang is a multi-ethnic inhabited area where various ethnic groups have long intermingled and developed in a diversified culture. With the increasing popularization of the common spoken and written languages in Xinjiang and the continuous progress of the cultural improvement project in Xinjiang, the synergy between language teaching and cultural teaching has become increasingly prominent.

3.1. Survey subjects

Ethnic minority college students in the class they teach are the main objects of the survey, and the students' study period is focused on the first year of college. The survey subjects are divided into two groups. The first group is the minority college students who will complete the course on traditional Chinese culture in 2021 (the first year of the course). The other group is the minority college students who will study traditional Chinese culture courses after the pilot reform of teaching methods in 2022. 120 students are selected for each of the two groups.

3.2. Investigation tools and methods

This survey uses the "Chinese Traditional Culture" questionnaire, compiled via Questionnaire Star, to collect, analyze, and describe the data. The questionnaire consists of 20 questions, covering various aspects such as basic information about the survey participants, their understanding of the excellent traditional Chinese culture course, their level of interest in the course content, satisfaction with the teaching methods, assessment methods, and other suggestions. The question types include several common formats, such as fixed-item choice, open-ended choice, and question-and-answer. A total of 120 questionnaires were distributed, meeting the medium sample standard for a sampling survey, with an effective recovery rate of 96%. Following an initial integration and simple analysis of the survey results, the author conducted targeted individual interviews with the survey participants to address shortcomings and gaps identified in the questionnaire.

3.3. Analysis of the survey results of Chinese traditional culture courses

In the Chinese traditional culture courses offered, the course category is optional (or required). According to an analysis of the survey results, students' understanding of different cultural topics varies significantly.

 (1) Part 1 includes topics such as Confucius and Confucian culture, moral power, revolutionary culture, Chinese poetry, the concept of Great Unity, and the consciousness of building the Chinese nation community.
 (2) Part 2 focuses on topics such as food culture, traditional festivals, dress culture, tea and wine, calligraphy and the Four Treasures of the Study, traditional architecture, and classical gardens.

From the analysis of interest levels, the content in the first part of the course is perceived as somewhat boring by students. This is attributed to its theoretical nature, with less practical application, making it challenging for students to grasp the profound connotations behind the culture. In contrast, the content in

the second part is considered more engaging because it is more closely related to daily life, with a strong practical component, although it is less theoretically robust.

4. The multi-dimensional teaching approach of Chinese traditional culture course

The author carries out teaching research and practice from two aspects: improving students' interest in cultural courses and improving teaching methods.

4.1. The adjustment of teaching content

At the moment, in the course of traditional Chinese culture offered by the college for minority students, the textbook "Chinese Culture" published by Beijing Language and Culture University Press is mainly used as a reference. According to the local development and characteristics of Xinjiang, we have made appropriate adjustments in the teaching content, paid more attention to the guidance of ideological values, and integrated the ideological and political elements into the curriculum, which is expected to better meet the needs of the development and talent training of Xinjiang.

The course is designed to continuously improve the comprehensive ability and cultural accomplishment of ethnic minority college students in the application of the common Chinese language. Students in the "transitional zone" (receive bilingual education later in life) have a weak foundation of standard spoken and written national language, and it is difficult to learn professional courses. When learning the theoretical content of traditional Chinese culture courses, they find it difficult to understand the deep connotation behind the culture due to their limited language application ability and cognitive level.

4.2. Multi-dimensional integration teaching practice of traditional Chinese culture and common Chinese language teaching

In actual teaching, we constantly try to pay attention to the intersection and integration of disciplines in the construction of "new liberal arts" and constantly think about how to organically integrate traditional Chinese culture and standard national language teaching.

4.2.1. Group cooperation

Group cooperative learning is the main way for college students to independent learning and the most influential teaching mode in the new curriculum reform [9]. Group cooperative inquiry learning has become the mainstream of education reform in today's world, and it is the most effective and important way of learning advocated by the new curriculum. Following the trend of worldwide curriculum reform, China has introduced the new idea of group cooperative inquiry teaching, carried out the new curriculum reform nationwide, and carried out the educational curriculum reform with scientific group cooperative inquiry as the breakthrough point.

Students adopt the group cooperation learning mode in the traditional culture curriculum, which increases the interest of the culture class, and exercises the students' hands-on and brain ability. In the cultural topic of traditional architecture, the students learned the roof style of traditional architecture, followed by the teacher giving pictures, then the students observed and memorized, and the teacher assigned manual work, which should not be the same in each group. Representatives were selected to give explanations, and each group made comments and assigned points. The points were counted as part of the normal grades. When

the students elected representatives to make statements, they exercised their oral expression ability in the common national language and made them by hand, which deepened the memory of the cultural topic in this section, and once again linked the teaching of common national language and culture closely together.

After studying the topic of food, students can be assigned homework that incorporates local food characteristics, such as creating drawings, food videos, jokes about food, melodramas, and other creative projects. Utilizing their spare time, each group is encouraged to actively use their intelligence and creativity. When presenting, students first introduce the food—its origin, characteristics, and background—before explaining the production process and sharing their personal experiences. This process helps improve their oral expression skills. Through group cooperation, students' interest in cultural classes is enhanced. While sharing their stories, they practice language organization and expression skills. Group cooperative teaching not only fosters teamwork but also builds students' confidence and courage. The competitive spirit among groups motivates active participation. Fair and objective evaluations are conducted to encourage humility and reinforce moral education. Additionally, during hands-on activities like crafting, students focus on aspects such as color coordination and integrating aesthetic education into the learning process.

4.2.2. Cross-cultural communication

Cross-cultural communication is inevitable for people of all ethnic groups in Xinjiang in their daily work and life. Han-Uyghur cultural exchanges initially developed when teachers began teaching minority college students through language comparison. In culture classes, cross-cultural communication also occurs between Chinese and Uyghur students or other ethnic minorities. Differences in hospitality customs, particularly in food culture, are common in everyday interactions. When teaching food culture, teachers can focus on key aspects of cross-cultural communication, extending and broadening the topic by designing a comparative study of hospitality customs between Chinese and Uyghur food cultures. For example, the teacher might highlight the following points:

(1) General receptions are often held in outside restaurants.
(2) The relationship between host and guest determines the restaurant's grade.
(3) Even-numbered dishes are usually ordered when hosting guests.
(4) Guests typically allow the host to order, following the principle of guest preference.
(5) For festivals, dishes are chosen according to the theme of the occasion.
(6) Hosts and guests usually eat together at the same table.
(7) Guests often leave some food on their plates rather than finishing it.
(8) Hosts will encourage guests to drink wine; if a guest cannot drink, someone will be designated to accompany them.
(9) Hosts typically avoid interruptions like singing or dancing during meals unless specifically requested by guests.
(10) There is often a friendly competition over who pays the bill.

Teachers can use these examples to guide the discussion, assigning tasks that encourage students to identify and add additional cultural phenomena to enrich the learning experience. Groups can use this outline to create various presentations, further enhancing the classroom's content. Through cross-cultural comparisons between Chinese and Uyghur hospitality customs, teachers expand students' knowledge and enrich classroom instruction. By employing flipped classrooms and integrating entertainment with education,

the teacher elevates the acquired knowledge and strengthens the connection between in-class and after-class learning, as well as between primary and supplementary lessons.

4.2.3. Immersive teaching experience

The immersion teaching mode refers to an approach where educators skillfully employ various teaching methods to stimulate students' interest in learning, allowing them to enter an "immersive" learning experience. This approach enhances teaching quality and effectiveness. Immersion teaching is also well-suited for cultural education. For example, in lessons on tea culture, students can recognize the color of tea, smell its aroma, and engage their senses of vision, smell, and taste. Additionally, teachers can introduce knowledge about tea ceremony etiquette, such as the sayings "tea is full of deceiving people" and "seven points of tea and three points of sentiment." By leveraging modern digital education tools, students can watch micro-videos, directly observe tea ceremony etiquette, and immerse themselves in the experience. In these teaching approaches, educators should combine cultural themes with key language learning objectives. The primary goals should remain to spread traditional Chinese culture and improve students' proficiency in the national common language. Effective teaching design should identify meaningful entry points for integrating cultural content with language instruction, avoiding integration solely for its own sake.

4.3. Assessment methods

The culture course serves as a microcosm and a window for inheriting excellent traditional Chinese culture [12]. Humanized reforms and adjustments in assessment methods should be implemented to provide students with a platform to fully showcase their abilities. Building on the existing assessment structure—where regular scores account for 40% and final scores for 60%—students should have the option to select the scope of their final exam. During students' presentations on cultural topics, teachers must carefully evaluate the following:

(1) Whether the content selection is scientific and reasonable.
(2) The quality of the courseware design.
(3) The accuracy and standardization of pronunciation in the national common language.
(4) The clarity of the presentation organization.
(5) The students' quick thinking and logical reasoning during the additional question-and-answer session.

This approach ensures a comprehensive and balanced evaluation while fostering students' critical thinking and presentation skills.

4.4. The after-effect evaluation and reflection of the Chinese traditional culture course

Most students in traditional Chinese culture courses demonstrate attentive listening, active participation, and positive thinking during class. The classroom atmosphere is lively, fostering cultural literacy and improving the comprehensive application of the national standard Chinese language, with students' Mandarin pronunciation becoming increasingly accurate. However, there are some areas for improvement. For instance, students often provide relatively simple examples when discussing cultural topics, their language tends to lack conciseness, and their adaptability in responding to open-ended questions remains weak. These aspects need further enhancement in future culture classes to build on strengths and address deficiencies. To achieve this, teachers should expand extracurricular knowledge resources, leverage modern educational technology,

and adopt diverse teaching methods. They should also focus on creating problem-based scenarios to enhance students' problem-solving strategies and guide them to consider issues from multiple perspectives and articulate their opinions effectively. By connecting lessons to real-life experiences, teachers can help students promote and disseminate traditional Chinese culture, foster patriotic feelings, and empower the younger generation to inherit and advance the rich heritage of Chinese tradition.

5. Conclusion

The development of the subject should not only have a theoretical direction but also stand the test of practice and take root. Based on the actual requirements of national standard Chinese language education and teaching, this paper attempts, for the first time, to integrate traditional Chinese culture courses for ethnic minority college students with national standard Chinese language teaching in a multi-dimensional way. It constructs a multi-dimensional teaching model framework from the aspects of teaching content, methods, and practices of traditional Chinese culture courses, explores new teaching models, and improves teaching methods. This aims to enhance the teaching quality of traditional Chinese culture courses, allow students to enjoy cultural courses, and better spread Chinese culture. Teachers play an important role in the practical teaching of traditional Chinese culture, serving as role models and guides. The curriculum of traditional Chinese culture should be continuously optimized to improve quality and efficiency, enrich knowledge structures, and cultivate feelings of family and country. Strengthening traditional Chinese culture education for college students will help build a harmonious society. Inheriting and carrying forward traditional Chinese culture will promote the main goals of ethnic education, strengthen the sense of community of the Chinese nation, enhance national cohesion, and highlight the leading role of new liberal arts construction.

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Research on the Path of Classroom Teaching Reform of Ideological and Political Courses in Higher Vocational Colleges Under the Digital Background

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Abstract: With the rapid development of information technology, digitization has become an important trend in the field of education. The ideological and political courses in higher vocational colleges, as the key courses of moral education, are facing new opportunities and challenges. This paper analyzes the current situation of ideological and political courses taught in higher vocational colleges under the digital background, including advantages and existing problems. Then, discusses the path of classroom teaching reform in the higher vocational ideological and political courses under this background, covering the renewal of teaching concepts, optimization of teaching content, innovation of teaching methods, improvement of teaching evaluation, and improvement of teachers' quality, to improve the effectiveness and certainty of teaching in higher vocational ideological and political courses, enhance students' participation and learning effect, and train high-quality technical and skilled talents to meet the needs of the digital age.

Keywords: Ideological and political courses in higher vocational colleges; Digitization; Teaching reform; Path research

1. Introduction

With the rapid development of information technology, digitization has become an important trend in the education field. Several Opinions on Deepening the Reform and Innovation of Ideological and Political Theory Courses in Schools in the New Era proposed by The General Office of the State Council to "promote the application of modern information technology such as artificial intelligence in the teaching of ideological and political courses," provides a new direction for the teaching reform of ideological and political courses in higher vocational colleges. As an important part of higher vocational education, the higher vocational courses play a key role in cultivating students' ideological and political quality, professional ethics, and

social responsibility [1]. Under the background of digitalization, the way of information dissemination and students' learning habits have undergone profound changes, and the traditional teaching mode of ideological and political courses has not been able to meet the needs of students and the requirements of modern times. Therefore, exploring the path of classroom teaching reform of ideological and political courses in higher vocational colleges under the digital background is of great significance for improving the teaching effect and cultivating high-quality technical and skilled personnel.

2. Significance of the teaching reform of ideological and political courses

2.1. Development of modern times in education

Nowadays, with the rapid development of digitalization, society has put forward higher requirements for the ideological and moral quality and digital literacy of talents. The ideological and political courses in higher vocational colleges should not only cultivate students' correct worldview, outlook on life, and values but also cultivate their value judgment ability and moral self-discipline ability in the digital environment [2]. Through the reform of classroom teaching and the integration of digital elements into the courses of thinking and politics, we can better train high-quality and skilled talents to adapt to the development of modern times.

2.2. Opportunities brought by digitization for higher vocational ideological and political courses

The ideological and political courses in higher vocational colleges, as the key courses of moral education, the classroom teaching reform is particularly important under the background of digitalization. Digitization not only provides rich teaching resources and convenient teaching tools for the courses but also brings a new teaching model and evaluation method. Through digital means, teachers can grasp the learning situation more accurately, optimize the teaching design, and improve the teaching effect [3]. Accordingly, students can also obtain more learning resources through the digital platform and conduct independent learning and collaborative learning, to improve their ideological and political literacy and comprehensive ability.

2.3. Demand for classroom teaching reform of ideological and political courses in higher vocational colleges

In the context of the rapid development of the current society, the ideological and political courses in higher vocational colleges are facing many challenges and opportunities. On the one hand, with the popularization and application of information technology, students' ideological concepts and value orientations are increasingly diversified, and the requirements for ideological and political courses are getting higher [4]. On the other hand, there are still some deficiencies in teaching content, teaching methods, and teaching evaluations, which need to be reformed and innovated. Therefore, it is of great significance to explore the path of classroom teaching reform of ideological and political courses in higher vocational colleges under the background of digitalization to improve teaching and train talented individuals [5].

2.4. Adapt to the needs of students' characteristics

Vocational college students grow up in the digital age, and they have a natural affinity for digital technology. The use of digital means in teaching can better attract their attention and fit their learning habits [5]. For example, they are more inclined to acquire knowledge through multimedia resources and online platforms

than traditional paper textbooks and blackboard books. Digital reform can make ideological and political courses more suitable to their tastes and increase their participation.

3. Teaching status of ideological and political courses in higher vocational colleges

3.1. Advantages brought by digitization to ideological and political classes

3.1.1. Enrich teaching resources

There are a large number of high-quality videos, audio, pictures, literature, and other materials related to ideological and political courses on the Internet. These resources can provide rich materials for the teaching of ideological and political courses in higher vocational colleges, and expand the breadth and depth of the teaching content.

3.1.2. Diversified teaching methods

Digital technology enables teachers to adopt a variety of teaching methods, such as multimedia teaching, virtual simulation teaching, online teaching platforms, and so on.

3.1.3. Enhance learning autonomy

Students can independently search for learning materials, participate in online discussions, and complete online assignments through the Internet. Online learning platforms, such as Superstar Learning Pass, provide students with independent learning space so that they can learn according to their learning progress and needs, and improve their learning initiative [6].

3.2. Existing problems

3.2.1. The teaching concept lagging behind

Some teachers of ideological and political courses in higher vocational colleges still adhere to the traditional teaching concept, taking the teacher as the center and paying attention to the one-way indoctrination of knowledge, ignoring the principal position of students and the learning characteristics of students in the digital environment.

3.2.2. Insufficient integration of teaching content

Although the network resources are rich, there are problems in the integration of teaching content. Some teachers just pile up the network materials mechanically and do not integrate them with the content of textbooks and the actual needs of vocational students [7].

3.2.3. Improper use of teaching methods

Some teachers tend to be formalistic when using digital teaching methods. For example, in multimedia teaching, the content of the textbook is simply transferred to PowerPoint (PPT) presentations, and the interactive advantage of multimedia is not brought into play.

3.2.4. Teaching evaluation is not scientific

The traditional teaching evaluation based on test results is still dominant. Under the digital background, this kind of evaluation cannot fully and accurately reflect the learning process and its effect on students [7].

3.2.5. Teachers lack digital ability

Some teachers of ideological and political courses in higher vocational colleges lack the ability to apply digital technology, such as the operation of multimedia production software and online teaching platforms, and little understanding of the application of new technologies such as virtual reality and artificial intelligence in ideological and political teaching, which affects the promotion of teaching reform.

3.3. The challenges faced

There is a realistic contradiction between teachers' information literacy and the development requirements of modern times. Currently, some teachers of ideological and political courses have certain shortcomings in how to use new information technology to integrate into all aspects of teaching, how to use data to effectively analyze learning situations, and how to use technology to carry out multidimensional teaching evaluation. This leads to the dilemma of insufficient reform of teaching conditions and inadequate application of teaching carriers in ideological and political teaching.

There is a contradiction between students' demand for high-quality digital resources and the shortage of real supply [8]. At the moment, there are still some deficiencies in the construction of digital resources in the ideological and political courses of higher vocational colleges, such as insufficient quantity, low quality, and not timely updating of resources. As a result, students' demand for high-quality digital resources cannot be fully satisfied, which affects the teaching effect of ideological and political courses.

4. The path of classroom teaching reform of ideological and political courses

4.1. Update the teaching concept

Firstly, establish a student-centered concept. Teachers should fully recognize students' learning abilities and needs in the digital age, and shift the focus of teaching from knowledge transfer to ability cultivation and value guidance.

Secondly, cultivate the consciousness of digital teaching. Teachers should actively embrace digital technology and integrate it into their teaching concepts. They should realize that digitalization is not only a teaching tool but also an important means to change the teaching mode and promote the development of students.

4.2. Strengthen infrastructure construction

Infrastructure construction is an important prerequisite for the classroom teaching reform of ideological and political courses in higher vocational colleges under the background of digitalization. Colleges and universities should, based on the main goal of their digital transformation and the basic needs of students' digital learning, determine the direction and focus of infrastructure construction, rationally invest construction funds, and steadily promote the construction process [9]. To be specific, we can start from the following aspects.

Firstly, strengthen the construction of network facilities. Ensure the stability and high speed of the campus network, and provide network guarantee for the download of online digital resources and the development of online learning courses. Simultaneously, a sound and perfect facility management system should be established, and professionals should be hired to overhaul and maintain the facilities regularly to improve the service life of the facilities.

Secondly, build a digital ideological and political classroom. The classroom is equipped with an electronic whiteboard, virtual reality (VR) technology glasses, interactive tablets, computers, and other technical equipment. Using these devices to bring immersive and interactive ideological and political learning experiences to students. The construction of digital ideological and political classrooms can not only improve students' learning interest and participation but also enrich teaching methods and forms and improve teaching effects [10].

Thirdly, build a high-quality digital ideological and political resource library. Integrate and build a high-quality ideological and political digital resource library to realize the extension and enrichment of teaching content. By integrating the ideological and political education elements contained in local high-quality resources, multi-dimensional education resources are integrated and reconstructed, and resources such as Red Revolution sites, former sites of third-line construction factories, and rural revitalization demonstration villages are digitally transformed, to realize the direct "transfer" of fresh education resources to the campus.

Finally, build a digital platform. The following columns show the content of various disciplines and integrate the ideological and political learning resources in different disciplines. Professional teachers are encouraged to make use of these resources to innovate and engender ideological and political characteristics in discipline teaching, to realize the education of all disciplines, and to promote the all-round development of students [11]. Concurrently, live network broadcast can also be used to broadcast the ideological and political practice activities carried out by the school in the whole process, providing opportunities for online interaction for students who cannot participate in offline activities due to time, place, and other factors.

4.3. Optimize the teaching content

Firstly, combine network resources to select teaching content. Teachers should select content that is consistent with the teaching goal and students' reality from the massive network resources.

Secondly, the ideological and political courses should be integrated with professional education. According to the professional characteristics of higher vocational students, the content of ideological and political courses should be organically combined with the content of professional courses.

Thirdly, update the teaching content in time. Pay attention to current hot issues and social developments, and incorporate new content into teaching on time.

4.4. Innovate teaching methods

Firstly, we will build an ideological and political education model that combines online and offline education. In offline teaching, digital resources are used to enrich the teaching content of ideological and political courses, and digital equipment is used to innovate teaching methods. Accordingly, ideological and political teachers are required to use the university's digital classroom to record online courses, the content of which is mainly to reproduce, expand, and extend the knowledge of offline courses [12]. Through the combination of online and offline forms to build a systematic and comprehensive curriculum system, break the time and space limitations of students' course learning, and help students form a complete ideological and political knowledge structure.

Secondly, integration of multimedia resources. Make use of video, audio, animation, and other multimedia resources to concretize the abstract theoretical knowledge in ideological and political lessons.

Thirdly, the use of multimedia interactive teaching. Make full use of the interactive function of

multimedia, and design interactive teaching courseware.

Fourthly, carry out virtual simulation teaching. Using virtual simulation technology to create ideological and political courses teaching situations.

Lastly, the use of artificial intelligence to assist teaching. Provide personalized learning services for students with the help of artificial intelligence (AI) technology.

4.5. Improving teaching evaluation

Firstly, establish a diversified teaching evaluation system. Students' classroom performance, online learning participation, homework completion, test scores, and other factors should be taken into account. For example, on the online learning platform, it is possible to count the number of logins of students, the quality of speeches that participate in discussions, and the completion of online assignments, among others, and combine these data with class performance and final exam scores to comprehensively evaluate the learning effect of students.

Secondly, pay attention to the process evaluation. Strengthen the evaluation of student's learning process and pay attention to their ability development in the digital learning process. For example, by recording the operation process and performance of students in virtual simulation teaching, evaluating students' practical ability and ability to use knowledge, timely finding the problems in the learning process of students, and giving guidance.

Thirdly, students' mutual evaluation and self-evaluation should be introduced. Let students participate in teaching evaluation to promote mutual learning and self-reflection among students. For example, after a group project is completed, have the group members evaluate each other on aspects such as teamwork ability, contribution to the project, and other ways to evaluate their peers [13]. In parallel, students are asked to self-evaluate their performance in the whole process of learning ideological and political courses, to cultivate students' awareness of independent learning and evaluation ability.

4.6. Improving the quality of teachers

Firstly, we will strengthen training in digital technologies. Schools should provide systematic digital technology training for higher vocational ideological and political teachers, including multimedia production software, the use of online teaching platforms, virtual simulation technology, artificial intelligence applications, and other aspects of training. For example, regularly organize teachers to participate in online and offline training courses, invite experts to give technical guidance, and improve teachers' digital operation ability. Regularly organize higher vocational ideological and political teachers to participate in digital teaching technology training, including multimedia production software, online teaching platform use, and VR/AR technology operation training, so that teachers can skillfully use digital technology to carry out teaching activities [15].

Secondly, update the teaching concept. Carry out teaching concept training and guide teachers to establish digital teaching concepts. Let teachers realize that in the digital background, teaching is no longer a one-way knowledge transfer, but to use digital means to stimulate students' initiative and creativity. Encourage teachers to explore new teaching methods, such as project-based learning, flipped classrooms, and many others, in ideological and political lessons.

5. Conclusion

The teaching reform of ideological and political courses in higher vocational colleges under the digital background is a multi-dimensional and multi-level systematic project. Through strengthening the construction of infrastructure, innovating teaching modes, integrating teaching resources, and strengthening the construction of teachers, we can promote the in-depth development of the reform of ideological and political class teaching in higher vocational colleges [14]. Simultaneously, it is also necessary to pay attention to the challenges and countermeasures faced by the reform of the classroom teaching of ideological and political courses in higher vocational colleges under the background of digitalization, actively respond to various challenges and problems, and constantly improve the education effect of ideological and political courses and the ability to train high-quality technical talents. In the future, with the continuous development and application of information technology, the classroom teaching reform of ideological and political courses in higher vocational colleges will continue to be further promoted and achieve more remarkable results.

Disclosure statement

The author declares no conflict of interest.

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A Blended Teaching Approach to Linear Algebra

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Abstract: Linear algebra is an important fundamental course for university students in technology and science. However, most students think linear algebra is very abstract. To give students a much better learning effect, we chose a blended teaching method that uses both offline and online resources. By analyzing the characteristics of linear algebra, the aim of teaching, and the characteristics of human understanding. Concrete teaching methods and some linear algebra examples are displayed in this paper.

Keywords: Linear algebra; Blended teaching; Online and offline teaching

1. Introduction

Linear algebra is an important fundamental course for university students in technology and science. However, linear algebra textbooks lack concrete application examples, some of the definitions lack background context, and the lesson time is limited [1,2]. Therefore, the traditional teaching according to the textbook seems very abstract. The traditional teaching method is limited. It no longer adapts to the new requirements of new situations which need more talents who have much better research ability, innovative ability, and application ability. Additionally, the traditional method is not beneficial for the development of personal quantity. Much research has been done to improve the teaching method. One of them is blended teaching [3,4]. Blended teaching uses two kinds of resources: online and offline. With these abundant resources, we can adequately utilize the provided information and software. By analyzing the characteristics of linear algebra, the teaching goals we aim to achieve for students, and the nature of human understanding, we propose a blended teaching approach for linear algebra. Before proposing the specific blended teaching approach, we will first discuss the considerations involved.

2. Consideration of blended teaching for linear algebra

In this section, we describe the considerations that serve as guiding principles for blended teaching in linear

algebra. These considerations include the characteristics of linear algebra, the teaching goals we aim to achieve for students, and the nature of human understanding.

2.1. Characteristics of linear algebra

Linear algebra is derived from studying the linear system of equations. It primarily deals with linear relationship problems. The primary study objects involve vectors, vector space, linear transformation, and linear systems of equations with finite dimensions. Linear algebra can be widely used in computer science, physics, economy, biology, pattern recognition, data science, circuit analysis, and so on. Next, we will analyze the characteristics of linear algebra.

Firstly, from the application domain of linear algebra, it is clear that linear algebra has abundant practical applications. It can provide colorful examples.

Secondly, the linear algebra textbook lacks application examples, and some definitions in the textbook lack background and meaningful explanations. As a result, linear algebra appears very abstract to students. For example, consider the concept of matrix rank: why is the highest order of the algebraic minors of a matrix that is not equal to zero defined as the rank of the matrix? If the teacher simply presents the definition without explanation, it can seem very abstract. Students need to grasp the underlying meaning of the concept to fully understand it.

Thirdly, in practical applications, the matrix may have huge order and the linear system of equations will have many variables or many equations. Students should have the ability to choose the right software to program.

2.2. The teaching aim

The teaching aim acts as our guide. The primary teaching problem is what kind of person we hope to cultivate. For the aspect of individuals, we regard the students as vivid people, so we hope to stimulate and lead students to the route of self-development.

For the aspect of society, we are in the artificial intelligence age. Nowadays, there is a need for more innovation. We hope to cultivate within the students the capability of research, innovation, application, and cooperation. The aim is for individuals and society to supplement each other.

2.3. The characteristics of human understanding

As humans, we are willing to study the things that interlink with us. The formation of thinking is from concrete to abstraction and then from abstraction to concrete. According to these aims and characteristics, we design the strategy of blended teaching.

3. The blended teaching method for linear algebra

According to the aims and characteristics mentioned above, in our blended teaching, we will design some questions to lead students to think over, to discover the rules of the questions, and to verify the rules they are provided with. Then, we hope to reinforce their recognition through further exercises, reading, and studying. Finally, we hope that students can solve some practical problems or find more rules with the knowledge they have gained.

We divide the study process into three stages: the stage before class, the stage during the class, and the

stage after class. The ideas mentioned above will run through all of these study processes. Next, we will describe the concrete teaching method and examples used in every stage as follows.

3.1. The stage before class

The stage before class is designed to help students understand the relevant background knowledge, the origin of the problem, its historical development, and stories about the mathematicians involved. This stage encourages students to think critically and draw preliminary conclusions related to the concepts they will learn.

To reach this aim, we can give the students a self-study list. This can aid students to prepare more effectively. The list contains some tasks such as exercises, discussions, and some resources that need students to read.

Online classrooms such as Rain-Classroom can be used to give the students some resources to prepare lessons before class. The resources may contain PowerPoint presentations (PPT), videos, resources from the Internet, documents, and other exercises that can push students to think about the relevant knowledge in advance. For example, before starting class on the topic of determinants, some resources will be given in advance to the students.

Firstly, some practical examples and exercises that can be solved using a linear system of equations will be uploaded online. The examples are as follows.

(1) Example 1: We can use the linear system of equations and computed tomography X-ray to get the quality of some human brain organs.

(2) Example 2: We can use the linear system of equations to solve some chemical problems, such as balancing chemical equations.

Through these practical applications, students can appreciate the diverse and colorful applications of linear systems of equations in different domains. Next, we will provide students with two exercises designed to help them think critically about better methods for solving linear systems of equations.

(1) Exercise 1: Students will solve five linear systems of equations, each consisting of two equations with two variables, using methods they learned in high school. Then, we will pose a follow-up question: What should we do if there are 100 such systems to solve? This encourages students to consider whether there are faster and more efficient ways to handle large numbers of equations.

(2) Exercise 2: Students will solve a specific set of equations, as follows:

$$\begin{cases} a_{11}x_1 + a_{12}x_2 = b_1 \\ a_{21}x_1 + a_{22}x_2 = b_2 \end{cases} \quad (1)$$

We will then prompt students to think about whether the solutions from **Exercise 2** can help solve these 100 equations more efficiently. Furthermore, we will ask them to consider ways to remember or reuse the solutions to improve efficiency.

The purpose of **Exercise 2** is to guide students in understanding the necessity of using ready-made solutions to tackle large systems of equations and exploring strategies for retaining and applying these solutions. By preparing these examples and exercises online, students can better understand the concept of determinants and their role in solving linear systems of equations.

3.2. The stage during class

In this stage, the teacher's task is to guide students in forming concepts and conclusions based on the problems we study. Students will realize that definitions and theorems are not rigid facts to be memorized; rather, they are concepts to be discovered.

In this way, we can cultivate students' scientific literacy, the spirit of exploration, and the ability to cooperate by discussing in teams. For example, in the section on inverse-matrix, the concrete teaching process will be divided into three steps.

(1) Step 1: In this step, we will provide students with some background on the application. Specifically, we sometimes need to encrypt a matrix. A matrix can store various types of information, and to keep it confidential, we may want to encrypt the matrix. The teacher can have students take on the role of cryptographers and think about the best way to encrypt an information matrix.

The teacher can organize students into teams for discussion. Drawing on all the matrix calculations they have learned, students can discuss the problem and submit their answers online. By reviewing the answers posted online, everyone will see that there are different possible approaches. The class can then further discuss which method involves the most complex calculation, ensuring the highest level of security for the matrix through matrix operations.

Through the discussion, students will conclude that matrix multiplication is the most complex operation in matrix calculations, making it the safest method for encrypting a matrix. Let the information matrix be X (named as plaintext matrix), the encryption matrix be A, and the encrypted matrix be C (referred to as ciphertext matrix). Then, we can get the calculation $AX = C$ or $XA = C$.

(2) Step 2: The next question is how to decode the matrix. In this step, students can learn methods to solve an unknown problem by comparing it with the knowledge they are already familiar with.

The teacher can remind students that matrix multiplication is similar to number multiplication. If we want to decode, we can draw a parallel with number multiplication. This understanding will allow us to decode the matrix, $X = A^{-1}C$ or $X = CA^{-1}$.

(3) Step 3: To define the inverse matrix, in this step, the teacher helps students understand that when we create new concepts in research, we define these new concepts. Therefore, we need to define the inverse matrix A^{-1}.

In this stage, we see that we define the inverse matrix through the process of solving a practical problem. Through this training, students will understand that we can create definitions or conclusions based on our needs during problem-solving. We also observe that online classes facilitate more efficient interaction. Additionally, if students have questions or new ideas, they can promptly write them down in the online class, where they will be displayed in the PowerPoint presentations. The teacher can then make relevant adjustments based on these questions in real-time. Other students may gain new insights from these questions or ideas. Moreover, using the online class platform, the teacher can assign exercises online and quickly monitor the learning progress of all students.

3.3. The stage after class

The stage after class is crucial for students to digest, consolidate, and reinforce their understanding of the knowledge they gained in class. We will provide an example to demonstrate what is done after class. The example focuses on the section about eigenvalues and eigenvectors of matrices. We will give three tasks for

the students to complete.

(1) Task 1: We will give students some exercises to calculate the eigenvalue and eigenvector. It will give students a chance to familiarize themselves with the definition and the calculation.

(2) Task 2: We will let students calculate the eigenvalue and eigenvector using software such as Matlab. In this way, the students can use proper software to calculate.

(3) Task 3: Through online platforms, students will be given some documents on the application of eigenvalue and eigenvector. For example, documents on "Shallow Discussion of the Application of Eigenvalues and Eigenvectors," "Economics Perspective of Understanding Eigenvalues and Eigenvectors," and so on [5,6]. These documents can be found in academic journal databases such as CNKI, Wan Fang Data, Google Scholar, and so on. By reading these documents, students can further master the essence and applications of eigenvalues and eigenvectors.

4. Conclusion

In summary, we presented the concrete flow of the blended teaching method for linear algebra. Through the use of abundant online resources and proper teaching design, we can help students master the course content. By studying this course, we can also cultivate students' research abilities, innovative thinking, application skills, and teamwork. Our next task is to establish a comprehensive resource database and examples for each concept in the linear algebra course. **Figure 1** illustrates the overall concept of using the blended teaching method for linear algebra.
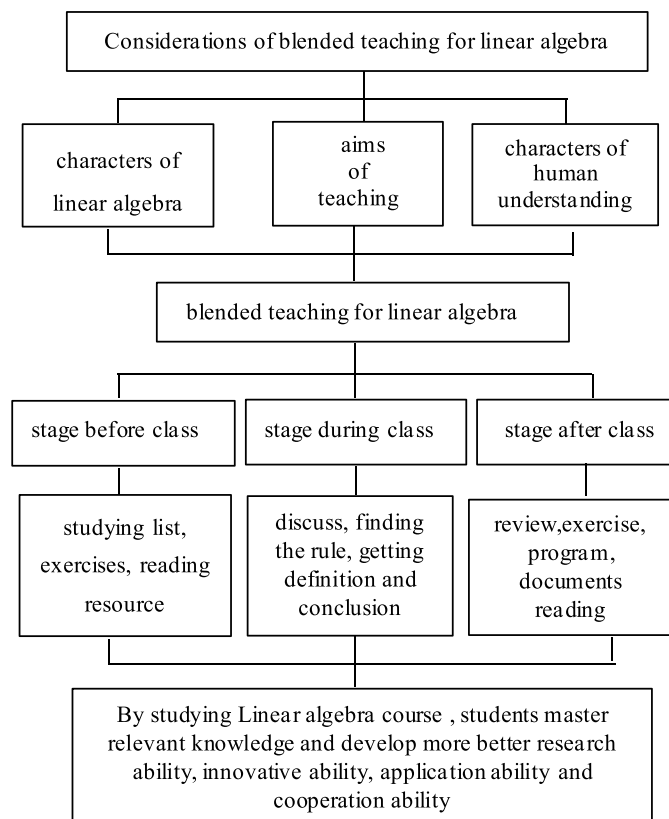
Figure 1. Blended teaching method for linear algebra

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The Role of Technology Integration in Facilitating Literature Education: Insights and Challenges

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Abstract: Blackboards and textbooks are no longer the features of a classroom. Modern classrooms blend traditional methods with digital tools, presenting educators with another way to promote effective teaching strategies. Technology integration is used to improve teaching and learning processes. This development has presented a better pattern for new teaching models. Consequently, it has a key role in learning and teaching literature education. While the benefits of technology integration in literature education are widely acknowledged, we cannot disregard the challenges of utilizing it to create a well-managed learning environment. This study aims to identify the role of technology integration in literature education and its insights and challenges. Findings reveal that teachers used different digital tools such as gamification, social media, and multimedia resources. These tools are believed to be beneficial as they enhance engagement and motivation, access to diverse literary devices, and promote collaborative learning. However, teachers faced different challenges in integrating technology such as limited training and professional development and lack of resources. The review of literature revealed the technological tools used by the teachers, their benefits and challenges as well as the role play by technology in literature education.

Keywords: Literature education; Technology integration; Role; Insights; Challenges

1. Introduction

In a time when digital literacy has become essential rather than optional, teachers must understand the advantages of information and communication technologies to effectively incorporate them into the teaching of both theoretical and practical knowledge to students. Consequently, teachers must be capable of fostering an environment that effectively encourages the application of new technologies in education, especially in language instruction, as this area has always been seen as aligned with continuous innovative developments

in the information technology (IT) sphere. The 21st century has equipped students with a variety of online resources such as community-based and collaborative knowledge exchange systems and easy access to various digital platforms [1]. Because of this, the Department of Education (DepEd) has been trying to shift to technology-based education. It aims to mobilize Filipino learners to become globally competitive and digitally transformed individuals. Thus, the Enhanced Basic Education Act under RA 10533 compels quality education that is globally competitive through Information and Communication Technology (ICT) [2]. It is further supported by RA 108442 s, 2015 which requires the use of ICT in education as one of the means to enhance education services provided to Filipinos.

Teaching literature in the context of language teaching can be challenging especially when it comes to incorporating new IT innovations. Since the gap between love of technology and love for writing is quite challenging. Compared to other subjects and courses, teaching literature has proved to be most resistant to the integration and use of modern technologies, as literature was predominantly associated with deeply spiritual, emotional, and mental notions that could hardly be linked with the utilitarian world of technology [3]. Much research tried to prove how technology influenced the way we read and understand written literature before the digital age. They conclude that literature teachers need to include media, videos, digital texts, blogs, and images in the literature classroom. Department of Education (DepEd), through the Teacher Education Council (TEC), issued the DO No 42, s 2017 entitled "National Adoption and Implementation of the Philippine Professional Standards for Teachers (PPST)" [4]. The teacher's goal is to ensure that ICT is used responsibly, ethically, and appropriately to achieve and reinforce learning as stipulated in the Philippine Professional Standards for Teachers (PPST). This involves ensuring that in our efforts to enhance teaching and learning, we can leverage ICT to positively impact learning and revolutionize the methods of providing education overall.

Traditional teaching of literature is a functional strategy where teachers are the center of the teaching-learning process. This involves route memorization, chalk-and-board, reading texts, and lectures. In traditional teaching, the teacher is the source of information, and the learners are the receivers. Khalaf believed that traditional learning is necessary to increase learner's outcomes and keeps them active during the learning process [5]. Traditional learning produces active and non-active learners as a result of its conceptualization of the learning process. Traditional behavioral classes do not favor the active engagement of learners in the learning process but rather focus on the behavioral impacts of the immediate context and the teacher's role on learners. This was opposed by Barzani who believed that the old way of learning does not awaken student's minds, instead, learners nowadays want to be more involved in their learning process rather than be passive [6]. Also, teaching a traditional literary text can now be reinterpreted using new forms of media. If used properly, technology integration can be a source of creativity among learners by opening debates and discussions regarding lessons learned in different literary texts they studied. Through posting or "tweeting" their answers in a forum or "comment section" for discussion. Furthermore, the use of social media sites as a way of promoting literary authors of their works helps teachers to engage students, and to gather information about the authors and their literary works. Following these author's posts on different social media may help students to understand the themes used by the author for his/ her works. The shift of understanding literature through technology integration encourages students to discuss complex literary perspectives and add new meanings to literary texts. With the identified reason above, it is therefore beneficial to conduct research that will focus on the role of technology integration in facilitating literature

education, its insights, and challenges.

2. Research questions

This study aims to determine the role of technology integration in facilitating literature education and its insights and challenges. Specifically, this study aims to answer the following research questions.

(1) Which types of technology do teachers integrate into their literature education?
(2) What benefits have they observed from integrating technology into literature education?
(3) What challenges do they face when integrating technology into their literature classes?
(4) What is the role of technology integration in facilitating literature education?

3. Significance of the study

This study is significant to the following individuals in the field of education.

(1) School administrators: The result of this study will help them to identify the role of technology integration in facilitating literature education, its insights, and challenges. The findings can serve as a way to develop teaching strategies to integrate technology into literature education.
(2) Literature teachers: The findings of this study will help them to innovate themselves in teaching literature and use teaching strategies that are technology-based and engaging.
(3) Future researchers: This will give them information about the role of technology integration in facilitating literature education, its insights, and challenges. It can guide them to further study the role of technology integration in literature education.

4. Scope and limitation

This study was specifically focused on determining the role of technology integration in facilitating literature education, its insights, and its challenges. The researchers employed the descriptive method of research and interviews as the major data-gathering instrument. The respondents of the study are composed of six secondary language teachers from Tumalim National High School at Tumalim, Nasugbu, Batangas.

5. Literature review

This literature review presents key related literature and studies relevant to the study that provide the researchers with sufficient ideas and insights that act as their frame of reference that led to the conceptualization and formulation of research.

5.1. Types of technology in literature education

Many educators are convinced that incorporating technology into literature education has changed educational methods, promoting more creative ways to involve students. It became quite obvious that technology-enhanced teaching improved students' comprehension levels and critical thinking skills. Digital tools currently adopted to teach literary texts include visualizations, digital editions of classics, storytelling through videos, graphic novels, interactive hypertexts, and distant reading of the texts [7]. Based on the study

by Lorenzo, these are the different technological tools used in the teaching of the 21st century literature: (1) Technology-based Teaching and Learning, (2) Online Resources and Interactive Web Resources, (3) Web 2.0 applications like social networking sites (Facebook, Instagram, WhatsApp, Twitter, Viber, and YouTube, (4) eBooks, (5) Flipped classroom, (6) Literature Circles, (7) Mobile Textula, and (8) Edmodo [8]. In the study conducted by Morales *et al.*, although the majority of teachers favor conventional technologies such as chalkboard, web-based and software-based technologies such as PowerPoint and YouTube videos, and electronic and computer-based technologies are used by teachers to teach "students belonging to a different generation who have different learning style" to "make discussion more meaningful and students proper examples on how technology works in both theory and in application" [9]. Teachers reveal that the basic motivation in integrating technology is their belief that the use of technology has the potential to "make class not boring and gain participation," "promote critical thinking" and "the power to stimulate real life applications" [9].

5.1.1. Learning Management System (LMS)

Due to the COVID-19 pandemic, education shifted to modular distance learning. Teachers thought of many ways to communicate and teach students while upholding the health guidelines. This gives way to the introduction of the Learning Management System (LMS). Learning Management System can be considered as a type of online content management or online content delivery platform. It is used to deliver training and educational materials to the workforce or external users via the Internet [10]. Akay and Gumusoglu showed that with LMS, it contributed to the improvement of their language skills including speaking, writing, reading, listening, and grammar [11]. Moreover, students believed that LMS is beneficial to their studies. Students have positive perceptions and satisfaction with using LMS, with features such as accessibility, flexibility, interactivity, and availability of learning materials. This is reinforced by changes in behavior and ways of communicating between students in solving the problems presented by the teachers after the problems can be solved [12]. In terms of literature education, LMS allows for the organization of course materials, submission of assignments, and collaborative projects, the use of LMS in literature classes promotes collaboration among students and provides a structured environment for discussion and analysis. Google Classroom, one of the most common LMS, is a component of Google Apps for Education (GAFE), a suite of productivity apps designed to assist instructors and students in learning and online collaboration [13]. Through Google Classroom, literature teachers can organize online classes and create group projects. Learners, on the other hand, can post their reaction papers, articles, and learning tasks through Classwork. Moreover, the use of Google Classroom helps in assessing literature students as teachers can post their assessments and can give their feedback using the Classroom's grading function.

5.1.2. Gamification

Educators are worried about finding ways to make learning more engaging for their students. There are many methods available to increase students' engagement and one of these is through what we call gamification. Gamification is the process of integrating game elements and mechanics into non-game contexts, such as education, to enhance engagement, motivation, and learning outcomes. It involves applying game design principles, techniques, and features to make activities more interactive, enjoyable, and immersive. Rachman *et al.* proved in their study that gamification positively influences student motivation in English

Language Teaching (ELT) [14]. Elements like points, leaderboards, and rewards create a sense of achievement and intrinsic motivation. Engaged students are more likely to persist and participate actively in studying literature. Gamification promotes active learning and engagement, with interactive activities involving vocabulary acquisition, grammar practice, and language production. Furthermore, Wang revealed that students were more motivated to focus on what was being taught during lectures when a game-based student response system (GSRS) was used, as well as read the textbook to prepare for lectures to do well in the quiz [15]. Engagement levels increased for students engaged in gamification learning. Students actively engage in content as a result also have a positive attitude towards learning and increased student learning productivity [16]. Menchaca, Moya, and Bastida, in their study, showed that gamification resulted in a well-motivated learner [17]. Intrinsic motivation is the core of this type of method and its creativity is essential to its permanency. It does not only motivate students but also the literature teachers. Based on their study of the learners studying Spanish Literature, students were active, engaged, and involved in the course and saw a 73% increase than before. Moreover, the learners' grades increased by 20%.

5.1.3. Social media

Social media is one of the means of information and communication technology used by the public to communicate online [18]. Using social media nowadays is a way to reach other people, and widely used by children to even the elderly. This is proof that technology advances rapidly. Facebook, X (formerly called Twitter), YouTube, and Instagram are some of the social media platforms that people use. These platforms allow individuals to communicate easily across borders, foster global friendships, and enable the exchange of ideas on a massive scale. Social media plays a vital role in learning English Language (EL) skills because it provides many and varied opportunities for adult learners to improve their listening, speaking, reading, writing, and other skills. Learners read the new text and learn new phrases on social media to enhance their communicative vocabulary [18]. Social media platforms and online forums encourage students to engage with literature outside the traditional classroom setting. In the study conducted by Mehrpouyan and Zakeri, YouTube is a great help to undertake literature subjects [19]. Since some literature subjects are difficult to understand, videos uploaded on this platform are of great help. Re-enactments of Shakespeare's dramas exist as YouTube movies and short videos, which are often used in literature classes. Instead of making textual commentary on these types of literary works, students can make more effective evaluations as they listen to and watch these videos.

Prime social media platforms for e-teaching English Literature can include: live performances of plays, reading poems, writer interviews and biographies, evaluation of literary works, students' performances and experiences, performed literary pieces, musical selections of many historical literary periods, full-length movies in 10-minutes, radio productions and audiobook readings [19]. Rahman on her blog realized that Twitter is a dynamic and exciting use of social media in teaching and learning [20]. She used the platform by posting questions on the literary text they discussed, and students would post their answers by posting a tweet. By retweeting their answer, she was able to monitor students' input on their tasks. Shahwan, in his study, proved that the use of social media like Facebook in the classroom included improved performance, communication, student participation, and motivation [21]. Mariappan, Abu, and Omar, in their study, proved that Facebook is regarded as one of the most interesting applications that help in understanding English literature [22]. It gives students the chance to understand the events of stories and criticizes the stories.

Students experience the language in the Facebook group in a lively way. By using Facebook, students can get to know each other better, take education to its highest level, and make it more interesting, therefore creating richer learning environments.

5.1.4. Multimedia resources

Multimedia is the combination of different content forms. It includes a combination of text, audio, still images, animation, video, or interactivity content forms [23]. It is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance. Multimedia provides a complex multi-sensory experience in exploring our world through the presentation of information through text, graphics, images, audio, and video, and there is evidence to suggest that a mixture of words and pictures increases the likelihood that people can integrate a large amount of information. Students learn best by seeing the value and importance of the information presented in the classroom [23]. Several studies show that computer-based multimedia can improve learning and retention of material presented during a class session or individual study period, as compared to—traditional lectures or study materials that do not use multimedia. Teachers can incorporate multimedia learning into their classroom by identifying the learning styles of each of their students, matching teaching methods to learners' multimedia learning for difficult tasks, strengthening weaker learners' multimedia learning through easier tasks and drills, teaching students, and selecting learning strategies.

Odhiambo indicated that integrating multimedia in teaching poetry enhances learner engagement and participation, stimulates and motivates them to learn, and simplifies the otherwise abstract and compact language of poetry [24]. Multimedia thus affords a learner-centered pedagogy, as opposed to the conventional teacher-centered approach of analyzing poems using print-based materials as the primary resources. The study conducted by Baharudin and Zulkiflei showed that students learn better with videos created using the PowToon application [25]. They tend to pay more attention to the lessons compared to when their teacher uses conventional methods. The use of PowToon videos encourages active participation among learners in class. Learners tend to participate actively during the lesson rather than just become passive learners. They ask questions, answer the teacher's questions and they even exchange thoughts and ideas with their friends. There is a tremendous shift from print to digital media in the 21st century. The traditional oral storytelling method has changed to visual digital media stories with video, audio, and 3D objects, this helps the readers to interact with stories currently. Digital storytelling is the result of combining different media elements into a coherent story. Students find it more engaging when the storytelling contains moving pictures and engaging sounds. Digital storytelling helps language learners to learn vocabulary and grammar effectively. Many students who have been exposed to storytelling build new vocabulary, use more complex sentences, and improve comprehension [26].

5.2. Benefits of integrating technology into literature education

The integration of technology in classroom management practices plays a crucial role in enhancing student engagement and learning outcomes. By incorporating technology effectively, teachers can track, monitor, and engage students in their learning process effortlessly. Technology provides a platform for teachers to celebrate student accomplishments, communicate with parents, and support important educational goals such as project-based learning and higher-order thinking skills [27].

Morales emphasized that technology integration enhances teachers' instructions and the learning experience of learners and provides them the opportunity to actively engage with the learning, to develop critical thinking, creativity and collaboration, and prepare them for their future careers [9].

Technology has meaningfully influenced educational practices and the traditional teaching methods have shifted to digital tools and resources. This brought a positive impact on student learning expectations and outcomes. Technology integration has the following benefits: (1) increased student motivation, (2) increased student engagement, (3) increased student collaboration, (4) increased hands-on learning opportunities, (5) allows for learning at all levels, (6) increased confidence in students, and (7) increased technology skills [28]. These benefits can be observed particularly in the field of literature education. The integration of technology into literature classes has become more significant as teachers try to create engaging and effective learning environments.

In terms of literature education, technology gives way to different access to a wider range of learning materials. With the use of online platforms, students can access various resources, such as e-books, videos, and audio recordings, which can help them improve their language skills. Furthermore, technology integration can also provide opportunities for professional development for English language teachers. By attending workshops and training sessions on technology integration, teachers can improve their skills in using technology tools and resources to enhance their teaching [29].

5.2.1. Enhanced engagement and motivation

Motivation drives a learner to do actions in classroom activities. Engagement is the evidence of that motivation. Both play a vital role in the teaching-learning process, particularly in English and literature education. Reading and understanding English literature can be quite challenging for students if English is not their native language. Thus, somehow students do not feel motivated in reading literature because of the high language proficiency the texts require and the length of the teaching materials. The conventional "Chalk and Talk" teaching method is not enough to convey the complexity of English literature effectively. The use of multimedia and technology might be a precious medium in the teaching of literature and to increase students' motivation to read literary texts [30]. In addition to reading with the use of multimedia, there are more technology-based tools that can be used in literature education. Word wall is an example of this which pertains to an online tool applying gamification principles in non-game contexts—to enhance students' learning engagement and motivation in literature classes. Word walls in literature classes had a notable impact in motivating students to actively engage in the learning environment. Employing gamification quizzes in literature classes emerged as an innovative agent to engage students' interest in reading and interpreting literature works [31].

5.2.2. Access to diverse literary resources

Diverse literary resources refer to the broad collections of books, articles, essays, poetry, and other texts that represent identities, cultures, and varied views in a specific community. These resources can be found in libraries and other resource centers which could be a source of a wide range of information. However, as technology evolves rapidly, exposure to digitalized resources has been utilized. Digital libraries, for example, offer easy access to read and do research. The biggest upside of using technology in the classroom is that it gives students immediate access to extensive information and resources. With digital tools like academic

journals, project management platforms, and study apps, students can explore various subjects, conduct research, and access materials beyond traditional textbooks [31]. The teaching of literature through online and multimedia methods involves greater interaction between students and more accessibility to sources of information. Students make use of strategies like collaborative learning to interpret literary texts, which develops their interdisciplinary thinking and cross-curricular approach, required for literature teaching. Technology assists both the teacher and the students in searching for references and other cultural content in the literary text, which eventually makes a positive impact on the attainment of the learning outcomes [14].

5.2.3. Improve collaborative learning

Taking place between the teacher and the students, between students and students, and between them and the elements of the educational environment, the collaboration aims at situations and group activities related to a common goal. Technological development in the online environment has influenced the social practice of teachers and students and the way they collaborate. The use of digital resources in the learning process puts teachers and students in a position to identify and use the most appropriate platforms and tools to support collaborative learning. When collaboration is accomplished through technology, it promotes a way of learning during which students build their knowledge as a consequence of engaging, discussing, and re-expressing their learning material [8].

5.3. Challenges in integrating technology into literature education

Integrating technology into literature education has become more common nowadays. This adds to the necessity to engage students in a changing digital environment. While technology gives various benefits and advantages like access to a wide range of resources and interactive learning experiences, it also carries significant challenges that need to be tackled to ensure successful implementation. The challenges faced by teachers in integrating technology include lack of technology media facilities, slow internet connections, lack of skills in mastering it, teachers' or students' low motivation to use technology in learning English, and lack of proper material preparation [32].

According to Dotong *et al.*, some of the probable barriers to educational technology integration in most developing countries are inadequate financial support and infrastructure, human capital, management support, as well as behavioral and environmental aspects [33]. Lack of appropriation for ICT due to corruption and the strong influence of politics might be some barriers to believe as reasons. Most organizations and industries from developed countries are giving out their support to alleviate the digital divide among nations. However, only a few stayed focused and committed from the beginning of the project until it produced an impact on the community and society at large. In addition to that, teacher-preparedness is insufficient. The workforce must be well-equipped with the skills necessary to provide an effective transfer of knowledge from the teachers and learners. Such technology is being used to support the delivery of instruction and to train students in how the computer works and its fundamental operation as well as its applications in the development of an informed and educated community. In the study of Atillano-Tang and Cirilo, despite efforts to integrate technology integration, many challenges remain [34]. These include the lack of resources, inadequate teacher training, and resistance to change. Teachers need to be equipped with the necessary knowledge, skills, and confidence to use technology effectively in their teaching practices. Teachers need access to technology devices, software, and internet connectivity to effectively integrate technology into their teaching practices.

Moreover, teachers need to have the ability to adapt to different technology tools and platforms to enhance the effectiveness of technology integration in their teaching practices.

5.3.1. Lack of resources

Access to digital resources is one of the foremost challenges in literature education. This will remain a significant barrier, as not all students have equal access to devices or high-speed internet. Schools may also have no adequate resources to implement technology-based learning which can limit students' exposure to diverse literary text and digital platforms. The problem of integrating technology into the teaching and learning process has become a perennial one. Common excuses for the limited use of technology to support instruction include a shortage of computers, a lack of computer skills, and computer intimidation. These could affect the success of technology integration. Acknowledging the degree of success teachers have in using technology for instruction could depend in part on their ability to explore the relationship between pedagogy and technology [35]. Additionally, students without adequate access to digital resources struggle to participate fully in online learning, access educational materials, collaborate with peers, or develop the digital skills and literacies needed for post-graduation success. These disparities can impact a student's ability to participate fully and benefit from digital learning opportunities often taken for granted by their better-resourced peers [36].

5.3.2. Limited training or professional development

The rapid expansion of Information and Communication Technologies (ICTs) has transformed learners into digital learners, requiring teachers to integrate technology into their pedagogical approaches, where teachers' attitudes, technological knowledge, and skills play a significant role in its effective integration [37]. The rise of technology has complicated its adoption and integration by teachers in the classroom. The effective integration of technology into classroom practices poses a challenge to teachers than connecting computers to a network [38]. One of the most crucial inhibitory factors that make teachers reluctant to utilize ICT in education is the lack of training on ICT [39]. Teachers find themselves ill-equipped to integrate technology effectively into their teaching practices, primarily due to limited resources and insufficient curriculum focus on ICT. There are fewer training courses available that focus on the use of technology. At some point, newly hired teachers have the advantage of using digital teaching methods.

5.4. Role of technology integration in literature education

Throughout the years, literature education has been integrated into the curriculum in the Philippines. It is valued as a foundation for English classes, as it enhances students' language skills. However, the curriculum fails to cultivate students' appreciation of literature. Consequently, literature teachers face difficulties in presenting and teaching literary works in engaging, captivating, and appealing manners to foster a true passion for literature. Thus, integrating technology becomes an answer to this dilemma. Pallathadka discovered in his study that more than 95% of students are instead more optimistic and are committed to using immersive English absorption technologies [40]. Statistical data show a high proportion of English students who use modern technologies rather than conventional teaching methods such as intelligent panels, computers, and displays. The use of English technology enhances the integrated approach to the digital media framework and other elements that help students obtain the necessary results. Literature analysis shows that

the use of technology in learning can increase student motivation and engagement. Various studies show that the use of applications, educational games, and digital learning tools can create a more engaging and dynamic learning environment [41].

6. Research design

This study employed descriptive research. According to Smith, descriptive research is a cornerstone of scientific inquiry, providing a systematic approach to observing and documenting phenomena without manipulation [42]. This method is essential for researchers seeking to paint a detailed picture of real-world situations, behaviors, or characteristics. In this regard, it helps the researchers gather information, identify patterns, and inform decision-making. Thus, this serves as a tool to gather data in identifying the role of technology integration in facilitating literature education and its insights and challenges.

7. Data collection

In this study, the researchers used structured interview questions administered through Google Forms to collect data from the respondents. The questions are constructed based on the needed information such as the types of technology used to integrate technology in literature education, the benefits and challenges of integrating technology, and the role of technology in teaching literature. The researchers used Google Forms to collect data as it is an effective way for teachers to answer at their convenience as well as this method is easier to analyze data for accuracy and reliability. Moreover, the confidentiality of the respondent's information is secured.

8. Data analysis

After the researchers gathered all the data needed, they adopted Collaizzi's seven-step analysis method [43]. To summarize the concept of the study, the details are as follows: (1) reading the transcript, (2) pulling out significant statements, (3) interpreting the statements, (4) grouping the drawn meanings into themes, (5) deriving descriptions based on the phenomenon, (6) reporting the phenomenon's importance, and (7) verifying the findings.

9. Discussion

This study presents the discussion and interpretation of data gathered by the researchers.

9.1. Types of technology used in teaching literature education

Six participants chose social media as one of the technologies used in teaching literature education while five participants chose multimedia, one for gamification, and none for Learning Management System (LMS).

> *"It is more accessible and user-friendly."*
> -Participant 1
> *"It is more convenient, and easy to access. Applications like YouTube and Facebook are always available".*

-Participant 2

"I chose to use those types of technology because I find it easier and more convenient for me and my learners. I have observed that learners best understand our literature lesson through video presentations."

-Participant 3

"These are the available resources and are easy to access".

-Participant 4

"The technology tools are easy to use, and the learners are well-versed in them".

-Participant 5

"Because it's in demand and accessible".

-Participant 6

Having been introduced to different types of technology in literature education, the participants invoked that technology integration is very useful since it is accessible and user-friendly and helps them to understand literary texts substantially. It is also revealed that all the participants seek these types of technology since the learners are well versed in them and they understand the lesson clearly. Alfaruque *et al.* believed that technology-enhanced teaching improved students' comprehension levels and critical thinking skills [7]. Morales *et al.* pointed out that teachers choose to teach using this technology "students belonging to a different generation who have different learning styles" to "make the discussion more meaningful and students' proper examples on how technology works in both theory and in application" [9].

9.2. Benefits of technology integration in literature education

Six participants believed that technology integration can enhance engagement and motivation among learners.

"Learners are more engaged and motivated when I use technology making our classes enjoyable. Moreover, different strategies and sample activities help me to teach the lessons. Lastly, collaboration is evident when learners are engaged."

-Participant 2

"Technology can enhance the active participation of the learners. This also leads the way to a wider range of literary pieces, locally or even in other countries. It doesn't limit learning more about literature."

-Participant 5

Successful technology integration ensures that the technology aligns with the learning goals and helps the students reach the goals. It requires teachers to make the lesson more engaging and motivating to enhance the active participation of learners.

Additionally, integrating technology in literature teaching opens to more varied sources of literary text and is not limited to what is available. Technology provides a platform for teachers to celebrate student accomplishments, communicate with parents, and support important educational goals such as project-based learning and higher-order thinking skills [27]. Five participants emphasized that access to diverse literary resources is a great help in literature education. More so, five participants agreed that technology integration improves collaborative learning in literature education.

"This makes the teaching of literature interactive and meaningful, deviating from a monotonous discussion and exploration of literary pieces. It promotes literary appreciation."

-Participant 1

"Learner's engagement in my literature class is observable. They participate well during the discussion and tend to collaborate with others for the given activities."

-Participant 3

"Integrating technology doesn't only enrich the learning experience by making it more interactive and relatable but also provides access (broader access) to online libraries where learners can explore literature around the world. Access to social media and using media resources also give the learners the chance to share their thoughts on the literary works."

-Participant 4

"Since it's in demand and accessible students love to use it and enjoyment arises also.

- Participant 6

Participants pointed out that integrating technology not only enriches the learning experience but also gives the learners the chance to share their thoughts and limits the monotonous discussion of literary pieces.

9.3. Challenges faced by teachers in integrating technology in literature education

Four participants stressed that lack of resources contributed to the challenges in technology integration in literature education.

"Teachers should be well equipped with the use of technology-based tools in teaching. A broad skill in using it should be possessed by a teacher to formally integrate technology and can cater to learners' concerns."

-Participant 3

"Technology facilitates communication and collaboration through platforms like discussion boards, blogs, and social media. Without these tools, it can be harder for students to engage in meaningful discussions, share insights, and collaborate on projects, limiting their ability to deepen their understanding through peer interaction."

-Participant 4

"The availability of gadgets is very important in using technology in teaching. Advanced gadgets may not be available to some teachers."

-Participant 5

"Without resources like cellphones, accessing social media can affect the teaching of literature by limiting the activities to be explored by the students."

-Participant 6

The participants in this study highlighted that the lack of gadgets can affect the teaching of literature. Moreover, even if there are available gadgets, the inaccessibility of the software applications is another concern of the participants because it limits the activities explored by the learners.

9.4. Roles of technology integration in literature education

The participants have different views on the role of technology integration in literature education.

"Technology plays a vital role in literature education. Technology may serve as a springboard to appreciate literary gems not just from our very own folks but even across the country. This also helps promote literature from other provinces to flourish and be read by everyone. Technology in this time of AI gives vitality to the teaching of literature if used positively for appreciation and enlightenment."

-Participant 1

For Participant 1, technology is a way to appreciate literary text through different technology tools such as AI.

"The role of technology is to make the lesson more exciting and up-to-date, learner-friendly and subject to inclusive and cultural perspective."

-Participant 2

For Participant 2, technology leads to making a lesson inclusive, user-friendly, and culturally acceptable.

"Technology became a new way of learning literature ensuring learners convenience in understanding the lesson and enjoying the exposure to more literary pieces."

-Participant 3

Participant 3 stressed that technology ensures a convenient understanding of literary texts and exposes learners to more literary phrases.

"Integrating technology can enrich both the teaching and learning experiences in literature education since it can lead to enhanced engagement of learners to literature and collaborative learning. Integration of technology can also help students connect and understand literature in innovative ways."

-Participant 4

Participant 4 expressed that integrating technology enriches the teaching-learning experience that leads to enhanced engagement of learners in the literature that promotes collaborative learning.

"Technology is a new way of learning literature. You are enjoying the lesson while learning a variety of literary pieces."

-Participant 5

Participant 5 proved that technology integration adds enjoyment to learning literature while encountering a variety of literary texts.

"While other techniques can also promote metacognition using technology, teachers can produce interesting and enjoyable activities while creating deeper connection and learnings."

-Participant 6

Participant 6 believed that technology integration promotes metacognition in understanding the literary text, thus having a deeper connection and learning.

10. Conclusion

The following conclusions were drawn based on the findings.

(1) This study revealed that teachers preferred to use social media and multimedia in literature education. Respondents believed that these technology tools can be easily accessed and available to use.

(2) The respondents are convinced that integrating technology in literature education can enhance engagement and motivation, lead to more access to resources, and increase collaborative learning.

(3) The teachers struggle to integrate technology in literature education due to a lack of resources and limited training and professional development.

11. Recommendations

Based on the findings and the conclusions drawn, the following recommendations were suggested.

(1) Teachers must explore more types of technology tools that can be used in teaching literature education.

(2) Teachers must improve the use of technology integration to continue the positive effects of technology integration.

(3) School administrators must provide adequate resources to meet the demands of technology integration in literature education. Moreover, training and professional development highlighting the use of technology should be initiated.

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Teaching Practice to Enhance Safety Awareness of Students in Welding Processing Professional Training

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Abstract: As an important part of cultivating students' practical skills, the safety of welding processing professional training cannot be ignored. Students' safety awareness is directly related to their training effectiveness and personal safety in complex environments such as high temperatures, high pressure, and harmful gasses. Therefore, enhancing students' safety awareness in welding processing professional training is not only a guarantee of teaching quality but also a responsibility for students' life safety. This article will explore effective teaching strategies and practical methods based on this. By strengthening safety education, simulating real-scene drills, and building a safety culture, we can comprehensively enhance students' safety awareness and self-protection abilities, escorting their professional growth.

Keywords: Welding processing major; Practical training; Safety awareness

1. Introduction

Welding processing professional training is a deep integration of technology and practice, and it is also a critical stage for cultivating safety awareness. While mastering welding skills, students need to establish a solid safety concept to cope with various potential risks in practical training. This not only concerns the personal safety of students but also directly affects the quality and effectiveness of practical teaching. Therefore, how to effectively enhance students' safety awareness in the teaching process has become an important issue we must face. Through innovative teaching methods, strengthening safety education, simulating actual combat drills, and other measures, we are committed to creating a safe and efficient learning environment for students, helping them grow into excellent welding talents with both technical strength and safety literacy.

2. Safety teaching objectives of welding processing professional training

(1) Comprehensive understanding of safety norms and requirements for welding processing training: As a high-risk technical practice activity, welding processing training requires students to deeply understand and strictly follow safety norms and requirements. These objectives demand that students not only master basic welding safety knowledge, such as equipment operation procedures, work environment standards, and chemical safety but also be able to internalize this knowledge and externalize it in their actions. To achieve this, teaching should emphasize the combination of theory and practice through case analysis, on-site teaching, interactive discussion, and other methods. This will enable students to deeply understand the importance of safety norms and flexibly apply them in practical operations to ensure a safe and orderly training process.

(2) Strengthen personal protection awareness and proficiency in the use of protective equipment: Personal protection awareness is the first line of defense to ensure students' safety during practical training. In welding processing training, students need to constantly pay attention to their safety and fully recognize the key role of personal protective equipment in preventing accidents. Therefore, one of the teaching objectives is to enhance students' protection awareness, enabling them to actively identify potential risk factors and take corresponding protective measures. Simultaneously, students need to proficiently master the use of various protective equipment, such as adjusting welding masks, wearing protective clothing, and using respirators. The mastery of these skills requires not only theoretical explanations in classroom teaching but also repeated practice and consolidation through practical training. This ensures that students can quickly and accurately use protective equipment in emergencies, protecting their safety.

(3) Cultivate the ability to identify safety hazards and respond to emergencies: During welding processing training, safety hazards are ubiquitous, and emergencies occur frequently. Therefore, students must possess keen safety hazard identification skills and effective emergency response capabilities. Achieving this goal requires teachers to focus on cultivating students' observation and judgment skills in the teaching process. This enables them to accurately identify safety hazards in the training environment, such as equipment failures, improper fire source management, and chemical leaks. Concurrently, teachers should impart basic knowledge and skills for responding to emergencies, including fire escapes, first aid for electric shocks, and chemical spill handling. Through simulated drills and other methods, students can experience and practice these skills firsthand, enhancing their adaptability and psychological resilience in emergencies.

(4) Shape good safety operation habits to reduce training safety risks: Good safety operation habits are crucial for preventing safety accidents. In welding processing training, students must always follow safety operating procedures and maintain utmost vigilance. Therefore, one of the teaching objectives is to help students develop positive safety operation habits, such as regularly inspecting equipment, standardizing tool usage, and maintaining a clean and orderly work environment. The formation of these habits requires continuous emphasis and supervision from teachers in daily teaching. Through demonstration teaching, on-site guidance, supervision, and inspection, teachers can guide students to gradually establish correct safety operation awareness and behavior patterns. Additionally, teachers should encourage students to learn from and supervise each other, jointly creating a safe, orderly, and efficient training environment to reduce safety risks during the training process.

3. Teaching practices to enhance safety awareness of students in welding processing professional training

3.1. Deep practice of personal protective equipment teaching

3.1.1. Deep analysis of the functions and uses of personal protective equipment

Firstly, teaching should focus on the specific functions and uses of various personal protective equipment. The welding helmet, as a key piece of equipment to resist sparks, harmful light, and ultraviolet (UV) rays during the welding process, requires a detailed explanation of its light transmittance, heat resistance, and impact resistance. Protective clothing, like a second skin for students, features flame retardant, heat insulation, and wear resistance properties, which are crucial for protecting students from high temperatures, sparks, and chemical substances. As for gloves, an important barrier for hand protection, their anti-slip, heat insulation, and wear resistance properties need to be selected based on the specific needs of welding operations. During the explanation process, teachers can use physical demonstrations, videos, or virtual simulation technology to give students an intuitive understanding of how these equipment are applied in practical work. At the same time, by combining real welding accident cases, teachers can conduct an in-depth analysis of the serious consequences caused by not wearing or improperly using protective equipment, thereby strengthening students' safety awareness.

3.1.2. Practical operation

Learning theoretical knowledge is fundamental, but true mastery requires a practical operation to test it. Organizing students for practical training is an indispensable part of personal protective equipment teaching. Teachers can design a series of targeted training programs, such as adjusting and wearing welding helmets, putting on and adjusting protective clothing, and selecting and wearing gloves. During the training process, teachers should provide patient guidance to ensure that each student can operate according to the correct steps and methods. To enhance the interactivity and fun of teaching, teachers can adopt forms such as group competitions and role-playing, allowing students to master the use of personal protective equipment in a relaxed and pleasant atmosphere. In parallel, teachers should also focus on observing students' operation processes, discovering and correcting wrong actions promptly, and ensuring that each student can meet the teaching requirements.

3.1.3. Continuous guidance and feedback

The teaching of personal protective equipment is not a one-time task but requires continuous reinforcement and improvement in daily practical training. Therefore, teachers should continuously monitor students' usage, providing necessary guidance and assistance. During practical training, teachers should regularly check whether students' personal protective equipment is worn correctly and intact, and remind students to pay attention to equipment maintenance and care. Additionally, teachers should establish an effective feedback mechanism to encourage students to raise questions and suggestions. By collecting student feedback, teachers can adjust teaching strategies and methods on time to meet students' learning needs. In unison, teachers should regularly organize students to review and summarize common problems and solutions with the use of personal protective equipment, helping students consolidate learning outcomes and enhance self-protection abilities.

3.2. Comprehensive practice of safety education for training sites and equipment
3.2.1. Safety inspection of training sites

Conducting a comprehensive safety inspection of the training site before each practical training session is an essential step. This includes checking all facilities and equipment on the site individually to ensure they are in good working condition, without damage, aging, or safety hazards. Special attention should be paid to checking whether the fire-fighting facilities are complete and effective, whether the emergency evacuation passageways are unobstructed, and whether the electrical wiring meets safety standards. Furthermore, the ventilation system of the training site should be inspected to ensure it can effectively remove harmful gasses and dust generated during the welding process, maintaining air quality. During the inspection process, the principle of "meticulous attention to detail" should be adhered to, leaving no detail unchecked. Any identified issues or hidden dangers should be rectified immediately to ensure the safety of the training site. Simultaneously, a sound safety inspection system should be established to normalize and institutionalize safety inspection work, forming a long-term mechanism.

3.2.2. Inspection and maintenance of welding equipment

Welding equipment is an indispensable tool in the practical training process, and its safety and stability are directly related to the training effectiveness and students' safety. Therefore, teaching students how to inspect and maintain welding equipment is one of the important aspects of safety education in practical training. Firstly, it is necessary to explain the structure, performance, and usage methods of welding equipment to students in detail, helping them establish a comprehensive understanding of the equipment. Based on this, the focus should be on imparting equipment inspection and maintenance skills. This includes teaching students how to check the integrity of power cables, the tightness of connections, equipment grounding protection, and other critical areas. It also involves teaching them how to identify potential abnormalities during equipment operation, such as unusual noises, overheating, and vibrations. Moreover, students should be instructed on routine equipment care and maintenance, such as cleaning equipment surfaces, replacing wearable parts, and lubricating transmission components. At the same time, it is important to emphasize that students should strictly follow operating procedures when using equipment and not arbitrarily change equipment parameters or perform unauthorized operations. While using the equipment, students should constantly monitor its operating status and immediately stop and report any abnormalities to the teacher. After use, equipment should be shut down and cleaned according to prescribed procedures, ensuring it is in a good standby state. By imparting welding equipment inspection and maintenance skills, not only can safety accidents caused by equipment failures be prevented, but students' sense of responsibility and self-protection abilities can also be cultivated. They will learn how to take responsibility for their actions and how to protect their own and their classmates' safety. This sense of responsibility and self-protection ability will accompany them throughout their professional careers, becoming their valuable assets.

3.3. Emergency handling and rescue skills training
3.3.1. Laying the foundation with basic skills

Firstly, the teaching of emergency handling skills should cover core content such as initial fire suppression and first aid for electric shocks. In terms of initial fire suppression, students need to master the use of different types of fire extinguishers, understand the basic laws of fire spread, and learn to assess the fire situation and take corresponding suppression measures. Through a combination of theoretical explanations

and practical drills, students can experience the fire suppression process in simulated fire scenarios and master correct fire-fighting techniques. First aid for electric shocks is another crucial skill. Students need to understand the dangers of electric shocks and learn basic assessment methods and emergency steps after an electric shock. By simulating electric shock situations, students can practice emergency skills such as cardiopulmonary resuscitation (CPR) in a safe environment and master correct emergency procedures and techniques. Simultaneously, the importance of safe electrical usage should be emphasized to raise students' self-protection awareness.

3.3.2. Practical emergency drills

After theoretical learning, emergency drills become a key link to test and improve students' emergency response capabilities. The drills should be closely integrated with the actual situation of the training site, simulating real accident scenarios such as fires caused by short circuits in welding equipment or operators accidentally suffering electric shocks. Through preset scenarios and simulations of emergencies, students can quickly activate emergency plans and implement rescue operations in a tense atmosphere. During the drills, teachers should play the role of guides and evaluators, observing students' emergency response speed, decision-making ability, and team collaboration skills. Concurrently, reasonable evaluation criteria should be set to objectively evaluate students' performance, point out existing problems, and provide suggestions for improvement. After the drills, students should be organized to summarize and reflect, sharing experiences and lessons learned to further consolidate and enhance their emergency handling and rescue capabilities.

4. Conclusion

Enhancing the safety awareness of students undergoing welding training is a continuous and far-reaching task. Through systematic teaching practices, not only do students master professional welding skills, but more importantly, they learn how to maintain vigilance in complex and changing environments, effectively preventing and responding to potential safety risks. This is not only responsible for students' personal growth but also an important contribution to future industrial safety. Looking ahead, teachers need to continue exploring more efficient and practical teaching methods, constantly optimizing the safety awareness training system, laying a solid foundation for students' comprehensive development, and delivering more outstanding welding talents with both technical strength and safety literacy to society.

Disclosure statement

The author declares no conflict of interest.

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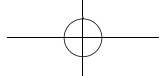
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