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The Study of Project-Based Learning Model in College English Writing

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Abstract: As a response to the current situation of college English writing teaching, this study aims at constructing a new teaching model in writing instructions with more involvement on the side of learners. Project-based learning(PBL)integrates language and soft skills simultaneously to promote the frequent use of English language, practice learners' strategies, boost learners' self-confidence, and other capabilities. Therefore, it is introduced as a theoretical foundation for a project-based learning model in college English writing featuring writing process, contextualized tasks, and creative projects. It is expected that this study will provide new insights into the innovation of college English writing teaching, and help enhance its teaching efficiency.

Keywords: Project-based learning; Process-oriented approach; Contextualization; Collaboration

1. Introduction

Language achieves its communicative function through skills like listening, speaking, reading, and writing, among which writing holds particular significance. With the rapid development of internationalization in education, traditional teaching models for writing, such as lecture-based instruction, case study, and module-based teaching, can no longer meet the needs of learners and the cultivation of professionals. Especially in the context of the "Belt and Road" initiative and multiculturalism today, the curriculum standards for English writing teaching(2020) should adapt to the new educational environment. They should elevate from a mere focus on language knowledge to a fusion with competence and quality—intercultural communication skills, critical and innovative thinking, autonomous learning, as well as noble character, dedication, cooperative spirit, etc. Therefore, it is necessary to encourage innovation in writing teaching models.

2. Current Situation of College English Writing Teaching

2.1. Passivity and dependence

Currently, most students could recognize the importance of writing skills, however, they lack interest in writing and self-directed learning(Su Huina, 2019). In classroom teaching, many students simply expect teachers to impart more writing knowledge and provide guidance for their assignments. They are unwilling to actively overcome the possible difficulties encountered in writing and also reluctant to spend more time practicing after class. But it is insufficient to improve English writing skills by classroom instructions alone; instead, it requires students to do more practice in their free time.

2.2. Unified teaching model

Writing is a personalized skill, with various needs for different students. Due to objective factors like textbooks, class hours, and class size, the teacher-centered traditional teaching model has been playing a dominant role in English writing teaching. In most classroom instructions, the teaching model is unified: Teachers present theoretical knowledge through case analysis, students complete writing tasks after class and teachers grade the essays with comments. Although this kind of teaching model helps guarantee the smooth flow of teaching procedure, it lacks personalized guidance with no adequate feedback on assignments.

2.3. Product over process

The traditional classroom instruction focuses on sentence-level writing rather than the entire discourse (Shi Yuan, 2017); it focuses on language use such as grammar, spelling and punctuation, neglecting the cultivation of ideas and perspectives; it emphasizes the final discourse, but ignores the writing process, which results in students focusing on form rather than content when they start writing.

3. Project-based Learning

Buck Institute for Education(2008) defines project-based learning as a systematic teaching method, involving the exploration of complex and real-world problems, and the careful design, planning, and implementation of project tasks. Through this process, students are able to imaginatively grasp the necessary knowledge and skills. Wurdinger, Haar, Hugg & Bezon (2007) state that in project-based learning, teachers guide students through a problem solving process, which includes identifying a problem, developing a plan, testing the plan against reali-

ty, and reflecting on the plan. According to Harmer and Stokes (2014), "learning by doing" is the core element of this model. Learners are supposed to engage in real-world activities to utilize what they learn in a way similar to what they need outside the classroom(Hanney, 2013). Learning occurs naturally when learners solve problems by questioning, researching, writing, speaking, advocating, arguing, analyzing and synthesizing.

4. Construction of Project-based Learning in College English Writing

Project-based learning in college English writing aims to meet students' learning needs by designing challenging or authentic writing projects.

4.1. Process-oriented teaching design

Writing is a process of discovery involving a series of steps. Writing an effective essay requires brainstorming, making a draft, revising, and evaluating. Project-based writing teaching emphasizes "learning by doing", so it can meet the requirements of process-oriented writing teaching for the cultivation of writing strategies and meta-cognitive abilities. The staged and collaborative nature of project completion also provides possibilities for multiple writing feedback and diverse evaluation methods, enabling the positive role of feedback and evaluation to be better realized. Students' cognitive abilities, creativity, autonomous learning, and collaboration skills can be more comprehensively cultivated.

4.2. Situation-based writing projects

Contextualizing writing tasks involves creating real-life situations or scenarios that students can engage in. By providing a meaningful context for writing, students are more likely to be motivated. This approach can enhance their understanding, application and enjoyment of the writing process, thus forming a "student-centered with teacher guidance" teaching mode. In the design of projects, different roles are assigned to both teachers and students. They can be freelance writers, newspaper editors, journalists, authors, speakers, critics, job seekers and so on. Apart from improving students' competence in language use, these contextualized projects will be good for developing their awareness of academic identity and teamwork, critical thinking, problem-solving abilities as well as communication competency in various contexts.

4.3. Innovative writing projects

Sample analysis is an essential part in traditional writing classroom instructions. Students create their own copies by imitating the writing style of the well-selected samples. This teaching model might be an effective way of practicing writing for beginners, however, it is more teacher-oriented and outdated. The design of innovative

writing projects should feature authenticity, interest, and practicality so as to enhance participation and efficiency.

(1) Create the connection between reading and writing. It's hardly surprising that good readers often become good writers themselves. Good readers note effectiveness in the writing of others and use these observations to help clarify their own ideas and rhetorical choices about organization, development, and style. It is suggested that materials that are closely related to students' lives and social hot topics should be carefully chosen for students to read analytically. By doing so, input and output are synchronized to consolidate language foundations.

(2) Optimize teaching content. Needs analysis should be carried out based on course objectives, students' learning needs, and professional goals. Therefore, the teaching content can be divided into four modules: language training, general practical writing, workplace writing, and academic writing. Each module involves different text genres, focusing on helping students establish their identity as writers, understand academic norms, master genre rhetoric knowledge in academic discourse, and accumulate sociocultural knowledge.

(3) Enrich teaching evaluation. Project-based writing instruction employs a comprehensive evaluation system from self-evaluation, peer-to-peer, teacher-to-student, and computer-assisted evaluations. Essays are assessed mainly in terms of language, structure, and content. The evaluating process greatly enhances students' ability to identify, analyze, and solve problems, and also facilitates personalized guidance and feedback between teachers and students.

5. Conclusion

Project-based learning allows learners to be involved in the analysis of a given project and the search for possible solutions. Innovative project scenarios can add a strong sense of vitality and practicality to the writing classroom, transforming students' mindset of writing "for exams or for class". They also incorporate other elements like cross-cultural communication knowledge, and critical thinking to create a more enriching foreign language lectures. As for teachers, their tutorial functions are related to the selection as well as contextualization of the proposed projects and also the monitoring and evaluation of the learners.

6. Acknowledgment

A school-level teaching reform project: Research on Integrated Education Model of "Career-Course-Competition-Certificate" for Applied English Majors, Project No. GKDXJ202219.

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The Application of Task-Based Teaching in the Teaching of Oral English in Vocational Universities

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Abstract: In vocational university English teaching, speaking, as one of the main assessment links, is gradually diversified. In this regard, the application of task-based teaching in vocational university English speaking teaching is proposed. Firstly, the concept of task-based teaching is analyzed and the differences between task-based teaching and practice-based teaching are compared. Then the application value of task-based teaching is analyzed, and it is proposed that task-based teaching takes knowledge teaching as the core and teacher-student interaction as the main mode of interaction, which has a certain promotion effect on both knowledge output and input. Finally, the specific application scenarios of task-based teaching are proposed, including the creation of language environment, the issuance of teaching tasks and the development of thinking training. It aims to improve the practical application value of the task-based teaching mode and optimize the teaching effect of spoken English in vocational universities.

Keywords: Task-based teaching; College English; Oral language teaching; Teaching model

1. Introduction

Task-based teaching is a learner-centered teaching method that emphasizes students' learning and mastering of language by completing tasks with practical meaning in authentic contexts. Task-based teaching pays attention to students' subjectivity and emphasizes that students learn by doing and improve their language ability through practice. Task-based teaching requires the design of meaningful tasks that are relevant to students' lives and occupations and can arouse students' interest and motivation. The design of tasks should take into account the difficulty of the task, the students' language level and other factors [1]. In the process of task implementation, students need to work in groups or individually to complete the tasks. Task implementation should focus on students' initiative and practicability, and encourage students' active participation, independent thinking and cooperative communication. Task assessment is a very important part of task-based teaching, which should include students' self-assessment, peer assessment and teacher assessment. The assessment should be based on the effect of task completion, students' language performance, teamwork ability and other aspects as the criteria to help students find problems and improve their deficiencies. Task-based teaching emphasizes that students learn and master language by completing tasks in authentic contexts. Task-based teaching can not only improve students' English speaking ability, but also cultivate students' comprehensive qualities such as teamwork and problem-

solving ability. With the rapid development of vocational education and the increase of internationalization, the teaching of spoken English in vocational universities is facing more and more challenges. The traditional teacher-centered teaching method can no longer meet the needs of students. Therefore, it has become imperative to find a more effective teaching method [2]. As a new type of teaching method, task-based teaching has been widely used in many disciplines, but the research on the application of it in the teaching of spoken English in vocational universities is still relatively scarce. Therefore, this study aims to explore the application of task-based teaching in oral English teaching in vocational universities, with a view to providing new ideas and methods to improve students' oral English proficiency. Task-based teaching is a learner-centered teaching method that emphasizes students' initiative and practice. In task-based teaching, students need to use language in real contexts and improve their speaking ability by accomplishing tasks. This teaching method can not only improve students' English speaking ability, but also cultivate their teamwork and problem-solving abilities. In addition, task-based teaching can promote students' independent learning and self-assessment ability, which is conducive to their lifelong learning and career development [3]. Therefore, this study has important practical and research value. The research significance of this study lies in the following: firstly, by exploring the application of task-based teaching in oral English teaching in vocational universities, it can enrich and improve the existing theories and methods

of English teaching; secondly, through the empirical study, it can provide effective data support and practical guidance, which can help to improve the quality of oral English teaching in vocational universities; and lastly, through the implementation of task-based teaching, it can improve the students' oral English ability, teamwork ability and problem-solving ability and other comprehensive qualities, which is conducive to their career development and lifelong learning [4].

2. Theoretical Foundations of Task-Based Teaching

Task-based teaching refers to a way of planning and organizing language teaching with tasks as the core unit. Task-based teaching comes from the theory of communicative language teaching. The term "task" originally referred to exercises in the language classroom. At present, some scholars still compare tasks with teaching skills, and consider tasks as "a special form of skills." How to accurately understand "task" is the key to the correct implementation of task-based teaching. Therefore, it is necessary to discuss the definition of task at [5].

There are various definitions of the term "task". First of all, "task" refers to a variety of things that people do in a non-educational setting or in their daily lives. The Modern Chinese Dictionary explains the word "task" as "work assigned, responsibility assigned", which is what most people understand by the word "task". However, in foreign language teaching, especially when talking about task-based teaching, the concept of "task" usually refers to an activity that takes the real world as a reference and the formation of linguistic meaning as its main purpose. Since the "task" in task-based learning has many similarities with real-life tasks.

According to the degree of similarity of the tasks, they are categorized as "real-world tasks" or "target tasks" and "pedagogical tasks", the former referring to those tasks that have analogous objects or prototypes in life, i.e., designed according to practical needs after objective examination, aiming at making learners capable of accomplishing similar tasks in real life. The former refers to those tasks that have analogies or prototypes in life, i.e., those designed according to actual needs after objective examination, and aim to make learners capable of accomplishing similar tasks in real life; the latter includes tasks based on theories of second language acquisition and related research, which may not directly reflect the objective reality, and are limited to be used in a certain educational environment [6].

In short, tasks in task-based teaching or task-based learning are not general, isolated or arbitrarily combinable teaching or learning activities inside or outside the classroom, but are an integral part of the whole system (or curriculum). Tasks take the form of dealing with simulated or real-life problems in language (oral, written or

synthesized); the effective integration and interaction of the various aspects of the task points to the overall goal of the course. Tasks have an educational value in their own right, as they allow students to learn language and develop themselves.

Next, this paper will address the relationship between tasks and communicative language teaching in the context of communicative language teaching. In this regard, this paper divides communicative activities into two categories, namely pre-communicative activities and communicative activities. Pre-communicative activities include mechanical structural activities and semi-communicative activities. The former is a separate training of language knowledge and skills, focusing entirely on language form; the latter tries to make learners realize the potential functional meaning of the language form while mastering it, but since no real communication takes place, the evaluation criterion is mainly the acceptability of the output language rather than the transmission of meaning. On the whole, pre-communicative activities are non-communicative language activities, practically exercises, in which students have neither a communicative desire nor a communicative purpose, and in which the form of the language is mastered accurately mainly through repetition, and the flow of information is unidirectional, with the teacher mainly giving instructions and the students drilling them. On the contrary, some classroom activities cannot be regarded as tasks, such as: completing a form-transformation exercise (e.g., changing active to passive sentences); many teacher-led question-and-answer activities (both teachers and students have a clear idea of what to ask and what to answer, and there is no difference in information); and inductive learning activities (the activities are based on preselected materials conducive to the production of linguistic rules). The differences between tasks and exercises can be summarized as follows.

Obviously, both types of activities have the basic characteristics of tasks and belong to the category of tasks. Therefore, it has also been argued that the early task-based learning model of task is still only a part of the traditional communicative language communication activities, just teaching activities in the classroom, while some people later gave it the characteristics of many tasks in life.

To sum up, activities that stay in formal training and aim at mastering language forms are exercises; if the activities have no similarities with real life, or if there is no information gap between the parties in the conversation, no communicative purpose, no knowing, no communication, and no interaction, even if they are aimed at communicative functions, they can only be regarded as training for communicative function programs, and at best they can only be called "quasi-communicative". The task-based activities make the activities more purposeful

and can effectively avoid practicing language for the sake of form and practicing language for the sake of form. It can be said that the proposal of tasks ensures that the teaching activities are meaningful, communicative,

process-oriented, and oriented to the real world, and finds a landing point for language teaching to realize the real meaning of language function [7].

Table 1. Differences between task-based and practice-based instruction

	Practice	Tasks
Focus	Form	Meaning
Communicative desire and communicative purpose	No	Yes
Real life situations	No	Yes
Evaluative aspects	Accuracy of language form	Completion of the task or not
Language control	Strict control	Not strictly controlled
Teacher error correction	Immediate correction of errors	Observe, analyze causes and correct errors
Information flow	Unidirectional	Bidirectional or multidirectional

3. The Value of Task-Based Teaching in College Speaking Teaching

3.1. Output-oriented foreign language learning culture

Foreign language teaching in China has always been teacher-led, centered on language knowledge, reading as the main learning path, and vocabulary as the goal, which has become a deep-rooted foreign language learning culture. In addition to the constraints of the foreign language environment in China, this learning culture is mainly the result of the influence of national cultural traditions. In our country, the concept of education advocates the dignity of teachers; in the content of teaching and emphasizing knowledge and theory; in the teaching methodology used to teach indoctrination; in the teaching pathway emphasizes reading, reading with learning. Chinese language teaching is basically the same. It can be said that China's teaching mode is lecture, indoctrination, recording, analyzing and reading type of teaching, is an input-based learning culture [8].

One of the cultural features of input-oriented foreign language learning is its knowledge-centeredness. Teachers, textbooks, teaching methods, and tests consciously or unconsciously emphasize knowledge. Teachers regard themselves as the transmitters of language and cultural knowledge, and input words, sentences, chapters and language-related knowledge of culture, history and literature through demonstration, explanation, analysis, comparison, induction and translation; textbooks, as language models and knowledge textbooks, pay attention to the standardization of language, the systematic nature of knowledge and the wide range of topics, and are therefore the channels and templates for language input; students act as "containers" of language knowledge, listening to the lessons in class and taking the tests. Students act as "containers" of linguistic knowledge, listening to lectures and taking notes in class, reading, memorizing and doing exercises outside the classroom, seeking to "know" and relying on "remembering": exams are noth-

ing more than a test of students' mastery of the language, from the content to the form. Exams, from content to form, are no more than tests of the level, degree or quality of students' knowledge of the language. The result of this learning culture is that it is difficult for students to transform the language knowledge they have acquired into language skills [9]. The ultimate goal of language learning is not to master language knowledge, but to move from "knowing" to "knowing", from knowing what the language is to being able to use it for what it is meant to be used for, that is to say, to turn knowledge into skills. However, language knowledge does not automatically translate into communicative skills. Skills can't be developed just by "speaking" and "interpreting", nor can they be solved just by "knowing" and "understanding". Nor can it be solved by "knowing" and "understanding" alone. Therefore, the input-oriented foreign language learning culture has neglected the cultivation of skills both subjectively and objectively.

The second characteristic of input-oriented foreign language learning culture is that teachers are dominant and emphasize teaching rather than learning. In the process of classroom teaching, teachers are in an active and condescending position [10]. They take the role of authority, mentor and scholar to teach the text, solve the vocabulary, show the example sentences, teach the rules, analyze the text, judge the correctness and incorrectness, and so on, and take care of a lot of things which should be left to the students to do by themselves. Students are in a passive position, and have developed the habit of learning by sitting back and waiting to be "fed". Compared with other knowledge classes, in addition to listening and taking notes, students can at best answer questions, but often review facts or test their understanding. It still reflects a passive behavior. They are not externally conditioned to communicate, even if they have the need and motivation to do so. In fact, the key to language teaching is not in teaching but in learning. If students do not have the process of processing knowledge and the opportunity to use language for communication, their language learning is only half of the process.

3.2. A foreign language learning culture that emphasizes output

Compared with China, the foreign language learning culture in the West is generally output-oriented. Foreign language learning cultures that emphasize output pay special attention to the use of language, so that learners' existing language resources can be transformed into benefits. They emphasize classroom learning with reference to social behavioral goals. The instrumental value of language lies in the fact that learners produce a process of self-induced, self-discovery, self-discovery, self-exploration and self-supplementation when they apply their own language knowledge and language materials. That is to say, in the process of applying language knowledge, students will find out what they have forgotten, what they have not learned, what they have done wrong, what they have failed to do and what they have succeeded in doing, and only then will they be motivated to learn more and have a clear goal of learning. Therefore, the role of the teacher is to provide them with stimuli and triggers for applying language knowledge and materials. Such stimuli and elicitors can motivate or trigger students' needs as social beings to cater to what society requires of them, thus ensuring that classroom learning is aligned with the goals of social behavior; and that there is a balance between input and output [11]. With these conditions, students' learning will change from passive to active. To receive this kind of teaching benefit, in addition to emphasizing the use in the single teaching of grammar, vocabulary, listening, reading, writing and so on, the foreign language learning culture that emphasizes the output advocates the synthesis of output use, and task-based teaching is a typical example. Task-based teaching aims to provide learners with opportunities and motivation to communicate, so that students can learn to communicate in communication. In the process of accomplishing tasks, students generate, comprehend and apply linguistic and communicative knowledge, develop language skills such as listening, speaking, reading and writing as well as communicative competence such as negotiating, communicating, coordinating and cooperating with others [12].

In the process of task-based teaching, the teacher-student relationship, in addition to teaching and learning, is more importantly a communicative, cooperative and interactive relationship. Teachers and students are together in a language communication environment, and teachers are the communicators and facilitators of communication activities. This kind of teaching process is to let students use language to do things or deal with conflicts through a variety of tasks in the real life or work field, from which they can cultivate and develop their language skills, communication skills, and social survival skills such as cooperation and negotiation and coexistence with others.

4. Specific Application of Task-based Teaching in Teaching English as A Foreign Language in Vocational Universities

4.1. Language environment creation

Create an immersive language environment supported by information technology. This is a closed language environment, i.e., learners and teachers can only communicate and discuss in the target language, without using the mother tongue at all, so as to avoid interference and influence on the target language due to the mother tongue.

The availability of information technology is an essential prerequisite for immersive language environments. The determining role of information technology is manifested in the design of resources and the use of technology in the immersive language environment. From the provision of resources presented to the students to the resources and materials used in the connection and construction of language knowledge in the classroom, all of them are embodied in the form of multimedia. That is to say, the resources and materials in the immersion language environment have been purposefully developed with technology. For example, the use of English short films in video format, English movies are technically processed into short films and introduced into the classroom. Information technology with rendering power provides an environment with strong rendering power for the construction of linguistic structures in the minds of the learners, so that the language environment is more realistic, the motivation for learning is stronger, and the interest in learning is stronger, which in turn achieves the purpose of cultivating the learners' practical application of the language [13].

In an immersion language environment, the target language is the only language available to teachers and learners. In the traditional classroom, teachers mostly use the target language only when presenting new language objectives, and at other times they are still accustomed to describing and explaining in Chinese, and even if they speak English, it is only limited to simple communication such as "Read after me." "Open your book, please." "Open your book, please." and other simple exchanges. In an immersion environment, teachers not only use English when presenting new knowledge, but also use English when inspiring, describing and explaining new knowledge. When students do not understand, they use slow repetition, explain complex English in simple English, and use body language to help them understand, without using their mother tongue. In this regard, the task-based teaching model of spoken English constructed in this paper is shown below.

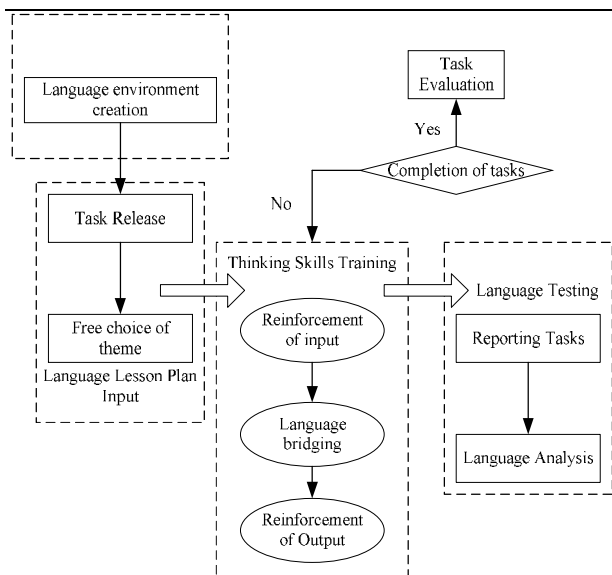


Figure 1. Task-based teaching model of spoken English

4.2. Issuance of teaching assignments

Tasks are released through the task-based teaching platform of university spoken English in the information technology environment, and this link can be released either before or during the class. The task is not a single one, but consists of a chain of tasks of varying degrees of difficulty, from easy to difficult, in ascending steps. The tasks are set as close as possible to the students' real life and create authentic language situations. The tasks are set up interactively, i.e., there is interaction between teachers and students, between students and students, between individuals and groups, and between groups and groups, so that everyone has the opportunity to open their mouths and communicate. In addition, tasks should be set up in such a way as to avoid boringness and should be designed to attract students' sustained attention and stimulate their interest in learning.

A task can be composed of a number of themes, such as the task is to master the English expression "year, month, day", teachers can design different themes for the teaching objectives, such as allowing students to investigate the birth of classmates, investigate the parents' wedding anniversary, investigate the various traditional Chinese festivals are on which day, etc., so that students through the different themes. different themes. Teachers are the designers of the activities. In order to respect the individual differences of students, the themes should be designed with varying degrees of difficulty, so that students can make their own choices. Students are the masters of this link, choosing the theme independently according to their own interests, hobbies and inclinations. The teacher is only a guide and facilitator, who can give guidance to the students when they are confused in choosing the theme, but cannot influence the students' tendency to

choose, and respect the final result of the students' choices [14].

After the students choose the theme independently, they can freely combine or match to form a theme activity group according to the theme selection. Group members should make the necessary preparations for the task, develop their own plan for accomplishing the task for the theme, and make clear what kind of purpose they want to achieve, what aspects to start from and how to explore the problem and solve the problem. When grouping, care should be taken to take into account every student, so that every student can participate in classroom activities and really become the master of learning. It is also possible for students with different levels of speaking ability to combine and form several competitive groups led by the group leader to meet the challenges that follow and lay the foundation for independent learning.

4.3. Critical thinking vitality training

This session is the centerpiece of the model and is designed to overcome learners' emotional anxiety. Most of the speaking practice sessions in the traditional teaching mode are mechanical and static, and the classroom atmosphere is dead. Teachers are the protagonists of speaking activities, students are afraid to open their mouths due to low self-esteem and fear of making mistakes, and even if they do open their mouths, they will only answer the questions negatively and lack independent language acquisition. This kind of formalized speaking activities is meaningless and has little effect on improving students' speaking level and communicative competence. Thinking Vitality Training changes the dead classroom form, enlivens the atmosphere, gives students positive encouragement, makes them rebuild their self-confidence and speak boldly.

"Think and tell", i.e. learners take the initiative to think, ponder, question, and speak as much as possible in as many sentences as possible. When there are no words to say as much as possible to find words to say, a sentence can be finished, as far as possible in two sentences to say or a different way of expression to say. "Energizing", i.e. dynamic communication with active thinking, in which learners engage in active, intense, mind-jumping, effortful uninterrupted talking and communication, which takes place not only within the group, but also within and between groups. This session requires the technical support of human-computer dialog intelligent software. The human-computer dialogue software provides a platform for practicing the thought-expression dynamics training and also a potential psychological pressure. When the students' oral expression is conducted, once there is a cold room for more than 10 seconds, the human-computer dialog software will automatically sound a tone to remind the learners to continue speaking. Once the learner speaks a language point that matches the learning

target tendency, the human-computer dialogue software will emit sounds such as "Wonderful" and "Good" to motivate the learner's self-confidence, enhance motivation, and promote the learner's active thinking and speaking out loud with an open mouth. Through the training, learners' fear of speaking is gradually eliminated, their self-confidence is enhanced, and they are forced to speak to gradually relax their psychological pressure and speak actively, finally cultivating a highly expressive and articulate oral learner [15].

5. Concluding Remarks

The application of task-based teaching in the teaching of spoken English in vocational universities has important practical value and research significance. Through empirical research, we can provide effective data support and practical guidance, and offer new ideas and methods for teaching oral English in vocational universities. At the same time, the application of task-based teaching method can also promote the development of students' independent learning and self-assessment ability, and lay a solid foundation for their lifelong learning and career development.

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Recherche Sur Le Système De Garantie Des Ressources d'Informations scientifique Et Technologique Dans Le Contexte Du Big Data

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Abstract: This paper summarizes the innovative practices and implementation results of a scientific research institute with the goal of "serving scientific research and enlightening scientific research" through information + informatization, information + editing and publishing, dynamic information + thematic information, active push information + docking project demand information, vigorously reforming the scientific and technological information workflow, innovating work measures, integrating scientific research projects, helping scientific research innovation, and building a scientific and technological information service system.

Keywords: Scientific and technological information; Scientific research institutes; Service system; Information research

1. Introduction

Scientific and technological information is a technical basic work, scientific and technological innovation, information first, in order to help scientific research, learn from the advanced experience at home and abroad, scientific and technological information needs to go first. The scientific research units of national defense and military industry should establish a systematic and perfect scientific and technological information service system, which should be guided by 'supporting strategic decision-making and scientific research innovation', follow the all-round information service concept covering the whole equipment, and rely on information technology to gradually establish an information service system for industry innovation.

2. Analysis of the Current Situation and Problems of Scientific and Technical Information Work

In recent years, in the process of high-quality development of a scientific research institute, the professional field has been continuously expanded, the volume of scientific research projects has increased, and scientific and technological innovation is imperative. However, the current situation of 'information overload and intelligence scarcity' is prominent. The project demonstration, subject research, key technology research, and even achievement identification and scientific and technological novelty search of scientific research projects all need

the support of scientific and technological intelligence services. In view of the above problems, the main reasons are as follows.

First, the lack of understanding of scientific and technological information work, attention is not enough. Under the current condition of information overload, many people think that young researchers have high academic qualifications and good English. They can undertake the collection and research work of scientific and technological information at home and abroad by themselves, and do not need to train scientific and technological information staff alone. In fact, if there is a lack of long-term and active tracking and mining of scientific and technological information at home and abroad, only to obtain some scattered information for project needs, it is impossible to systematically obtain information and knowledge in new fields. It will also be difficult to understand the research progress of peers and track the frontier of the industry, and the accumulation of scientific and technological information results will also be broken.

Secondly, the quality of intelligence personnel fails to meet the demand. Some scientific research units do not attach importance to the construction of intelligence personnel, lack of personnel with professional background, and the overall quality of intelligence personnel fails to meet the needs. Although it can ensure the tracking of internal intelligence needs and intelligence information of the unit, and can make some progress in macro and meso intelligence, the grasp of technical details is still insufficient, and the support for strategic decision-making is limited. Third, the intelligence work system

has not been effectively constructed. Due to the lack of an effective intelligence work system, the docking between intelligence personnel and scientific research personnel is not close enough, the precise docking with the project is insufficient, and the collaborative research work mode has not been effectively established.

3. Construction of Sci-tech Information Service System

3.1. Intelligence + informatization, promote intelligence information sharing

With the development of information technology and intelligence research work itself, the methods and means of assisting intelligence research are constantly developing. In the process of informatization construction of the unit, the scientific and technological intelligence work actively grasps the general trend of informatization development, integrates the informatization process, fully adopts advanced technical means, creates a new situation of 'intelligence + informatization', and promotes the sharing of intelligence information. The main practices include the following four aspects. First, the OA system of the intranet has developed the process of 'scientific and technological intelligence business entrustment', and the volume of intelligence business has increased year by year. Since 2018, there have been 220 online application intelligence services, which have shown an increasing trend year by year, covering several types of intelligence services such as citation search, scientific and technological novelty search, full-text literature search, literature translation, thematic intelligence research, emergency intelligence consulting and so on. Second, a new version of the digital library has been built, which integrates data resources and improves the utilization rate of information resources. With the formation of digital scientific research environment and the evolution of scientific paradigm, scientific and technological information work is becoming a data-intensive scientific research activity, a knowledge discovery and intelligent analysis activity based on massive data, and an indispensable information support system for scientific and technological decision-making and innovation development.

In the past three years, the total number of visits to digital libraries has exceeded 60,000, and the utilization rate has increased significantly. Third, the intranet knowledge base has developed an intelligence information release section to facilitate the release and access of intelligence information and display intelligence results. There are 1 267 pieces of online intelligence information and 17 998 times of online access. Combined with the intranet knowledge base, the intelligence information is scrolled and pushed to the target user in a more intuitive way. Fourth, build a new paradigm of intelligence service based on artificial intelligence. During the '14th Five-Year Plan'

period, the unit's professional fields were more extensive, and the demand for scientific and technological information in various fields was more intense. However, relying solely on the original manual collection and manual analysis methods has not adapted to the needs of rapid development. Intelligence staff actively introduce advanced technical means, use artificial intelligence to vigorously reform the whole process of intelligence work, improve the intelligence level of the whole process of intelligence collection, intelligence translation and intelligence publication generation, improve the efficiency of intelligence collection, analysis, compilation and generation, and save manpower and material resources.

3.2. Dynamic intelligence + thematic intelligence, intelligence service systematization

Dynamic intelligence is a report on the latest political, economic, military, scientific and technological developments of the enemy or competitors obtained through tracking, monitoring and analysis. It is dynamic information that is selected and processed for a specific object, for a specific purpose. Thematic intelligence is a process in which intelligence researchers collect relevant literature and information for historical and comprehensive investigation and research on specific issues or research topics according to the needs of specific users, and use relevant logical methods and technical methods to process and study these literature and information in different forms, and write written materials to provide creative labor results. Scientific research institutes have different levels of demand for dynamic intelligence and thematic intelligence.

The second is to practice internal work and improve the ability of thematic intelligence research. The scientific and technological information service team participated in the group's intelligence project for nine consecutive years, carried out intelligence research according to the scientific research needs of the institute, wrote special intelligence research reports, and won excellent reports for many times in a row. In addition, the intelligence service team actively communicates with the project leaders in the institute, understands the needs, immersively integrates the project, conducts research jointly with scientific researchers, and forms thematic intelligence research reports every year, which improves the team's intelligence research ability.

3.3. Active push intelligence + docking project

Demand intelligence, full-service scientific research projects and scientific and technological innovation needs Scientific and technological information staff in-depth study of the scientific research field and development direction of the unit, around the scientific research field and the '14th Five-Year Plan' six key layout professional direction, take the initiative to track intelligence

information in related fields, regularly edit and publish the ' National Defense Science and Technology News ' and ' Ship Technology Information ', push the ' Global Marine Equipment Development Trend ' through the WeChat public account, with an average annual editing of more than 600,000 words. In addition, the active docking needs to carry out intelligence services, ' immersive ' into the project full cycle process. Actively tap the needs of the project, the intelligence team actively communicates with the project leader, and accurately grasps the actual and potential needs of the user by issuing an intelligence needs survey questionnaire, participating in the monthly meeting of the project, communicating with the project ' s leading experts, various thematic leaders, and project personnel, and closely following the needs to carry out intelligence research ; according to the different stages of the project cycle, it provides the project with various forms of information research results, such as domestic and foreign development status, literature compilation, thematic search reports, research collections, translation collections, etc., to help scientific research project declaration and key technology research.

3.4. Standardize the system of scientific and technological information system

Through the system, it standardizes the entrustment and service process of scientific and technological information, and newly releases the ' × × institute scientific and technological novelty search management method ', ' × × institute scientific and technological information business entrustment management method ', ' × × institute digital library management method ', and the management system is more perfect ; in addition, the ' entrustment of scientific and technological intelligence business ' is integrated into the internal control system of the unit, a clear internal control process is established, a risk event type library, authority guide table and business flow chart are

established, and the controllability of each link of intelligence service is guaranteed.

4. Conclusion

Through the combination of intelligence + informatization, intelligence + editing and publishing, dynamic intelligence + thematic intelligence, active push intelligence + docking project demand intelligence, the latest international ship science and technology information is quickly captured and digested, and the information is transformed into available information. It is integrated into the whole cycle process of scientific research projects, carries out intelligence services for the whole institute, displays intelligence research results, constructs a scientific and technological intelligence service system, creates a new situation of scientific and technological intelligence work, and plays an important role in decision support, innovation support and information guidance in the development of the unit.

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Research on the Cultural Value of Characteristic Tourism in the Context of New Media Communication

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Abstract: This study takes the new media communication environment as the background and aims to explore the economic value of characteristic tourism culture and its role in improving the economic level of the river basin. Firstly, an in-depth analysis was conducted on how new media dissemination can promote the development of rural tourism characteristic culture from three aspects: tourism resources, transportation conditions, and tourism infrastructure. Subsequently, based on the relevant conditions for introducing rural tourism into the construction of new rural areas, an in-depth study was conducted on the economic value of rural tourism characteristic tourism culture.

Keywords: New media communication; Characteristic culture; Rural tourism; Intangible culture

1. Introduction

In today's society, the rapid development of new media has provided new ways and channels for information dissemination and cultural exchange. With the continuous innovation of new media technology, the tourism industry has gradually incorporated elements of new media communication, bringing new opportunities and challenges to the inheritance and development of tourism culture [1]. The purpose of this study is to explore the economic value of characteristic tourism culture in the context of new media dissemination and its role in enhancing the economic level of the watershed.

Characteristic tourism culture is a unique cultural form formed by a region or ethnic group in the long-term historical evolution process, with distinct regional and ethnic characteristics. In the context of new media communication, the inheritance and development of characteristic tourism culture face new challenges and opportunities. On the one hand, the rapid development of new media technology has provided broader space and more convenient channels for the dissemination of characteristic tourism culture, making it better understood and recognized by the outside world; On the other hand, the popularization and application of new media have also provided more commercial opportunities and market space for the development of characteristic tourism culture, providing a more reliable guarantee for the inheritance and development of characteristic tourism culture.

This study will analyze in depth how new media communication promotes the development of rural tourism characteristic culture from three aspects: tourism re-

sources, transportation conditions, and tourism infrastructure.

2. New Media Dissemination and the Development of Rural Tourism Characteristic Culture

With the rise and development of new media, new media communication plays an increasingly important role in promoting tourism resources, improving transportation conditions, and promoting tourism infrastructure. At the same time, it also provides new opportunities for the development of rural tourism characteristic culture [2]. This section will explore in detail the application of new media communication in the development of rural tourism characteristic culture.

2.1. Tourism information dissemination on new media platforms

New media platforms have become an important means of disseminating tourism information. Compared with traditional media, information dissemination on new media platforms has stronger interactivity and real-time capabilities, which can better meet the needs of tourists. Rural tourism scenic spots can release tourism information through new media platforms, such as scenic area introductions, tourist routes, and characteristic activities. At the same time, they can also collect feedback and suggestions from tourists through new media platforms, continuously improving service quality.

For example, social media platforms such as WeChat and Weibo can serve as important channels for information dissemination in rural tourist attractions. Scenic spots can

publish tourism information such as articles, pictures and videos through WeChat official account, and can also publish real-time news and activity information through microblog platform. In addition, scenic spots can also be promoted online through live streaming platforms, inviting internet celebrities or tourism influencers to promote live streaming, improving the visibility and attractiveness of the scenic spot.

2.2. New media marketing strategy and rural tourism brand construction

New media marketing refers to marketing activities conducted using new media platforms. Rural tourist attractions can promote their brand image and distinctive culture through new media marketing strategies. For example, scenic spots can attract more tourists to visit by publishing advertisements and promotional information through new media platforms. At the same time, scenic spots can also interact with tourists through new media platforms, carry out online activities and games, and improve tourists' participation and stickiness.

In addition, rural tourism scenic spots can also be brand built through new media platforms. For example, the scenic spot can publish articles and pictures about characteristic culture, local customs and other aspects through WeChat official account, microblog and other channels to attract more readers and fans to follow and forward. At the same time, scenic spots can also provide more convenient tourism services and experiences by establishing official websites, apps, and other channels, improving tourist satisfaction and loyalty.

2.3. The dissemination and planning of transportation information through new media technology

New media technology can provide support for the dissemination and planning of transportation information. For example, through map applications or navigation software, real-time traffic information, traffic planning suggestions, etc. can be provided to tourists, helping them better arrange travel time and routes. In addition, new media technology can also provide support for the construction of transportation facilities in rural tourist attractions, such as road design and planning through virtual reality technology.

2.4. The improvement of tourism transportation conditions through new media marketing

New media marketing can improve tourism and transportation conditions in various ways. For example, providing booking and car rental services through online booking systems or mobile applications facilitates tourists to book vehicles in advance or share their travels. In addition, new media marketing can also attract more tourists to choose public transportation or low-carbon transportation through coupons, promotional activities, and other

means, promoting the sustainable development of the tourism industry.

2.5. The promotion of new media propaganda on infrastructure construction

New media promotion can provide support and promotion for infrastructure construction. For example, raising funds through online crowdfunding or public welfare activities to improve or upgrade public facilities and services in rural tourist attractions. In addition, new media promotion can also promote the smooth implementation of infrastructure construction by reporting and promoting local government investment plans and construction progress.

2.6. The role of new media technology in the improvement and upgrade of tourism facilities

New media technology can provide support for the improvement and upgrading of tourism facilities. For example, providing tourists with more realistic simulation experiences and services through virtual reality technology, augmented reality technology, etc; Improving the comfort and intelligence level of accommodation facilities through smart home technology; Convenient shopping and consumption for tourists through mobile payment technology. The application of these new media technologies can not only improve the service level and efficiency of tourism facilities.

3. Research on the Economic Value of Rural Tourism Characteristic Tourism Culture

The characteristic culture of rural tourism is a unique tourism resource in rural areas, which has irreplaceable competitive advantages. Its economic value is reflected in multiple aspects, including its contribution to economic growth, the attractiveness of tourists, and future development trends [3]. This section will explore in detail the economic value of rural tourism characteristic tourism culture.

3.1. The attraction and competitive advantage of rural tourism characteristic culture

The characteristic culture of rural tourism has unique charm and attraction, which can meet the longing and pursuit of modern urban people for natural scenery and folk customs. Its uniqueness and differences are manifested in the following aspects: firstly, rural tourism characteristic culture carries rich historical and cultural heritage, including traditional architecture, handicrafts, folk activities, etc. These cultural resources have irreplaceable uniqueness in the process of inheritance and promotion. Secondly, the characteristic culture of rural tourism also has a strong local atmosphere and natural landscape. The natural landscapes of rural areas, such as mountains and rivers, farmland and forests, blend with the local customs

and traditions, forming an original ecological cultural atmosphere. Finally, the characteristic culture of rural tourism also has participatory and experiential characteristics. Tourists can personally participate in local folk activities, agricultural experiences, and experience the fun and charm of rural life.

These unique and differentiated characteristics give rural tourism characteristic culture a competitive advantage in the tourism market, attracting more tourists to experience and consume.

3.2. Analysis of the attraction of rural tourism characteristic culture to tourists

The attraction of rural tourism characteristic culture to tourists is mainly manifested in the following aspects: firstly, rural tourism characteristic culture can meet the needs of tourists to pursue freshness and diversity. Compared with urban tourism, rural tourism provides more distinct characteristics and differences in natural scenery and folk customs, which can meet tourists' pursuit of novelty. Secondly, the characteristic culture of rural tourism can meet the needs of tourists to relax and return to nature. In the fast-paced urban life, people often feel pressure and exhaustion. The peaceful environment and natural scenery provided by rural tourism can allow tourists to relax and return to nature. Finally, the characteristic culture of rural tourism can meet the needs of tourists for learning and exploration. By participating in and experiencing rural cultural activities, tourists can understand and learn about local history and traditional culture, expand their horizons and knowledge.

3.3. The contribution of rural tourism characteristic culture to economic growth

The contribution of rural tourism characteristic culture to economic growth is mainly reflected in the following aspects: firstly, rural tourism characteristic culture can drive the development of related industries. Rural tourism can not only promote the prosperity and development of the tourism industry itself, but also drive the development of related industries such as catering, accommodation, and shopping. These industries provide more employment opportunities and sources of income for local residents. Secondly, the characteristic culture of rural tourism can promote the transformation and upgrading of

rural economy. By developing rural tourism, it is possible to optimize the allocation of rural resources and adjust the industrial structure, promoting the development of rural economy towards high quality and efficiency. Finally, the distinctive culture of rural tourism can enhance the visibility and image of local brands. By exploring and promoting local characteristic cultural resources, the visibility and image of local brands can be improved, attracting more tourists to come for sightseeing and consumption, thereby promoting economic growth.

4. Conclusion

This article deeply analyzes how new media communication promotes the development of rural tourism characteristic culture from three aspects: tourism resources, transportation conditions, and tourism infrastructure, and explores the economic value of rural tourism characteristic tourism culture. Research has found that new media platforms can provide diverse channels for disseminating tourism information, improve transportation conditions, promote the improvement and upgrading of tourism infrastructure, and also enhance the attractiveness and competitiveness of rural tourism culture, drive the development of related industries, and promote economic growth. In the future, with the continuous development and application of new media technology, rural tourism characteristic culture will usher in broader development space and more business opportunities. Therefore, new media platforms and technologies should be fully utilized to explore and inherit the unique culture of rural tourism, and promote the sustainable development of rural tourism.

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Exploratory Study on the Unique Value of Aesthetic Education Incorporating Red Culture and Art

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Abstract: Aesthetic education in colleges and universities is an important way to enhance students' aesthetic and humanistic qualities, which has an irreplaceable role in establishing morality and shaping people, and red culture has distinctive contemporary values and aesthetic characteristics. In order to promote the integration of the two, improve the effect of aesthetic education, now put forward into the red culture and art of aesthetic education unique value of research. First of all, the connotation and characteristics of aesthetic education are specifically analyzed, and combined with the aesthetic characteristics of red culture, the unique aesthetic role of red culture is deeply analyzed, and finally the value and significance of integrating red culture and art into aesthetic education are analyzed from the three levels of development, theory and practice. It aims to make theoretical contributions to the sustainable development of aesthetic education in colleges and universities in the new era.

Keywords: Red culture; Aesthetic education; Higher education; Research implications

1. Introduction

In today's society, the diversification and comprehensiveness of the education system is getting more and more attention, which includes the integration of red culture and art with aesthetic education. Red culture and art is an important part of China's revolutionary history, with profound historical significance and rich cultural connotation, while aesthetic education is an important way to cultivate students' aesthetic ability, creativity and humanistic literacy. Integrating red culture and art into aesthetic education can not only enrich the content of education, but also give full play to the educational value of red culture and improve the comprehensive quality of students [1]. The purpose of this paper is to discuss the necessity, unique value, and related research progress of the integration of red culture and art with aesthetic education, with a view to providing reference for future educational reform. Red culture and art refers to the art forms with the background of Chinese revolutionary history and the theme of revolutionary struggle and construction practice. Red culture and art includes various art forms, such as red literature, red music, red art, red film and television and so on. These art forms also contain rich cultural connotation and educational value while expressing revolutionary history. Aesthetic education refers to the education of cultivating students' aesthetic ability, creativity and humanistic qualities through aesthetic education. Aesthetic education not only focuses on students' artistic skills and knowledge, but also pays more attention to

students' emotional experience and the cultivation of humanistic qualities. Through various forms of art education, it can improve students' aesthetic level, enhance their cultural confidence and national pride, and promote all-round development. Red culture and art have profound historical significance and cultural connotation, and integrating them into aesthetic education can enrich the content of education and improve the interest and attraction of education [2]. Through the education of red culture and art, students can have a better understanding of Chinese revolutionary history and excellent traditional culture, and enhance their cultural self-confidence and national pride. The integration of red culture and art with aesthetic education can cultivate students' aesthetic ability, creativity, humanistic qualities and other aspects of quality, and improve their comprehensive quality. The integration of red culture and art into aesthetic education can make students better understand and inherit red culture, and promote the inheritance and development of red culture. Through the research on the integration of red culture and art with aesthetic education, it can further deepen the understanding of red culture and aesthetic education, and provide support for the development and improvement of related theories. By integrating red culture and art into aesthetic education, students' comprehensive quality can be cultivated, their cultural confidence and national pride can be improved, and a solid foundation can be laid for future development. At present, the research on the integration of red culture and art with aesthetic education at home and abroad is still in the ex-

ploration stage. The existing researches mainly focus on the following aspects: the inheritance and development of red culture and art; the theory and practice of aesthetic education; the integration strategy of red culture and art and aesthetic education. These studies have achieved certain results, but there are still some problems, such as the lack of in-depth theoretical discussion and practical verification. Therefore, this study aims to further deepen the understanding of the integration of red culture and art with aesthetic education, and provide guidance and reference for actual teaching [3].

2. Concepts Related to Aesthetic Education

Aesthetic education is a kind of education that takes beauty as a criterion and cultivates people through figurative and emotional education. It takes the aesthetic concepts of a particular age and class as its criterion and aims at realizing the all-round development of human beings. Through aesthetic education, people can acquire ideals, sentiments, character and qualities of beauty, as well as the ability to appreciate and create beauty.

2.1. The meaning of aesthetic education

As for the connotation of aesthetic education, scholars have mainly studied it from the following aspects. Scholars represented by Zhu Guangqian believe that aesthetic

education is equal to art education. According to Zhu Guangqian, aesthetic education is a kind of emotional education, and its function is to make people more pleasant by cultivating a sense of beauty, so as to achieve the purpose of physical and mental health, cultivating the body and cultivating the character [4]. Scholars represented by Cai Yuanpei and Wang Guowei believe that aesthetic education is more important than emotional education. Cai Yuanpei's view is that the main purpose of aesthetic education is to cultivate students' emotions by applying aesthetic theories to education. Jiang Kongyang's point of view is that aesthetic education is to cultivate people's love for beauty, to feel the joy of life, to improve the sentiment of life, and to cultivate the noble purpose of living a noble life. Therefore, the connotation of aesthetic education can be summarized as follows: the inner quality education that guides the educated to love life, enhance their interest, and cultivate their character through emotional education, aesthetic education, and art education [5].

2.2. Characteristics of aesthetic education

The main characteristics of aesthetic education are: image, pleasure, practice and universality. The specific differences between aesthetic and moral education are shown in the table below.

Table 1. Difference between aesthetic and moral education

Aspects	Aesthetic Education	Moral Education
Definition	Education to develop aesthetic ability, creativity and humanistic qualities through aesthetic education	Education to develop students' moral concepts, character and behavioral habits through ideological and moral education
Objective	Improvement of students' aesthetic level, enhancement of cultural self-confidence and national pride, and promotion of all-round development	Cultivating students' moral concepts and establishing a correct worldview, outlook on life and values
Content	Education in various art forms, such as music, art, literature, etc.	Ideological and moral education, such as patriotism education, collectivism education, and social morality education
Methodology	Guiding students to experience and realize through the appreciation, creation and practice of art works.	Education through theoretical lectures, case studies, practical experiences, etc.
Effectiveness	Improve students' aesthetic level and cultivate creativity, humanistic qualities and other comprehensive qualities.	Cultivating students' moral concepts, character and behavioral habits, and establishing correct values

Although aesthetic and moral education are different, there is a certain connection between them. Aesthetic education can lead students to experience and feel through the expression and appreciation of art works, thus cultivating their aesthetic ability and creativity; while moral education can help students establish a correct worldview, outlook on life and values through the guidance of ideological and moral education.

The pleasantness of aesthetic education is the emotional resonance triggered by the infectious power emitted by the beautiful things, so as to produce aesthetic pleasure in the enjoyment of beauty, and then purify the emotions and sublimate the mind, reflecting the characteristics of "teaching for pleasure". The reason why aesthetic educa-

tion is pleasurable, in the final analysis, is derived from the essential characteristics of aesthetics. Marxist theory holds that beauty is the perceptual expression of the basic power of mankind, or can be regarded as the perceptual expression of the essential power of mankind[6]. Therefore, the image of true beauty is inevitably infused with the element of life, which inspires people to marvel at human creativity, yearn for and love the beautiful world, and then triggers people's healthy, positive and noble emotions. This affirmative emotion of life and creation will naturally make the aesthetic subject feel pleasure and satisfaction.

The image of aesthetic education refers to the fact that aesthetic education is not an abstract theory and moral

sermon, but a kind of image education through concrete and sensible, vivid and distinctive image as a tool, means and way. In aesthetic education, people's aesthetic ability, aesthetic interests and aesthetic ideals are drawn from rational concepts and norms such as truth and goodness, knowledge and morality, and are integrated into concrete and vivid things of beauty, such as natural landscapes, noble behaviors in society, works of art, and so on, thus causing a series of aesthetic psychological changes and gradually improving [7]. Therefore, aesthetic education does not lead learners to think and deduce abstractly with a conceptual system, but with the presentation of a system of sensual images of beauty, prompting learners to feel, appreciate and understand beauty, so as to achieve the purpose of giving people pleasant emotions and spiritual cultivation.

The universality of aesthetic education refers to the diversity and richness of aesthetic education, which is applicable at any time, place, object and condition. Since the development of human civilization, aesthetic education has always existed at all stages, in all fields and at all times, and has been found everywhere and is omnipresent, a characteristic that gives aesthetic education a universal character.

The practicality of aesthetic education lies in the transformation of aesthetic theory into practical educational applications. Practice is the source of beauty, and human aesthetic feeling is also obtained in practice. Whether artistic beauty is used as a means of education or realistic beauty is used as the content of education, it is inevitable to rely on aesthetic practice [8]. Without practice, both aesthetic education and aesthetic sense will be in vain. The basis of aesthetic education lies in the existence of beauty, and the successful acquisition of a sense of beauty is a necessary condition for aesthetic education. The ultimate goal of aesthetic education is to improve the learners' aesthetic literacy and ideals and to enhance emotional experience. Therefore, aesthetic education focuses on practical teaching so that students can experience and feel the beauty personally.

3. The Aesthetic Role of Red Culture

Red culture is both a spiritual force and a new type of cultural product combining modernization and excellent traditional Chinese culture. Red culture is an important part of socialist culture with Chinese characteristics in the new era, which is mainly manifested in two aspects. From a material point of view, red revolutionary sites, former residences of red figures and so on bear witness to the history of red culture, and provide material support for the cultural construction of each place. From a spiritual point of view, the Yan'an Spirit and the Jinggangshan Spirit are important contents of the red culture propaganda, as well as an important part of the spirit of the Chinese nation [9].

The purpose of aesthetic education is to train students to recognize and create beauty. Schiller, a German aesthetician, believed that aesthetic education is the combination of aesthetics and education, and he pointed out, "There is no other way to make the sensual man a rational man unless he is made an aesthetic man." Aesthetic education is the process of helping people discover inner and outer beauty. The aesthetic characteristics of the red culture have a rich role in aesthetic education.

3.1. The red spirit cultivates perfect personality

Mencius once said, "The poor cannot be moved, the rich and the powerful cannot be lusted after, the mighty and the powerful cannot be subdued, and this is what is meant by a great man." This is the personality of a great man based on the traditional thinking of Confucianism, and this traditional personality is still an important part of the new socialist personality. The revolutionary martyr Li Dazhao was on the front line of the liberation of the Chinese nation and preferred to die rather than give in under the enemy's knife, which is a noble sentiment and a great manly personality. Such a spirit of self-sacrifice for the cause of the nation implies a perfect personality and aesthetic education, and is an excellent teaching material for aesthetic education.

3.2. Red culture promotes emotional beautification

One of the important spheres of aesthetic education is emotional beautification, which is an important aspect of perfecting moral character. In today's era, there are many mixed phenomena. The unique charm of sublime purity emanating from the red culture itself is an aesthetic interest, which can cultivate sentiments and make people aspire to beauty and pursue it. The Wedding on the Penal Colony records the story of Chen Tiejun and Zhou Wenyong who sacrificed their lives on the penal colony in the face of torture. Such a kind of like-minded love story promotes the beautification of emotions, which is praiseworthy [10].

3.3. Red culture promotes aesthetic education

Red culture is the condensation of the spirit of hard struggle shown by the Chinese people in the process of revolution, defying difficulties and dangers, heroic struggle, red culture contains rich red genes and lofty ideals and beliefs, and it carries the deep sense of pride of the Chinese nation emanating from every child of China. Such a culture gives people spiritual strength, especially the youth of today's society, lack of hard training, poor stress resistance, through practice to hone their willpower, so that they can recognize the beauty, appreciate the beauty of the process of aesthetic education and constantly improve their personality, so as to promote their overall development.

3.4. Red culture promotes aesthetic education in colleges and universities

As socialism with Chinese characteristics enters a new era, General Secretary Xi Jinping, with the goal of cultivating socialist builders and successors with all-round development of morality, intelligence, physical fitness and aesthetics, proposes that aesthetic education in colleges and universities should be strengthened and improved. Aesthetic education can not only help students establish a correct aesthetic outlook, but also enhance their ability to discover and recognize beauty [11]. Red culture contains a rich spirit of excellent traditional Chinese culture and embodies the aesthetic pursuit of Chinese children. Colleges and universities should continue to develop the value of red culture, deeply excavate the red resources related to red culture, create and innovate the rich red resources, and actively open courses related to aesthetic education to help students establish a correct aesthetic outlook, improve their aesthetic awareness and ability, and promote the overall development of students. Red culture has profound connotation and aesthetic value of the times, contains the rich spirit of aesthetic education in China, and progresses with the development of the times. Red culture has deeply rooted the spirit of defying difficulties and pioneering in people's ideals and beliefs, injecting spiritual impetus for realizing the Chinese dream of the great rejuvenation of the Chinese nation [12]. At the same time, red culture also contains rich educational content, inherits the excellent traditional Chinese culture, and inspires people to keep learning, from ignorance to knowledge, and finally form perfect people. Aesthetic education makes people cherish today's hard-won good life and guides them to be positive, reflecting the contemporary connotation and aesthetic education of red culture.

4. The Unique Value of Red Culture into Aesthetic Education

4.1. Practicing the development requirements of aesthetic education in colleges and universities in the new era

The term "aesthetic education" originated in Germany in the 18th century. Schiller believed that human nature is the harmonious unity of sensibility and rationality, and that this unity of human nature requires the ability of aesthetics, which is why it is necessary to cultivate the qualities of human beings to recognize and create beauty. Many sages from the East and the West have expressed their views on the importance of "aesthetic education" and given us inspiration and guidance. Traditional Chinese culture has always emphasized the unity of beauty and goodness, and that only goodness and beauty have higher value. Modern Lu Xun, Cai Yuanpei, Zhu Guangqian and other masters have emphasized the value of

aesthetic education in no uncertain terms, and have continued to innovate aesthetic education in practice. Cai Yuanpei even called out: "aesthetic education can replace religion, aesthetic education is the most important, the most basic outlook on life education." The mission of colleges and universities is to establish morality and nurture people, and aesthetic education in colleges and universities is an important stage for students to receive art education and an important carrier for students to learn the fruits of human civilization. Deepening and innovating the work of aesthetic education in colleges and universities is an important part of the all-and-developing education policy, and the Ministry of Education has issued the Opinions on Effectively Strengthening the Work of Aesthetic Education in Colleges and Universities in the New Era, which clearly defines the overall reform goals of aesthetic education in colleges and universities. Entering the new era, the multicultural mingling and collision provides opportunities for the development of aesthetic education in colleges and universities, and also puts forward higher requirements for aesthetic education in colleges and universities. China's development is in the historical position of the new era, which is the mission given to us by the times. In this great era, we have to live up to the mission and firmly assert the confidence of the excellent traditional Chinese culture, and the red culture is even more so [13]. Red culture is a valuable spirit and value system formed by the Chinese people's struggle for national independence and liberation and the construction of socialism, which has become an important spiritual driving force to unite the national strength and social consensus. College students in the new era are in the flourishing environment of multiculturalism and are deeply influenced by various cultural values, especially the continuous influx of Western culture, which makes the aesthetic education work of students transform from superficial aesthetic propaganda to deep-level aesthetic ability transformation. The integration of red culture into aesthetic education can help students establish a good aesthetic psychology, enhance students' profound national emotions, strengthen students' sense of responsibility and mission to inherit China's excellent traditional culture, and cultivate all-round and high-quality development talents to meet the needs of the new era.

4.2. Innovate the teaching content and methods of aesthetic education programs in colleges and universities

In the early twentieth century, China combined the Western ideas of aesthetic education with the modern Chinese theory of aesthetic education based on traditional Chinese aesthetics, emphasizing that aesthetics is an intrinsic virtue closely related to emotion, and that aesthetic education constitutes one of the four major elements of the education system, together with moral education, intel-

lectual education and physical education, and that it is an important element in the cultivation of talents for the development of the whole person [14]. Mr. Wang Guowei, the earliest advocate of aesthetic education in China, pointed out that the relationship between aesthetic education, moral education and intellectual education is that "aesthetic education develops people's emotions to achieve the perfection of the field; on the other hand, it also serves as a means for moral and intellectual education, which is something that the educators should not be unaware of". As advocated by the American educational philosopher Maxine Green, aesthetic education should break through the instrumentality, let students break through the daily banal state, constantly innovate and construct their own world of meaning.

Red culture is an important part of the spirit of Chinese aesthetics, and it is a powerful faith support for the practice of education in colleges and universities to adhere to the original spirit of education and keep in mind the historical mission. Red culture is the spiritual display and conceptual cohesion of the three-dimensional space of red history, red reality and red future, reflecting the rich beauty of red. Through the integration of red culture, it can reconstruct the teaching content of college aesthetic education courses, inspire college aesthetic education teachers to constantly innovate teaching methods, and realize the inheritance of the red culture of college students at the same time, but also can innovate the teaching mode of college aesthetic education, to achieve the important goal of the reform of college aesthetic education teaching, and really make the college aesthetic education and intellectual education as well as moral education, and to play the role of the whole but the positive role of educating people. Red characters and red spiritual heritage in the Internet, multimedia, big data, VR and other modern information technology means of support, can be formed online and offline combination of aesthetic education course content resources, and then through the red poetry, red stories, red scripts and other ways of performance presented in front of the students, so that students are immersed in the red cultural experience, can further enrich and innovate college aesthetic education course content and teaching methods and teaching methods [15].

4.3. Expanding the effect and form of practical education of aesthetic education in colleges and universities

Unlike other education, aesthetic education emphasizes harmony and wholeness. Zhu Guangqian, a famous modern aesthetician, believes that aesthetic education in colleges and universities focuses on "unity of knowledge and action", emphasizes the important role of real life and artistic cultivation in aesthetic education, and advocates the unity of aesthetic education and the development of the country's society, affirming the role of aes-

thetic education in the cultivation of the hero's personality, and the role of the "founding of a man". and affirms the role of aesthetic education in the cultivation of the heroic personality. The purpose of aesthetic education is not only to improve the aesthetic and humanistic qualities, but also to educate people with beauty and cultivate their hearts and minds, so as to improve their characters and healthy personalities. Colleges and universities can follow the characteristics of aesthetic education, find the right entry point, broaden and extend the space of aesthetic education in colleges and universities. Although art education is not equivalent to aesthetic education, but is the core of aesthetic education, red music and other red cultural resources in art education and aesthetic education in the importance of the significance of the education should not be underestimated.

Colleges and universities should be firmly confident in the attractiveness and infectious power of the revolutionary red culture created by the people, and integrate the red culture into students' aesthetic education, so as to cultivate people of sound character for the great rejuvenation of the Chinese nation. Colleges and universities can effectively expand the practical nurturing effect and form of aesthetic education by enhancing the sense of identity of red culture into aesthetic education, recognizing that red culture is a rich and high-quality resource for socialist core value system education, and recognizing that red culture contains a rich revolutionary spirit and a thick connotation of virtues. On the one hand, the historical figures and relics in the red culture are real and have distinctive regional cultural characteristics, which are in line with the interest of the post-00 college student group in the pursuit of facts and individuality, avoiding the embarrassing phenomenon of turning a deaf ear and bowing one's head in the aesthetic education classroom. On the other hand, poems, songs and stage performances in red culture have unique artistic charm, which can make college students enhance their non-utilitarian aesthetic consciousness and ability in emotional resonance.

5. Concluding Remarks

In this paper, we discuss the unique value of aesthetic education that incorporates red culture and art. By integrating red culture and art into aesthetic education, it can not only enrich the content of education, enhance cultural self-confidence and cultivate comprehensive quality, but also promote the inheritance and development of red culture. Relevant studies have also shown that this integration has a positive impact on the cultivation of students' aesthetic ability, creativity and humanistic literacy. Therefore, we believe that the integration of red culture and art into aesthetic education is an educational approach of great value and prospect. In the future, we can further deepen our understanding of the integration of red culture and art with aesthetic education, explore more

effective integration strategies and methods, and provide more guidance and reference for actual teaching.

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Design of Collaborative Network Teaching Demonstration Platform based on Virtual Simulation Technology

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Abstract: The current conventional network teaching demonstration platform mainly realizes the teaching function through the hardware structure of distributed architecture combined with script programming, which leads to the poor performance of the platform due to the lack of simulation modeling of the teaching scene. In this regard, a collaborative network teaching demonstration platform based on virtual simulation technology is proposed. First, the hardware structure of the teaching demonstration platform is designed. Then the user classification and authorization mode of the platform are designed, and the retrieval and sharing of teaching resources is realized by calculating the matching degree between the keywords of teaching resources retrieval and course resources. Finally, the teaching simulation scene is constructed so as to realize simulated teaching. In the experiment, the operational performance of the proposed platform is verified. Finally, the experimental comparison results can prove that the teaching demonstration platform constructed by the proposed method has a relatively low server occupancy and has a more ideal operational performance.

Keywords: Virtual simulation; Collaborative; Online teaching; Platform design

1. Introduction

With the rapid development of technology, the field of education is undergoing an unprecedented transformation. The wide application of network technology has made distance education and learning no longer subject to the limitations of geographical location. However, the existing network teaching methods often cannot meet the complex teaching needs, especially when it comes to practical operation and more interactive courses, such as simulation experiments, project collaboration and so on. Therefore, the development of a collaborative online teaching demonstration platform based on virtual simulation technology is of great significance for improving teaching quality and promoting educational equity [1]. In traditional network teaching, teachers usually transfer knowledge through multimedia resources such as PPT and video, while students receive information and give feedback through the network. This one-way teaching method often lacks practicability and interactivity, and the learning effect of students is often unsatisfactory. In addition, for some courses that require simulation experiments, such as physics, chemistry, biology, etc., the traditional network teaching methods cannot meet their teaching needs. Therefore, designing a collaborative network teaching demonstration platform based on virtual simulation technology can help to solve this problem. The design of a collaborative online teaching demonstration platform based on virtual simulation technology

aims to improve the interactivity and practicability of online teaching. Through virtual simulation technology, teachers can build various virtual experimental environments so that students can learn knowledge in simulated practice. Meanwhile, through the collaborative design, students can conduct team learning, discussion and cooperation on the platform to improve the learning effect and teamwork ability. In addition, the platform can personalize teaching based on students' learning and feedback, realizing tailor-made teaching [2]. This research not only helps to improve the quality of online teaching, but also can be extended to other fields. For example, in the fields of vocational training and skill enhancement, the platform can provide an efficient and convenient training method for enterprises. In addition, the platform can also be applied in the field of scientific research to provide a platform for researchers to share resources and exchange ideas. At present, some research institutions and universities at home and abroad have begun to pay attention to the application of virtual simulation technology in the field of education. For example, a university in the United States has developed an online chemistry laboratory platform based on virtual reality technology, through which students can simulate chemistry experiments [3]. A university in China also developed an online collaboration platform based on cloud computing to support online learning and communication between teachers and students. These studies provide valuable references and lessons for this topic. However, the existing virtual simula-

tion technology still has some problems, such as low simulation accuracy and low interactivity. Therefore, this study will further optimize the virtual simulation technology and enhance the interactivity and collaboration of the platform in order to improve the learning effect and interest of students. In summary, the design of collaborative network teaching demonstration platform based on virtual simulation technology has important research background, research significance and research value. Through the design and research of this platform, it is expected to bring a revolutionary change in the field of education, improve the quality of teaching and promote educational equity [4].

2. Hardware Design of Collaborative Network Teaching Demonstration Platform based on Virtual Simulation Technology

The overall architecture design of the experimental teaching platform studied in this paper is shown in Fig. 1. The overall architecture is divided into three components: client, server cluster and hardware.

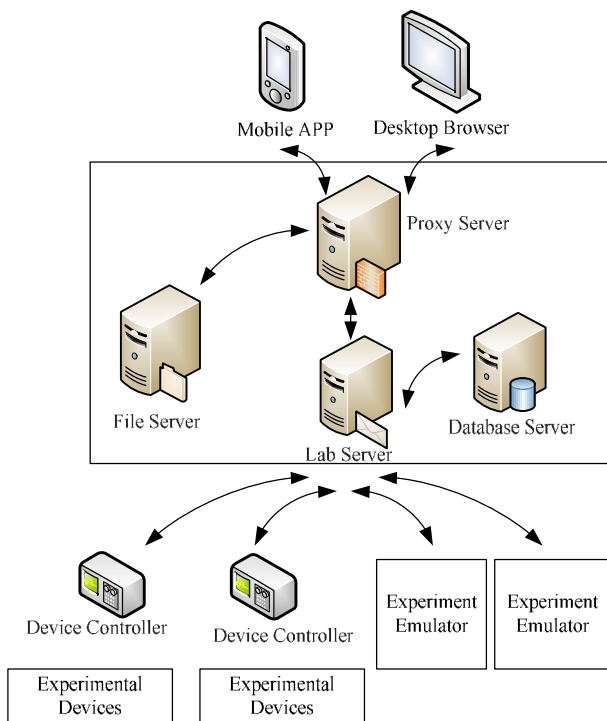


Figure 1. Collaborative web-based teaching demonstration platform hardware.

2.1. Client

Considering the convenience of users, the experimental teaching platform studied in this paper chooses Web browser as the main target development platform. Web browser, as a common desktop software pre-installed in

personal computers, is used as the client of the experimental teaching platform, which will bring great convenience to the development and use, and it is not necessary to develop different versions of desktop application software for developers according to different operating systems. For developers, there is no need to develop different versions of desktop application software according to different operating systems, and for users, there is no need to download additional application software to use the experimental functions provided by the experimental teaching platform, as long as they open their browsers and enter the URL of the experimental teaching platform [5] to carry out experimental activities. On the other hand, Web-based development technologies and standards are getting richer and more mature, and developers can even use HTML5 to provide users with native 3D animation, multimedia, user interaction and other aspects of the enhanced experience support, which in the old HTML era had to be realized through Flash or other browser plug-ins.

In addition to choosing the Web browser as the main client platform, this paper also takes into account the needs of cell phone users, and chooses cell phone App as another supplementary way for users to use the experimental teaching platform. In today's mobile era, the market share of the mobile terminal has greatly increased, and the demand for multi-terminal use can no longer be completely ignored, but the launch of App terminal software does not mean that it is necessary to re-develop the new client software in a mobile development mode, with the help of hybrid technology such as React Native or Cordova, developers can directly deploy the Web client code as an App terminal, which can realize one-end development and multi-end deployment. App terminal, you can realize one-end development, multi-end deployment of the client program [6].

2.2. Server clustering

The server cluster responds to the client's request and provides background resource support for users to carry out normal application and experiment operation. The server cluster mainly includes proxy server, file server, experiment server and database server.

Proxy servers are used as reverse proxies for HTTP requests, resolving HTTP request paths and forwarding them to file servers or experiment servers. At the same time, the proxy server provides file indexing, load balancing, redirection and other functions [7]. The file server, also known as the static resource server, deploys the entire front-end React project and mainly provides front-end static resources, including packaged and published HTML pages, JavaScript scripts, CSS style files, and so on. In the development phase, this paper applies the React framework to build the front-end project, React is a declarative, efficient and flexible framework used to

build user interfaces, developers in the development phase for each state of the application to design a view, when the application data changes will be efficiently updated to render the page.

The experiment server is used to handle back-end API requests, as well as to handle experimental operations such as algorithm download, experiment start/stop, and experimental data requests. The experiment server is directly connected to the database server to read or store application data from the database server. Meanwhile, the experiment server is connected to the experiment hardware through socket protocol to realize direct control of the experiment process. In this paper, the popular php framework Laravel is used to build the back-end application. Laravel provides a complete set of Web back-end development components, including route resolution, middleware, controller assignment, database mapping, and HTTP request response. Based on Laravel, developers can quickly and efficiently build a complete Web application backend [8].

2.3. Hardware

The hardware side of the experimental teaching platform is used to execute the laboratory algorithms downloaded by the user and to send the experiment status data back to the experiment server. The hardware side of the experimental teaching platform studied in this paper is divided into two types, one oriented to real experimental equipment, including a device controller and a real experimental equipment, and one oriented to simulation experiments, including an experimental simulator.

In the hardware side facing the real experimental equipment, the device controller is used to receive algorithms from the server and execute experiments, and at the same time transfer the state parameters of the experimental process back to the experimental server. In the control system loop, the device controller serves as a controller, a sensor, and an actuator at the same time, while the real experimental equipment serves as the controlled object. The software architecture of each controller is mainly divided into three layers: application layer, operating system layer and hardware layer [9]. In the application layer, there are three processes running in the operating system memory at the same time. The algorithm receiving process is used to process the algorithm download request from the server, receive the executable control algorithms and update the existing control algorithms of the experimental equipment. The algorithm control process executes the experimental algorithms and changes the experimental control parameters based on user input. The experimental data communication process transmits real-time experimental status data from the experimental process back to the server. The operating system layer is the basic support for the application layer, which includes, in addition to the embedded Linux

operating system, the hardware driver module that communicates with the underlying inputs and outputs. A high-performance, low-power ARM microprocessor is used in the hardware layer, in which the embedded real-time operating system runs and the application layer process [10] is executed.

3. Software Design of Collaborative Network Teaching Demonstration Platform Based on Virtual Simulation Technology

3.1. User classification and authorization control

The collaborative online teaching demonstration platform is mainly for three kinds of users: students, teachers and administrators, and the student users have the rights related to the students' classroom. First of all, the user enters the login interface to submit the registration application and perfect the personal information. The administrator stores the personal information of the student user in the database by verifying and categorizing the user's identity and provides timely feedback of the confirmation information through the mailbox. After the registration of student users is completed, they can log in to the teaching platform according to the set account and password information, and obtain the corresponding account use privileges [11]. After logging in, users can browse the course and instructor profiles and complete the course selection according to the content of the profiles. After selecting a course, the user can download the courseware, participate in online teaching, check the progress of assignments, ask the teacher, and take the exam and check the results after the class. The design of the teacher user is similar to that of the student user, who obtains a teacher account and corresponding authorization through account registration and identity verification. Teacher account privileges include posting teacher and course profiles, applying for course announcements, uploading courseware and teaching, assigning and correcting assignments, organizing tests and evaluations, etc. In addition, the administrator account has all the authorizations of the platform, which not only enables the management of student accounts and teacher accounts, but also manages and configures the online course resources and system functions.

3.2. Teaching resources retrieval and sharing

Teachers create courseware containing multimedia elements such as video, pictures and audio according to the courses offered by each specialty and upload them to the teaching platform [12]. After the administrator's review and approval, the teaching resources are stored in the platform database, and the student users can retrieve the relevant teaching resources and download the course teaching resources in the platform according to the requirements of the course or their personal learning needs

in the course teaching process. Equation (1) is used to calculate the matching degree between the keywords of teaching resources retrieval and course resources.

$$h_{match} = \sqrt{\sum(|x_i - x_j|^q)} \quad (1)$$

Among them, x_i and x_j represent the input key search words and the course resource feature words stored in the database respectively, q represents a positive integer, and the final calculation result h_{match} is the matching coefficient between any course resource in the database of the platform and the input search key words [13]. If the result of the matching coefficient is higher than the threshold value, the current resource is determined to meet the retrieval needs of the student user, and will be added to the output queue, otherwise the resource will not be allowed to display. Until the matching of all course resources in the database is completed, the retrieval results of the relevant course resources are derived. In the output process of retrieval results, keywords need to be sorted according to the frequency of their appearance in the course resources, and the formula for calculating word frequency is as follows.

$$TF = \frac{N}{\sum_q n_i} \quad (2)$$

The variables N and n_i in the above equation represent the number of times the keywords appear in the resources and the total number of feature words in the course resources, respectively. According to the calculation results of word frequency TF , the retrieval results of course teaching resources are output in ascending order. The student user selects the appropriate resources to download according to the demand and completes the remote transmission of the target course resources with the support of the remote wireless communication network [14].

3.3. Virtual laboratory teaching panoramic roaming realization

The purpose of designing the experimental teaching platform is to build an interactive virtual experimental environment, that is, to simulate the real experimental instruments and experimental equipment in the platform, the shape of the instruments and equipment is the same as the actual one, and to achieve a realistic effect in texture, form and lighting. Combine 3DMax and VRMI. tools to realize interaction. In the experimental teaching platform, it is assumed that several objects together form a real laboratory, the external geometry of the object is fitted by the polygon, and the polygon lighting and material effects are given to enhance the realism of the object. The virtual scene modeling process is shown in the following figure.

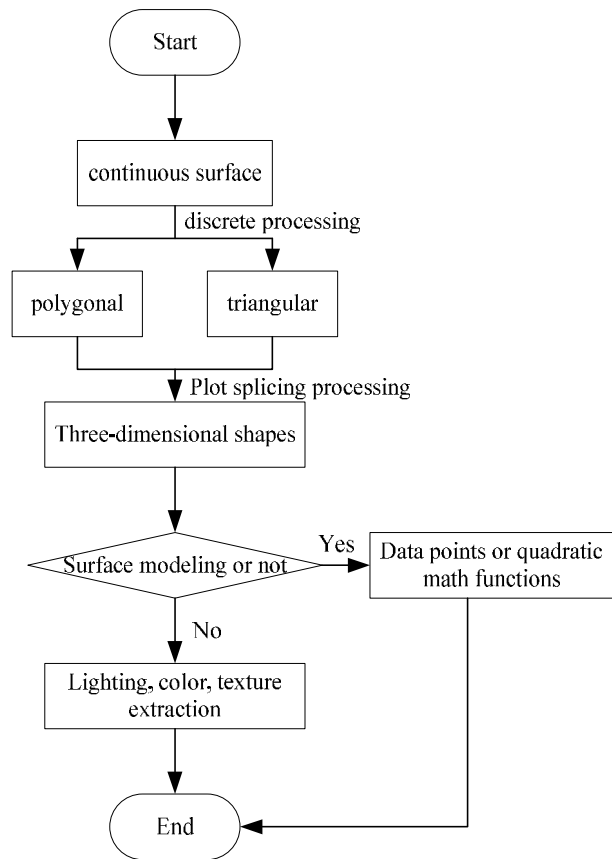


Figure 2. Modeling process of virtual teaching scene

In realizing the panoramic roaming of the virtual laboratory teaching is mainly realized through two aspects: manufacturing landscape and manufacturing panoramic video.

First the texture information for each landscape model needs to be collected and processed. The format and size of the selected texture is processed by the texture processing tool [15]. When modeling, the edge length of the texture image needs to be 2 in order to display the correct model when roaming and achieve real-time display of graphics. Then, using the camera motion tracking algorithm, assuming that a point in the camera coordinates is (x_u, y_u, z_u) , and projecting the point to the imaging plane through perspective to obtain the coordinates of the point is (x, y) , then the specific relationship between the two is shown below.

$$\begin{cases} x = \frac{ex_u}{z_u} \\ y = \frac{ey_u}{z_u} \end{cases} \quad (3)$$

Where e represents the camera focal length. If the camera focal position does not change, then the relationship expression between the two coordinates after the transformation is shown below.

$$\begin{cases} x' = \frac{e'}{e} x \\ y' = \frac{e'}{e} y \end{cases} \quad (4)$$

The e' represents the changed focal length of the camera. The camera is capable of making six degrees of freedom movements, namely rotation ($\mathbf{j}_x \mathbf{j}_y \mathbf{j}_z$) and displacement (r_x, r_y, r_z). Where $\mathbf{j}_x \mathbf{j}_y \mathbf{j}_z$ r_x, r_y, r_z represent the motion parameters of the camera, the resulting expression for the newly generated pixel coordinates is shown below.

$$(x', y', z')^P = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos j_x & \sin j_x \\ 0 & -\sin j_x & \cos j_x \end{bmatrix} (x, y, z)^P \quad (5)$$

Where, represents the cycle. The virtual simulation teaching environment can be generated through the above steps, combining the contents of this section with the hardware configuration of the teaching platform and other related contents mentioned above, so that the design of the collaborative network teaching demonstration platform based on virtual simulation technology is completed.

4. Experimental Component

4.1. Experimental preparation

In order to evaluate the actual running effect of the network teaching demonstration platform proposed in this paper, two conventional network teaching demonstration platforms are selected as comparison objects, namely, the Hadoop-based network teaching demonstration platform, and the digital twin-based network teaching demonstration platform.

According to the results of the optimized design of the hardware platform, each hardware device is debugged separately, and each hardware device is connected to the power supply circuit in order according to the working principle. In the experimental environment, set up a host computer as the main test computer, set up a server and 500 teaching clients. In the process of building the course teaching platform, the first step is to install the operating system CentOS6.5, and then install Apache, PHP, Mysql and other database tools through RPM commands, because when Mysql is installed, the password of the Root user is empty, so in order to ensure the security of the data, it is necessary to change the password of the Root user in a short period of time. In addition to the implementation and testing environment of the teaching platform for computer courses, it is necessary to prepare several teaching platform test cases, some of which are prepared as shown in Table 1.

Table 1. Platform test case setup table

Use Case Number	Execution side	Test Content
1	Student 01	Adding "Programming" Course
2	Student 01	Add "Computer Networks" course
3	Student 01	Add "Compilation Principles" course
4	Student 01	Add "Artificial Intelligence" course
5	Student 01	Modified "Artificial Intelligence" course to "Artificial Intelligence Technology".
6	Student 01	Show video of "Programming" course.
7	Teacher 01	Released a teaching examination paper

4.2. Experimental results

The comparison index selected for this experiment is the server memory occupation ratio of different teaching platforms, the lower the value, the better the platform's performance, the specific experimental results are shown in the following figure.

Through the above experimental results, it can be seen that when analyzing the same set of teaching resources data, different teaching platforms show different performance in terms of operational performance. The numerical comparison clearly shows that the collaborative network teaching demonstration platform based on virtual simulation technology proposed in this paper has a lower server memory occupation ratio, which proves that the

platform in this paper has certain advantages in terms of actual operational performance.

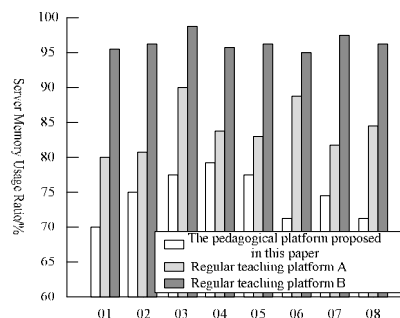


Figure 3. Comparison results of teaching platform server memory usage ratio

5. Concluding Remarks

The research on the design of collaborative network teaching demonstration platform based on virtual simulation technology provides us with a new perspective on the development of network education. Through the introduction of virtual simulation technology, we can greatly enhance the interactivity and practicability of online teaching and make up for the shortcomings of traditional online teaching. At the same time, through collaborative design, we are able to promote students' cooperation and communication in the learning process, and improve the learning effect and teamwork ability.

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Predicting the Stock Market based on Multiple Innovative Research Methods

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Abstract: This paper introduces the research area of stock market forecasting and four common forecasting models in it: random forest, support vector machine, back propagation neural network and MDT-CNN-LSTM model. Stock market prediction has always been a popular research area in the financial field because accurate prediction of stock market movements is of great significance to investors and financial institutions. Random forest, support vector machine, backpropagation neural network and MDT-CNN-LSTM models, as the main stock market prediction tools, each have different characteristics and scope of application. In this paper, the principles and applications of these four models are introduced, and their prediction performance is comparatively analyzed through experimental results. The experimental results show that different models exhibit their respective advantages and limitations on different data sets, so choosing the appropriate model in practical applications is of great significance to improve the accuracy of stock market prediction.

Keywords: Stock market prediction; Time series; Machine learning; Sentiment analysis; Bitcoin market; Human health

1. Introduction

The stock market's vast network data poses a challenge for accurate analysis due to its susceptibility to multiple factors. Intelligent prediction methods offer regulators insights for market control and aid investors in making informed, long-term decisions amidst market volatility. Despite complexities from market environment, corporate operations, and psychology, scholars explore innovative methodologies like Random Forest, Support Vector Machine, and Neural Networks for stock forecasting [1].

2. Method Categories

2.1. Random forest

2.1.1. Definition

Random forest (RF) was belonging to the typical algorithms of Bagging in integrated learning, which is a random combination of free-growing CART decision trees in randomized subspaces and Bagging is obtained.

2.1.2. Structure

Bagging, also known as bootstrap aggregating, is an integration technique that trains classifiers on the original dataset by re-selecting k new datasets with put-back sampling. It uses an ensemble of trained classifiers to classify the new samples, and then counts the classification results of all the classifiers using majority voting or averaging the output, and the category with the highest result is the final label. Such algorithms are effective in reducing bias and can reduce variance. In each round of

random sampling in Bagging, about 36.8% of the data in the training set is not captured in the sampling set. This uncollected data is often referred to as Out Of Bag (OOB). These data are not involved in the fitting of the model in the training set, and thus can be used to test the generalization ability of the model.

The OOB error serves as an indicator of how well the random forest model generalizes to unseen data. It is calculated by aggregating the predictions made by each decision tree on their respective out-of-bag samples and comparing them to the true labels. The average error across all trees is then computed, providing an estimate of the model's performance.

One advantage of using OOB error is that it eliminates the need for a separate validation set, saving computational resources and simplifying the training process. It also provides a reliable estimate of the model's performance, especially when the size of the training data is limited.

By monitoring the OOB error during the training process, one can assess the impact of different hyperparameters, such as the number of trees or the maximum depth of the trees, and make informed decisions to optimize the model's performance.

2.1.3. Parameters of the decision tree

Since each tree is uncorrelated, it can be generated in parallel, making the whole algorithm run very efficiently. Free-growing decision trees are easily overfitted, but due to Bagging makes the random forest insensitive to outliers and highly resistant to interference. CART decision

trees have good properties, such as the ability to deal with missing values, deal with continuous or multicategory variables, and so on. It can be used for feature selection [2].

2.2. Support vector machines

2.2.1. Definition

Support Vector Machines (SVM) is a binary classification model. Its basic model is a linear classifier with the maximum margin defined in the feature space, which distinguishes it from the perceptron. SVM also includes kernel tricks, making it essentially a nonlinear classifier. The learning strategy of SVM is to maximize the margin, which can be formalized as solving a convex quadratic programming problem and is also equivalent to minimizing the regularized hinge loss function. The learning algorithm for SVM is an optimization algorithm that solves convex quadratic programming problems [3].

2.2.2. Structure

Support vector machine model: The concept behind SVM learning is to find a separation hyperplane that effectively divides the training dataset and has the maximum geometric margin. In the diagram below (Figure 1) , the equation $w \cdot x + b = 0$ represents the separation hyperplane. While there are infinite hyperplanes (i.e., perceptrons) for linearly separable datasets, the separation hyperplane with the largest geometric margin is unique [3].

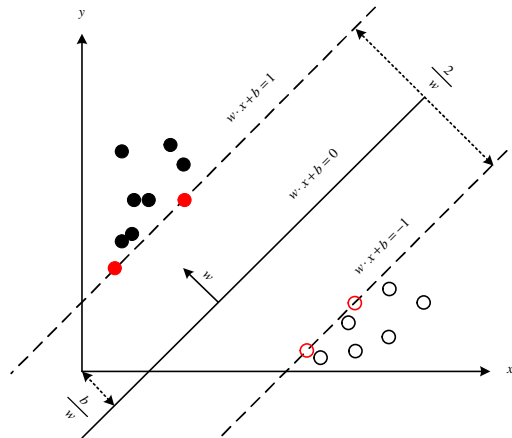


Figure 1. Support vector machines legend

Make the sample set $(x_i, y_i)_{i=1,2,\dots,n}$ represents the stocks of n listed companies for stock price prediction, $x_i \in R^d$ represents the d-dimensional fundamental and technical indicators that affect the price of each stock. $y_i \in \{-1, 1\}$ represents the "up" and "down" category labels corresponding to the i-th stock price. Assuming

that there is a Hyperplane $w \cdot x + b = 0$, n stock can be divided into two categories according to the rise and fall of stock prices: Category 1 and Category -1 Category 1 represents stocks with an increase in stock prices during the quarter, while Category -1 represents stock with a decrease in stock prices during the quarter Where w is the weight vector, representing the weights assigned to different attribute features that affect stock price fluctuations, and b is the parameter of the model [4].

All sample data of "stocks with rising stock prices in the quarter" meet $w \cdot x + b \geq -1$, and all sample data of "stocks with declining stock prices in the quarter" meet $w \cdot x + b \leq 1$ By combining the two inequalities mentioned above, we can obtain:

$$y_i (w \cdot x_i + b) - 1 \geq 0 (i = 1, 2, \dots, n) \quad (1)$$

The classification goal is to maximize the distance $\frac{2}{w}$ between two parallel sides H1: $w \cdot x + b \geq 1$ and H2: $w \cdot x + b \leq -1$, which is equivalent to minimizing $\frac{w^2}{2}$.

The solution (w, b) of the optimization problem under the following two constraint conditions will be found through SVM:

$$\min_w \frac{w^2}{2} \quad (2)$$

$$s.t. y_i (w \cdot x_i + b) \geq 1, i = 1, 2, \dots, n \quad (3)$$

Using Lagrange's optimization method, the above optimization problem can be transformed into its dual problem. The ultimate goal in high-dimensional feature space is to I_i Solve for the maximum value of the following function, I_i is the Lagrange multiplier corresponding to each constraint condition. The optimal classification function that can be obtained after solving is:

$$f(x) = \text{sign} \left(\sum_{i=1}^N I_i y_i x_i \cdot z + b \right) \quad (4)$$

Temporal support vector machine model: This model incorporates temporal patterns in input and output by adjusting the temporal granularity. It enables the creation of support vector machine classification models that capture different temporal patterns, thereby revealing patterns that are challenging to identify in the original time series data.

Temporal data refers to data with attributes related to time, derived from observed time series data. When time series data contains temporal factors, it becomes temporal data. To better understand temporal data, we need to define two important concepts: temporal type and temporal granularity.

In this context, real-time is conceptualized as a continuous real-number axis with infinite extension in both directions. Each point (t) on this axis represents a specific moment in the real world, referred to as an absolute moment. Intervals on this axis, denoted as (f), represent time durations between different absolute moments [5]. Due to space limitations, the specific content can refer to 2.2.1, and only the tense part has been added to this model.

2.2.3. Empirical analysis

This study collected a dataset consisting of 523 data points from Baosteel and Jiangsu Hengrui Medicine, covering the period from January 1, 2018, to March 1, 2020. To evaluate Python's data training capabilities, two sets of training data were prepared: a large sample and a small sample for both companies. The large sample utilized the entire dataset, while the small sample focused

on data between June 1, 2019, and January 1, 2020, sourced from online capture using a Python crawler.

Using Python, historical data for two stocks was retrieved online from January 1st, 2018, to March 1st, 2020. The data was then preliminarily organized as follows: the daily difference in closing prices was calculated, where a positive difference indicated an increase (assigned a value of 1) and a negative difference indicated a decrease (assigned a value of 0). Further classification was performed by dividing the data into an 80% training set and a 20% test set, followed by normalization of the sample data.

Periodic predictions were made using different kernel functions ('ploy', 'linear', 'rbf'). Each time, one value was predicted ahead, and then the predicted values were classified. The accuracy rates for the test set were as follows (Table 1) [6]:

Table 1. Periodic predictions were made using different kernel functions ('ploy', 'linear', 'rbf')

	Large			Small		
	ploy	linear	rbf	ploy	linear	rbf
Baosteel Correct	91.43%	96.19%	90.48%	93.10%	93.10%	89.66%
Jiangsu Hengrui Medicine Correct	93.33%	96.19%	93.33%	96.55%	93.10%	96.55%

Based on default parameter settings, the analysis showed that the SVM prediction effect was ideal, with accuracy rates around 90% for both large and small samples. However, due to the significant impact of SVM parameters on prediction performance and the relatively lower accuracy of 'rbf', the study focused on parameter optimization for the 'rbf' kernel using a large sample. The optimal SVM parameter C was found to be 1,000,000.0, resulting in an accuracy rate of 98.10%, significantly higher than the previous 90.48%. This indicates a positive effect of parameter modification on prediction accuracy.

Printing the predicted performance confusion matrix yields:

$$\begin{bmatrix} 38 & 16 \\ 9 & 42 \end{bmatrix}$$

It can be seen that the predictive effect of the model is considerable.

2.2.4. Related recommendations

(1) When selecting industries for investment, it is advisable to consider those in the growth and maturity stages of their industry lifecycle. In a growth-oriented industry, the revenue growth rate outpaces the overall national economic growth rate. Investing in such an industry allows investors to benefit from the industry's profits driven by rapid economic expansion.

Industries in the growth and maturity stages of their lifecycle typically exhibit stable income and profits during

their operational phase. This stability ensures consistent returns for investors, while also minimizing investment risks.

(2) Regarding policy, it is essential to conduct thorough social research and discussions to determine phased objectives for the economic development of China's stock market. Additionally, establishing a proactive monitoring system for stock market quality is crucial to ensure timely and precise evaluation of its performance. This would enable effective control and understanding of the stock market quality. Finally, regulatory authorities should maintain vigilance regarding changes in market quality, aiming for stability in the stock market and reduced risks for both investors and fundraisers.

2.2.5. Backpropagation neural network

Definition: Backpropagation neural network, referred to as BP network, is a multi-layer forward neural network, usually with 3 or more layers of neuron network, including input layer, hidden layer and output layer, the upper and lower layers of neurons are fully connected, and the same layer of neurons are not connected [6].

Structure: There are two typical transmission functions in BP algorithm, namely linear function and S-type function. The Sigmoid function (S-type function) is used as the input function in this model. BP algorithm is a kind of delta algorithm, and it is also a learning algorithm. The core idea of the algorithm is: the least square method is used to minimize the sum of squares of error between the actual output value and the expected output value of the

network. The actual output value of the network model is compared with the expected value by means of the least square method, so as to minimize the sum of squares of error between the two, and constantly train and adjust the system weight, so as to obtain the best model for prediction. From this idea, we can know the basic steps of BP core algorithm: First, the model and learning parameters are initialized, and the input value and expectation of the model are put into the network model for training. The calculated output value and expected output value obtained will be compared. If there is any error, the process will continue to repeat; otherwise, the output value and expectation will be calculated from the output layer to the hidden layer. The connection weights of each element are corrected by calculating the error δ of the same layer element. The revised formula is shown as follows [7]:

$$w(t+1) = \eta \delta o + w(t) \quad (5)$$

Where ω is Connection weight between input node j and output node k ; t is for time; The range of η is $\eta \in (1,0)$.

The learning efficiency is shown in the model; δ is the error of the unit in the same layer.

2.2.6. Empirical analysis

After the sample data is selected, the Sigmoid function is used to normalize the original data and the predicted value. The number of neurons in the input layer of Jing's neural network is 25. The number of neurons in the output layer is 1 and 300 sample data. The condition for judging the end of sample learning is set as error accuracy $E < 0.01$ or cycle times must more than 2000. The initial value of the learning rate is set to $\eta = 1.0$. And the initial value of the momentum factor $\alpha = 0.9$ [7]. Then a good and suitable BP network model.

Jing takes the stock price of domestic enterprises as an example, selects China Railway Heavy Industry (600031) for testing, compares the results, and obtains the curve as shown in the following figure1 [7]:

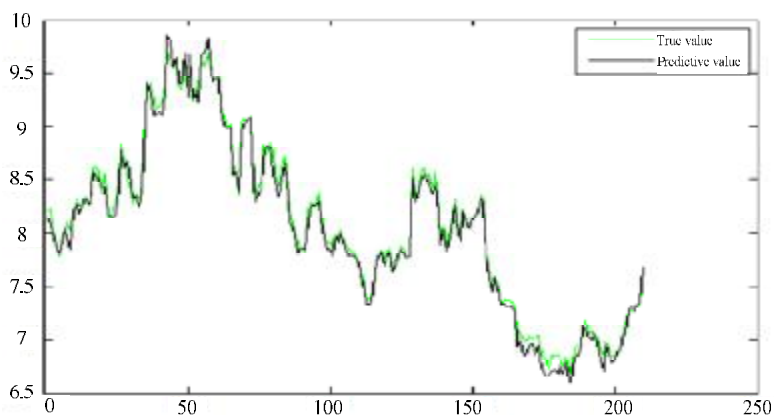


Figure 2. The fitting curve of BP neural network training

As shown in Figure 1, the green curve is the experimental true value and the black curve is the predicted value.

After modification and adjustment, the model is as follows:

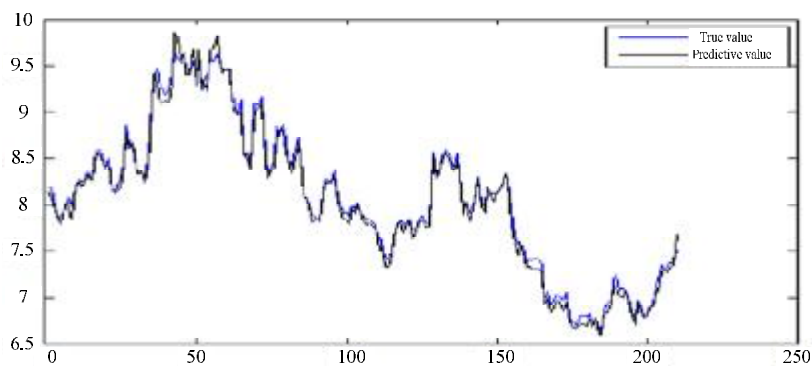


Figure 3. The fitting curve of the improved BP neural network training

It can be seen that the fit degree of the model is high, the prediction is more accurate, and it is suitable for short-term investment.

3. Conclusion

This study evaluates four key stock market prediction models: Random Forest, Support Vector Machine, Backpropagation Neural Network, and MDT-CNN-LSTM. Each model offers distinct strengths: Random Forest excels in handling extensive data, SVM in complex nonlinear relationships, Backpropagation Neural Network in nonlinear and time-series data, and MDT-CNN-LSTM in multi-scale time-series tasks.

By comparing their performance on different datasets, the study reveals varied strengths and limitations. Choosing the right model for specific scenarios is crucial for enhancing prediction accuracy in practical use. Future research should focus on refining these models to adapt to evolving challenges in stock market forecasting.

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The Application of Management Accounting Tools under the Big Data in the Evaluation of Enterprise Performance

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Abstract: In the era of big data, scientific evaluation of enterprise performance will help solve structural problems in China's economic development. The Basic Guidelines on Management accounting of the Ministry of Finance pointed out that management accounting tools can organically integrate financial and business to promote the sustainable development of enterprises. Taking the balance scorecard as an example, this paper aims to discuss the role of cotton textile enterprises by using management accounting tools in improving quality and upgrading. Through an analysis of the factors including operating profit margin, employee skills, internal communication, enterprise financial risk analysis, the author of this paper proposes that the design of impact factors will improve the ROE focus, appropriately reduce the scale of operating income and strengthen research and development to improve customer satisfaction, and optimize the internal process of the enterprise.

Keywords: Big data; Balanced score card; Performance evaluation

1. Introduction

The so-called management accounting is an information system that creates organizational value, and its output information is provided to the managers and employees within the organization (Yu Zengbiao, 2018). The American Management Accounting contains two schools represented by Professor Kaplan and Horngren as their representatives, with emphasis on applied research on the part of the former and emphasis on the basic research on the part of the latter. The typical management accounting tools include balanced scorecard, operation cost method, resource consumption cost management, decision cost concept framework, etc.

In domestic research circle, Wen Subin believes that big data technology and machine intelligence make a lot of unstructured information available for decision-making. Feng Chogen (2019) believes that the strategic orientation principle of management accounting features all-roundedness and it also covers the whole-process. Foreign Researches on the tools of management accounting reveal that the application of research management accounting tools in enterprise performance evaluation in the era of big data plays a significant role in promoting the transformation and upgrading of Chinese enterprises, reshaping the industrial chain, supply chain and value chain. It can also bring energy and vitality to transformation and the quality-lifting and upgrading of traditional Shaanxi industry.

2. Production Data of the Cotton Textile Enterprises

The Monthly Analysis Report of China Cotton Textile Industry by China Cotton Textile Industry Association was released in August 2021. Data from the key enterprises and industrial clusters in the report shows that the steady production and operation of the cotton textile enterprises occurred in July 2021. However, the growth rate of major economic indicators slow down from January to July 2021.

3. Performance Evaluation and Analysis of Improving the Quality and Upgrading of Cotton Textile Enterprises

Among the multiple tools of management accounting, the balance scorecard combines financial factors with non-financial factors, internal and external factors, which can comprehensively improve the value appreciation of enterprises.

Many light industry and cotton textile enterprises have made certain contributions to the local economy for a long time. However, the new era poses both an opportunity and a challenge for traditional industries. The major economic indicators of cotton textile enterprises in 2020 are as follows:

Table 1. Major Economic Indicators from January-December 2020

Project	Period		Cotton spinning processing	Cotton weaving processing
	December, 2020	January -December 2020		
Operating Income	December, 2020	January -December 2020	65,276,144.00	31,518,989.00
	December, 2019	January-December 2019	74,884,255.00	35,995,460.00
Total Profit	December, 2020	January-December 2020	2,160,577.00	1,204,683.00
	December, 2019	January-December 2019	2,702,983.00	1,424,606.00
Export Delivery Value	December, 2020	January-December 2020	1,971,319.00	3,138,193.00
	December, 2019	January-December 2019	2,311,106.00	4,199,812.00

Among the major economic indicators in 2020, operating income, total profit and export value of goods have all decreased, as shown in Figure 1:



Figure 1. Major economic indicators of 2020

Data show that the operating income of the cotton textile processing and cotton textile enterprises continue to decline. The profit of cotton textile processing declines by 3.61% and 3.31% respectively in 2019 and 2020. The profit of cotton textile enterprises declines by 3.96% and 3.82% respectively. According to the market demand for cloth color, different color products are processed, produced and sold to downstream clothing enterprises. Under the needs of clothing manufacturers, the prices of cotton, yarn, dyes and other prices are squeezing the profit space of cotton textile enterprises. In cotton spinning processing, the export delivery value accounts for 3.02% of operating income cotton in 2020,

an increase of 3.09% compared with 2019. The cotton textile enterprises should center around the domestic cycle, and the post-epidemic cycle of domestic and international double cycle.

4. Key Factors for the Performance Evaluation of Cotton Textile Enterprises under the Balanced Scorecard Model

In view of the common problem of overcapacity in traditional cotton textile enterprises, the improvement of the profitability of cotton textile enterprises in the post-epidemic era should call for the focus on the improvement of return on equity, appropriate reduction of the scale of operating income and the great efforts to be made to become stronger and better enterprises. By controlling costs and expenses and improving asset turnover rate, the gross profit of the product can be promoted.

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Automatic Detection Method of Boundary Data of Gemstone Bearing Image based on Fourier Transform

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Abstract: Propose an automatic detection method for gemstone image boundary data based on Fourier transform. Firstly, the Fourier transform algorithm is used to segment the image, and then the boundary information of the image area is determined through information measurement. Finally, the ant colony algorithm is used to detect the boundaries of the image. The experimental results show that the proposed method has a measurement value closer to 1 and is practical.

Keywords: Fourier transform; Gemstone bearing; Image; Boundary; Testing

1. Introduction

Gem bearing is a sliding bearing made of hard materials such as gemstones. Gemstone bearings require high precision, especially in terms of boundary accuracy. Therefore, higher requirements have been put forward for gemstone orientation detection. To this end, a method for automatic detection of gem image boundary data based on Fourier transform is proposed. By using this method, the automatic detection effect of gemstone image boundary data can be effectively improved, which is practical [1, 2].

2. An Automatic Detection Method for Boundary Data of Gemstone Bearing Image

2.1. Image segmentation of gem bearing

Based on infrared imaging technology, images containing gemstones are obtained and segmented using the Fourier transform algorithm. Calculate the segmentation threshold of the image based on the grid points obtained from the rotation ray BV and the circle square BH during the interpolation stage:

$$T = \frac{BV * BH}{a^2} \quad (1)$$

Among them, a is the segmentation threshold of gem bearing image; B is the calculation parameter of segmentation threshold [3].

According to the segmentation threshold, the class variance $d^2(T) = w_0(m_0 - m)^2 + w_1(m_1 - m)^2$ between the target area and the background area of the image containing gemstones is obtained. When $d^2(T)$ reaches its maximum value, the corresponding threshold T is the optim-

al threshold for segmentation, thus achieving image segmentation.

2.2. Image boundary information measure

Based on the segmentation results of the aforementioned gemstone images, the boundary information of the image area can be determined through information measurement. In gemstone images, the structural features of boundary points are significant differences between boundary points and non boundary points. The structural boundary information (x_0, y_0) of a point is defined as:

$$C(x_0, y_0) = \max_{x, y \in I} g(x, y) / (2r + 1) \quad (2)$$

The directivity of the boundary point is one of the remarkable characteristics of the boundary point. The expression of the directivity information measure of point (x_0, y_0) is:

$$O(x_0, y_0) = \max\{|f_{s_1} - f_{s_2}|\} - \min\{|f_{s_1} - f_{s_2}|\} \quad (3)$$

Then the neighborhood consistency edge information measure of point (x_0, y_0) is:

$$R(x_0, y_0) = \max\{|f_{s_1} - f_{s_2}| / [r(r + 1)]\} \quad (4)$$

Through the above analysis, the result of boundary information measure of gem bearing image is $Q = \{C(x_0, y_0), O(x_0, y_0), R(x_0, y_0)\}$

2.3. Image boundary data detection

Based on the measurement results containing the boundary information of the gemstone image mentioned above, obtain the boundary data of the gemstone image. And based on ant colony algorithm to detect image boundary data, the steps are as follows:

Step 1: set the initial value of basic information.

Set the total number of iterations Z and q_{\max} of ant cycle, and the initial value of pheromone $t^0 = 0.0001$. In order to ensure the efficiency of the algorithm, if $t_{ij} \geq T$, then $V(i, j)$ is the image boundary data, otherwise it is not.

Step 2: ant B selects the rules of the next node.

In the iterative process of ant k , the transfer probability function from the current node (i, j) to the next node (n, m) is $P_{(i,j)(n,m)}^k$.

Step 3: update rule of pheromone.

The pheromone value of each node in the gem bearing image needs to be updated locally and globally.

When ant k completes a move, it needs to update the pheromone locally, The expression is $t_{ij}^n = (1 - r) \cdot t_{ij}^{(n-1)} + r \cdot \Delta t_{ij}^k$. Through the above process, the expression of boundary data detection of gem bearing image is obtained as follows:

$$X_i = \frac{\sum T * Q}{P_{(i,j)(n,m)}^k \times t_{ij}^n} \tag{5}$$

In conclusion, the automatic detection of boundary data of gem bearing image is realized, which provides a new technical support for gem bearing detection.

3. Test Results

In this paper, a standard measure F is introduced to evaluate the performance of boundary data detection, which is defined as:

$$F = \frac{1}{\max(I_D, I_L)} \sum_{i=1}^{I_D} \frac{1}{1 + Z I_i} \tag{6}$$

The comparison of measurement F is shown in Table 1.

Table 1 Measurement F comparison table

Number of experiments	Literature [2] method
20	2.13
40	0.12
60	2.56
80	3.00
100	3.06

As shown in Table 1, the measurement F of the proposed method is closer to 1, indicating that the detection effect of the proposed method is better.

4. Concluding Remarks

Because the traditional automatic detection method of boundary data of gem bearing image is not effective, this paper proposes an automatic detection method of boundary data of gem bearing image. This method greatly improves the detection effect and provides a new technical support for the detection of gem bearing. However, there is still room for improvement in the detection effect of the proposed method, which needs to be further optimized.

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Research on Innovative Strategies of the Communist Youth League in Carrying out Social Work s for College Students

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Abstract: Influenced by changes in the level of the talent structure, the level of human resource development work carried out by universities and colleges also needs to be constantly improved. In order to positively guide the social values of college students, it is now proposed that the Communist Youth League carry out research on the innovative strategy of college students' social work. First the concept of college students' practice activities is defined and analyzed. Then the significance of carrying out college students' social work is analyzed from the three aspects of human education pattern, ideological education and moral quality. On this basis, the specific innovative paths of social work carried out by the Communist Youth League are proposed, which include enriching the content and form of practice, strengthening the educational linkage of social work, and shearing the evaluation mechanism of social work. It aims to enrich the experience of social practice of college students, so as to deepen the guiding role of the ideological work and promote the overall development of college students.

Keywords: Youth league; Social work; Innovative strategies; University students

1. Introduction

The continuous change of the structure of the current social demand for talents also puts forward higher requirements for the development of the practical aspects of college students. As an important organization guiding the growth of young people, the Communist Youth League has become an important research topic on how to carry out effective social work sessions to enhance the sense of social responsibility and practical ability of college students. In this context, this paper aims to explore the innovative strategies of the Communist Youth League to carry out social work of college students. Firstly, through in-depth study of the practice activities of the Communist Youth League, it helps us to understand more comprehensively its importance in cultivating college students' sense of social responsibility and practical ability. Secondly, by analyzing the problems existing in the existing practical activities, we can provide the direction and strategy for the improvement of the practical activities of the Communist Youth League, and then promote the innovation of its practical activities. Finally, by exploring new modes of social work, we can provide college students with richer and more in-depth practical experiences, help them better understand and adapt to society, and improve their own quality. In the field research related to social practice, there have been numerous scholars who have conducted in-depth discussions on the significance of this activity. For example, literature [1]

analyzes the development of practice sessions from the social level and the school level respectively, and puts forward specific suggestions for the development of practice sessions with the goal of improving the effectiveness of the activity. Literature [2] points out that the development of practice sessions cannot be carried out without the participation of multiple subjects, so it is necessary to integrate multiple subjects to improve the positive orientation of practice. In addition, literature [3] also suggests that the practical activities of the Communist Youth League should pay more attention to the innovation and effectiveness of the activities to meet the needs of the youth in the new era. Through analyzing and researching the related literature, this paper combines the existing theories to analyze the innovative path of the social practice link. In this regard, this paper has the following innovations: first of all, this study will analyze the conceptual definition of practice sessions through a combination of qualitative and quantitative research methods, such as field observation. Secondly, this paper will introduce the innovation theory to explore the innovation strategy of the practical activities of the Communist Youth League from multiple perspectives, such as activity form, activity content, activity organization and so on. Finally, this paper will combine with specific cases to analyze in detail the application and effect of innovative strategies in actual operation, and provide reference value improvement suggestions for the practical activities of the Communist Youth League. Overall, this paper aims

to provide innovative strategies and suggestions for the Communist Youth League to carry out social work of college students through in-depth research and practice. We expect that this study will not only promote the innovation and development of practical activities in colleges and universities, but also effectively enhance the comprehensive quality of college students and enrich their practical experience, thus improving their sense of social responsibility [4].

2. Definition of the Concept of Social Work Sessions for University Students

Concerning the concept of social work sessions of college students, there are two main ways in the domestic academic circles at present.

First, it is defined in a more general way as "social work sessions for college students is an important part of higher education in China, which takes ideological education as its main content and aims to improve the overall quality of young students. Its basic task is to guide college students to the factories, rural areas, troops, to understand the national conditions, regional conditions and people's conditions [5]. It clarifies the historical mission of contemporary intellectuals and strengthens their sense of responsibility. It is a kind of educational activity to carry out ideological and political education and cultivate comprehensive qualities for college students, which is organized, planned, purposeful, in-depth practical, in-depth social, and relies on social forces to complete.

Secondly, it defines social work sessions for college students in both a broad and a narrow sense, believing that social work sessions for college students is a general term for a series of activities in which institutions of higher education, according to the needs of their cultivation objectives, actively guide college students to contact the society, to understand the society, to serve the society, and in which college students can receive education and cultivate their comprehensive qualities. It takes students as the main body, the school as the support, and the society as the stage. Social work sessions are divided into broad and narrow sense. Social work sessions in the narrow sense refers to a variety of practical activities outside the teaching program, that is, excluding the combination of teaching practice with classroom learning[6]. Social work sessions in the broad sense refers to a variety of practical links relative to the theoretical teaching outside, including both social work combined with production and labor, including the combination of classroom learning and teaching practice. At present, there are social work sessions within the teaching program and social work sessions outside the teaching program in colleges and universities. The former is mainly arranged by the Academic Affairs Office of the school according to the needs of teaching professional courses, such as teaching experiments, professional internships, graduation design,

etc. The former is mainly arranged by the Academic Affairs Office of the school according to the needs of teaching professional courses. The latter is organized by the school league committee, the general branch of each faculty or student unions at all levels during the holidays, such as social surveys, voluntary work, work-study, study tours, activities, etc.[7].

3. The Significance of Social Work of College Students Carried Out by the Communist Youth League

3.1. Developing a pattern of parenting

Youth organizations in colleges and universities are the implementation force for the realization of college and university education. They accompany college students in all aspects of learning and life, and are the group that college students have the most contact with on campus, as well as the group that has the greatest influence on college students' thoughts and behaviors [8]. "Three teams" as the main body of college education, first of all, should be clear sense of nurturing, although some of the positions of the affairs of the work does not include the content of ideological and political education, but as the ideological and political education must always be clear about their own function of nurturing, the sense of nurturing penetrate in the specific work. Secondly, establish a sense of responsibility for educating people [9]. Ideological and political work in colleges and universities is not the patent of the student work department and the party propaganda department, the personnel of each work department should have a high sense of responsibility for educating people, moral education is the center of the work of colleges and universities. Again, to play the role model [10]. "Three teams" personnel, regardless of what kind of work position, students, from all aspects of the ideological and political education of students, based on the advantages of the position to play a nurturing expertise, and drive more staff to create a role model for nurturing. Colleges and universities of all types of personnel should be involved in the "moral education" of this great soul-building project, play the function of education, mutual cooperation, collaborative innovation, the formation of a large pattern of ideological and political education of the whole person, in order to have a strong educational synergy. Therefore, it is necessary to form the "three teams" all-embracing ideological and political education work pattern in colleges and universities, which is a prerequisite to ensure that the ideological and political work in the same direction [11].

3.2. Enhance the effectiveness of ideological and political education for college students

The connotation of comprehensive human development is constantly being enriched and improved, and at the

same time, it is also a historical process in which individual subjectivity is constantly being generated and developed. As opposed to the one-sided development of a person, the core of comprehensive human development refers to a person's appropriation of his or her comprehensive nature as a whole person in a comprehensive way. The thoughts and behaviors of college students will be exercised with the growth of their experience, presenting a variety of new situations, which will break the existing balance of the ideological and political education system, so the synergy in the model of collaborative education in colleges and universities is highlighted, and only the synergy can keep the education system of colleges and universities to flexibly cope with the changed situation and environment, and to maintain a stable functioning of the ideological and political education system[12]. The whole process of educating people emphasizes that educating people should include college students, moral, intellectual, physical, aesthetic and labor aspects, college students ideological and political education workers must infiltrate the work of educating people into all aspects of teaching, management and service, grasp the characteristics of each student, will be a combination of explicit and implicit educating people, targeted ideological and political, behavioral norms, academic qualities, and cultural cultivation of education infiltrated into their learning, life, social practice and other aspects. The establishment of a collaborative model of ideological and political education in the perspective of the integration of the three teams will help to form a structure of the whole process of joint efforts to educate people, tap the integration of ideological and political education resources in the teams, dismantle the walls of colleges, majors and departments, the wall of teaching and scientific research, the wall of teaching and learning, and truly realize the cross-connectivity of talents, the departmental synergy, the interflow and interoperability of resources to mobilize the various aspects of the school, various types of personnel, and departments to carry out education in cooperation with each other. Mutual cooperation to carry out education. School ideological and political education resources through the combination, integration, cooperation and integration, to form a strong educational synergy, enhance the effectiveness of ideological and political education [13].

3.3. Promote the overall development of the ideological and moral qualities of university students

The social work of college students by the Communist Youth League also helps to form an all-round ecological environment for collaborative education. In the collaborative nurturing model of ideological and political education under the integrated perspective of the "three teams", various departments and personnel in colleges and universities follow the laws of education, adjust the internal structure of the system, and constantly move

from disorder to order. Through multifaceted cooperation, coordination, communication and interaction, to promote the coordination and synergy of parenting. Realize the cooperation and coordination of many aspects, and form an all-round and multi-perspective ecological environment of collaborative parenting from teaching, research, management, service and practice as the entry point. Students in the study, life, interaction, activities in the ideological and moral quality of all-round, comprehensive development. At the same time, it can also promote the campus cultural construction to create a positive campus cultural atmosphere.

4. Innovative Strategies of the Communist Youth League in Carrying out Social Works of College Students

4.1. Enriching the content and form of social work for college students

Enriching the content and form of college students' social work is mainly optimized from two aspects, namely, the practice mode and the practice route. From the perspective of practice mode, the promotion of social work should not repeat mechanized practice content, but should take challenging content as the main direction of college students' social work, in order to mobilize the enthusiasm of college students to participate in social work, stimulate the desire of college students to participate in social work, cultivate college students' exploratory ability and research ability, so that students can develop the good habit of problem solving and have higher Learning and practicing level[14]. Analyzing from the perspective of practice routes, social work should take the technical content as the educational padding, based on the differences of different students' professional characteristics and professional advantages, choose appropriate routes to formulate the social work planning, so that college students can effectively utilize the knowledge of the curriculum to formulate the practice content in social work, improve the perception ability of college students' learning in social work and their sensitivity to knowledge, and lay a solid foundation for college students to adapt to the current social and practical environment better. The practice environment is a solid foundation for college students to better adapt to the current social work environment. In order to enrich the contents and forms of college students' social work, it is necessary not only to break the limitations of college students' social work, but also to formulate scientific educational planning based on the cultivation of college students' spirit of exploration and innovation, as well as to do a good job of educational innovation based on the change of educational needs in the new era, so as to ensure that the innovation of the mode of college students' social

work is in line with the requirements for the cultivation of talents in higher education in the new era.

4.2. Deepening the educational linkage of social work for university students

Deepen the linkage of social work education, improve the participation of colleges and teachers in college students' social work , so that colleges and universities can become the organizers of social work and teachers can become the guides of college students' social work , thus solving the problems of negative thinking and diffuse thinking in college students' social work . Colleges and universities, as organizers, should use the effective docking of theoretical teaching and college students' social work to strengthen the interaction between college students and teachers, so that teachers can deepen their understanding of students' learning dynamics and learning status, and teachers can formulate corresponding social work strategies according to students' current social work problems and the future direction of talent training in colleges and universities to steadily push forward the work of college students' social work , form a solid nurturing structure, and fully maintain the advantages of college students' social work . Maintain the advantages of college students' social work. Teachers, as guides, should further utilize the rich teaching resources of colleges and universities, scientifically grasp the new wind direction of college students' social work in the new era, improve the foresight of college students' social work content, practice strategies and practice methods, and integrate valuable teaching content into college students' social

work system to avoid the problem of disconnecting college students' social work and employment development, and at the same time, integrate college students' future employment problems into social work , establish a more perfect social work system for college students, and establish a more perfect social work system for college students. At the same time, we should integrate the future employment problems of college students into social work and establish a more perfect social work mechanism for college students[15] .

4.3. Establishment of a multi-faceted evaluation mechanism for social work

The establishment of a multi-integrated teaching practice evaluation system refers to the full integration of university teaching evaluation, students' social work self-evaluation and teachers'evaluation, and based on the comprehensive evaluation and analysis of students' social work problems, further strengthening the objectivity, authenticity and effectiveness of the evaluation of college students' social work . Therefore, colleges and universities should strengthen the communication between teachers and those in charge of social work sessions, regularly carry out multi-party teaching evaluation seminars, and provide support for the evaluation of college students' social work by enterprises, communities and civil organizations. Among them, the teaching evaluation of colleges and universities should be integrated into the existing teaching evaluation system as the reference item of students' social work evaluation. The specific social work evaluation mechanism is shown in the figure below.

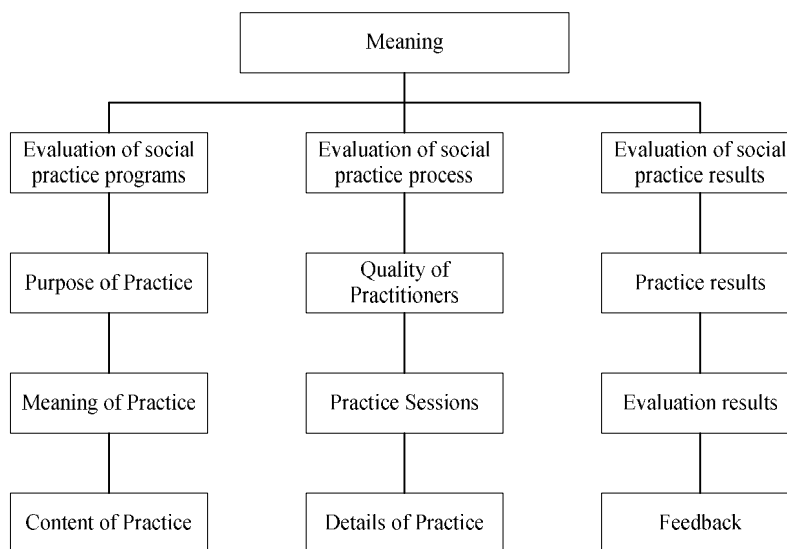


Figure 1. Structure of social work evaluation mechanism

The self-evaluation of students' social work should be completed jointly by students and relevant instructors to ensure the accuracy of students' self-evaluation. Teach-

ers' evaluation should be based on the evaluation of the person in charge of social work sessions, and then analyze the teaching evaluation objectively, and include the

enthusiasm of students' social work , the effectiveness of social work , the results of social work , and the impact of social work into the evaluation system of teachers, so as to help teachers effectively analyze the problems and solve them, and then formulate the scientific solutions according to the difficulties encountered by the students in their social work . The evaluation system helps teachers effectively analyze and solve problems, and further develop scientific solutions according to the difficulties encountered by students in social work. In this way, the educational service level of social work of college students can be improved, so that government agencies, enterprises and communities can become the supporters of social work of college students, thus mobilizing the enthusiasm of college students to participate in social work.

5. Concluding Remarks

In the new historical period, the social practice link of college students is facing new challenges and opportunities. By studying the innovative strategies of the Communist Youth League in carrying out college students' social practice, this study aims to explore a social practice model that adapts to the needs of the development of the times and conforms to the laws of youth growth, so as to play a guiding role in the nurturing work of colleges and universities. These innovative strategies not only help to improve the relevance and effectiveness of college students' social practice, but also better meet the diversified needs of young college students and stimulate their enthusiasm and creativity in participating in social practice.

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Application of River Luo Culture in Digital Environment Design and Talent Cultivation

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Abstract: At present, the inheritance of the River Luo culture is facing many challenges, in order to promote the progress of the inheritance of the River Luo culture, the application of the River Luo culture in the digital environment design and talent training is now proposed. Firstly, the concept of River Luo culture and specific visual elements are explained and illustrated. Then, the necessity of integrating the culture into digital environment design and talent training is analyzed from the aspects of the change of thinking concept and the need of social talents. Finally, specific paths are proposed for the practical means of integrating the culture of the river Luo, including strengthening cultural communication research, strengthening cultural construction, and integrating into the teaching process of colleges and universities. The aim is to meet the social demand for interdisciplinary talents and to promote the effective inheritance of Heluo culture.

Keywords: Helo culture; Digitalization; Environmental design; Talent cultivation

1. Introduction

Heluo culture is an important part of Chinese traditional culture, with profound historical background and rich cultural connotation. However, with the rapid development of society and the impact of the wave of digitization, the inheritance and development of Heluo culture are facing many challenges. Therefore, how to combine the River Luo culture with the digital environment and innovate the inheritance and development of the River Luo culture has become an urgent problem to be solved. At the same time, digital environment design and talent cultivation, as an important field in today's society, are receiving more and more attention. However, most of the existing researches focus on digital technology, informationization application, etc., while there are relatively few researches on the application of traditional culture in digital environment design and talent cultivation. Therefore, it is of great practical significance and historical mission to apply the River Luo culture in digital environment design and talent cultivation. The research on the application of River Luo culture in digital environment design and talent cultivation is of great significance. Firstly, by combining the Heluo culture with the digital environment, it can innovate the inheritance and development of the Heluo culture and better protect and inherit the excellent traditional culture of the Chinese nation. Secondly, by applying the River Luo culture in digital environment design and talent training, we can improve the cultural literacy and innovation ability of students, and cultivate more talents with regional characteristics and cultural

confidence. Finally, by studying the application of Heluo culture in digital environment design and talent training, it can provide theoretical support and practical guidance for the development of related fields and promote the improvement of digital environment design and talent training. In recent years, scholars at home and abroad have conducted a large number of studies on the application of traditional culture in digital environment. For example, literature [1] proposes a digital protection and display scheme for cultural heritage based on virtual reality technology, which realizes the immersive experience and interactive operation of cultural heritage. Literature [2] applies augmented reality technology to the protection and display of ancient architecture, realizing three-dimensional modeling and virtual-reality integration of ancient architecture. However, the research on the application of Hieroglyphic culture in digital environment design and talent training is still in its infancy and needs to be further explored. This paper combines the River Luo culture with digital environment design, talent training and other fields to conduct interdisciplinary research. By comprehensively applying the theories and methods of culture, design, education and other disciplines, the application of River Luo culture in digital environment design and talent cultivation is discussed in depth. This paper verifies and analyzes the application of River Luo culture in digital environment design and talent cultivation through a variety of empirical research methods, such as fieldwork, questionnaire survey, and case study. This paper emphasizes the combined application of the River Luo culture in digital environment de-

sign and talent training, and promotes the cultivation of talents with regional characteristics and cultural self-confidence by cultivating students' cultural literacy and innovation ability. At the same time, targeted suggestions and measures are put forward in combination with actual cases and practical experience.

2. River Luo Culture and Its Visual Elements

Heluo culture is the culture of the Heluo region in ancient China, the core of the Central Plains culture and the main source of traditional Chinese culture. It is centered in Luoyang, starting from Zhongtiao Mountain in the north, reaching the FuNiu Mountain in the south, extending to the plains of central Henan in the east, and longing for Guan in the west, and its scope is roughly the central and western regions of Henan. The Heluo area is the oldest living and reproducing place of the Chinese nation, and the formation of the Heluo culture has gone through a long development process, which arose in the Xia and Shang Dynasties, matured in the Zhou Dynasty, developed in the Han Dynasty, Wei Dynasty, Tang Dynasty and Song Dynasty, and was inherited in the following generations. The Heluo culture is the sum of the material and spiritual civilization of the Heluo area. The earliest slavery society in China appeared in the region. The Xia Dynasty created the earliest state form of the Chinese nation; the Shang Dynasty produced the earliest written language "oracle bone script" in China and created the precedent of Chinese trade; the Zhou Dynasty established a system of political indoctrination, national political system, national operation mechanism and social behavioral norms that have influenced the Chinese society for thousands of years. Because of the orthodoxy of the "official culture", the Helo culture, while influencing the neighboring cultures, also absorbed the essence of the neighboring cultures, and gradually became the mainstream of the traditional Chinese culture, which had a great influence on the development and progress of China's social history.

Hailuo culture is the regional characteristic culture of Hailuo area, which is a collection of material culture, spiritual culture and political culture precipitated by the long history of the area. The visual elements of Hailuo culture are rich in content and diverse in form, and this paper mainly focuses on the nature of the elements as a distinction for research, mainly including: graphics, text, color, material and shape of the four major categories.

Graphics is an illustrative visual element mainly characterized by images, which is not restricted by regions and nationalities, and can fully convey the information, and is a carrier tool for human beings to express their emotions and disseminate information. Hailuo culture has a deep historical background, and its graphic elements have very varied styles and significant Hailuo cultural characteris-

tics. Yangshao culture, 5000-7000 years ago, is an important part of Hailuo culture, and the patterns on Yangshao colored pottery have unique decorative effects, as shown in the figure below.



Figure 2. Typical representative of Yangshao culture colored pottery

Yangshao colored pottery decorative patterns are mainly embodied in geometric patterns, human patterns, animal patterns and plant patterns, which produce a strong visual impact with the combination of dots, lines and surfaces. They are the earliest graphic symbols of mankind, reflecting people's understanding of nature at that time as well as reverence.

The He Luo region is the birthplace of Buddhist culture in China. Since Buddhism was introduced to China in the Eastern Han Dynasty, it was developed in the Heluo area, where Buddhist art with Chinese characteristics was gradually formed. Buddhist culture has not only brought great influence to people's spirit and life, but also provided inspiration for the creation of modern design. Peony culture, as an important part of Luoyang culture, is an oddball of Chinese culture. "Luoyang has the most suitable flowers, and peonies are especially strange in the world". Peony culture can be found in precious cultural relics excavated in Luoyang, as well as in the existing ancient buildings, and even in many folk cultures and modern handicrafts. As the flower of Luoyang City, peony has not only brought Luoyang the reputation of "Peony Flower City", but also become a cultural symbol of Luoyang with unique personality.

Chinese traditional culture has far-reaching influence on China's modern packaging design, in which the traditional color concept is one of the important factors. China's five years of civilization has given birth to a unique "five elements and five colors system", the philosophical color concept of Confucianism, Taoism and Buddhism has guided the color aesthetics of the Chinese nation, and also played a crucial role in guiding the use of color in China's packaging design.

Black is the color revered by the Xia Dynasty and also revered by Taoism. Legend has it that the Eight Trigrams were first created by Fuxi through the Hetu Luoshu, where black and white are mutually exclusive, with white as yang and black as yin, complementing each other and symbolizing that all things cannot help but circulate. Therefore, black and white have become important color concepts in the River Luo culture.

Red, yellow, cyan and black and white together constitute China's traditional "five colors". Red in traditional Chinese culture symbolizes festivity, good luck, is the people of the New Year festivals, marriage and childbirth and other folk customs commonly used color, red is also China's representative color, the rational use of red, can be a good show of traditional Chinese culture; yellow symbolizes the right, rich and noble, is China's emperors of the past dynasties of the special color; cyan is also one of the ancient Chinese people commonly used color, has a strong, solemn, hopeful cultural connotations.

3. The Necessity of Digital Environmental Design and Talent Training to Integrate the Culture of River Luo

3.1. Change of mindset

River Luo culture is a treasure of Chinese culture with deep historical heritage and artistic value. Introducing Hailuo culture into digital environment design will help students better understand and appreciate traditional Chinese culture, and cultivate their cultural self-confidence and sense of identity. At the same time, this cross-cultural perspective will also help to broaden the students' international vision and equip them with stronger cultural adaptability and innovation ability in their future design work.

Digital environmental design is an emerging design method that emphasizes the combination of technology and art and is highly practical and innovative. Incorporating the River Luo culture into this design method can enable students to gain a deeper understanding and mastery of the characteristics and values of this culture through practical operation. For example, they can use virtual reality technology to present the elements and essence of the River Luo culture in a digital model, or to understand the evolution and influence of this culture in the course of history through data analysis.

Hieroglyphic culture is rich in artistic symbols and ideological connotations, such as the philosophical ideas of "the unity of man and heaven" and "yin and yang", as well as unique architectural styles and painting techniques, etc. These elements can provide a lot of materials and inspiration for digital environmental design. These elements can provide a lot of materials and inspiration for digital environment design. By studying and applying these elements, students can design works with more characteristics and emotional resonance.

Under the background of globalization, cultural diversification and intermingling has become a trend. Integrating the culture of River Luo with digital environmental design can not only enhance the cultural connotation of the design, but also provide a new platform and way for the inheritance and development of this culture. In this way,

the River Luo culture can better enter the modern life and be recognized and loved by more people.

For designers, mastering a specialized skill is not enough. They also need to have a deep humanistic literacy and historical vision. Integrating the River Luo culture with digital environment design can cultivate designers' humanistic literacy and historical vision, so that they can not only use technical means in design, but also fully consider the cultural background and social value.

3.2. The need for human resources in society

Integration of River Luo culture can meet the social demand for interdisciplinary talents: with the progress and development of society, interdisciplinary and cross-field talents are more and more popular. Integrating Hailuo culture with digital environment design can cultivate interdisciplinary talents who have both traditional cultural literacy and modern design skills. Such talents will play an important role in the field of digital environment design and promote the design industry to develop in a more diversified direction.

In the fierce market competition, talents with a skill are often more likely to stand out. Integrating the River Luo culture with digital environment design will enable talents to master professional skills while possessing unique cultural perspectives and innovative abilities. This comprehensive ability will give them an edge in competition and become a key factor in promoting individual career development.

With the development of cultural industry, the protection, inheritance and innovation of traditional culture has become a hot spot of social concern. Integrating the culture of Hailuo with digital environment design can cultivate talents with high cultural consciousness and innovation ability. They will use the knowledge and skills they have learned to inject new vitality into the development of cultural industry and promote the inheritance and innovation of traditional culture.

By integrating the river Luo culture with digital environmental design, talents will be able to present traditional culture to the public in a more vivid and intuitive way. This will not only enhance the society's knowledge and understanding of traditional culture and improve the public's cultural literacy, but also convey the designer's thoughts and feelings through the design works and guide the public to think and feel.

As an important part of Chinese traditional culture, He Luo culture has high artistic value and tourism value. Integrating the Hailuo culture with digital environment design can cultivate design talents with local cultural characteristics. They will utilize the knowledge and skills they have learned to contribute to the development of local economy and promote the prosperity and development of tourism.

4. Innovative Paths to Promote the Integration of River Luo Culture into Digital Environmental Design and Talent Cultivation

4.1. Increase the research and dissemination of He Luo culture

In order to really make good use of He Luo culture, a profound and excellent traditional culture, and to make it really used for cultural education in colleges and universities, it is necessary to do a good job of discovering, researching and summarizing the cultural resources fundamentally. This not only requires the local government to do a good job of organization, funding and other guarantees, but also requires professional scholars, including educators and researchers in colleges and universities, to continuously expand the new content of the education of the He Luo culture, to dig out its rich connotation, and at the same time, to give it the connotation and value of the new era. In the context of the new era, it is more necessary to create a network culture propaganda position with its own characteristics to publicize the culture of Hailuo, and it is more necessary to take advantage of the new media's popularity and fast dissemination to make use of the typical representatives of Hailuo customs and Hailuo historical figures, and to produce documentaries, propaganda films, short videos and so on, which are uniquely Hailuo, so as to make them become the inexhaustible resources for the cultural education of the colleges and universities.

4.2. Integration of River Luo culture into the cultural construction of digital environment in colleges and universities

In order to create a good campus cultural position, it is necessary to integrate the unique regional culture of He Luo culture into the campus cultural construction of colleges and universities. First of all, to create a humanistic landscape with He Luo culture as the main body. Important venues such as college libraries, archives, school history museums, and teaching buildings can be utilized to create panels dedicated to the display of He Luo culture. Attention should be paid not only to the design of the exterior of the venues, but also to the creation of the internal cultural atmosphere. Secondly, organize campus cultural activities with the theme of He Luo culture. Colleges and universities can regularly organize the broadcast of film and television movies, documentaries and propaganda films on the theme of He Luo culture, and organize rehearsals of cultural and artistic works that incorporate He Luo culture or are based on the history of He Luo. Telling the story of Hailuo from the perspective of college students and publicizing Hailuo culture in the way and language of college students can strengthen the cultural confidence of college students in the new era.

Finally, strengthening the construction of network culture positions dominated by He Luo culture mainly involves creating new media-based columns on He Luo culture on campus. For example, using the campus network or intelligent bookstore to create a column on Hailuo culture, presenting relevant books, history of Hailuo development, Hailuo culture and other contents in a way that is easy for students to access; utilizing platforms such as WeChat, microblogs and short videos to publicize and display Hailuo culture; and also creating a platform for students to create their own creations, so that they can explore the roots of the nation, comprehend the soul of the nation, carry forward the national aspirations, and establish a correct view of the nation through a combination of online and offline modes. The students can also create their own creative platform so that they can explore the root of the nation, realize the soul of the nation and promote the spirit of the nation in the combined mode of online and offline.

4.3. Integration of River Luo culture into the whole process of university education

First of all, it is necessary to promote the integration of He Luo culture into the teaching of college courses. The Civics and Political Science class should integrate the teaching content of the course with the ideological essence of the River Luo culture, and explore the combination point in the content that can be effectively integrated. Make full use of the River Luo culture, write teaching cases, revitalize the educational content and educational materials of the classroom, and explore the similarities between the River Luo culture and Marxist theory and socialist theory with Chinese characteristics. Efforts should be made to do a good job of articulation in teaching design, so that the River Luo culture can be truly integrated into the classroom of colleges and universities. Teachers should also give full play to students' initiative and inquisitiveness in the process of teaching, so that students can consciously transform socialist core values into their own moral consciousness and value orientation while comprehending the traditional regional culture. Secondly, the principle of combining theory and practice should be adhered to to strengthen practical education, strengthen the sense of identity of college students to the He Luo culture in practice, and let college students participate in the inheritance and promotion of the He Luo culture more actively, so that college students can better transform the excellent He Luo culture into the national cultural self-confidence. We can utilize the resources of museums and memorial halls in Luoyang City and its surrounding areas to lead college students on field visits and investigations, and help students enhance their in-depth understanding of traditional Chinese culture and value identity in the immersive environment and in the narration of historical facts; we can also encourage stu-

dents to combine their social practice projects with the exploration and discovery of the Heluo culture, so that they can take the initiative in visiting local folk culture and digging up the elements of local history, and help inherit the heritage in the development of Heluo culture, at the same time, experience the pulse of thousands of years of history and culture in Luoyang, explore the thick spiritual connotation of Heluo culture, and consciously build a strong spiritual foundation.

Thousands of years rooted in Heluo, thousands of years of cultural inheritance. Inheriting and carrying forward the Heluo culture is an effective path and right direction for Luoyang universities to promote campus culture construction and realize cultural education. As for the shortcomings and deficiencies in utilizing the culture of the River Luo to educate people, the local community of Luoyang should increase the development of resources and research on the culture of the River Luo, and provide as much help as possible for the universities to carry out the construction of campus culture and the construction of the curriculum. Colleges and universities in Luoyang should also actively take campus material and spiritual culture as the entry point, and take social practice, ideological and political theory classes and course ideology and politics as the grasp, and effectively integrate the excellent resources of He Luo culture into the whole process of college students' growth and success, focusing on its connotation, searching for its fundamentals, and basing on its concepts, so as to let the spirit of He Luo take root in colleges and universities and enhance the cultural self-confidence and moral quality of the current generation of college students with the power of culture, and guide the students in the inheritance of the He Luo culture. The students will be guided to build up cultural self-confidence in the inheritance of Hailuo culture, cultivate national sentiment in the study of Hailuo culture, and consciously take up the mission in the exploration of Hailuo culture.

5. Concluding Remarks

To sum up, the application of He Luo culture in digital environment design and talent training has far-reaching significance. Through the integration of Hailuo culture, we can cultivate talents with more traditional cultural literacy and modern design skills to meet the social demand for interdisciplinary talents. At the same time, this integration also helps to promote the development of cultural industry, enhance social awareness and understanding of traditional culture, and contribute to the prosperity and development of local economy. Therefore, we should actively explore the effective ways of integrating He Luo culture and digital environmental design, and play its important role in talent cultivation and social development.

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Online Monitoring of Power System Network Security based on Fuzzy Random Forests

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Abstract: The current conventional online monitoring methods for power system network security are mainly realized by analyzing the abnormal behavioral data characteristics of the network, which leads to poor monitoring accuracy due to the lack of multi-scale characterization of network traffic data. In this regard, the online monitoring of power system network security based on fuzzy random forest is proposed. Firstly, the power system network traffic data is collected and combined with autocorrelation function to perform multi-scale characterization. Then the devices are processed with pictorial labeling and the correlation factors in the network security information data are mined, and finally the online monitoring model is constructed. In the experiments, the monitoring accuracy of the proposed method is verified. The analysis of the experimental results shows that when the proposed method is used for online monitoring of network security, the false alarm rate of the method is low, and it possesses high monitoring accuracy.

Keywords: Random forests; Power systems; Cyber security; Monitoring methods

1. Introduction

The rational use of network security monitoring technology as a modern power monitoring system operation and management process, is an indispensable key content, directly related to the security and stability of the power system operation, whether to help power companies to create more security and economic benefits, while meeting the market users for high-quality power requirements. In this paper, we will further analyze and discuss the network security monitoring technology of power monitoring system, aiming to provide scientific reference for the industry. Senior leaders of power enterprises in various regions in the power production benefits at the same time, must also attach great importance to the optimization of the power monitoring system to improve the operation, give full play to the role of advanced network security monitoring technology, comprehensively enhance the power monitoring system operation and management level [1]. Power monitoring system essentially refers to the use of advanced computer information technology to complete the whole process of power production monitoring and control operations, in the power system operation process will produce a variety of network risk issues, power companies must arrange for professional and technical personnel to strengthen the prevention and control of these risks, standardize the use of network security monitoring technology, and effectively build a safe and reliable power system network operating environment, fully guarantee the safety and reliability of

power system operation[2]. Power system operation safety and reliability. Currently China's electric power industry in the implementation of the power monitoring system of various enterprises are still facing a variety of security threats, the need for professional and technical personnel to carry out effective prevention and control to solve the problem, reduce the network operation of the power monitoring system risk, while comprehensively improving the implementation of power monitoring the quality and efficiency of the operation work. First of all, the relevant technical personnel in the power monitoring system to build the process, need to strengthen the optimization of all kinds of network information management operations, combined with the actual information content of the reasonable design of the best network security monitoring and protection program, in order to effectively solve a variety of network security risks, to prevent any security risks left in the operation of the power monitoring system; Secondly, electric power enterprises also need to strictly require all staff to follow The relevant network security management principles promulgated by the state, when the technicians in the power system network monitoring work, the need for security awareness and protection awareness of the separation, separate in the power monitoring system network to build out a dedicated channel, on the one hand, the use of horizontal elimination of all kinds of security risks; on the other hand, through the use of vertical authentication to complete the internal and external network security isolation of the electric power enterprise, to build a net-

work protection barrier. A network protection barrier. Relevant technical personnel in addition to the security of the system host equipment for routine maintenance and management, but also need to carry out a full range of testing and protection of the power monitoring system network, as a way to fully guarantee the safety and effectiveness of the information in the network transmission process [3].

2. Power System Network Traffic Collection and Multi-Scale Analysis

Power system network traffic collection is an important step that helps us to better understand and monitor the operational status and performance of the power system. Before collecting network traffic, you need to define the goals and needs of the collection, such as monitoring a specific device in the power system or monitoring the overall performance of the network[4]. Based on the goals and needs, select the appropriate collection method. This may include collection methods based on technologies such as SNMP (Simple Network Management Protocol), NetFlow, sFlow, and others. Select an appropriate location to deploy a network traffic collection device, such as a network traffic monitor or a router or switch with traffic collection capabilities. Depending on the collection method selected, configure network devices to support traffic collection. This may involve setting IP addresses, enabling SNMP protocols, configuring NetFlow or sFlow, and so on. Then install and configure the collection software on the selected network traffic collection device to capture traffic data from the network. This may involve selecting the appropriate operating system, installing the collection software, configuring the software parameters, and so on. Start the network traffic capture device and begin capturing network traffic data. This involves capturing and analyzing network traffic data in real time. Time to process and analyze the captured network traffic data [5]. This may involve filtering, aggregating, and calculating traffic statistics to provide useful information about the performance of the power system network. Store the network traffic data in appropriate storage media and ensure the security and availability of the data. This may involve selecting appropriate storage devices or storage solutions and ensuring data backup and recovery capabilities.

Generate reports and visualize data as needed to better understand network traffic data and power system performance. This may involve the use of reporting tools or graphical interfaces to present data and analyze results [6].

On the basis of the power system network traffic data collected above, when transmitting the power system network traffic, there is uncertainty and certain mobility in the network traffic, as well as the similarity and correlation of the data, and it is necessary to analyze the cha-

acteristics of the power system network traffic. The random variable of power system network traffic in each scale is represented by $X = (X_1, X_2, \dots, X_n)$, assuming that $m = EX_i$ represents the mean value, at this time, the expression of autocorrelation function is shown below[7].

$$r(k) = \frac{E[(X_i - m)(X_{i+k} - m)]}{E(X_i - m)^2} \quad (1)$$

where $r(k)$ represents the autocorrelation function, E represents the descriptive mean variable, and X_i represents the i th random variable. In the generalized smooth random transform sequence X_m , $r^m(k)$ represents the autocorrelation function of X_m . If the Hurst parameter of the smooth random sequence is in the range of (0.5,1), it represents that there are similar characteristics of the power system network traffic in this scale, which belongs to the suspected network traffic. The memory characteristics of power system network traffic are mainly measured by correlation [8]. Even if the measurement time distance is long, and at the same time hair cattle two time, then between the two is also its have correlation, at this time need to be expressed through the autocorrelation function.

In the same scale, X describes the time series, and in X the corresponding values of the; two time series at the moment t and $t+k$ are selected, at which time their autocorrelation function expressions are shown below.

$$r(k) = \frac{E[(X_t - m)(X_{t+k} - m)]}{(s)^2} \quad (2)$$

Where $r(k)$ represents the autocorrelation function, m represents the time series mean, and s represents the time series variance. If the value of the autocorrelation function is large, it represents that the power system network traffic is a long correlation process at this time, and if the value of the autocorrelation function is small, it represents that the power system network traffic is a short correlation process.

3. Correlation Analysis of Network Data Information Security Factors

After completing the collection of network traffic and the scale analysis, this paper analyzes the equipment of the power system through the portrait analysis, on the basis of which, combined with the situational factors in the network data information, the correlation between the information security factors is mined, so as to provide reliable help for the subsequent network security monitoring[9]. First of all, imaging can be understood as labeling the data and portraying the characteristics of the equipment through a number of representative data features. The key point of the portrait is the definition of labels, which usually serves to change the logical calculation of data into more understandable feature labels. De-

signing a device portrait takes advantage of a lot of related information about the device, such as basic attributes, access data, business behaviors, and correlation data, etc[10]. The more the data is involved, the more it can be used to characterize the device. The larger the scope of data involved, the more the image can represent the overall appearance of the device. First get the equipment information, and then refer to the business defense objectives and data characteristics to complete the establishment of the equipment image, according to a variety of experimental methods model processing equipment data, to get the equipment multi-faceted digital labels, the same category of information technology characteristics of the equipment labeling co-ordination can be called the equipment image. The essence of power IoT equipment image is to label the data information and characteristics of the equipment through the algorithm[11]. To build a complete power Internet of Things device imaging system, it is necessary to think of feasible solutions from multiple directions such as device security authentication status, business traffic data and access behavior data. Network security monitoring of power IoT terminals includes three aspects: network external characteristics monitoring, protocol key field monitoring and network access behavior monitoring. Regarding the monitoring of equipment business traffic, the method can be applied to encrypted traffic by studying the external basic characteristics of network traffic and not deeply analyzing the fields transmitted by network messages[12]. Specifically, this paper counts the external characteristics of network traffic, applies the method of message clustering to preprocess the basic information of the traffic after counting, obtains the network traffic order vector used for clustering analysis, clusters the attributes of the network flow order vector to obtain the attribute feature words and feature phrases, and obtains the whitelist of the external characteristics of the network traffic through the analysis, so as to achieve the effect of traffic feature monitoring. The next step is to analyze the frequency and time slot of keyword segments and keyword combinations in the terminal network traffic to establish the protocol keyword whitelist. By analyzing the frequency and time slot of keywords and keyword combinations, the security gap value of the protocol keyword frequency and time slot of the device image is determined. Finally, the network access behavior of the device is analyzed from ICMP, DNS, WEB and other aspects of the experimental analysis, to get the baseline of the device network access behavior, to achieve the monitoring of the network access behavior of the device. Combining the external characteristics of network traffic, protocol keyword closure value and device network access behavior baseline to build device image. Based on the device image, we can effectively monitor malicious or fake terminal device

to achieve the effect of terminal network security monitoring.

In this regard, this paper uses fuzzy equivalence processing to cluster the situational factors in the power system network data information under the pictorial label. Assuming that there is a fuzzy relationship between two non-empty sets P and Q, then the expression for the strength of association between them at this time is shown below.

$$Q \cap P = \{(q, p) | q \in Q, p \in P\} \quad (3)$$

where q and P are subsets in two non-empty sets, respectively. Then, considering that the network data information is relatively dynamic, therefore, it is necessary to correct the processing of Q and P. In this paper, we utilize the big data technology to calculate the correction degree, and the specific expression is shown as follows.

$$a = b \left(\frac{Q \cap P}{Q} + \frac{Q \cap P}{P} \right) \quad (4)$$

Where a represents the correction degree and b represents the correlation coefficient. The calculation of the correction degree can be obtained through the above steps, thus realizing the correlation analysis of network data information security factors.

4. Online Monitoring of Power System Network Security based on Fuzzy Random Forests

Through the collection and characterization of hospital network traffic, the characteristics of hospital network traffic are obtained, and the multi-scale analysis method is used to extract the characteristics of hospital network traffic to carry out, so as to extract the suspected network traffic, which helps to improve the anti-noise ability of network traffic in the process of classification, and complete the monitoring of network traffic[13].

Hoeffding tree is used to classify the hospital traffic monitoring sample data and build a decision tree model s , Hoeffding tree is the core of the decision tree model. When classifying hospital network traffic, the tree needs to be changed first. When the classification in the decision tree is not clear enough, it is necessary to use the VFDT algorithm to re-bull into an alternative subtree in the corresponding decision tree node, and wait until the alternative subtree grows to the point where it can correctly classify the sample data of the hospital network traffic, the alternative subtree can replace the original corresponding subtree, so as to realize the classification of the hospital network traffic, and to complete the monitoring of the hospital network traffic, whose process is shown as follows.

(1) Introducing sliding window technology to improve categorization effect

After adding a sliding window W to the VFDT algorithm, new sample data is first entered into W. At this point, the

sliding window W is affected by the increase in the count of nodes in the decision tree and responds to the new sample data and maintains the new decision tree classification model with the reduction of the old sample technique[14].

The Impact Factor $n_{ik} * b$ can make changes to the count value of the sample hospital flow data, assuming that L represents the tree depth, which is proportional to the Impact Factor. When the value of influence factor is 1, the network traffic is correctly categorized in the decision tree. If the influence factor is inversely proportional to the value of L , then the decision tree makes an error in the categorization process, and this error will have an impact on the influence factor. Usually, hospital network traffic data is noisy, so according to the discrete and continuous attributes in the data, fuzzy random forest algorithm and fuzzy information gain algorithm are used to establish the metrics of the attributes of the data flow, respectively.

Assuming that D describes any sample dataset, partitioning D with attribute A based on the tuple fuzzy information in D is defined as follows.

$$\begin{cases} Info_F(D) = -\sum_{i=1}^m p(C_i, D) \log_2 P(C_i, D) \\ Info_F(A) = \sum_{j=1}^v Info_F(D) \end{cases} \quad (5)$$

Where, $Info_F(D)$ represents the fuzzy information describing any sample dataset, $Info_F(A)$ represents the fuzzy information of attribute A in a tuple, A stands for attribute, C stands for description class, N stands for description constant, and P stands for continuous attribute. Finally, under the role of the above attacks, the security parameters of network data information are obtained, and when the attacks on network data information do not exist in a single form, it is necessary to organically integrate the potential attacks on network data information and combine the risk indicators with the risk of intrusion attacks on the network data information security risk potential, the specific expression is shown below.

$$G = sumVI_r \quad (6)$$

In the formula, G is the final network data information security status monitoring results; sum is the security threat organic integration function. I_r represents the simulated attack parameters under the stochastic deontic model, and V represents the dependency relationship between nodes in the network data information[15].

Through the above steps, online monitoring of power system network security based on fuzzy random forest is thus realized.

5. Testing and Analysis

5.1. Test preparation

In order to prove that the monitoring effect of the fuzzy random forest-based power system network security online monitoring method proposed in this paper is better than that of the conventional power system network security online monitoring method, after the theoretical part of the design is completed, the experimental session is constructed to verify the actual monitoring effect of the model. In order to improve the reliability of the experimental results, this paper selected two conventional power system network security online monitoring methods as the comparison object, by comparing the experimental results of the three methods, to prove the effectiveness of the method in this paper. The conventional methods selected for this experiment are the power system network security online monitoring method based on big data, and the power system network security online monitoring method based on gray theory.

The system test environment is divided into 2 parts:① the main operating environment of the network security monitoring system, choose the operating computer of the power monitoring system as the main test computer, and use Java as the development tool to realize the writing of the monitoring system software program. The optimization device of the hardware module in the system design is connected to the main test computer to ensure the normal operation of the optimization monitoring system. ② The attack environment of the power monitoring system network, install an attack computer inside the network, import several different types of invasion and attack programs, and use random algorithms to realize the invocation of attack programs.

5.2. Analysis of test results

The evaluation index selected for this experiment is the monitoring accuracy of the method, and the specific comparison index is the false alarm rate (FAR) of different monitoring results, the lower the value is, the higher the monitoring accuracy of the method is represented, and the specific experimental results are shown in the following figure.

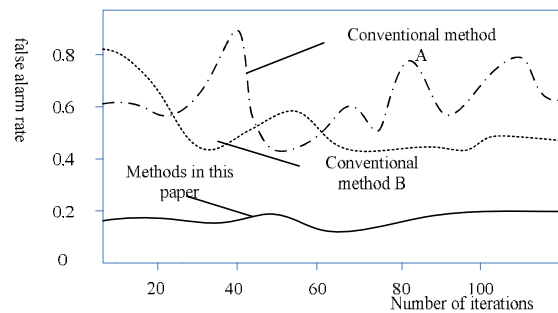


Figure 3. Comparison results of monitoring accuracy of different methods

Analyzing Figure 1, it can be seen that with the continuous improvement of the number of iterations, the monitoring accuracy of the different methods also shows a more obvious change. Through the comparison of numerical values, it can be clearly seen that the false alarm rate of the fuzzy random forest-based online monitoring method for power system network security proposed in this paper is significantly lower than that of the two conventional monitoring methods, thus proving that the monitoring accuracy of the method in this paper is better.

6. Concluding Remarks

Online monitoring of power system network security based on fuzzy random forest is an important research which aims to realize real-time and online monitoring of power system network security by introducing fuzzy random forest algorithm. This research combines fuzzy theory, random forest and online monitoring technology to provide a new solution for network security protection of power system.

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Research on the Path of Integrating Chinese Excellent Traditional Culture Into Ideological And Political Education in Colleges

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Abstract: In today's society, the fundamental purpose of ideological and political education in colleges and universities is to realize "moral cultivation". Integrating the excellent traditional Chinese culture into the ideological and political education in colleges and universities has become the top priority of the ideological and political education in Chinese colleges and universities. Through a brief analysis of the research background of the integration of Chinese excellent traditional culture into the ideological and political education in colleges and universities, this paper elaborates the importance of the integration of Chinese excellent traditional culture into the ideological and political education in colleges and universities, and puts forward some existing problems at the present stage, and then probes into the path of integrating Chinese excellent traditional culture into the ideological and political education in colleges and universities.

Keywords: China; Excellent traditional Chinese culture; Ideological and political education in universities; Path

1. Introduction

The fine traditional Chinese culture is a treasure that all Chinese nations are proud of. It is the blood tie and spiritual sustenance of Chinese people at home and abroad. It also plays a normative role in the form of centering, collective and overall awareness. It has always guided people's progress and given them spiritual encouragement and support. Nowadays, when multi-culture and ideological trend conflict with each other and communicate with each other, the nationality and scientific nature of Chinese excellent traditional culture can effectively promote the construction of the main ideological front in colleges and universities. As the future of the country and the successors of the socialist society, college students are the group that needs to be paid attention to. Integrating the excellent traditional Chinese culture into the ideological and political education in colleges and universities can effectively improve the comprehensive quality of college students and further promote the sound development of society.

2. Research Background

Under the environment of all-media development, the communication, blending and confrontation of various ideas and cultures are more frequent, which brings new challenges to the ideological and political education in

colleges and universities. The world today is undergoing profound changes unseen in a century. Various cultural trends of thought have impacted the thoughts and cognition of contemporary college students, exerting great influence on their world outlook, outlook on life and values. As the new force of the great rejuvenation of the Chinese nation, the ideological and political level, cultural accomplishment and externalized behavior of college students are the key issues that need to be studied at this stage. Therefore, it is urgent to study the improvement of college students' ideological and political education under the background of the new era, so as to improve the effectiveness of ideological and political education.

The spiritual foundation and cultural soul of the Chinese nation is the excellent traditional Chinese culture. Under the background of economic globalization, under the impact of multi-cultural thoughts, the value orientation of young students shows the characteristics of diversification, and the problem of diversified code of conduct is becoming increasingly prominent. Faced with the challenge of foreign culture, how to re-examine the contemporary significance and value of the excellent traditional Chinese culture, promote the close combination of the excellent traditional Chinese culture and ideological and political education, give full play to the role of traditional culture in the ideological and political education of college students, and improve the ideological and moral

level and cultural quality of college students are the requirements of The Times and society. It is also an important topic for ideological and political educators in colleges and universities to explore and study.

3. The Significance of Integrating the Excellent Traditional Chinese Culture into the Ideological and Political Education in Colleges and Universities

Many of Plato's educational thoughts are covered in the Republic. In the Republic, Plato presents what he considers to be his ideal vision of a complete educational system. Through the in-depth thinking of Plato's educational thought and the combination of contemporary educational work in various stages, this paper reveals the important enlightenment of Plato's educational thought in the Republic to contemporary education:

3.1. Excellent traditional Chinese culture is the source of vitality of ideological and political education in colleges and universities

Ideological and political education in colleges and universities is different from other professional courses. The purpose of ideological and political education is to train students to become firm believers in Marxism and to think and solve problems with Marxist thought. The ideological and political education for college students can be divided into two main aspects. The first aspect is to educate students through classroom teaching. In the process of educating students in class, schools need to consider students' subjective interests and combine theoretical knowledge with practical reality to conduct teaching. China's excellent traditional culture, with its 5,000 years of precipitation and accumulation, can provide inexhaustible resources for ideological and political education. In addition, although China has gone through a history of 5,000 years, many excellent traditional cultures in China have never been out of date, but are constantly updated, guiding people on the right path. The second aspect is to guide and educate students in their daily life. The excellent traditional culture of China has been immersed in the bones of every Chinese people after the training of time, and it can be immediately revealed as long as it is stimulated. In the daily life of college students, the school should carry out ideological and political education for college students through traditional culture. Traditional festivals are also an integral part of China's excellent traditional culture. Through traditional festivals, students can not only understand the customs of the ancients, but also feel the influence of various cultural thoughts of the ancients.

3.2. Ideological and political education in colleges and universities can carry forward the excellent traditional Chinese culture

Excellent traditional culture can provide a source of vitality for the ideological education of college students, and ideological and political education can also promote the inheritance of fine traditional Chinese culture by college students. The two are mutually reinforcing and inseparable. The excellent traditional culture of China has become the label of the Chinese people and the unique spiritual home of the Chinese people. The influence of fine traditional culture on the people is in line with the requirements of ideological and political education. For example, the spirit of justice, dedication, patriotism and self-strengthening in the excellent traditional culture are all requirements for contemporary college students. However, in the current colleges and universities, many departments and schools pay too much attention to the education of professional courses and neglect the education of traditional culture. As a result, many college students do not have a comprehensive and profound understanding of traditional culture, and even worship foreign thoughts appear in some college students. Integrating all the excellent traditions and national culture into the ideological and political classes of college students can greatly improve the understanding of and attention to the excellent traditions and national culture in colleges and universities, and promote college students to have a deeper and more comprehensive understanding of the traditions and national culture, so as to achieve the goal of developing and carrying forward the excellent traditions and national culture.

3.3. Cultivate the comprehensive quality of college students

Having the basic moral quality is the most basic requirement of the society for a person. In the process of educating college students, it is necessary to focus on cultivating them to form good moral values. The excellent traditional culture of China provides various models and requirements for the moral education of college students. Among them, the spirit of patriotism is the fundamental requirement of quality cultivation. Patriotism is also an important spirit in the fine traditional Chinese culture and is a basic component. Since the unification of the six States in the Qin Dynasty, the Chinese nation has permanently become a whole. Although China has experienced many invasions and wars for more than two thousand years, many people with noble ideals have emerged in each dynasty. They all regard the recovery of the Central Plains and the reunification of the motherland as their lifelong dream. So that the spirit of patriotism into the blood of every Chinese. As the future of the country, college students must develop a strong spirit of patriotism and strive to maintain the harmony and peace of the country.

4. The Problems Existing in the Integration of Excellent Traditional Chinese Culture into Ideological and Political Education in Colleges and Universities

4.1. Lack of emphasis on traditional culture in colleges and universities

In the college education in China, most schools pay attention to professional and vocational skills training, but neglect the education of traditional culture. In fact, a large part of the reason for the lack of traditional culture education in colleges and universities is that colleges and universities do not pay enough attention to it. On the one hand, some colleges and universities do not attach importance to the education of traditional culture; On the other hand, some colleges and universities have noticed the need to strengthen the education of traditional culture, but they have not implemented the correct method, and can not really solve the problem of insufficient attention to traditional culture education.

4.2. College students' cognition of traditional culture is low

Excellent traditional culture is the precious spiritual wealth of China. As a group with higher education level, college students have experienced a learning process of more than ten years. They should be able to form a relatively complete cognition system of traditional Chinese culture, but most college students have a serious lack of cognition of traditional culture. Many students do not know the ideological system of some famous thinkers in history, such as Mencius, Xunzi, Zhuangzi, Wang Yangming, etc. Many of them can not recite some very classic works. Even some characters that do not appear often are unknown to many students. The reason why traditional culture is important is that it contains many virtues. However, the influence of traditional virtues is decreasing among college students nowadays. There are more contrary moral concepts, such as egoism and money worship among college students.

4.3. College students' cognition of traditional culture is low

With the advancement of economic globalization, cultures of different countries are constantly influencing each other, and many foreign cultures have flooded into our society. Many European and American festivals have exerted a huge impact on our society, the most obvious example is Christmas. It is very common to celebrate Christmas in modern Chinese society, especially in universities. With the increasing social pressure, important traditional Chinese festivals such as the Spring Festival and Mid-Autumn Festival have become tools to make money in the eyes of many people, losing their meaning.

Some festivals that are not listed in the statutory holidays, such as the Double Ninth Festival, have a weak existence, and some college students can't tell the origin and customs of these festivals.

5. Epilogue the Path of Integrating Excellent Traditional Chinese Culture into Ideological and Political Education in Colleges and Universities

5.1. Incorporating traditional culture into the ideological and political education courses of college students

First of all, colleges and universities can offer a university-wide course on traditional culture and general knowledge, combine traditional culture and ideological and political education courses, set up a separate course on excellent traditional Chinese culture, or integrate excellent traditional culture into students' ideological and political education courses. Secondly, opinions should be widely solicited from the whole school, and students should be asked about their attitudes towards various traditional cultures, and courses should be set up that are of general interest to students; Teachers should be required to set up elective courses related to traditional culture according to their major. If the number of applicants for a course exceeds a certain number, money and time will be allocated to help teachers set up corresponding courses. In this way, students' interest in traditional culture and sense of identity will be improved, and their cultural self-confidence will be cultivated. Thirdly, schools should encourage students to actively set up organizations and associations to promote traditional culture and launch corresponding media magazines, so as to introduce traditional culture into their minds through various forms that students like.

5.2. Introducing traditional culture into campus construction

Excellent traditional culture is a living culture, not a dead culture. In addition to highlighting the importance of traditional culture in classroom teaching, the influence of traditional culture should be spread to the whole campus to create a strong and warm atmosphere of traditional culture. First of all, colleges and universities should carry out a variety of traditional culture education activities to create an atmosphere for all students to learn traditional culture. Such as setting up large-scale lectures, seminars, seminars, etc. In addition, various types of traditional culture activities are also important means to promote traditional culture. Schools can set up their own traditional culture knowledge competition activities after the poetry conference, or they can jointly hold various activities with other sister schools. Secondly, the methods of educating students in daily life are generally themed

group day activities and class meetings. Traditional culture and themed group day activities should be combined to increase the proportion of traditional culture-related activities in the activities. Finally, it is necessary to strengthen students' attention to traditional festivals, and popularize the customs of traditional festivals to students by setting up special lectures before festivals. A variety of activities are held on the day of the festival to create a festive atmosphere.

5.3. Using the Internet to open new positions to promote traditional culture

The Internet is an important means of disseminating all kinds of knowledge in today's era. In the process of integrating excellent traditional culture with ideology and politics, colleges and universities should not only focus on traditional education and teaching means, but also combine the Internet with traditional education means. In the classroom teaching of traditional culture, more multimedia should be introduced to enhance students' concentration in class through the use of multimedia to play pictures, videos, courseware and other forms, and transform boring theoretical knowledge into interesting performance pictures, so as to enhance students' interest in learning and understanding of traditional culture and reduce students' difficulty in understanding. Schools should also actively exert the influence of Internet public opinion, set up special columns on the school official website and new media platform to publicize the contents of traditional culture and ideological and political education, and call on teachers and students to carry out active publicity to expand the influence of the school.

6. Conclusion

To sum up, in the process of continuous development, China does not forget to look back at the past. In recent years, the country attaches more and more importance to traditional culture. College students are the most impor-

tant preparatory army and fresh force in China's social construction, so it is very important to strengthen various education for college students. Due to the similarities between excellent traditional culture education and ideological and political education, the two can be combined. Therefore, schools should offer traditional culture education courses as part of ideological and political education. In addition, emphasis should be placed on the education of traditional culture in the daily educational activities for students, by carrying forward traditional festivals, setting up various theme education and theme group activities to strengthen the education of traditional culture for students.

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A Study of Rousseau's Thoughts on Children's Education

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Abstract: In the new era, the people's code of conduct, talent training program and educational value orientation have undergone important changes. Rousseau is an important figure in the history of western education in the 18th century. "Voltaire ended one era, while Rousseau began another." Rousseau's view of children's education is embodied in his *Emile: On Education*, which transcends his time and comes to the "new era", which is of great practical significance to the children's education in the People's Republic of China.

Keywords: Rousseau; Children's education; Pedagogy; Emile

1. Overview of Rousseau's Thoughts on Children's Education

Rousseau's thoughts on children's education were formed and developed in the course of the French Enlightenment, and became mature day by day. In the first three volumes of *Emile*, Rousseau focuses on the educational thought of *Emile* during the whole childhood, which he imagined. In discussing his view of children's education, Rousseau compared human nature to a young sapling growing on the roadside. The task of education is to take good care of the sapling, fertilize and water it, and protect it from the ravages of fate. However, the progress of education can not be random, but should rely on the development process of children's nature and carry out education in stages.

1.1. Background of Rousseau's thoughts on children's education

In the 18th century, various natural disciplines began to be independent, and the complicated and diverse natural science knowledge and technology began to spread in France and achieved certain achievements. The progress of science and technology improved people's material living standards and provided a scientific premise for the emergence of the Enlightenment. However, people's natural attributes have been destroyed in the development of society, economic prosperity and social moral level develop in inverse proportion, the rapid development of large-scale machine industry followed by human alienation, the original harmony between man and man, man and society, man and nature has been destroyed. Therefore, Rousseau explored the natural nature of human beings, found children as an independent and special individual, and adhering to the "child-oriented" education

concept, thus creating a precedent for the subsequent academic research on children and children's education.

1.2. The theoretical basis of Rousseau's thoughts on children's education

The theory of the goodness of nature is another important theoretical basis of Rousseau's thoughts on children's education. He mentioned in his letter to Christopher: "The fundamental principle of morality that I have stated in all my writings and in the clearest way that I can achieve is that man is a being who is inherently good and loves justice and order; That there is no original depravity in man; The original movement of nature is always right", which shows that Rousseau believed that human nature is inherently good, if left to develop naturally and freely, there will be no evil part of human nature. In *Emile*, Rousseau also pointed out: "In the depths of our souls we are born with a principle of justice and morality; Although we have our own standards, but we judge our own and other people's behavior is good or bad, we must be based on this principle, I call this principle as conscience", in Rousseau's opinion, human beings are good, conscience is also the principle of talent, but because of the existence of the society in the dirt makes people's good since children have been harmed. This fundamentally negates the theory of original sin and the theory of sexual evil in religious teachings. Rousseau believed that although the real society is full of sinful people, such evil is not the nature of human beings, but the degeneration caused by human beings themselves in the development of civilization and society. Rousseau's view that "everything that comes from the creator's hand is good, but when it comes into man's hand, it all becomes bad" indicates that he ascribes evil to society rather than individuals. "There is nothing inherently evil in the human mind". Rousseau's thought on children's education assumes the

goodness and conscience of children. Due to the negative impact brought by the rapid development of social civilization, Rousseau believes that in order to maintain the good nature of human beings, it is necessary to protect this kind nature from childhood, so as to protect it from the influence of social dirt. At the same time, to ensure that children naturally realize their own perfection and development. The good human nature advocated by Rousseau in the theory of good nature starts from the natural nature of human beings. He understands that human beings can only get abstract human beings from the theoretical presupposition that human nature is good.

2. The Main Content of Rousseau's Thoughts on Children's Education

2.1. The content of Rousseau's thoughts on children's education

1. Physical Education

Rousseau believed that a strong body is the foundation of all careers, the source of personal happiness, and the tool of personal wisdom. To this end, he emphasized the maintenance and exercise of the body to promote the healthy development of children's bodies and enhance their physique. From the day a person is born, he should have a reasonable diet, sleep and play, and receive correct and appropriate physical education. Rousseau's thought of physical education mainly includes two aspects: physical maintenance and physical exercise.

2. Intellectual education

Through physical education and sensory education, children's bodies and sensory organs have been exercised and are already equipped for intellectual education, "because their bodies and sensory organs have been developed, their sensory experience has been accumulated, and the curiosity to seek knowledge has been stimulated". Rousseau's so-called intellectual education does not systematically teach children scientific and cultural knowledge, but focuses on cultivating children's interest in learning, emphasizing that the knowledge to be learned by children must be useful and can improve children's intelligence. However, Rousseau strongly opposes requiring children to learn the knowledge of interpersonal relations that cannot be understood by him, and attaches equal importance to listing fables. Rousseau refused children to learn fables.

3 Educate the senses

With the growth and development of children's bodies and the development of their language ability, their sensory ability has also developed to a certain extent, so it is possible to start sensory education for children. Through the use of sensory organs, such as eyes, ears, nose, mouth, etc., perceptual experience can be gained. Children always have senses before ideas. "As all things enter into man's mind through his senses, his first understanding is

also an emotional understanding, and it is on this emotional understanding that the rational understanding is formed." Our first teachers are sense and experience; our senses are the first means by which we perceive the world and acquire knowledge.

2.2. Rousseau's method of educating children's thoughts

In the 18th century, France was a country with extremely harsh feudal autocratic rule. In the field of education, the traditional classicism dominated, which made school education become a castle in the air, which seriously damaged the normal development of people's mind. The Catholic Church ruled the school education, and the teaching method seriously deviated from the order of children's physical and mental development, which severely suppressed children's personality development. For this reason, Rousseau formulated a set of educational methods to educate his imagined students to love and love according to the natural nature of human beings, including the following aspects.

1. The game method

Children are lively and active, good game, to "love children, help them play, make them happy." Through games, children's education is easier for them to understand and accept. In the process of sensory training to Emile, Rousseau repeatedly used the way of playing games to achieve the purpose of education. Games are a way for children to contact the world and others. Education through games is not only in line with children's nature of love to play, but also happy for them to accept, and can achieve a multiplier effect.

2. Model method

Children have a strong ability to imitate, parents or teachers must do a good role model in front of children. In addition, children due to nature, may produce all kinds of naive, even whimsical ideas, teachers and parents should be careful not to talk about children's innocent words and deeds in front of children, even if they want to talk, they should avoid children. As a qualified companion, we should be strict with ourselves, and at the same time, we should know how to protect children, and be the benchmark of children's behavior and a good mentor and friend in life.

3. Follow natural law

In the process of raising children, some mothers care and love their children too much and go down a path that deviates from nature. However, what these mothers fail to see is that "by immersing their children in a life of tenderness and comfort, they are actually preparing them for suffering; By opening the pores of their bodies, they will be invaded by diseases to which they will grow up to be victims." The right thing to do is to follow nature and "let them move freely, constantly, according to their own nature." Parents should teach their children to face the

winds and rains of nature, just as in Greek mythology, Thetis immersed his son Achilles in the river Styx, so that he would eventually become a bulletproof, brave warrior.

4. Naturalistic observation

Children are very curious, and the answers they seek to objects of curiosity are more readily obtained by thorough observation in nature than by reading a stereotypical textbook. Rousseau believed that "children should not be made to review this and that; their only lesson is to study and practice in the simplicity of nature." In nature, the first thing that will arouse children's curiosity is the earth, that is, the environment in which they live and live, followed by the sun.

3. The Connotation and Value of Rousseau's Thoughts on Children's Education

Children's education is an extremely important, urgent and long-term strategic task in the process of realizing the great rejuvenation of the Chinese nation, and a long-term mechanism for training qualified socialist builders and reliable successors. Rousseau's educational thought provides important reference and inspiration for the development of children's education in the People's Republic of China. Exploring the ideological connotation of Rousseau's values of children's education and constructing the value of Rousseau's values of children's education will help to build a new territory of children's education in the new era.

3.1. Ideal construction of training objectives

One is about the historical retrospection of the cultivation of natural man. In Europe in the 18th century, the social reality of the growing capitalist economy, strict hierarchy and intensified social contradictions laid a historical narrative for Rousseau's concept of children's education. In this social sequence, education was completely controlled by the Catholic Church. Rousseau wrote *Emile* in 1762, which was a cry of *The Times* for the cultivation of natural people and a challenge to the feudal education system at that time. Rousseau favored the cultivation of natural persons, which was a powerful spiritual weapon to understand *The Times* and surpass them. The second is about the formation principle of cultivating natural man. Rousseau's ideal design of children's education is to cultivate natural man: "The natural man lives entirely for himself, he is a unit of number, an absolute unity, related only to himself and his fellow man." It is a natural, free and independent individual, conforming to the natural nature, and a natural civilized man with the harmonious and healthy development of human body and mind. The cultivation of natural man expresses the ideality of Rousseau's theoretical description and logic of children's education. The third is to cultivate the humanistic implication of natural man. "In the natural order, all men are

equal, and their common duty is to acquire human character. Whoever is well educated in this respect will not lack the character commensurate with him." Only the "natural person" who can adapt to social life can maintain his good nature, adapt to the goals of society, and finally fulfill his social duties. This humanistic theory, starting from science and practice, is the primary driving force for cultivating natural persons.

3.2. Pure speculation of spiritual essence

The first is the logical starting point of child-oriented theory. Taking children as children is the basic point of view in the concept of natural education, creating a new paradigm for children's education, which is an important theoretical achievement of Rousseau. "In the order of all things, human beings have their place; In the order of life, childhood has its place; and that men should be regarded as men, and children as children." This is the priority of education, which should give them a simple and innocent childhood, and should not suppress the childlike and innocent nature of children. The second is the profound foundation of the child-centered theory. Rousseau's concept of children's education is liberated from the spiritual shackles of religion, takes nature as self-positioning, gives full play to children's subjective initiative, lets children conform to the natural nature of development, in line with children's age bearing range, follow and obey the nature of children, comply with the nature of children, so that children in the best, the most natural life to learn and grow. The third is the rational representation of the child-oriented theory. Education according to the order of children's development is an important basis of Rousseau's view of children's education: "Every age, every stage of life, has its appropriate degree of perfection, has its own unique maturity period." This is a scientific and empirical explanation of the developmental period of children. Rousseau has always opposed the feudal education that controls the order of children's development. He believes that children have no reason and no ability to bear the complex needs of adult society, and they should have a happy childhood life.

3.3. The value purport of deep logic

First, the thought essence of independent development. Attaching importance to children's independent development is the gist and basis of Rousseau's concept of children's education, highlighting the characteristics of children's independent development. Children should pursue truth from real life experience and respect children's free development. Therefore, he called for the interpretation of education in natural life and the promotion of common learning activities. From the development of teaching, anything done is in fact an impression taken from the outside world to ensure that the students who are co-active in teaching acquire useful knowledge and

skills. The second is the basic spirit of independent development. Independent development is one of the deep theoretical core of Rousseau's concept of children's education, and it is an important idea to educate and shape children. In Rousseau's concept of education, knowledge is not knowledge itself, but children's curiosity and interest in natural things. Rousseau attaches great importance to the development of perception and sensation, advocating that sense can be obtained through contact with nature, and knowledge can be obtained, understood and mastered through the impression of external things. Third, the theoretical character of independent development. The theoretical character of independent development gives children's education attraction and vitality, integrates the scientific spirit with the humanistic spirit, makes the educational theory more correct, more vivid and more abundant, and meets the needs of society is the basic requirement of education. At the same time, meeting the physical and mental development needs of children is the starting point of education, just as the two

points form a straight line, between the social needs and children's development constitutes the educational process.

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Research on the Collection and Application of Internet Science and Technology Information

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Abstract: In view of the problems in the development of Internet science and technology information in China, this paper expounds and thinks about the historical mission and strategic positioning of the new era, and tries to put forward the idea of a new path for the development of Internet science and technology information collection and application.

Keywords: "Internet +"; Scientific and technological intelligence; Innovative models

1. Introduction

After more than 60 years of "polishing", China's scientific and technological information work has reached a relatively mature scale. From the perspective of application transformation, the development of scientific and technological information in China is in the stage of decision-making knowledge service. From the perspective of informatization, the development of China's scientific and technological information has entered the era of intelligence 3.0. The above two stages of division, have introduced the concept of big data, big data is an important feature of the "Internet +" era, "Internet +" as an important strategy proposed by the country, scientific and technological information work will inevitably deepen the integration with Internet technology from multiple angles and dimensions, innovate service models, and provide decision-making support for national development.

2. Collection of Internet Scientific and Technological Information

Internet scientific and technological information collection refers to the process of purposefully obtaining materials through certain channels according to work objectives or needs, with the help of Internet technical means, under reasonable and legal circumstances.

2.1. Objects to be collected

In the era of intelligence 3.0, big data resources are the production factors of "Internet +", and the essence of Internet science and technology information collection is big data, so the essence of Internet science and technology information work is to mine the available information in big data. The theme of research in the "Internet+" era is to transform the existing big data resources into value as much as possible, so the theme of Internet science and

technology information can be understood to a certain extent to make the existing big data generate intelligence value. The sources of big data can be divided into three levels: automatically generated data, actively generated data, and passively generated data. The types of data structures are further divided into unstructured, structured, and semi-structured. With the development of technology, the above-mentioned data has gradually increased from terabytes to petabytes, creating a wealth of original information resources for Internet science and technology information work.

2.2. Collection methods

Internet-based collection methods include search engines, digital libraries, databases, professional websites, social network groups, etc. Specific content can be gleaned through search engines, access to databases, and websites. At present, literature is the main source of scientific and technological information, and the object of scientific and technological information collection can also be simplified to scientific and technological literature. There are three main ways to collect scientific and technological literature: retrieval according to professional service platforms, retrieval through Internet search platforms, and retrieval through professional databases. Drawing on technology-driven theory, some scholars have explored the automatic collection of Internet scientific and technological information, and expounded the technical route of automatic acquisition and intelligent analysis platform. Some scholars have innovated and upgraded the automatic intelligence collection model by optimizing the search engine, expanding the search terms and clustering the search results for the purpose of improving the search efficiency. At present, it has become a trend to integrate artificial intelligence technology with Internet science and technology information collection, and the Internet

science and technology information mining system designed by Fu Chang integrates the concept of artificial intelligence and creates an active search engine system model based on the knowledge base.

3. Application of Internet Science and Technology Information

The Internet has a large amount of information, which has become an important source of intelligence for intelligence departments, and has also made Internet science and technology information gradually have the characteristics of "whole government investment", and Internet science and technology information consulting services have come into being. With the development of Internet science and technology information in many fields such as national security, public management, and commercial competition, Internet science and technology information consulting services have become a particularly critical link. The essence of Internet science and technology information consulting work is a kind of processing, production and transmission of scientific and technological knowledge, is a process of combining the knowledge that has been spread and stored by mankind with the modern intellectual knowledge that has not yet been developed to create new knowledge, and through continuous improvement and expansion of the future direction and functional application of the field of Internet science and technology information consulting, the indirect value and production vitality of China's Internet science and technology information service can be effectively enhanced. According to the survey of relevant institutions, most researchers believe that the essence of Internet scientific and technological information consulting is information transmission, which is to raise the needs and related problems of service objects, and realize intelligence transmission by providing accurate scientific and technological information in a timely manner; There are also researchers who believe that Internet science and technology information consulting is a special form in a variety of forms of information services, Internet science and technology information consulting for enterprises, scientific research, technology departments and other objects to provide risk prediction and other services, its content is summarized as: intelligence guidance consultation, facts and data consultation, literature retrieval consultation, reading consultation, etc. With the development of the country's economic construction, the Internet science and technology information consulting service also needs to be constantly updated. Therefore, Internet science and technology information consulting should also cover strategic decision-making consulting, technology market consulting, and technology dynamic consulting. Xiao Ruilan [summarizes the functions of Internet science and technology information consulting services as: transmission, communication, transformation, re-

search, decision-making and planning. At the same time, in order to ensure that the Internet science and technology information consulting services have a stronger pertinence and advancement, Tang Wenmin proposed to combine the domestic scientific research trends with the latest foreign scientific research achievements, scientific and technological organizational forms, and scientific and technological management methods in order to provide the most valuable predictive information. In addition, the realization of pertinence and advancement also depends on the accumulation of data and the smooth flow of information channels.

4. The Development and Innovation Model of Internet Science and Technology Information

Restricted by many factors, China's Internet science and technology information work still has great limitations, and traditional work still accounts for most of the Internet science and technology information work, with few comprehensive reports, few application developments, less data mining, uneven personnel structure, and backward management methods. In addition, China's Internet science and technology intelligence work lacks core technology, and the development momentum and relevance are insufficient. In the information age, Internet science and technology intelligence must deepen the integration with Internet technology, realize the transformation from artificial to artificial intelligence, realize the transformation of intelligence talents from single to complex, and the transformation of intelligence services from single to diversified development.

4.1. Transformation from Artificial Intelligence

At present, the amount of data is growing rapidly at an unprecedented speed, and if Internet intelligence work wants to adapt to the development of the times, it needs to run through the entire intelligence work process from collection, processing, analysis, integration and distribution, etc., to realize the transformation from artificial to artificial intelligence. In the process of information collection and acquisition, relying on cloud computing and artificial intelligence technology, the automatic and accurate data collection is realized through intelligent algorithm screening and analysis, which greatly improves the efficiency of data acquisition. Data cleaning and data storage technologies also need to evolve in tandem. In processing analytics, analysts receive processed data with the help of intelligent applications, creating the possibility to generate valuable insights. Leverage artificial intelligence, including deep learning, to help analyze data, integrate intelligence into analysis in a visual mode, and continuously enhance analysts' understanding of the data. Intelligence prediction is realized in the provision of intel-

ligence products, and through the deep integration of artificial intelligence technology, intelligence products are transformed from task-accepting to analysis and prediction. At the same time, through information mining and multi-modal intelligent correlation analysis, cloud computing, artificial intelligence, machine learning and other technologies are used to obtain established facts, the dynamics of things and possible future development from massive data, and realize intelligent intelligence services for prediction and prediction.

4.2. The transformation from traditional intelligence workers to compound

Talents Internet science and technology intelligence work is a cross-field and interdisciplinary work, which not only requires practitioners to have professional knowledge and skills in information management, but also to master the knowledge of humanities and social sciences, economic science and technology, etc., and also needs to have a high sensitivity to information, certain strategic thinking and sufficient strategic analysis ability. At present, traditional institutions have the problem of aging talent structure. Therefore, high-precision and professional training should be used to gradually improve the intelligence analysis and processing ability of intelligence personnel under the new situation and the service awareness in the new era. At the same time, it is necessary to establish a sound talent system, introduce high-level, high-level, and high-quality talent, and gradually change the talent structure to be highly professional, energetic, and innovative. In the era of intelligence 1.0, translation is the main intelligence business, and intelligence work mainly requires foreign language translators and analysts. In the era of intelligence 2.0, more attention is paid to the technical expertise of intelligence personnel, and intelligence work mainly requires experts in a certain field. In the era of intelligence 3.0, in the case of the closer integration of big data and artificial intelligence, the traditional single type of intelligence talents can no longer meet the needs of the work, and the talents who are proficient in intelligence, computer knowledge, big data knowledge, and artificial intelligence technology will become leaders.

4.3. The transformation from simplification to diversification of intelligence

Services Value increment and hierarchy are the two major characteristics of intelligence services in the "Internet +" era, therefore, when carrying out intelligence service work, we can start from the direction and means of service. In the direction of service, with the help of a new concept to create a "full chain" service system, and constantly expand the space and extend the service chain; In terms of service means, with the help of new technologies, we will gradually build a diversified network service platform, and implement the concept of combining concentration and distribution. At this stage, the Internet science and technology information work also needs to return to the needs and experience of users, and provide highly integrated and high-level information as much as possible.

5. Conclusion

In the current era of big data, Internet science and technology intelligence, whether it is intelligence agencies or services, has ushered in great changes and challenges, and transformation and seeking new development have become the top priorities. In the new era, it is not only necessary to grasp the characteristics and change the way of thinking, but also to give a new definition to the core competitiveness of Internet science and technology information services, provide diversified services with new technologies, new formats, high strength and multiple resources, and open up a new road for the development of Internet science and technology information.

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Innovation Strategy of Scientific and Technological Information Service in the Context of Big Data

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Abstract: In the context of big data, with the rapid development of information technology and network technology, the big data of scientific and technological information is growing exponentially, and the response to the problems of collection, storage, transmission, processing mode and sharing of massive data has become a new challenge for scientific and technological information service. Based on this, this paper analyzes the challenges faced by scientific and technological information services in the context of big data, and puts forward effective measures for the development of scientific and technological information services and innovative service models for scientific and technological information services.

Keywords: Big data; Scientific and technological intelligence

1. Introduction

Science and technology information services the rapid development of mobile Internet, Internet of Things, cloud computing and artificial intelligence has led to the widespread use of intelligent terminals, etc., from time to time to record people's "data footprints", big data has penetrated into all walks of life, and the world is profoundly changing. As a new strategic resource, big data has been continuously increasing its contribution to social and economic development, and has become an important resource and means to promote national competitiveness together with human resources and natural resources. As of 2020, there are more than 10,000 members in 145 countries. In the big data environment, the new source of knowledge for scientific research is mainly data-driven, which brings more benefits and greater value to scientific research, and scientific researchers rely more on the exchange, processing and use of information and data than before. However, scientific research data is developing and growing exponentially, and the diversification of data sources and data formats has brought great challenges to scientific research data management.

2. Challenges Faced by Scientific and Technological Information Services in the Context of Big Data

First of all, in the context of big data, with the continuous generation of data from the Internet, social networks, the Internet of Things, scientific research, etc., the scale of data has grown rapidly. The emergence of open government data, open access to data from research institutions, and business models of data marts have exacerbated the

weakening of the role of science and technology intelligence agencies as data hubs. This also means that users have more channels to obtain scientific and technological information than before, which brings certain challenges to the information resource services of scientific and technological intelligence agencies. In addition, for the explosive growth of various types of data in the era of big data, on the one hand, more effective massive data storage capabilities are needed to cope with the comprehensive application of resource storage and storage system of information resources in scientific and technological information research. On the other hand, it is necessary to quickly and efficiently analyze and process these "starry sea" digital resources, dig deep into the tacit knowledge contained in them, and truly discover their potentially valuable intelligence. Therefore, "big data" puts forward higher requirements for the physical storage space and software facilities of scientific and technological information institutions, and most of the previous data is mainly structured data, and relational databases are generally used as tools, which are easier to process through computer equipment and software. However, the development of the data world has produced a large amount of unstructured data with different structures such as size, format, and content, and cannot be framed with a certain structure, which brings great challenges to how people can process data easily and quickly.

3. Effective Measures for the Development of Scientific and Technological Information Services in the Context of Big Data

3.1. Strengthen the construction of data resources for scientific and technological information services

In the era of big data, scientific data especially has obvious potential value and exploitable value, and is value-added in the process of wide application. Therefore, the construction of data resources is an indispensable part of the development of scientific and technological information services under the new situation. On the one hand, expand the collection and aggregation of multi-source scientific and technological intelligence resources. One of the important characteristics of data in the context of big data is the variety of data sources, that is, the "variety" in 4V, of course, big data of scientific and technological information is no exception. Some scientific data involves hundreds of parameters, and its complexity is not only reflected in the data sample itself, but also in the interaction dynamics between multi-source heterogeneous, multi-entity and multi-space. Therefore, the heterogeneous data from multiple sources needs to be fused, and a variety of data analysis methods should be integrated to mine the implicit correlation between resources through the fusion of multi-source data. By bringing together information with different data structures obtained from different channels and using a variety of collection methods, a data collection with a unified format and oriented to a variety of applications is formed, which is called multi-source data fusion. At the same time, it is important to pay attention to the important issue that the collected data should be based on the analysis goal, correctly collect high-quality data that serves the established analysis goal, and further data processing and processing to meet the growing personalized needs of users. On the other hand, the sharing service of scientific data should be strengthened. The rapid development of new technologies has driven a sharp increase in scientific data, and future scientific research activities will be driven by scientific data. The collection and integration of scientific data requires a lot of manpower, material resources and time to complete, so the sharing service of scientific data is of great significance to researchers and research institutions. The sharing service of scientific data can maximize the use of existing scientific data, and even if the utilization rate of scientific and technological information resources increases, the rapid growth of knowledge can be realized, which is conducive to the output of scientific research results.

3.2. Pay attention to the timeliness of data processing

In the Internet era, users have higher and higher requirements for the timeliness of information processing. With the development of science and technology, the large number of various types of data generated has increased exponentially, gradually exceeding the processing capacity of traditional relational databases, and the relationships and rules existing in the data are difficult to discov-

er. In the face of diverse, complex data sources and data volumes, as well as a large number of redundant and irrelevant data, it is necessary to build a general big data real-time processing technology platform, establish a data screening mechanism, select appropriate data tools to filter out a large number of useless data, complete the screening of effective data, and select a suitable big data real-time analysis and processing mode according to the characteristics of intelligence problems, so as to obtain effective and accurate data.

3.3. Development of personalized and professional in-depth scientific data services

In the big data environment, with the rapid development of information technology, all kinds of scientific research elements are increasingly moving towards informatization and digitization. From the perspective of scientific and technological information services, only through in-depth understanding and grasp of users' needs can we meet their needs and truly reflect the value and role of intelligence services. The work of scientific and technological information services should attach importance to this aspect, regard user needs as the core focus of scientific and technological information services and products, clarify the various scenarios in which users use intelligence products and services, and accurately and timely analyze and grasp user needs, so as to maximize the value of scientific and technological information and win the trust of users. The content of scientific and technological information services should be shifted from traditional literature and information services to digital knowledge services, providing more information analysis and knowledge discovery, continuously enhancing the degree of service, and attaching importance to personalized services and in-depth services based on scientific research.

4. Discussion on the Innovative Service Mode of Scientific and Technological Information Work in the Context of Big Data

4.1. Carry out intelligent scientific and technological information services

In the face of the rapid development of information technology, scientific and technological information services need to be further developed and innovated. It not only requires the effective organization of the digital resource environment, the flexible organization of various information resource systems, and the knowledge mining, calculation, experiment and evaluation, but also requires intelligence personnel to have a deep understanding of the structure and law of information resources, skillfully apply data mining and analysis tools, build user portraits, and form a data-driven, user-oriented intelligent scientific and technological information service model. True intelligence is a combination of intelligent technology and the

wisdom of intelligence experts. Intelligent scientific and technological information services emphasize people-oriented, emphasize the planning, adjustment and design of service content and service methods based on the needs of scientific research users, and provide high-quality scientific and technological information services with the help of software and hardware facilities such as resources, tools, methods, and professional knowledge. Intelligent scientific and technological information services have the characteristics of knowledge sharing, personalized needs, and precise services. On the basis of the construction of the user behavior model of scientific and technological information based on ontology data (the construction of behavioral ontology database), the overall scheme of data-driven scientific and technological information intelligent service needs to be further realized from three aspects: ontology database construction, user preference and demand mining, and ontology-based scientific and technological information intelligent service push.

4.2. Build a three-dimensional all-round service system

Comprehensive application of big data and cloud computing technology, adhere to the principles of relevance, continuity and completeness, build a comprehensive and three-dimensional service system, compatible with a wider range of heterogeneous data sources in a larger data environment, technically realize real-time dynamic and full-process service of user needs, collect complete data information in a timely manner, carry out uninterrupted continuous collection of data, and solve practical problems of users. Strengthen the construction of multi-access methods for mobile terminals, such as the use of WeChat official accounts to develop WeChat message

services, new mobile app platforms, etc., so that users can obtain the information services they need anytime and anywhere.

5. Conclusion

In the era of big data, with the rapid development of the Internet, cloud computing, intelligent computing and other technologies, the service content, service mode and development mode of scientific and technological information services have brought unprecedented challenges. To this end, the work of scientific and technological information services should open up new paths on the basis of traditional services, seize the opportunities and challenges of the era of big data, and adopt effective measures in terms of service space, service means, service methods and contents, service effects, and user services, so as to break through traditions, advance with the times, and further and deeply promote the effective development of scientific and technological information services.

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Research on the Embedded Service Model of Scientific and Technological Information in the New Era

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Abstract: In order to adapt to the new development and new changes of scientific and technological innovation under the new situation, a new form of scientific and technological information service, namely embedded service, is proposed. Based on the embedding theory, this paper analyzes the connotation of the embedded service of scientific and technological information, and constructs the framework of the embedded service system of scientific and technological information. From the perspective of three different dimensions of structural embeddedness, relational embeddedness and situational embeddedness, different embedded service models of scientific and technological information are proposed.

Keywords: Scientific and technological information ; Embedded services ; Embedding theory

1. Introduction

Since the 21st century, great change, great adjustment and great development have gradually become the main tone of the times. A new round of scientific and technological revolution is ready to start. China is in the period of economic transition, while the world economic pattern is facing reconstruction. The field of science and technology has become the main battlefield for the development and competition of all countries in the world. The U.S. 'small courtyard high wall' technology blockade strategy against China has become increasingly fierce. In May 2021, the United States launched the "US Innovation and Competition Act," emphasizing the need to consolidate the global leadership of US technology, prevent technology spillovers, and strengthen intellectual property protection. Through scientific and technological information services, it guides the government, enterprises and other innovation entities to formulate innovation policies, predict new technology trends, and optimize innovation activities, thereby reducing the risk and cost of scientific and technological innovation and improving innovation efficiency and effectiveness. In line with the development of the new era, the scientific and technological information service model should also be adjusted to support the scientific and technological innovation work under the new situation. As a new form of scientific and technological information service, embedded service can adapt to the new development and new changes of scientific and technological innovation, but it still lacks specific and in-depth research. Based on the idea of embedding theory, this paper discusses the connotation, foundation, system framework and mode of embedded

service of scientific and technological information, and puts forward corresponding promotion strategies in order to guide the practice of scientific and technological information service.

2. He Connotation of Embedded Service of Scientific and Technical Information

The embedded service of scientific and technological information refers to the whole value chain of the deep participation of scientific and technological information and the service of scientific and technological innovation. It sets up a special information service team, participates in different value node activities such as creative generation, R & D design, achievement incubation, and achievement industrialization application, and actively perceives and predicts intelligence needs, provides intelligence products and services in a timely manner, helps solve the problem of innovation and development, maximizes the value of innovation, and thus realizes the important leading role of scientific and technological information. The embedded service of scientific and technological information is an active and collaborative innovation mode of information service. The earliest embedded science and technology information service model in China appeared in 2066. At that time, the National Science Library of the Chinese Academy of Sciences formed six subject teams and four regional teams, and subject librarians were embedded in scientific research institutes to carry out information services. The development of information service work no longer only depends on the user's service request, but gives full play to the enthusiasm and initiative of the information service team and personnel, participates in the information de-

mand problem as a collaborator, and closely focuses on the formation, analysis and solution of the user's scientific and technological information demand, and carries out the whole process, systematic and professional information service.

Compared with the traditional scientific and technological information service, the embedded service of scientific and technological information emphasizes the collaborative relationship between scientific and technological information institutions (service providers) and scientific and technological innovation subjects (service recipients / users). This service model reflects the close and collaborative cooperative relationship between the two sides of information service. Science and technology intelligence agencies set up a special cooperation team guided by the theme of specific intelligence needs, carefully sort out the problems of users, propose solutions, and track services, so as to adjust intelligence products in time according to innovation changes or program defects. The two sides of the service process interact collaboratively and have a high degree of trust, which better avoids the problems of lack of service communication and service tracking feedback in the traditional passive intelligence service model. In the process of embedded service, it will not only openly obtain the actual explicit intelligence needs of users, but also consciously use deep mining and prediction to identify the potential intelligence needs of users, professionally solve the problem of users' intelligence needs, and promote scientific and technological innovation. With the development and mature application of Internet information technology and big data technology, scientific and technological information has entered a new era of open source.

3. Embedded Service Mode of Scientific and Technical Information from Multi-Dimensional Perspective

3.1. Relational embeddedness dimension

Embedding is a kind of social group behavior, which reflects the relationship between social subjects. The embedded relationship is the interaction relationship formed by the two parties of scientific and technological information service to jointly solve the problem of scientific and technological information, and is the key driving force to promote the behavior of scientific and technological information service. Relationship embedding provides support for multi-service relationship and multi-dimensional information exchange in the process of scientific and technological information collaborative service. According to the embedded relationship between the two sides of the information service, the embedded service mode of scientific and technological information is divided into three modes : administrative relationship embedded mode, contract relationship embedded mode

and trust relationship embedded mode. 1 The embedded mode of administrative relations mainly occurs between scientific and technological intelligence agencies and the government. At present, most provinces and cities in China belong to public welfare institutions of scientific and technological information, which belong to the local science and technology committee system. They often carry out information service work according to government instructions, involving scientific and technological strategy research, meso and macro scientific and technological planning, etc., mainly to meet the information needs of medium and long-term planning, regional pillar industries, new strategic projects, industrial core technologies, key common technologies and cutting-edge technologies of scientific and technological development. In this service model, scientific and technological intelligence agencies have a certain degree of passivity. The embedded model of contractual relationship is mainly a service cooperation model between scientific and technological information institutions and innovative subjects such as scientific research institutions and enterprises. Although scientific research institutions and enterprises, as the main body of market-oriented innovation, have rich R & D resources and high R & D capabilities, they often lack professional scientific and technological intelligence personnel and technology. The scientific and technological intelligence agencies not only have rich intelligence resources, but also have strong intelligence collection and analysis capabilities. The two sides can complement resources and cooperate to complete scientific and technological innovation. Based on the contract signed by the two sides of scientific and technological information demand, scientific and technological information institutions integrate information services into the main body of scientific and technological innovation, provide them with information products such as the feasibility of technology or product research and development, industry development forecast, competitor ability evaluation, etc., and jointly carry out technological innovation and product innovation. In this model, both sides of scientific and technological information service are based on commitment, with strong initiative and interaction. Scientific research institutions and enterprises will even outsource information services to professional information institutions to reduce innovation costs and enhance the competitiveness of the scientific and technological innovation value chain. In particular, in recent years, for-profit intelligence consulting services have emerged, such as Boston, Gallup (China) Consulting, Huicong Information, etc., to provide more professional intelligence services.

3.2. Structural embedding dimension

Structural embeddedness reflects the degree of dependence between the two systems of scientific and technol-

ogical information and scientific and technological innovation. The embedded service mode of scientific and technological information based on the structural embedded dimension is divided into three types : discrete service mode, nested service mode and symbiotic service mode. The discrete service mode mainly occurs in the early stage of China 's scientific and technological information construction. Due to historical reasons, there is a certain segmentation between the scientific and technological information department and the scientific research department, and the interaction between the two is less. The scientific and technological information department is mostly free from the scientific and technological innovation system and indirectly serves the scientific and technological innovation system. The intelligence service place is limited to the physical space, and its service content is mainly to collect, report and study the development and progress of science and technology at home and abroad in a timely manner, and extract the results of world scientific and technological papers and reports. (2) Nested service mode is an organic part of scientific and technological innovation system, which is nested in scientific and technological innovation and provides relevant information services. Especially under the impetus of Internet and other technologies, the service places of scientific and technological information institutions break through the physical space and extend to the virtual space, and adopt the combination of online and offline methods to organically nest into the scientific and technological innovation system. The advantage of this model is that the two sides of scientific and technological information service can communicate and cooperate conveniently and quickly according to the information needs.

3.3. Situational embedding dimension

A service scenario is a description of a state related to a service activity. Among them, the service demand is the most important. From the perspective of service scenarios, only when the subject of scientific and technological information service understands the user 's information demand environment, can it give full play to its own information resources and skill advantages and meet the

user 's information needs to the greatest extent. According to the different needs of scientific and technological information, the embedded service mode of scientific and technological information can be divided into information consulting service mode, professional service mode and cross-domain service mode. (1) The information consulting service mode mainly aims at the scientific research institutions and other innovative subjects to carry out traditional business services such as literature retrieval, scientific and technological novelty retrieval, information consulting and so on. This model is mostly based on literature data. The difficulty of demand service is low, and the requirements for the skill level of intelligence service personnel are also low, which is easier to meet the requirements of users. The professional service mode is to connect the professional information resources, technologies, tools and methods with the scientific and technological information needs of various industries, and provide professional and accurate information services in scientific and technological activities such as scientific and technological projects, product development, achievement appraisal, patent application and so on, so as to enhance the core scientific and technological competitiveness of the industry. This service model requires more multi-source data. In addition to basic data resources such as scientific and technological literature, patents, and standards, there are also thematic databases in the industry, such as clean energy thematic databases, integrated circuit thematic databases, and even network data.

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A Study on the Similarities and Differences between Chinese and Foreign Campus Cultures based on Hofstede from a Cross-cultural Perspective

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Abstract: With the international economic and social development, culture spanning is becoming more and more common, and the study analyzes the differences between Chinese and foreign university campus cultures in multiple perspectives based on Hofstede's theory of cultural dimensions. The study shows that in the index of individualism, Chinese campus culture prioritizes the collective and presents some deficiencies in uncertainty avoidance, long and short-term orientations. While reflecting on this, Chinese education needs to take advantage of the strengths and weaknesses of foreign campus cultures and education, and develop educational concepts that are open, innovative, and focused on students' individual development.

Keywords: Hofstede; Campus culture; Cultural differences

1. Introduction

In the 1980s, Professor Galt Hofstede created a framework for understanding cultural differences by studying cultures that do not make sense, arguing that cultural differences depend on the degree to which a certain value is valued, and that by studying one culture, it is possible to compare its position on the same continuum with another. The study compares the differences between Chinese and foreign campus cultures based on Hofstede's theory of cultural dimensions, which leads to the idea of cross-cultural excellence absorption in campus education and teaching. Campus culture is a special kind of social culture. Schools are at the forefront of social and cultural development, both as a place for the dissemination of human culture and as a place that insists on a scientific attitude to open up new cultures of the times.

2. Relevant Requirements for the Study of Similarities and Differences between Chinese and Foreign Campus Cultures based on Hofstede's

Due to the differences in geographic environment, historical background and other factors, Chinese and Western cultures have their own characteristics and show great differences, one-dimensional Chinese culture and diversified Western culture. The study analyzes the differences between Chinese and Western campus cultures based on Hofstede's theory of cultural dimensions, which is mainly

divided into five dimensions, as shown in Figure 1. Chinese and foreign cultures each embody a different spirit of the times, different value characteristics, and different theoretical foundations. As a result, Chinese and foreign campus cultures are also inherently different, and some conflicts arise. In the face of such conflicts, the study puts forward corresponding countermeasures and suggestions, which provide good opinions for the development of Chinese education, and references for cross-cultural exchanges between China and foreign countries.

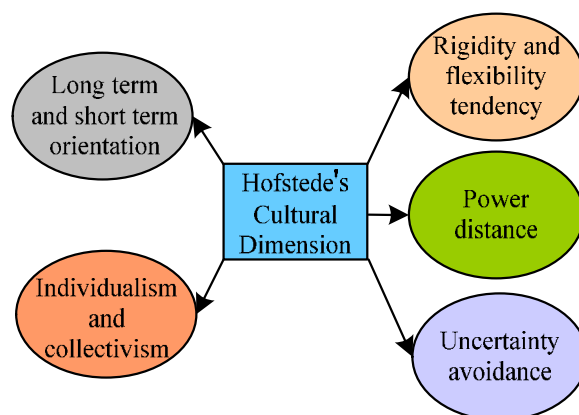


Figure 1. Specific elements of Hofstede's theory of cultural dimensions

3. Research on the Similarities and Differences between Chinese and Foreign Campus

Cultures based on Hofstede and Countermeasures

3.1. Similarities and differences between individualism and collectivism in Chinese and foreign cultures

The dimensions of individualism and collectivism reflect the relationships between different individuals and groups in a society. In terms of the basic form of culture, Chinese culture is unified, while Western culture is diverse. Chinese people have had the concept of great unity or unity since ancient times. The basic characteristic of Western culture is individualism, emphasizing individuality, personal freedom, self-development, and personal initiative, advocating novelty, and encouraging unique styles. In the Hawthorne cultural dimension, Western countries with high individualism indices, such as the United States, often express strong personalized characteristics, emphasizing individual independence and member diversity. In China with a low individualism index, it is a typical collectivist orientation that places more emphasis on the development and interests of the collective. In both Chinese and Western cultures, individualism and collectivism must have a fundamental commonality, which is to ensure that individual freedom and human rights are not violated by public power and other illegal acts. This is also the only correct reason for the existence of individualism and collectivism. Without this commonality, even if everything is beautiful, it has no meaning.

3.2. Campus culture differences between flexible and rigid societies

The difference between flexibility and rigidity is mainly reflected in the differences in male and female temperament, specifically referring to the understanding and expectations of different cultures towards male and female roles. In Chinese education, boys are often expected to excel in academic and sports, while girls are expected to possess gentle and elegant qualities. In foreign education, the performance and expectations between men and women are more equal.

3.3. Differences in cultural orientation between the long term and the short term

Uncertainty avoidance refers to the attitudes of different cultures towards unknown and uncertain things. In Chinese and foreign campus education, students often choose traditional and stable disciplines and majors, such as humanities and law; In foreign education, students pay more attention to innovation and practice, such as science and technology and engineering.

3.4. Cultural differences in power distance

Power distance refers to the attitudes of different cultures towards the distribution and acceptance of power. In Chinese culture, authority and status are very important,

and students often respect the opinions of teachers and elders, while in foreign cultures, individual rights and freedoms are more important. Mainly reflected in Chinese and foreign education, in Chinese education, the relationship between teachers and students is more strict and respectful, while in the West, there is more equality between teachers and students, and students can freely express their opinions.

3.5. Comparison of differences in uncertainty avoidance

According to Huo's cultural value orientation, the degree of uncertainty avoidance in Western societies is relatively low and far lower than in Chinese society. As for the teaching plan of each course, teachers will also adjust it based on the teaching progress and the schedule of the teaching team. Although Chinese students have strong flexibility in avoiding low uncertainty in their work, they do not exhibit obvious characteristics such as initiative and adventurous spirit, and still rely on certain rules and constraints to ensure stability and order in work and life.

3.6. Differences in theoretical foundations and educational ideas in campus culture

Chinese education values identity, while Western education values diversity. A neat and uniform teaching form may seem standardized and compact, but in reality, it lacks internal infectivity, which is not conducive to activating students' thinking and inner vitality, and is not easy for students to feel their own subjectivity. Western higher education institutions attach great importance to student autonomy and give full play to the role of students as the main body, mainly manifested in valuing extracurricular activities and education, and emphasizing the influence of situations, which subtly affects students. Western schools lack formalism, and the teaching atmosphere is naturally flexible. There are not many mandatory norms and unified requirements that must be followed for teaching and learning, and there is greater freedom and flexibility in the design, content, and methods of teaching and learning.

4. Relevant Reflections and Countermeasures on Intercultural Teaching and Learning

4.1. Innovate and develop themselves by building on their strengths and weaknesses

Placed in the context of the larger culture of society, campus culture is only a subculture. As a subculture, the essence of campus culture is closely related to the essence of social culture. While cross-culturally absorbing the western campus culture, we should adhere to the principles of abandonment, development and innovation, and based on the actual situation, so as to critically ab-

sorb and learn from the western campus culture, and build a democratic and open campus culture. Drawing on the principles of "innovation, openness, and emphasizing students' individual development" of Western campus culture, campus culture, as a special kind of social culture, has different forms of expression in different cultural contexts in China and the West.

4.2. Reflections related to pedagogical thinking and development

From the current situation of campus culture development in Chinese colleges and universities, the main problem is the lack of extensive and in-depth international exchanges, which is incompatible with the era of globalization in which international exchanges are becoming more and more profound. Active measures should be taken and channels should be opened up to create more favorable conditions for Chinese universities to learn from the experience of campus culture construction in foreign universities. Building campus culture with Chinese characteristics is the direction of campus culture construction in China, and scientific and democratic nature are the essential features that cannot be detached from, and actively and critically absorbing the achievements of foreign campus culture.

5. Conclusion

Regarding the cultural differences and similarities between Chinese and foreign campuses, the study analyzed

and compared them based on Hofstede's cultural dimensions. In general, campus cultural differences are mainly expressed in the cultural dimensions of individualism and collectivism, uncertainty avoidance and long-term and short-term orientation. These cultural differences have far-reaching implications for the development and reform of education in China, where students need to be encouraged to express themselves more openly and freely and to pay more attention to the development of their personalities and interests. Comparative studies on Chinese and Western campus culture and educational ideology provide a basis for critically inheriting the traditional Chinese educational heritage, as well as support for learning and absorbing the essence of Western educational concepts, laying the foundation for cross-cultural communication, and are therefore of great theoretical and practical significance.

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Research on the Relationship between Transformational Leadership and Team Cohesion of Football Coaches

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Abstract: The study explores the relationship between transformational leadership and team cohesion of football coaches, analyzes the problems that may be encountered in the development process of these two, and proposes corresponding coping strategies. These issues include insufficient leadership of coaches, neglect of individual needs of athletes, and potential goal conflicts within the team. Research has found that by clarifying and communicating team goals, encouraging innovation, adapting to and managing change, solving problems, and fully understanding strategies that respect team members, an effective combination of transformational leadership and team cohesion can be achieved, thereby improving team efficiency, stimulating team vitality, enhancing team adaptability, enhancing team cohesion, and cultivating a good team atmosphere.

Keywords: Football; Transformational leadership; Team cohesion; Coach

1. Introduction

As one of the most popular sports events in the world, the improvement of football's competitive level has always been a focus of attention for sports departments, relevant organizations, and academia in various countries and regions. Among numerous studies, previous studies focusing on athletes' skills, physical fitness, mental state, etc., have achieved an in-depth understanding and rich technical means [1]. In this fiercely competitive perspective, the role of football coaches and how their leadership within the team affects team performance is gradually gaining attention [2-3]. Nowadays, football coaches need to place more emphasis on the transformational component in their leadership to adapt to the rapid changes in the external environment and maintain the competitiveness of the team [4-5]. At the same time, regardless of how the external environment changes, team cohesion has always been one of the important factors determining the success or failure of a team's competition. Therefore, understanding and grasping the relationship between the transformational leadership of football coaches and the cohesion of the entire team is an important issue facing the current football leadership team.

2. Problems in the Development of Transformational Leadership and Team Cohesion for Football Coaches

2.1. Coach transformational leadership issues

Football coaches lack a sense of change. The strategy on the football field is always changing, and if coaches only follow traditional training methods for guidance, they cannot truly mobilize the efficient operation of athletes and even face the problem of tactical backwardness. How to continue learning, continuously improve oneself, and lead the team to new heights in the changing times is a challenge that coaches need to face.

Football coaches lack leadership skills. A coach is the leader of a team, determining the direction and tactics of the team. If there is a lack of effective leadership skills to make team members accept their tactical arrangements, it will not be possible for them to form consensus, reduce team cohesion, and have a significant impact on the outcome of the game.

Football coaches overlook athlete personalities. Every athlete has their own unique personality and needs. If coaches simply demand that all athletes follow their own way and ignore the personality and needs of athletes, it is likely to lead to low team cohesion and also affect the performance of athletes.

2.2. Development issues of team cohesion

Personal goals and team goals are prone to conflict. If there are individual members in the team who excessively pursue personal achievements and neglect team interests, it will lead to low team morale and decreased cohesion. Therefore, how to balance and mediate the relationship between individuals and the collective is an important factor in enhancing team cohesion. The interpersonal relationships within the team are tense. In a team, inter-

personal relationships are also a crucial determining factor. If there is a conflict of interest or personal grudges between team members, it will weaken the team's cohesion, and coaches need to mediate and solve such problems promptly. The team lacks trust in the coach. The level of trust that team members have in the coach can also affect team cohesion. If team members feel that the coach's decision-making or ability is problematic and cannot lead them to victory, it often has a negative impact on the team's cohesion.

2.3. The relationship between transformational leadership and team cohesion

There are several issues in the relationship between transformational leadership and team cohesion. Firstly, the guidance for change is incorrect. Change is not an end in itself. If the coach places too much emphasis on change and ignores the actual situation within the team, change will only make the team more chaotic. Secondly, improper handling of conflicts of interest. When making changes, how to properly handle internal conflicts of

interest within the team and ensure the rights and interests of all team members is also a test of leadership. Improper handling may lead to the breakdown of relationships between team members. Thirdly, it requires time and experience accumulation. The relationship between transformational leadership and team cohesion is not achieved overnight. It requires time and experience accumulation, and coaches need to repeatedly try and optimize in practice to find the most suitable leadership style for the team.

3. The Application of Transformational Leadership in Football Coaches

3.1. The combination strategy of transformational leadership and team cohesion

The research aims to closely integrate transformational leadership with team cohesion, and proposes relevant strategies as shown in Figure 1.

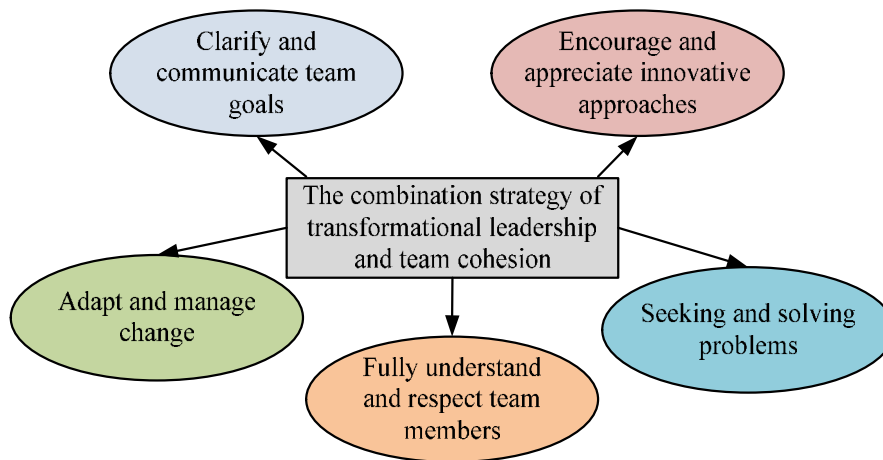


Figure 1. Combination strategy of transformational leadership and team cohesion

Firstly, clarify and communicate the team's goals. As a transformational leader, football coaches should first set clear and feasible team goals, and then use effective communication methods to communicate these goals to each team member. Team members who know why they are fighting will also be more likely to form a consensus and improve team cohesion. Continue to encourage and appreciate innovative approaches. Transformational leaders need to encourage their team members to try new things. For team members with innovative spirit and those who propose new ideas or strategies, leaders should give appropriate praise and rewards to stimulate their enthusiasm and innovation awareness. Secondly, adapt and manage change. Leaders need to have foresight, be prepared for upcoming changes, and help team members

accept and adapt to new environments. At the same time, appropriate management measures should be utilized, such as regular team meetings, to maintain the stability of the team in the midst of change. Then, seek and solve the problem. Continuously seeking opportunities for improvement, not only in competitions, but also in training, and even in team-building activities. Timely identify and solve crises and problems that affect team cohesion, and maintain team cohesion through continuous adjustment and optimization. Finally, fully understand and respect the team members. Each team member has their unique value and role, understanding their needs, respecting their wishes and contributions, establishing good interpersonal relationships, and making team members feel valued, will greatly enhance team cohesion.

3.2. The strategic significance of combining transformational leadership and team cohesion

Among the strategies proposed above, the combination of transformational leadership and team cohesion has roughly five meanings. Firstly, improve team efficiency. Clarifying and communicating goals will allow team members to have a clear understanding of what they are pursuing, and each person's work will be more targeted, which will improve the overall efficiency of the team. Secondly, stimulate team vitality. Encouraging and appreciating innovation can effectively stimulate the enthusiasm and creativity of team members, enable teams to have more diverse tactics, and enhance their competitiveness. Thirdly, enhance team adaptability. By adapting and managing change, teams can quickly adapt and respond to new situations or challenges, enhancing their resilience. Fourthly, it enhance team cohesion. Solving problems and respecting team members not only maintains team stability, but also enhances team cohesion. A team with strong cohesion will support each other and jointly face challenges, making it easier to overcome difficulties and achieve success. Fifth, cultivate a good team atmosphere. The implementation of these strategies will promote positive interaction among team members, enhance trust and respect among team members, and thus create a positive and healthy team atmosphere.

4. Conclusion

Through theoretical analysis and practical application, the study proposes strategies for effectively combining

transformational leadership and team cohesion. These strategies are of great significance in improving team efficiency, stimulating team vitality, enhancing team adaptability, enhancing team cohesion, and cultivating a good team atmosphere. Implementing these strategies not only helps to improve the competitive level of football teams, but also enhances the cohesion and morale of the entire team, creating conditions for sustained development and success. The research aims to discover references that can be provided to football coaches in practice, and encourage more research to delve deeper into this field.

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Discussion on Management Accounting Performance Evaluation Indicator System based on Technological Innovation

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Abstract: With the increasing status of technological innovation in enterprise development, how to effectively evaluate the performance of technological innovation becomes particularly important. This study first analyzes the current situation of technological innovation and management accounting performance evaluation, and points out the shortcomings of the existing evaluation methods. Subsequently, a new evaluation index system is proposed, which is based on four key dimensions, namely, innovation efficiency, innovation quality, innovation speed and innovation continuity, and specific evaluation indexes are given according to the four dimensions. The research results show that. The newly constructed index system can enable enterprises to evaluate their technological innovation performance in a more comprehensive and systematic way. In conclusion, this study provides a practical and efficient tool for evaluating the performance of technological innovation, which can help enterprises better promote technological innovation and improve the benefits of innovation.

Keywords: Technology; Innovation; Enterprise; Management accounting; Performance; Evaluation system

1. Introduction

With the acceleration of globalization and scientific and technological development, technological innovation has become the key to the sustainable competitiveness of enterprises. Technological innovation is not only a scientific and technological activity, but also closely related to the management and financial decisions of enterprises [1]. The core purpose of management accounting is to provide decision-supporting information to the management of an enterprise to help it better allocate resources, optimize processes and improve overall performance [2]. However, in the current fast-changing and highly competitive business environment, traditional management accounting performance evaluation metrics may not be sufficient to capture the value and potential risks associated with technological innovations. In recent years, with the increasing application of technological innovation in various industries, there is an increasingly urgent need for a performance evaluation index system that reflects technological innovation activities and is closely integrated with the overall strategic and financial objectives of the enterprise [3]. Therefore, the study of management accounting performance evaluation index system based on technological innovation is of great significance in guiding enterprises to effectively carry out technological innovation, promote sustainable organiza-

tional development and improve competitiveness. This study aims to explore the management accounting performance evaluation index system based on technological innovation, analyze the limitations of the existing performance evaluation indexes, and propose a more comprehensive and systematic performance evaluation framework to meet the actual needs of modern enterprises in the field of technological innovation.

2. Current Research on Performance Evaluation of Technological Innovation and Management Accounting

With the acceleration of globalization and technological progress, technological innovation has become the key for enterprises to gain competitive advantage and sustained growth. In this context, the role of management accounting has also changed, especially in the field of performance evaluation. Technological innovation can be defined as an enterprise's application of new or significantly improved technologies to its products, services or production processes. Technological innovation usually brings efficiency gains, cost reductions, or the creation of new products or services, which helps companies to stand out from the competition. Because of these benefits of technological innovation, many firms have invested in R&D and innovation activities. However, the returns on such investments are not always immediately apparent

and can sometimes even fail. Therefore, accurate performance evaluation of these activities has become critical. Traditional management accounting performance evaluation metrics, such as financial ratios, operating efficiency, and market share, while useful in assessing the overall health of a firm, may have limitations in evaluating the effectiveness of technological innovation activities. In addition, traditional metrics typically focus on the financial performance of the firm, such as revenues, profits, and return on assets. These metrics can provide information about the current health of the firm, but may not adequately capture the long-term value and potential benefits of technological innovation. Further, the inability of traditional financial metrics to capture this long-term value calls for improvements in current evaluation metrics. The challenges and risks faced by firms in a technological innovation environment have also become different from the traditional environment. Rapid technological change, market uncertainty, and increased competition have made performance evaluation of innovation activities more complex. In addition, technological

innovation often requires cross-disciplinary cooperation and knowledge sharing. This makes it difficult for a single performance indicator to capture the full value of innovation activities. In summary, the existing management accounting performance evaluation indicators may have certain limitations in the technological innovation environment and need to be further improved and refined.

3. Construction of Management Accounting Performance Evaluation Index System based on Technological Innovation

With the continuous impact of technological innovation on enterprise performance, the traditional management accounting performance evaluation index is no longer applicable. Therefore, this study tries to construct a new management accounting performance evaluation index system based on technological innovation. The evaluation index system constructed with technological innovation as the overall dimension is shown in Table 1.

Table 1. Management accounting performance evaluation index system under technological innovation

Dimension	Specific indicators	α
Innovation Efficiency	R&D Input-Output Ratio	1.265
	Number of R&D Projects	1.893
	R&D Input	1.028
Quality of Innovation	Market acceptance of new products	0.913
	Customer Satisfaction Survey	0.996
	Intellectual Property Quality	1.021
Innovation Speed	New Product R&D Cycle	0.715
	Speed of technical problem solving	1.164
	Time from R&D to commercialization	0.713
Innovation Sustainability	Number of consecutive R&D projects	0.894
	Frequency of new product updates	1.081
	Percentage of long-term R&D investment	1.603

Table 1 shows the management accounting performance evaluation index system under technological innovation. Cronbach coefficient α was used to verify the reliability and validity of the index system, and it was found that the values of all indexes were above 0.7. It can be seen that the construction of the index system is reasonable and effective. Under the dimension of innovation efficiency, three indicators are selected, namely, R&D input-output ratio, number of R&D projects, and R&D investment. The R&D input-output ratio refers to the ratio between R&D investment and the resulting economic benefits of new products or technologies. The number of R&D projects is used to assess how many of the completed R&D projects can be successfully transformed into actual products. R&D investment, on the other hand, is used to assess the degree of commercialization of a firm's technological innovation. Under the innovation quality dimension, market acceptance of new products, customer satisfaction survey, and intellectual property quality are chosen as evaluation indicators. Under the

innovation speed dimension, new product development cycle, technical problem solving speed, and time from R&D to commercialization were chosen as evaluation indicators. Under the dimension of innovation continuity, the number of consecutive R&D projects, the frequency of new product updates, and the percentage of long-term R&D investment were chosen as evaluation indicators. The constructed indicator system firstly covers multiple key dimensions of technological innovation, ensuring the comprehensiveness and depth of the evaluation. Secondly, the flexibility of the system enables enterprises to make appropriate adjustments and customizations according to their own actual situation, so as to better meet specific evaluation needs. In addition, by systematically evaluating all aspects of innovation, enterprises can more accurately understand the benefits of their innovation activities and thus formulate more rational and effective innovation strategies. Combined with the above evaluation indicators, enterprises can not only have a comprehensive understanding of their performance in technolo-

gical innovation, but also make adjustments according to the specific situation in order to continuously optimize their technological innovation strategies.

4. Conclusion

Technological innovation is crucial to the development of modern enterprises, in order to ensure that the technological innovation activities of enterprises are effectively promoted and managed, this study proposes a management accounting performance evaluation index system based on technological innovation. The system is constructed around the four core dimensions of innovation efficiency, innovation quality, innovation speed and innovation continuity, aiming to provide a comprehensive, systematic and flexible evaluation tool for enterprises. The results of the study show that compared with the traditional evaluation system, the index system proposed in this study has significant superiority. In conclusion, the management accounting performance evaluation index system based on technological innovation not only provides a scientific evaluation tool for enterprises, but also helps to promote their technological innovation activities and improve their innovation benefits. The evalu-

ation system can not only bring practical value to enterprises, but also provide strong support for China's technological innovation and industrial upgrading.

5. Acknowledgment

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Research on College English Curriculum Teaching Reform based on OBE Concept under the Background of New Liberal Arts

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Abstract: This paper is based on Huanghe Jiaotong University, from the private college students' college English classroom, based on Outcome Based Education (hereinafter referred to as "OBE") education concept in college English curriculum innovation teaching exploration, build a new teaching mode, according to the standard of "gender once" to carry out the teaching design and teaching practice inspection, in order to effectively improve the teaching quality of college English courses.

Keywords: New liberal arts; OBE; College English; Teaching reform

1. Introduction

At the meeting held on April 29, 2019, the Ministry of Education proposed the "Six Excellence and One Top-notch" plan 2.0, which formally proposed the construction of new engineering, new medical science, new agricultural science and new liberal arts. At the same time, the Ministry of Education issued the Notice on the Implementation of the "Double Thousand Plan" for the Construction of First-class Undergraduate Majors, which also clearly proposed to promote the construction of "four new" majors including new liberal arts. The Declaration on the Construction of New Liberal Arts points out that in higher education, liberal arts account for two thirds of the disciplines, and liberal arts education affects the overall situation of higher education.

2. Theoretical Support

Outcome Based Education (OBE) first appeared in the 1980s and can be translated as "results-based education". In Results-Based Education: Key Questions and Answers, Spadi gave the definition of OBE: "Outcome-based education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences" (Liu Jianzhu, 2019). The above statement is translated as follows: "Results-based education is an educational organization model in which the necessary abilities of students aim for all teaching activities". The core concept of OBE is student-centered, results-oriented and continuous improvement.

3. Innovative Teaching Practice based on OBE Education Concept

3.1. Research object

Research object is Huanghe Jiaotong University grade 2022 sophomore and 2023 freshman students, focus on the OBE education concept of college English curriculum innovation teaching concrete implementation plan, process and results, including the college English curriculum, teachers, teaching mode, teaching, teaching methods and teaching means of innovation research, to form the feasible teaching innovation scheme, detailed teaching steps and real objective teaching reflection summary.

3.2. Research process

3.2.1. Setting talent training objectives: Ability, concept and development

In the OBE education concept system, the most important thing is the academic achievement. The talent training goal of the course is the academic achievements achieved by the students after completing the academic tasks designed by the school. Based on the talent training objectives of the course: cultivate students' English application ability and cooperation ability, enhance cross-cultural communication consciousness and communication ability, develop independent learning ability; establish correct outlook on life, values and world view; and meet the needs of country, society, school and individual development. Namely: "ability, concept and development" talent training goal.

3.2.2. Optimize the curriculum system: Knowledge, culture, ideology and politics

The paradigm of OBE educational philosophy emphasizes the acquisition of students' ability. Under the guidance of OBE education concept and based on the talent training goal of "ability, concept and development", this paper puts forward the curriculum system of "College English Level 3", which divides college English courses into guidance stage, basic stage and improvement stage. In the guidance stage, in the first semester of the freshman year, four credit hours of "College English Ideological and political guidance" were conducted. The guided study phase consists of four parts, Systematically explain "what to learn in College English", It mainly includes the improvement of English language skills, the cultivation of cross-cultural communication skills and the forging of thinking mode and critical thinking ability; "Why to learn College English?" Including the need for international exchanges and cooperation, the expression of China's voice and Chinese stories, and the help of personal development space; "How to learn College English well", Including the mastery of college English learning strategies, ways to improve learning ability and the provision and acquisition of learning resources; "A display platform for College English", Including guiding students to participate in college students writing competition, speech contest, speech contest and translation competition and so on. In the basic stage, in addition to the basic public English courses, but also rely on the course teaching content, the timely study of the excellent traditional Chinese culture and the comparison between Chinese and Western cultures. Among them, the content of excellent traditional Chinese culture includes the benevolence, and the comparison between the differences between Chinese and Western cultures includes the origin, the form of expression, coping strategies, cultural confidence and harmonious development. The guiding stage and the basic stage of the above curriculum system are repeatedly revised through four rounds of teaching practice according to the actual situation of Huanghe Jiaotong University. In the teaching process, we always adhere to the teaching policy of taking the knowledge of basic college English courses as the carrier, the cultural differences between China and the West and the United States, and the ideological and political guidance of the course. The improvement stage in the curriculum system is the subsequent part of the teaching conception of the research group. Due to the research period and the teaching groups of the members of the research group, this paper focuses on the guiding stage and the basic stage of research. According to the educational concept of OBE, the curriculum of college English language will change with the needs of the society and the requirements of The Times, so as to continuously improve and improve.

3.2.3. Implementing innovative instructional design: Thinking, cooperation and empowerment

The complete teaching process can be divided into three stages: "beforeclass", "inclass" and "afterclass". Among them, the traditional classroom teacher lecturing learning mode mainly focuses on the "inclass" stage. The challenge of professional knowledge involved in the process of college English teaching and the understanding barriers caused by the cultural differences between Chinese and Western countries determine that the guidance and explanation of college English teachers in the "traditional classroom" is an indispensable teaching process."Online classroom" and "humanities classroom" are mainly applied (but not limited to) in two teaching stages: "beforeclass" and "afterclass".

Learning results reflect speculative and collaborative skills. The cultivation and training of students' speculative and cooperation ability need to be realized through the learning tasks carefully designed by teachers. The presentation form of tasks includes but is not limited to: group report in the form of PPT. In the "before class" stage, according to the learning content of the specific teaching unit, the teacher divides the class into several groups, and each group is randomly assigned a learning task. The group members need to have a clear division of labor and cooperate to complete it. In the classroom interaction, the group will report and show in the form of PPT. In this process, the group's cooperation ability and new media application ability can be effectively exercised and improved. Group broadcast in video form. In the "afterclass" stage, after learning the content of a certain unit, the teachers will assign the corresponding video recording tasks according to the students' new media application ability. During the completion of the task, students need to screen and evaluate the topics and information related to the task accordingly. Through the running-in in the video production process and the teachers' evaluation and guidance in the next class, students' media literacy and critical thinking ability can be exercised accordingly. The article was summarized in a guide map. Throughout the "before class", "inclass" and "afterclass" links, it is the combination of artificial intelligence and modern educational technology means, which realizes the two-way empowerment of teachers and students.

3.3. Teaching evaluation

The OBE educational concept emphasizes the students' ability to obtain the final academic results and continue to apply the results. Based on this, the evaluation mechanism of this paper not only adopts the traditional assessment method of combining formative results and final results, but also integrates the assessment of learners' achievement and ability.

3.3.1. Visualization of learning outcomes

The assessment of learning results is not only reflected in the consideration of students' scores. Compared with the assessment of final results, the assessment of formative results is mostly more assessment items, but the score is still determined. The OBE education concept emphasizes that students gain learning results and do not have to compare with other students, but only with themselves. These tangible learning results include short videos, PPT, hand-drawn newspapers and oral debates presented through group collaboration. This is not only the output of students' internalization and absorption of the knowledge, but also the complete and comprehensive presentation of the knowledge learned.

3.3.2. Continuity of learning ability

The cultivation of students' learning ability is not only reflected in the requirements of answering the questions correctly. Whether the students' paper score has been improved can not fully reflect whether the students' learning ability has changed. Through topic discussion, knowledge sharing and oral speech, students' learning ability is reflected in the ability to collect and organize the data, the ability of group cooperation and the judgment ability of identifying the good and the bad. Students' learning ability shows a trend of development and change, and the ability development space of each learning individual is different. Under the guidance of the student-centered OBE education concept, each learner's learning ability should be developed and improved in the acquisition of learning results.

4. Conclusion

The OBE education concept emphasizes that obtaining results is more important than providing services. The application of the "OBE" education concept to the school-based research of innovative college English teaching can make the teaching process more targeted and make the learning results more purposeful. The application of OBE education concept in this paper is still in the exploratory stage. With the deepening of theoretical research and the change of the social demand for talents, this research will continue to improve, in order to help the reform of foreign language curriculum in colleges and universities and cultivate high quality talents for the society.

5. Acknowledgement

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The Integration of New Business Management Courses Practical Teaching and Ideological and Political Education from the Perspective of Collaborative Education

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Abstract: With the progress of the times, the modes and objectives of education are changing, especially in the field of business education. The purpose of this study is to explore the possibilities and strategies of integrating practice teaching and civic politics in new business management courses from the perspective of collaborative education. The study first analyzes the multiple challenges facing business education in colleges and universities at this stage, and based on these challenges and existing educational practices, six strategies are proposed in the paper, aiming to better integrate practice teaching with Civics and Politics to provide students with a more comprehensive and practical learning experience. The results of the study show that compared with the traditional practice teaching mode, the new practice teaching concept of business management courses that incorporates the ideas of collaborative parenting and Civic-Political teaching can achieve better teaching results.

Keywords: Collaborative education; Management; Curriculum practice; Teaching; Civics

1. Introduction

In the context of globalization and digitalization, the rise of new business disciplines not only requires students to master professional knowledge, but also pays more attention to the cultivation of interdisciplinary, innovative and critical thinking [1]. At the same time, the state's attention to ideological and political education in higher education has been continuously strengthened, emphasizing the integration of ideological and political education into the professional curriculum to achieve the deep integration of the goal of human education. Collaborative parenting means that all disciplines, all fields, teaching and practice, specialization and ideology and politics need to be more closely integrated, so as to provide students with a comprehensive and three-dimensional parenting environment [2]. As an important part of business education, the practice teaching methods and contents of new business management courses should also keep pace with the times to meet the parenting needs of contemporary college students [3]. How to effectively integrate the ideological education in practice teaching, so that students can receive in-depth ideological education and value guidance in their professional learning, is an important issue facing the current educational research and teaching

reform. Based on this background, this study aims to explore the methods and strategies of integrating practice teaching and Civic-Political education in new business management courses under the perspective of collaborative education, with the expectation of providing useful references and insights for the innovation and development of business education.

2. Research on the Status Quo of Practical Teaching of Management Courses

In the 21st century, business education occupies a pivotal position in major institutions of higher education around the world, however, the current business education in China's colleges and universities is facing a series of specific difficulties. Firstly, some of the course contents are relatively old and out of touch with the international advanced level. Secondly, there is a certain disconnect between practical teaching and theoretical teaching, which makes it difficult for students to apply what they have learned in practice. Furthermore, the traditional teaching mode has been difficult to meet the diversified and personalized learning needs of contemporary college students. In this context, the proposal of new business management courses emphasizes the deep integration of keeping pace with the times, practice and innovation,

aiming to better cultivate students' comprehensive ability and international vision. Ideological and political education, as the core part of college education, needs to be closely integrated with the practical teaching of the new business management courses to ensure that students have correct values while learning management knowledge. How to integrate the two organically, so that business education can not only cultivate globally competitive economic and management talents, but also consolidate the ideological and political foundation of students has become an important issue in front of the universities. Collaborative education is a modern education model that emphasizes the joint participation, cooperation and interaction of learners, educators, educational institutions and other relevant parties in the education process. Collaborative education is not only limited to the interaction between students, but also involves the cooperation of educators, parents, communities and other stakeholders. Based on this background, the collaborative education perspective provides a new approach and mindset for

universities and colleges, namely, to emphasize the holistic and coherent nature of education, which helps to break down disciplinary barriers and realize whole-person education in the true sense of the word.

3. Strategies for Integrating Practice Teaching and Civics in New Business Management Courses under the Perspective of Collaborative Parenting

Aiming at a series of drawbacks existing in the current practice of new business management courses in colleges and universities, this study will combine the concept of collaborative parenting and the concept of Civic and Political teaching to reform the practice teaching of new business management courses. The specific implementation strategies for the integration of practice teaching and Civics and Politics of new business management courses under the perspective of collaborative parenting are shown in Table 1.

Table 1. Strategies for optimizing practice teaching in new business management courses

Strategies	Strategy Content
Combine case-based instruction with a Civics perspective	Selected business cases closely related to Civic-Political education, so that students can experience the application of socialist core values in the modern business environment while studying business decisions.
Combining simulated business decisions with Civic-Political factors	In the simulated business decision-making scenarios, deeply implant the elements of Civics and Politics, and guide students to integrate the values of Civics and Politics in the actual operation.
Combining business practice with Civic-Political education	Promote students to go into actual enterprises to experience and analyze the intermingling and conflict between corporate culture and socialist core values in the field.
Integration of curriculum design with Civic-Political concepts	Explicitly incorporate the Civic and Political module into the design of the new business management courses to ensure that students have an in-depth understanding and experience of Civic and Political while learning skills.
Teacher training and two-way interaction	Strengthen the training of business teachers in Civic and Political education, promote teachers to naturally incorporate Civic and Political education content in their daily teaching, and encourage students to actively participate and ask questions to form a two-way interaction between teachers and students.
Innovative teaching techniques and educational tools	Use modern teaching technologies, such as AR and VR, to create virtual business scenarios in which students can naturally feel and experience the deep integration of Civic and Political Education.

Table 1 shows the optimization strategies for practical teaching of new business management courses combining the idea of collaborative education and the idea of civic and political education. As can be seen from Table 1, a total of six strategies are given to improve the quality of its practical teaching, which are combining case teaching with the Civic-Political viewpoint, integrating simulated business decision-making with the Civic-Political factor, combining enterprise practice with the Civic-Political education, combining curriculum design with the Civic-Political concept, faculty training with the two-way interaction, and innovating the teaching technology and educational means. Through the combination of case teaching and Civic-Political perspectives, students can visualize the application of socialist core values in actual business environments and further deepen their understanding and experience of them. The integration of simulated business decision-making and Civic-Political factors allows students to more naturally integrate Civic-Political awareness into the decision-making process in

actual operation, realizing the unity of knowledge and action. The combination of business practice and Civic-Political education provides a real platform for students to observe and analyze the relationship between corporate culture and socialist values, which strengthens the effectiveness of Civic-Political education. The new curriculum design combines skill learning with Civic-Political education, which not only cultivates students' business skills, but also ensures that they have an in-depth understanding of the country's core values. Teacher training and two-way interaction strategies have enabled both teachers and students to participate more actively in Civic and Political Education, creating a closer connection. Through the introduction of modern teaching technologies, such as AR and VR, a more realistic and immersive learning environment is created for students, enabling them to experience and understand Civic and Political Education more deeply, driven by both technology and content.

4. Conclusion

In order to improve the practical teaching effect of the new business management courses, this study optimizes them by combining the concept of collaborative education and the concept of Civics teaching. Through the six strategies proposed in this study, it can be found that the combination of various modern technologies and educational concepts can further make Civics education more deeply and widely applied in the business field. Incorporating the concept of Civic Education not only helps students gain a more comprehensive educational experience, but also lays a solid foundation for their future careers and contributions to society. In conclusion, this study can provide certain reference value for colleges and universities and education departments to improve the teaching effectiveness of new business management courses.

5. Acknowledgment

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Exploration of Indoor Design Classroom Teaching Method based on Double Loop Teaching Mode

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Abstract: This study is based on the teaching practice of interior design major, and aims to address the common problems in teaching. Centered around the "teaching competition" dual cycle teaching model, it explores a series of teaching reform ideas. In the teaching process of interior design, teachers should not only focus on imparting theoretical knowledge, but also use competitions and other forms to encourage students to participate in practical activities and broaden their design horizons. Therefore, the current teaching of interior design is gradually moving towards a "dual cycle" creative education. This study focuses on exploring the development path of innovative education in interior design majors under the "dual cycle" teaching model.

Keywords: Double loop teaching mode; Interior design; Innovative education; Teaching model

1. Introduction

With the rapid development of the real estate industry, the construction industry has also ushered in new development opportunities. The types of architectural decoration majors are constantly increasing, and the employment scope of graduates is constantly expanding [1]. In order to make up for students' professional shortcomings, many universities in China have opened courses on "Interior Design". Interior design mainly considers the internal space of a building from three aspects: function, technology, and art. Based on the environment and corresponding standards of the building, scientific methods are applied to create a comfortable and beautiful indoor environment by combining knowledge from disciplines such as plastic arts and ergonomics. Its research focuses on the interrelationships between internal form and space, the artistic treatment of facades, the form and layout of furniture, lighting, and furnishings [2]. Over the years, under the guidance of teaching practice and theory, various universities have established a "teaching competition" dual loop classroom teaching model. Relevant research has conducted empirical research on it, verifying that teaching reform centered around this model can significantly improve the quality of classroom teaching [3]. The dual loop teaching mode combines teaching and competition in the teaching process to improve students' professional skills; and use competition activities as a carrier to cultivate students' practical operation and professional abilities. At the same time, the practical training content should be adapted to the needs of new technologies and models in new industries, so that students can better grasp relevant work skills and application abilities.

Through competitions, it is not only possible to test the effectiveness of teaching, but also to reflect on teaching for teachers and students, thereby promoting innovation in educational concepts and teaching methods.

2. Analysis of the Current Situation of Classroom Teaching Methods for Interior Design

As a new discipline, interior design involves a wide range of content. Therefore, how to quickly develop the profession has become a major issue faced by every teacher. Universities are the cradle of cultivating interior designers. In this context, how to better carry out the teaching of interior design courses is the key to cultivating high-quality talents. With the development of the times, new problems have emerged in the teaching status of interior design majors. Firstly, the theory of interior design is separated from practical teaching; at present, there is a phenomenon of emphasizing theory over practice in interior design majors in most universities. This teaching method neglects the organic integration of theoretical knowledge transmission and practical operation, which is not conducive to cultivating and enhancing students' interest in learning, and also makes students feel that the learning content is very boring. In addition, in the process of theoretical teaching, students are unable to have a clear understanding of knowledge related to interior design, and it is also difficult to effectively combine abstract theoretical knowledge with practical cases, resulting in unsatisfactory teaching results. Secondly, the teaching method of interior design is relatively simple and lagging behind. At present, the application of multi-

media technology in interior design majors in Chinese universities is still in the stage of theoretical teaching. Moreover, there is a lack of necessary interaction and communication between teachers and students during the teaching process. This makes it difficult to achieve the expected teaching effect and teaching objectives. Thirdly, students' cultural heritage is not strong. In a sense, the cultural foundation affects students' artistic quality and also their teaching of interior design, which brings great challenges to teachers' teaching work. In addition, due to the lack of cultural heritage, it is likely that students will lose interest in learning, resulting in low motivation for learning.

3. Indoor Design Classroom Teaching Strategy based on Double Loop Teaching Mode

In response to the current teaching situation of interior design majors, this study proposes a teaching model based on dual circulation. The dual cycle teaching mode is divided into a teaching competition cycle path and a competition teaching cycle path.

The cycle path of teaching competition can be started from the following three aspects. Firstly, a scientific training plan should be formulated. In the skill competition of interior design major, it is necessary to combine it with the job and skill requirements of the development of the interior design industry. Based on the relevant competition projects and actual situations, reasonable training courses and content should be set up to enable students to continuously engage in professional skill competitions during the learning process. At the same time, in response to the employment needs of graduates, we need to strengthen integration with the industry, frequently communicate and interact with relevant enterprises, understand industry information and development trends, and better formulate talent training plans. Secondly, we need to improve the system of interior design skills competitions. In interior design training, a teaching model of "old leads new" can be adopted to continuously improve the skills of new students. At the same time, more stu-

dents will also join, forming a virtuous cycle on campus, preparing for competitions and competitions. Thirdly, build a better platform for training and competitions. In the teaching process, to improve students' competitive ability, it is necessary to have an open training room, allowing students to have more opportunities to participate in internships. Provide diverse training resources for students to meet their hardware needs. At the same time, schools should also strengthen the construction of clubs internally and actively carry out various competitions.

The cycle path of competition teaching mainly involves utilizing competition skills to innovate and reform teaching concepts, content, and methods. Firstly, interior design is a comprehensive and technical professional field. In the teaching process, attention should be paid to integrating theory with practice, changing traditional teaching concepts, and improving students' hands-on abilities. Promote teaching through competitions, and improve teaching through competitions. Secondly, in the interior design skills competition, the selected participants all possess high professional literacy and comprehensive qualities. Therefore, the introduction of new technologies, new content, new processes, and other contents should be given attention in teaching and training. And integrate the course with future job positions. Starting from reality, improve teachers' practical operation ability, so that the content taught can better adapt to the needs of students' career development. Finally, in the interior design professional skills competition, professional ability training should be the main evaluation method to improve the exam results of the contestants. In vocational skills competitions, it is necessary to accumulate according to the scoring criteria and rules of each competition, and ultimately obtain the final score. Therefore, teachers should combine theoretical training before the competition with practical teaching, apply theoretical knowledge to the competition, and continuously improve their teaching theories during the competition. Therefore, the indoor design classroom teaching strategy based on the dual loop teaching mode is shown in Figure 1.

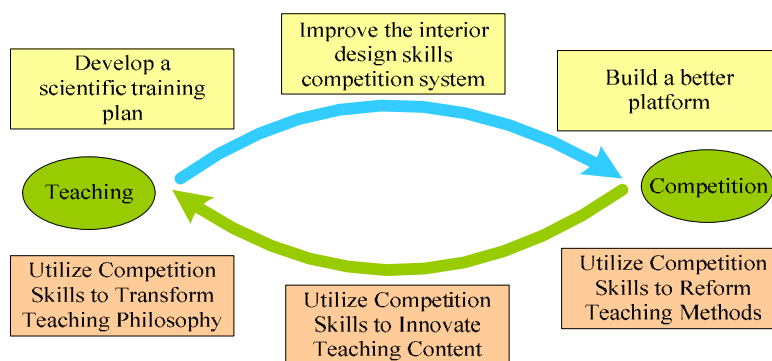


Figure 1. Indoor design classroom teaching strategy based on double loop teaching mode

4. Conclusion

In summary, applying the "teaching competition" dual loop teaching mode to the interior design major in universities can effectively improve the traditional teaching mode and improve the teaching quality of interior design. Using vocational skills competitions as a platform to promote the improvement of college students' innovation ability and comprehensive quality. On this basis, through the combination of "theory" and "competition", innovation is carried out in teaching content and methods to improve the teaching and learning abilities of teachers and students; Expand students' horizons and artistic literacy in the field of art and design, achieve seamless integration with job positions, and thus improve the efficiency of talent cultivation in the college.

5. Acknowledgment

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The Prevention and Control Countermeasures of Self-harm Among College Students

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Abstract: In order to reduce the self-harm behavior of college students and protect their mental health, the paper proposes to investigate the status quo of the self-harm of a college students based on sampling survey, and construct the corresponding prevention and control countermeasures. The effect of the prevention and control strategy proposed in the study was evaluated, and it was found that the total number of self-harm decreased from 12 to 8 people after the implementation of the strategy. Therefore, from the mental health education, social support system construction, school-family cooperation and other aspects, can improve the mental health level of college students, reduce the occurrence of self-harm behavior.

Keywords: College students; Self-harm; Prevention and control measures; Mental health; Social support system

1. Introduction

In recent years, the phenomenon of self-harm among college students is increasingly serious, which has caused wide attention of the society. The self-harm of college students not only causes serious damage to their personal physical and mental health, but also has adverse effects on social stability and development [1]. Therefore, the research uses the sampling survey method to investigate the status quo of the self-harm of college students, and takes this as the starting point to deeply analyze the background and reasons of the self-harm of college students. Through the analysis of the current situation and causes of the self-injury of college students, the comprehensive and effective prevention and control countermeasures are put forward, so as to protect the physical and mental health of college students and promote the stability and development of the society. The study aims to reduce the occurrence of self-harm behaviors, create a positive and healthy growth environment for college students, and provide theoretical support for developing strategies for their mental health in the future.

2. Survey on the Status Situation of Self-Harm Behavior of College Students

The self-harm behavior of college students refers to the behavior that voluntarily causes harm to their own body or psychology. Self-psychological injury of college students mainly includes excessive anxiety, depression, self-strong disorder and other psychological disorders. And the physiological self-harm behavior mainly refers to

through the physical abuse or self-harm to achieve some purpose, such as self-harm and suicide. Psychological and physical self-harm behaviors are interrelated, and psychological problems may lead to physical problems, which in turn may exacerbate psychological problems [2]. Therefore, in the prevention and control of self-harm behavior of college students, it is necessary to consider both psychological and physiological factors to provide corresponding mental health education and support measures. Therefore, in order to explore the current situation of self-harm behavior of college students, 1000 college students from a university were selected through sampling survey and tested in questionnaire test. The questionnaire mainly refers to the college students' life event scale, Hamilton Depression and Anxiety Scale and self-harm behavior questionnaire. Furthermore, this questionnaire survey ensures anonymity and adheres to ethical norms. According to the results of the self-harm of college students, among 1000 respondents, the probability of college students was 1.2%, among which excessive anxiety accounted for the highest proportion, 75%. This was followed by depression and coercion, at 41.7% and 25%, respectively. And self-harm and suicide were 8.3%. The above results reflect the severity and urgency of college students' mental health problems.

3. Reasons and Effects of Self-Harm Among College Students

There are various reasons for college students' self-harm behavior, mainly including psychological pressure, emotional distress, interpersonal relationship problems and so

on. The first is the mental health problems. College students are faced with pressure from their study, interpersonal relationship, future employment and other aspects, which may lead to mental health problems, such as depression, anxiety and so on, and then lead to self-harm behavior. In addition, college students often face mood swings, emotional distress, such as love, family problems and so on. If these emotional problems cannot be properly handled, they may lead students to take self-harm behavior to vent or escape. At the same time, in college, students are in the reconstruction period of their social circle, facing new interpersonal relationship challenges, such as loneliness and social anxiety. The above problems can trigger a sense of inferiority and isolation, which leads to their self-harming behavior. College students' self-harm behavior not only has a significant impact on individuals, but also has a negative impact on their family and society. Self-harm behavior may cause more mental and emotional burden, which may lead to tension or even breakdown of family relationships. At the same time, college students are a part of the society, and their self-harm behavior may attract public attention, and have a negative impact on the social mental health atmosphere. Moreover, self-harm behavior may also impose a certain financial burden on the society, such as the cost of medical and psychological assistance. To sum up, college students' self-harm behavior will have a profound impact on individuals, families and society, and corresponding measures should be taken to prevent and control it.

4. Prevention and Control Countermeasures of Self-Harm Among College Students

In order to effectively prevent and control the self-harm of college students, comprehensive prevention and control countermeasures are proposed, including mental health education, social support system construction, school and family cooperation, etc. First of all, strengthen the mental health education of college students to improve their cognition and coping ability to mental health problems. The study proposes to offer relevant courses or organize mental health lectures to teach college students stress management, emotion regulation and problem solving skills. Secondly, for the establishment of a sound social support system, to provide psychological counseling and assistance services. The study proposes to set up psychological counseling centers in universities to provide students with professional psychological counseling and counseling services. At the same time, encourage students to establish good interpersonal relationships and increase social support. Third, the cooperation between schools and families. College students not only need the attention of the school, but also need the support of their families. Schools and families should strengthen cooperation and pay common attention to the mental health

problems of college students. The school can communicate with parents regularly to understand the situation of students, and intervene in time. Parents also need to pay attention to their child's psychological state, and provide support and understanding. In addition, the study also proposes to adjust and improve the prevention and control measures of students according to their actual situation, and adjust the focus and direction of the prevention and control work timely. Through comprehensive measures such as mental health education, social support system construction, school and family cooperation, the mental health level of college students can be improved and the occurrence of their self-harm behaviors can be reduced.

5. Effect Evaluation of Prevention and Control Countermeasures

In order to verify the effectiveness of the prevention and control countermeasures of self-injury among college students, the effect is evaluated. After the implementation of the self-injury prevention and control strategy for college students, the effect of the college students before and after the implementation of the prevention and control measures was evaluated. The evaluation index is the incidence of self-harm behavior and the improvement of mental health level among college students. The comparative results of self-injury and mental health of college students before and after the implementation of prevention and control measures are shown in Figure 1.

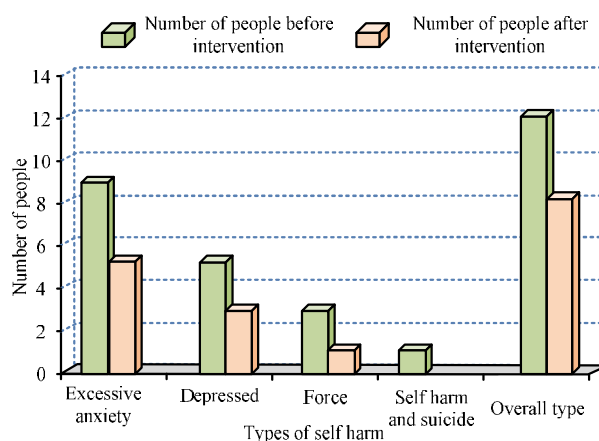


Figure 1. Comparison results of self-injury and mental health of college students before and after the implementation of prevention and control measures

As shown in Figure 1, after the implementation of self-injury prevention and control measures, the total number of self-injured college students decreased from 12 to 8 people. The number of excessive anxiety also dropped from nine to five, coercion from three to one, and self-

harm and suicide from one to zero. In summary, the results show that the implementation of self-injury prevention and control countermeasures has achieved positive results, protecting the physical and mental health of college students and reducing the occurrence of self-injury. This also reminds us that it is of great significance to pay attention to the mental health problems of college students and take effective measures to prevent and reduce self-harm. In the future, we should continue to pay attention to the mental health of college students, provide more support and help, and jointly create a positive and healthy learning and living environment.

6. Conclusion

The phenomenon of self-injury of college students is a serious social problem, which requires effective prevention and control countermeasures. The study proposes to improve the mental health level of college students and reduce the occurrence of self-harm behavior by strengthening mental health education, establishing a sound social support system and the cooperation of schools and families. After the implementation of a semester of prevention and control countermeasures, the effect of the research was evaluated. The evaluation results found that the total number of self-injury injuries among college

students decreased from 12 to 8. The number of excessive anxiety also dropped from nine to five, coercion from three to one, and self-harm and suicide from one to zero. In conclusion, the results can be seen that by strengthening mental health education and establishing social support system with family support, it can create a healthier and positive growth environment for college students and reduce the occurrence of self-harm.

7. Acknowledgment

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Analysis and Suggestions on the Integration Path of Chinese Traditional Tea Culture Elements and Jewelry Designs

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Abstract: This research focuses on the integration path and its significance between traditional Chinese tea culture elements and jewelry design. Through in-depth analysis of tea culture, the study finds that tea culture is not only about brewing and sipping, but also contains rich philosophical thoughts, humanistic feelings and life aesthetics. However, there are many problems in the current jewelry design, so the study proposes specific measures to integrate tea culture elements with jewelry design, emphasizing the embodiment and innovation of tea culture connotation and the importance of market demand. The study expects to provide consumers with jewelry products with cultural depth and help the sustainable development of the jewelry industry through the integration of traditional tea culture elements in jewelry design.

Keywords: Tea culture; Jewelry design; Integration path; Specific measures

1. Introduction

Tea culture is an important part of the traditional culture of Chinese civilization, which has been precipitated and evolved for thousands of years [1]. Tea, far more than a simple drink, it contains the wisdom of philosophy, reflects the rhythm of life, but also a bridge of emotional exchange between people. Equally as old as tea culture is jewelry culture. Since ancient times, jewelry has been regarded as a symbol of power, a representative of beauty, and contains endless stories and meanings [2]. In today's globalization, jewelry design pursues a more personalized and culturally rich direction, trying to bring consumers products that satisfy both aesthetics and cultural depth. However, the integration process in between is not always smooth. Many designers and scholars are exploring how to perfectly combine the deep elements of tea culture with jewelry design, making it not only traditional but also modern aesthetics. This research will explore this theme in depth, first analyzing the current situation and problems in the field of jewelry design, and then proposing how to draw on and incorporate the elements of tea culture to inject new vitality and significance into jewelry design. It is hoped that this exploration will provide new ideas and directions for the development of the jewelry industry.

2. Basic Features of Traditional Chinese Tea Culture Elements

From the ancient tea scriptures and tea songs to today's tea art and tea ceremony, traditional Chinese tea culture has condensed the wisdom and experience of the Chinese

nation for thousands of years [3]. In modern times, this culture is still active and blended with modern features, whether in the urban tea ceremony halls or e-commerce tea sales, you can see the trace of the perfect combination of tradition and modernity. Geographically, each region has cultivated unique tea species and tea-drinking habits due to its unique climate and geographic conditions, such as Pu'er in the southwest and Longjing in the southeast, which have added a strong regional color to Chinese tea culture. What is more proud of is that Chinese tea culture has broken through the limitations of national boundaries, and its charm has crossed the mountains and seas and entered the world, becoming an international bridge of cultural exchanges, so that more people understand and love this cultural treasure deeply rooted in the Chinese land. The study summarizes the basic characteristics of traditional Chinese tea culture elements, as shown in Fig.1.

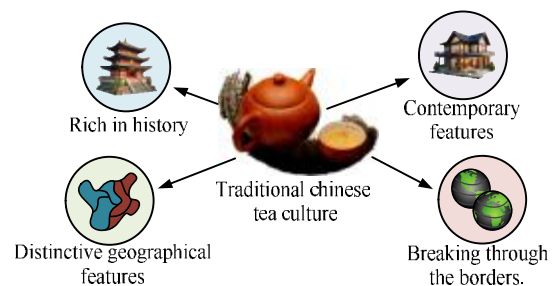


Figure 1. Basic characteristics of traditional Chinese tea culture elements

3. Problem Analysis in Jewelry Design

3.1. Insufficient cognition of design positioning

Although jewelry, as a status symbol and artistic expression, has always been filled with a fusion of culture, tradition and personal emotion, today's designs are often overly concerned with modernization, uniqueness or simple commercial value, while neglecting to dig deeper into the possibilities of combining with traditional culture. This limited perspective makes many designs lack depth and cultural roots, manifesting themselves as being too generalized, lacking in character, or not having a high degree of cultural and emotional identification with consumers. Especially in a country with such a rich cultural heritage as ours, many valuable traditional elements, such as tea culture, are often overlooked or used only as symbolic decoration rather than truly integrated into design thinking. This lack of in-depth knowledge of the cultural background and value makes it difficult for the design to form a unique competitiveness in the market, and also difficult to cause deep resonance with consumers.

3.2. Inadequate innovation capacity

Insufficient innovation is another major problem in jewelry design. Jewelry, as a work of art that embodies both personal taste and cultural heritage, should be continuously injected with new design thinking and innovative elements to adapt to the ever-changing market demand and aesthetic trends. However, many jewelry designs in the current market are still stuck in the traditional framework and lack sufficient innovative driving force, resulting in their forms and styles being too single. At the same time, many designers, when faced with how to strike a balance between tradition and innovation, often choose to follow the existing model and fail to bravely try new ideas and technologies. Especially when dealing with deep Chinese cultural elements, such as tea culture, it is more of a superficial borrowing, and lacks of inspiration from it and combines it with modern design concepts for real innovation. This limitation not only makes jewelry design lose the freshness of competition in the market, but also makes consumers feel aesthetic fatigue when choosing.

3.3. Inadequate matching with market demand

With the growing maturity and diversification of consumers' aesthetic concepts, they are not only looking for the value and craftsmanship of jewelry, but also attach more importance to its cultural connotation and design concept. However, many jewelry designs are still stuck in the traditional aesthetics, failing to closely follow the market trend, resulting in the design of products difficult to meet the diversified needs of modern consumers. Especially in the face of the younger generation of consumers, they have a strong interest in and curiosity about

traditional Chinese cultural elements, such as tea culture, and hope to see the innovative presentation of these cultural elements in jewelry. However, the current jewelry design often can not dig deep into these cultural values, just stay on the surface of the imitation, lack of depth. This disconnect with market demand not only restricts the market expansion of jewelry brands, but also may cause them to lose the opportunity to establish a deep connection with consumers.

4. The Integration Path of Traditional Chinese Tea Culture Elements and Jewelry Design

4.1. Emphasize the embodiment and innovation of the connotation of tea culture elements

In exploring the integration path between traditional Chinese tea culture elements and jewelry design, it is especially crucial to pay attention to the embodiment and innovation of tea culture elements. Tea culture, as a profound cultural heritage of the Chinese nation, is not only a beverage brewing and drinking, but also contains a series of philosophical ideas, humanistic feelings and aesthetics of life. Jewelry design in the integration of tea culture elements, should dig deep into the spiritual connotation, rather than just stay on the surface of the form of imitation. For example, we can consider the natural form of tea leaves, the beauty of the lines of tea utensils, the Zen of the tea ceremony and tea-related traditional cultural symbols for abstraction, sublimation, innovatively integrated into the design of jewelry. In addition, jewelry designers should also actively communicate and cooperate with tea culture researchers and tea masters to truly understand the deeper meaning of tea culture and combine it with jewelry design to create jewelry works with both cultural connotations and innovation.

4.2. Emphasis on market demand

With the intensification of market competition and the constant changes in consumer trends, jewelry design can no longer be limited to pure artistic expression, but also needs to keep close to the pulse of the market and deeply understand the real needs of consumers. Among them, the pursuit of culture and innovation by young consumer groups is particularly obvious. They hope that the jewelry they buy is not only decorative, but also a symbol of culture and identity, reflecting their unique aesthetic of the fusion of tradition and modernity. Therefore, when incorporating tea culture elements into their designs, jewelry designers need to consider how to better meet this generation's demand for personalization, differentiation and cultural depth. This means that designers not only need to study tea culture in depth, but also need to work across boundaries with experts in marketing, consumer research and other fields to ensure that the design solu-

tions have a deep cultural heritage, but also keep up with market trends and meet the actual needs of consumers.

5. Conclusion

After in-depth exploration, the study found that there exists a natural affinity and great potential for integration between Chinese tea culture and jewelry design. Today, when tradition and modernity are intertwined, the connection between the two should be more cherished and deeply explored, so that it can become a new driving force to promote the development of the jewelry industry. By incorporating the essence of tea culture, jewelry can not only show richer cultural connotations, but also satisfy modern consumers' pursuit of identity and individuality. In addition, such a combination also provides a broader creative stage for jewelry designers, encouraging them to step out of the traditional framework and innovate boldly. Ultimately, when the perfect combination of tea and jewelry is realized, the study believes that it will not only bring about a sea change for the jewelry industry,

but also send a strong message to the whole society about the harmonious coexistence of tradition and modernity.

6. Acknowledgement

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The Effect of Different Exercise Styles on Anxiety and Depression

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Abstract: Anxiety and depression have become an important health problem that troubles people, and their occurrence frequency is relatively high. Therefore, this study explores the impact of different exercise styles on anxiety and depression, and attempts to provide suggestions and strategies for individual emotional counseling. By comparing the intervention effects of aerobic exercise, strength training, and yoga on subjects, it was found that they all effectively reduced anxiety and depression symptoms, and there was a significant statistical difference ($P < 0.05$) between them and the group that did not engage in any exercise. The impact of different exercise methods on anxiety and depression is positive, and it can serve as an auxiliary intervention method for psychological and emotional disorders, helping individuals improve their mental health level.

Keywords: Exercise intervention; Physical and mental health; Anxiety self rating scale; Self rating depression scale

1. Introduction

The increasing life pressure and workload make people's psychological state more prone to fluctuations, and exhibit negative emotions such as anxiety and depression. There are many reasons for this negative emotion, including genetic factors, psychological factors, or changes in major life events or ways, which can have an impact on individuals' emotions and mental health. Among them, anxiety and depression, as a persistent and negative emotional state, may be accompanied by tension, worry, and depression. Excessive anxiety and depression can have a negative impact on an individual's physical and mental health and daily life [1]. Moderate aerobic exercise can increase the levels of neurotransmitters such as endorphins and serotonin produced in the body, thereby improving mood, enhancing emotional stability, and alleviating symptoms of anxiety and depression [2]. The differences in different exercise methods lead to different effects on improving individual anxiety and depression. Therefore, finding suitable exercise forms has a positive impact on maintaining mental health. The purpose of this study is to explore the impact of different exercise styles on anxiety and depression, and to provide some suggestions for exercise choices, in order to provide theoretical basis for improving individual quality of life.

2. Research Objects and Methods

2.1. Research subjects

The study used social survey questionnaires to screen individuals with anxiety and depression, and invited them to participate in the experimental process based on in-

forming them of the experimental content. The research subjects included in the experiment underwent the Self Rating Anxiety Scale (SAS) or Self Rating Depression Scale (SDS), with scores greater than 50, and there were no subjects with neurological diseases or cognitive impairment. The selected individuals were able to independently complete the experimental content without exiting the experiment midway.

2.2. Research methods

The subjects were divided into groups according to their voluntary will, and were divided into a control group of 30 people (not participating in any exercise), an aerobic exercise group of 30 people, a strength training group of 30 people, and a yoga group of 30 people. The exercise frequency of the exercise group was three times a week, each time for 30-60 minutes, and the specific situation was flexibly adjusted based on the subjects' physical condition. The experimental period is 12 weeks, and it is required that all participants maintain a normal diet and rest, do not take any health drugs or supplements, and ensure that they do not engage in significant physical activity 24 hours before the exercise training process. The experimental exercise forms and movements were completed under the guidance of professionals.

2.3. Detection indicators

Psychological evaluation indicators: Evaluate using SAS and SDS, and score the frequency of symptoms in the scale according to a 4-level score. The scoring options are none, sometimes, often, and always. A higher score

indicates a more severe tendency towards anxiety or depression, with a SAS cutoff of 50 points [3].

2.4. Data statistical processing

The experimental data were processed and analyzed using EXCEL2003 tools and SPSS22.0 software, and presented in the form of mean ± standard deviation. The counting data is expressed in columns or percentages, and the Mann Whitney U test is used, with P<0.05 as the criterion for determining the significance of differences between groups.

3. Results

Data statistics were conducted on the anxiety scores of subjects before and after intervention. The results showed that there were significant changes in the values of sub-

jects in the aerobic exercise group, strength training group, and yoga group compared to before intervention, with significant statistical significance (P<0.05), and their scores decreased by at least 8 points or more. The results of the depression scale also showed that the control group who did not engage in any exercise had relatively small numerical changes and no significant difference. The SDS scores of the exercise group after intervention were all less than 50 points, and there was a significant inter group difference compared to the control group (P<0.05). The above results indicate that different exercise methods have alleviated the anxiety and depression of subjects, and can all improve their psychological state to a certain extent, enhancing their mental health level.

Table 1. SAS and SDS scale results of subjects before and after different exercise modes

Inscale	Experiment time	Control group	Aerobic exercise group	Strength training group	Yoga group
SAS	Before experiment	58.28±2.74	58.56±1.37	59.34±3.27	58.94±6.12
	After experiment	59.26±3.22	52.44±2.06*	51.06±2.12*	48.34±3.16*
	P	0.073	0.014	0.022	0.005
SDS	Before experiment	60.12±2.56	60.07±1.22	59.89±3.46	60.28±3.64
	After experiment	61.19±2.17	53.36±2.11*	52.67±4.23*	51.77±4.68*
	P	0.172	0.004	0.001	0.001

Note: "*" indicates P<0.05 compared to the control group.

4. Conclusion

Anxiety and depression, as a global mental health problem, are commonly intervened with methods such as psychotherapy, medication, and self-regulation. However, due to individuals exhibiting lower self-efficacy when experiencing anxiety and depression, and often experiencing a sense of shame and reduced communication with others, it is difficult for patients to actively seek psychological treatment. Although drug therapy is simple, it is difficult to persist for a long time, and habitual use can also cause certain damage to the body's functions. Therefore, when this negative emotion has not yet developed enough to require medical attention, most scholars suggest starting from aspects such as sleep, diet, and exercise habits to help individuals get out of the emotional quagmire and regulate their psychological state. The study analyzed the anxiety and depression emotions of subjects under different exercise modes, and found that they can significantly improve the negative emotions of patients and enhance their mental health level. The reason may be that aerobic exercise can promote blood circulation in the body, increase blood and oxygen supply to the brain, and thus improve mood and emotional stability. It can also promote the release of neurotransmitters such as endorphins and serotonin, which play an important role in reducing anxiety and depression symptoms. Yoga combines postural exercises, breathing exercises, and meditation, which can help balance the body and mind.

During yoga practice, participants will achieve physical relaxation, thereby reducing physical tension and anxiety. A certain level of strength training can enhance muscle strength and physical strength, enhance self objective cognition by improving body shape, and thus alleviate anxiety and depression. Developing good exercise habits has a positive effect on improving individual anxiety and depression, and this approach can be well integrated into our daily life, with high practicality. Choosing suitable exercise methods to promote mental health can effectively improve our quality of life and help us achieve physical comfort and spiritual pleasure.

5. Acknowledgement

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Reflections on the Application of Modern Educational Technology in Russian Teaching in Universities

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Abstract: The continuous promotion of computer applications and the development of information technology have led to more application of modern educational technology in the field of teaching. However, the outdated and monotonous nature of traditional Russian language teaching courses cannot meet the teaching needs of teachers and students. Therefore, the research explores the application path of this educational technology in Russian language teaching in universities, and through its necessity analysis, promotes the improvement of teaching quality from three aspects: rational use of multimedia technology, transformation of teaching role positioning, and the use of virtual practice environment, and promotes innovative reform of teaching courses.

Keywords: Modern educational technology; Russian; Multimedia tools; Personalized needs

1. Introduction

With the development and widespread application of information technology, the progress and innovation of educational technology have greatly changed the diversification of teaching methods and the professionalization of educational environments, which has to some extent expanded the breadth and depth of educational applications. Modern educational technology not only provides rich teaching resources, but also represents the display of teaching functions and values, achieving modern educational management in schools. Applying this technology to different teaching courses can bring new opportunities, which is of great significance for promoting curriculum development[1]. Among them, niche language courses are difficult to achieve good course results in traditional teaching methods due to their high learning difficulty, poor language environment and habits[2]. Therefore, this study focuses on Russian language teaching in universities and actively explores the application prospects and development ideas of modern educational technology in their course teaching, in order to better promote the improvement of course quality.

2. The Necessity of Applying Modern Educational Technology to Russian Language Teaching

Language is not only a tool for people to communicate, but also a social phenomenon that showcases social

changes and changes. With the gradual manifestation of the trend of "popularization" in higher education, the number of educated people has sharply increased, and the rapid development of information technology has led to more and more universities starting to allocate computer teachers and online classrooms, providing opportunities for educational development while also facing significant challenges. The current situation of Russian language teaching mostly adopts traditional teaching methods and textbooks, which are difficult to stimulate students' interest in learning. Moreover, under the traditional teaching mode, the teaching form with teachers as the dominant position meets students' personalized learning needs, and the quality and effectiveness of teaching urgently need to be improved[3]. The advantages of multimedia technology, internet resources, and virtual environments demonstrated by modern educational technology can create a richer learning environment and experience for students, and provide higher quality resources. With the continuous progress of technology and the transformation of educational models, the application of educational technology in Russian language teaching in universities has become increasingly important. Therefore, accelerating the exploration of the application of modern educational technology in Russian language teaching is an important measure to meet the development of the times and also a necessary measure for curriculum reform and innovation. Figure 1 shows the current problems in Russian language teaching.

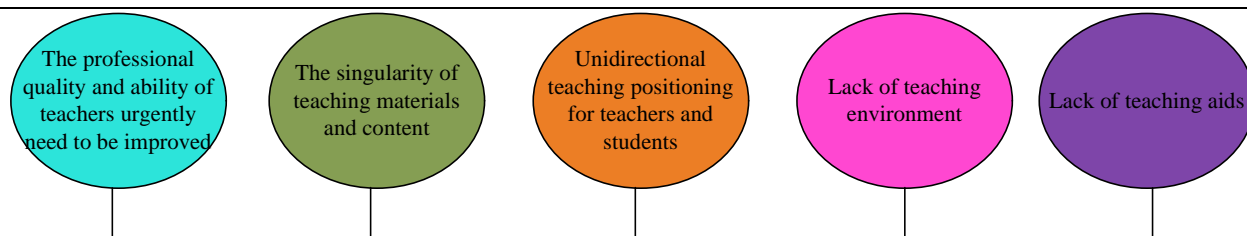


Figure 1. Current problems in Russian teaching

3. The Modern Informationization Development Path of Russian Teaching in Universities

3.1. Improve the adaptability of teaching content and make reasonable use of multimedia technology

Russian is a highly applicable course, and teachers need to organically integrate educational technology into the teaching process, providing a challenging and inspiring learning environment. Teachers should continuously improve their knowledge and abilities in teaching techniques and theories, combine their professional abilities with modern information teaching methods, and improve the adaptability of teaching content. Especially in teaching Russian grammar, vocabulary, and phonetics, teachers need to develop corresponding educational technology tools and resources for specific teaching content to help students better master language knowledge. At the same time, attention should be paid to linking with existing teaching methods and textbooks to ensure the coherence and organic nature of the teaching process. The content of Russian course textbooks differs to some extent from online resources. Therefore, teachers should use multiple media such as text, images, sound, and video to adjust teaching content in a timely manner. While considering the characteristics and needs of teaching content, they should use music, movies, and online media to enrich students' learning experience, enhance classroom interaction between teachers and students, and help students experience the charm of language from the inside out. The charm of learning Russian. At the same time, teachers can also use educational technology tools such as video teaching and interactive courseware to stimulate students' interest and participation in learning. Assist students in sharing learning resources and exchanging learning experiences through online learning platforms and collaborative tools.

3.2. Innovate classroom teaching and transform role positioning

The traditional teaching mode often centers around teachers, with students passively accepting knowledge. Teachers should actively use educational technology to break this traditional one-way teaching mode, and use

online learning platforms, online classrooms, and social media technology tools to guide students to participate in classroom discussions and learning activities. Through interactive and cooperative learning methods, students' thinking development and language ability improvement can be promoted, Cultivate their teamwork and communication skills, while also enhancing their interest and motivation in learning. Teachers can assist students in providing personalized learning guidance and feedback when accessing teaching resources based on their individual needs and levels. For example, intelligent learning platforms and learning management systems can be utilized to automatically push corresponding learning materials and exercises based on students' learning situations and grades, providing targeted guidance and guidance to individual students. Teachers are no longer just knowledge imparters, but rather guides and guides students' learning. Students also need to exert their subjective initiative and actively participate in teaching activities. Strengthen the construction of cooperative relationships between teachers and students under the application of modern educational technology, making them the two-way interactive subjects of knowledge construction. Teachers should cultivate students' creativity and critical thinking abilities, encourage them to actively participate in classroom discussions and research activities. Students can independently choose learning materials, develop learning plans, and use various tools and technologies for learning and presentation. An open and autonomous learning environment helps to stimulate students' interest and initiative in learning, improve learning effectiveness and motivation.

3.3. Using virtual environments to create language learning environments

When applying and promoting modern educational technology, the deployment and development of technology cannot be separated from a good network environment and technical support, so the school needs to invest funds and resources to update equipment and software to maintain the progressiveness and effectiveness of teaching. In Russian language teaching, teachers need to use computer technology to simulate the real environment and achieve interactive learning through educational technology, allowing students to experience the actual situation

firsthand. Virtual practice environments can provide students with more opportunities for practical language use. For example, students can engage in conversations with other native Russian speakers through a virtual communication environment to enhance their practical communication skills. In addition, the virtual practice environment can also provide visual learning materials and interactive learning activities, helping students better understand and master Russian grammar and vocabulary, achieving "gamification" of teaching. Students can play virtual roles in language practice, enhance their sense of engagement and participation in learning, and enrich the learning experience. The main roles of schools and teachers should learn to create an open, interactive, and accessible learning environment for students, and use virtual practice environments to meet students' personalized learning needs and stimulate learning interest.

4. Conclusion

Modern information technology is a field with strong correlation between theoretical and practical applications,

and with its widespread application in educational practice, it contributes to the reform and development of education and teaching. When applying information technology to Russian language teaching, all parties should actively utilize information technology and multimedia tools to enhance their own quality and professional abilities, explore innovative paths that meet the needs of the times and teaching, and jointly promote the improvement of Russian language curriculum quality.

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The Economic Development and Strategy of Planting Industry based on AHP-SWOT Quantitative Analysis

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Abstract: In order to achieve strategic research on the economic development of the planting industry, a seedling production company in southwestern China was taken as a sample, and a quantitative analysis was conducted using AHP-SWOT to systematically study and explore the development strategy of the seedling company. The planting industry is an important component of the agricultural and forestry economy, and the seedling industry is the core of promoting the development of the planting industry economy. Based on the company's vision and overall goals, starting from the strategic principles of specialization, market orientation, reasonable resource allocation, and people-oriented approach, the overall strategy and competitive strategy of the seedling company have been formulated, and the key points for strategic implementation have been proposed, in order to provide theoretical reference for the economic development of the planting industry.

Keywords: Analytic hierarchy process; Planting industry; Economic development Seedling industry; Development strategy

1. Introduction

The rapid development of China's ecological civilization construction process is driving the continuous deepening of rural revitalization strategy. As the world's most populous country, the stable operation of the agricultural economy and food security are the key to China's livelihood and national security. The development of science and technology has prompted the transformation of traditional agriculture to intelligent agriculture, and as an important component of the agricultural and forestry economy, the production of seedlings is insufficient to meet the growing demand of the planting industry market. Therefore, in response to the weak technical strength and lack of core capabilities in the seedling industry, AHP-SWOT was used to quantitatively analyze the production and operation situation of seedling companies in the planting industry, and further explore the economic development strategies of the planting industry, in order to promote the sustainable development of China's seedling planting industry economy.

2. AHP-SWOT Quantitative Analysis of Planting Economy

In order to develop strategies suitable for the development of the planting industry, improve the weakness of planting enterprises, and enhance the market competitiveness of the planting industry, this study takes a seedling company in southwestern China as a research sample. Based on the organization and induction of relevant research data, the AHP-SWOT quantitative analysis method is used to quantitatively analyze the economic development of the company [1]. Firstly, the matrix evaluation results obtained from SWOT analysis are shown in Figure 1.

From Figure 1, it can be seen that the ST strategy of the seedling company focuses on its own advantages, thereby enhancing its core competitiveness to cope with external threats. The SO strategy is to utilize its own advantages and opportunities to continuously develop upwards. The WT strategy is a stability strategy that utilizes opportunities to improve its own weaknesses. The focus of WT strategy is to avoid external risks, and it is necessary to continuously supplement its own weaknesses through the company. On the basis of SWOT analysis results, the AHP-SWOT model constructed using Analytic Hierarchy Process (AHP) is shown in Figure 2.

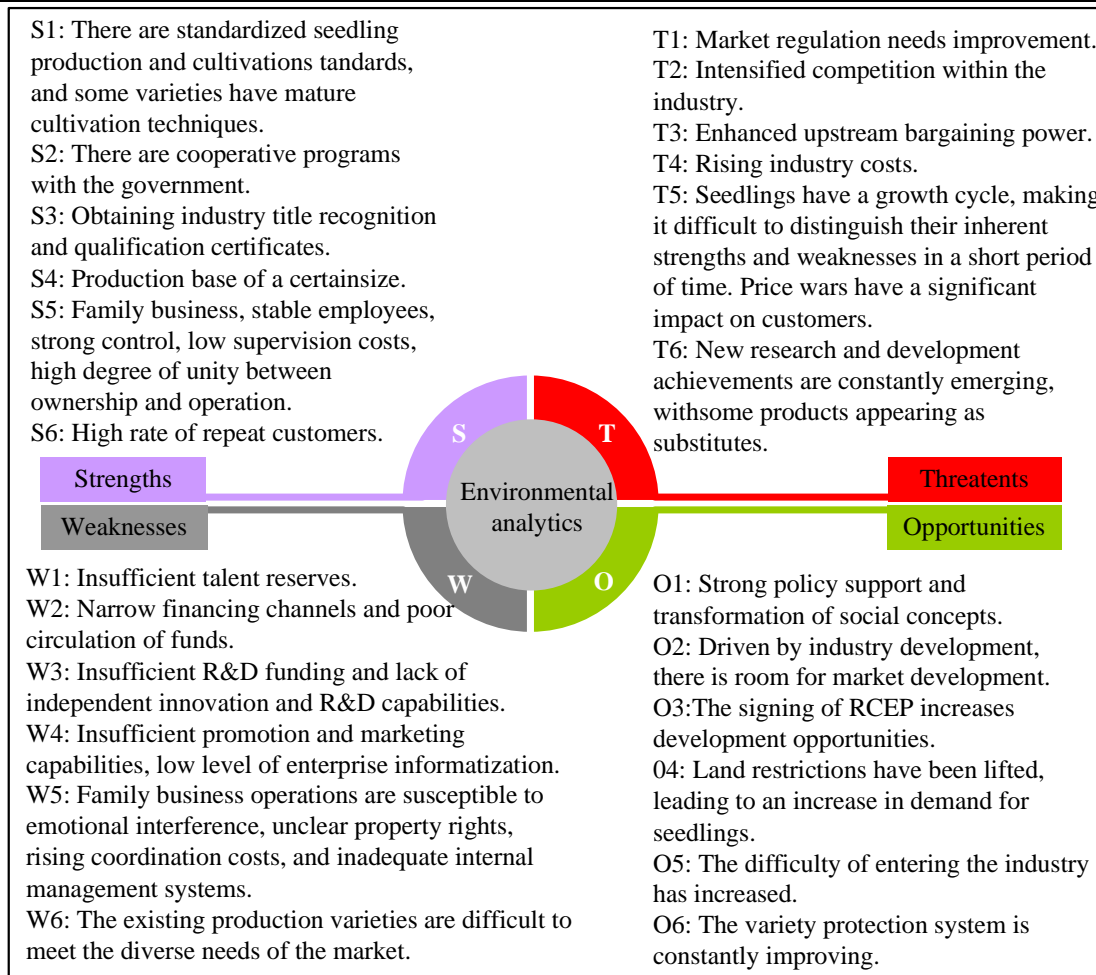


Figure 1. SWOT matrix analysis and evaluation results

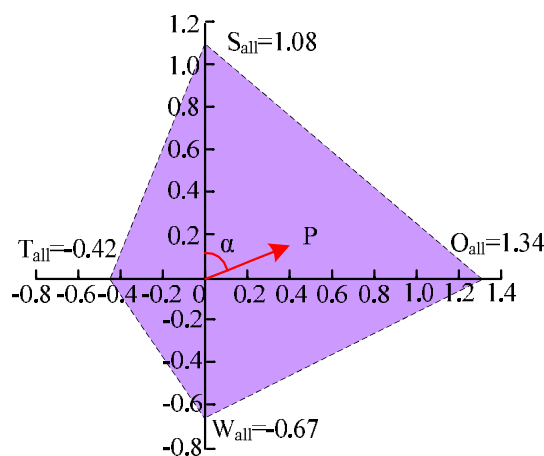


Figure 2. Strategic quadrilateral diagram based on AHP-SWOT analysis

From Figure 2, it can be seen that the total advantage intensity is 1.08, the total disadvantage intensity is -0.67, the total opportunity intensity is 1.34, and the total threat intensity is -0.42. According to the formula for calculating the coordinates of the triangle center of gravity, it can be seen that the center of gravity P of the strategic quadrilateral is within the SO strategic quadrant, with an azimuth angle of 66°, and the strategic direction deviates towards the horizontal axis opportunity O. This indicates that for the overall environment in which the seedling company is located, the strength of advantages and opportunities is significantly superior to the strength of disadvantages and threats, and the SO strategy should be emphasized in development. The company has standardized seedling production and cultivation standards, and the cultivation technology for some seedling varieties is mature, which has certain advantages in terms of seedling quality in the market. The seedling company can increase investment in technical services to ensure the quality of early stage seedling products and after-sales service through high-quality cultivation technology. Se-

condly, increase the number of nursery cultivation points, sign land leases on site and sell them nearby, expand the company's production area, and promote the upgrading of the company's scale. Make full use of the company's technological advantages and customer resources, keep up with the pace of national policy changes in the planting industry, and pay attention to seizing the opportunities generated by industry development, and timely leverage to improve one's ability to avoid risks and core competition, thereby weakening the negative impact of fierce market competition.

3. Development Strategy of Planting Economy based on AHP-SWOT Quantitative Analysis

Based on the quantitative analysis results of AHP-SWOT, this study comprehensively explores the development strategy of the seedling company from three aspects: selection principles, company mission and vision, and strategic goals, in order to further promote the economic development of the planting industry. Seed companies use scientific research achievements as their products for

market operations, possessing a certain level of scientific and technological content. Therefore, they should follow the principle of specialization, adhere to the principle of specialization to enhance the company's technical strength, and ensure the company's professional authority. At the same time, seedling leveling has a certain growth cycle, so it should be market-oriented as the principle. The reasonable allocation of resources can provide guarantees for the implementation of strategies, and the normal operation of a company also requires people to achieve it. Therefore, the principles of reasonable allocation and people-oriented should also be followed. Combining the company's business philosophy of "service, professionalism, standardization, and innovation" and the corporate vision of "utilizing modern technology to serve the seedling cultivation industry", the overall goal of the company is to continuously expand its enterprise scale and market share in the planting industry, and strive to become a high-quality modern seedling company in the southwest region. The overall goals of the seedling company are shown in Figure 3.

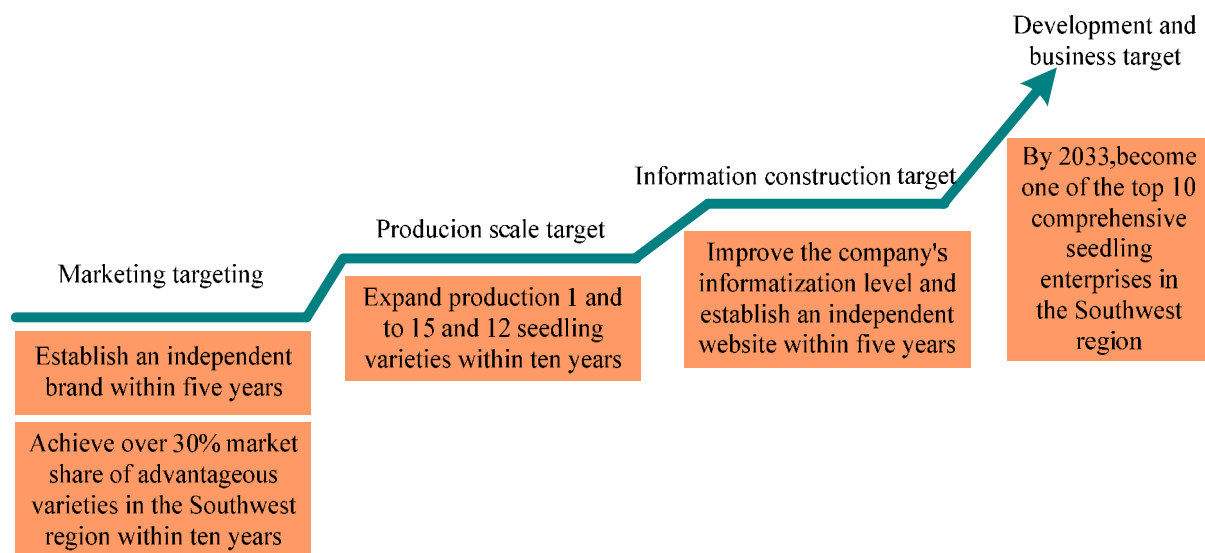


Figure 3. Overall targets of the seeding company

Based on the current development situation of the company, as well as the future market, production scale, information construction, and development and business goals, the final strategic implementation focus has been proposed through research. Firstly, stabilize the development of core business, while ensuring the normal operation of the main business, observe market orientation and industry direction, continuously expand the diversification of product categories and enrich product groups, thereby improving the company's ability to resist risks. Secondly, expanding marketing and promotion channels,

improving and developing online sales channels, can expand the online sales scope by establishing the company's official website, official online stores, micro stores, etc. The e-commerce economy is developing rapidly, and sales channels can be promoted through e-commerce platforms such as Taobao and JD.com. Thirdly, conduct market research and innovate business scope. In addition to seed sales, we can also sell new businesses such as seed breeding technology and pest control. We can also consider non-technical business products that combine leisure and sightseeing agriculture development. Finally,

according to local conditions, expand the existing scale of the company and carry out the "company cooperative/planter" production model. Based on the natural environmental conditions, agricultural policies, and regional characteristics of the company's location, establish a local production base to increase the market share in the southwest region.

In addition, it is necessary to leverage its own advantages in combination with competitive strategy, allocate resources reasonably, and promote the achievement of strategic goals. Firstly, a differentiation strategy should be implemented in terms of product quality differences and technical service differences to ensure the reliability of product advantages. Establish standardized and professional cultivation technology standards and nursery standards for seedlings, sell according to the grade of seedlings, and improve the core competitiveness of the company's products through variety specificity and quality differences. At the same time, providing reliable after-sales technical guidance services for growers or cooperatives is beneficial for enhancing customer stickiness and improving the company's marketing reputation. Secondly, strengthen communication with other enterprises or research institutions, use alliance strategies to compensate for the company's shortcomings, promote sustainable development, and facilitate the expansion of financing channels and the increase of investment entities, thereby

increasing the company's resources in research and development and talent.

4. Conclusion

The planting industry, as an important pillar of agricultural development, cannot thrive and develop healthily without the support and promotion of the seedling industry. Currently, China's seedling enterprises are still mainly small and medium-sized, with relatively weak capital strength. Clarifying their strategic positioning in the market environment is conducive to adapting to the development process of the planting industry. The study combines AHP-SWOT quantitative analysis to explore the development strategy of a certain seedling company in the southwest region, and hopes to provide theoretical reference for the development of the planting industry, thereby promoting the development of the seedling industry and China's agriculture, and enhancing the comprehensive strength of the seedling industry.

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Measurement of Eco-Efficiency and Analysis of Influencing Factors of Returning Farmland to Forest Project based on DEA-Tobit Model

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Abstract: Returning farmland to forests is an important ecological restoration measure, and its efficiency is a common concern of the public, government decision makers and academics. In this study, the main line of the ecological efficiency evaluation of the returning farmland to forest project was constructed, the ecological efficiency measurement model was constructed, and the influencing factors were analysed from the perspectives of multiple inputs and multiple outputs. The results show that with the implementation of the project, the number of counties at a low level of efficiency began to decrease, while the number of counties at a high level of efficiency increased year by year, which is in line with the reality. This shows that the proposed model has good performance in measuring eco-efficiency and has some potential for application.

Keywords: DEA-Tobit; Fallow forest; Eco-efficiency; Influencing factors

1. Introduction

The rapid development of society also brings serious ecological problems, such as environmental pollution and resource depletion. With the rapid development of China's economy and the acceleration of urbanisation, forest resources have been exploited in large quantities, causing serious ecological damage and intensifying soil erosion and land degradation [1]. With the main purpose of controlling soil erosion, protecting and improving the ecological environment, the basic idea of returning plough to forest is to gradually prohibit ploughing of sloping farmland that is prone to soil erosion, and select suitable afforestation varieties according to the natural conditions of each region and implement the project of returning plough to forest according to the local conditions [2]. From the perspective of the scale of capital investment, geographical scope and the number of interest subjects involved, China's initiative to return ploughland to forest is the largest forest ecological project in the world. The study intends to use a data envelopment analysis model to measure the ecological benefits of this project and analyse its main influencing factors, with a view to providing a data basis for decision-making on the optimization of ecological benefits in China.

2. Measurement of Ecological Efficiency of Returning Farmland to Forest and Analysis

of Its Influencing Factors based on Data Envelopment Analysis

2.1. Measurement of ecological efficiency of returning farmland to forest project based on DEA-Tobit model

Data Envelopment Analysis (DEA) is a method based on linear programming to construct the production wavefront points of the predicted values, and then determine the relationship between the wavefronts based on the wavefront values. The DEA model does not need to have the input and output factors known in advance, and belongs to the dimensionless one of the research means. Due to the characteristics of multiple inputs, outputs, and scale returns in the implementation process of China's fallow farmland reforestation project, it is suitable to use DEA method to measure it. Equation (1) is the expression of ecological efficiency measurement of returning farmland to forest.

$$\begin{cases} \min q_z - e \left(\sum_{i=1}^m S_i^- + \sum_{r=1}^s S_r^+ \right) \\ s.t. \sum_{j=1}^n I_j x_{ij} + S_i^- = q_z i x_{rz}, i = 1, 2, \dots, m \\ \sum_{j=1}^n I_j y_{rj} - S_r^+ = y_{rz}, r = 1, 2, \dots, s \\ \sum_{j=1}^n I_j = 1 \end{cases} \quad (1)$$

In Eq. (1), q_z denotes the ecological efficiency of returning farmland to forest, z denotes the number of regions, j denotes the number of regions, m and s denote the number of input indicators and output indicators of ecological projects. x_{ij} and y_{rj} denote the quantity of inputs and the r th output of the region numbered j on element i , respectively. I_j denotes the weight coefficient of the region numbered j on each input factor. S_i^- and S_r^+ denote input deficiency variables and output excess variables, respectively. e denote the adjustment coefficients. When the values of deficit variable and excess variable cancels out to 0, it indicates that the inputs and outputs of the ecological project of returning farmland to forests are kept in a balanced state, and at this time, the ecological efficiency takes the value of 1, and it is in full efficiency. When the absolute value of the sum of the deficit variable and the excess variable is not equal to 0, the eco-efficiency is less than 1, which is in the incomplete efficiency, and it is necessary to make the eco-efficiency increase to 1 through the appropriate regulation of the factor inputs and outputs. The Tobit model needs to observe the constrained observation of the explanatory variables, while there is no constraint limitation on the explanatory variables. For this reason, the study intends to use the Tobit model to analyse the effects of different environmental factors on the eco-efficiency of returning farmland to forest. Equation (2) is the mathematical expression of Tobit model.

$$y_{it} = b_0 + b_1 * L + b_2 * I + b_3 * F + b_4 \geq b_5 * N + b_6 * R + m \quad (2)$$

In Eq. (2), L denotes the rural labour transfer rate, I denotes the per capita net income of farmers, F denotes the average annual rainfall, N denotes the soil nitrogen content, and R denotes the average river network density. b_0 denotes the intercept, b_1 to b_5 denote the regression indices of the corresponding variables, y_{it} denotes the explanatory variables, and m denotes the inequality compensation.

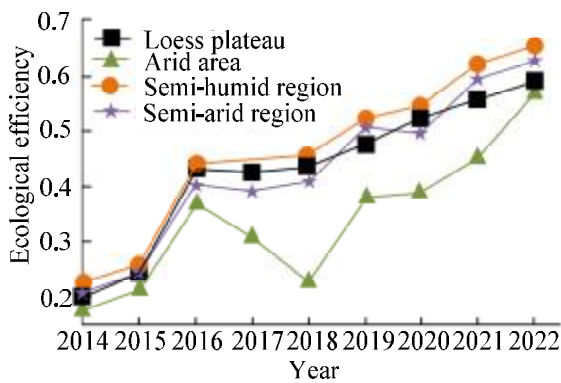
2.2. Analysis of factors influencing the ecological efficiency of farmland reforestation projects

As the largest forest ecological project in the world, China has invested a great deal of human, material and financial resources in the arable land reclamation project. Whether the input and output benefits of the arable land reclamation project can be guaranteed with the support of the large-scale national financial funds and how the project implementation will be enhanced in the project implementation has become an urgent issue. To achieve this goal, it is necessary to assess the eco-efficiency of the cropland reclamation project in more detail. Based on the perspective of multiple inputs and multiple outputs, three input elements, arable land, capital and human, are selected. Among them, arable land input refers to the cumulative area of fallow land that has been achieved in the fallow forest project; financial investment refers to the cumulative investment in the fallow forest project; and labour input refers to the number of farmers who have participated in the fallow project. Returning farmland to forest is a gradual process, and at the beginning of the implementation of the retired farmland project, new retired farmland area appears every year, i.e., the retired farmland area that has been improved for the ecological environment is a cumulative process. Due to the continuation of the retired farmland to forest project, the area of retired farmland to forest will not only not be reduced, but will also have an impact on the ecological environment together with the newly reclaimed land. Since the implementation of the Return of Farmland to Forestry and Grassland Project, the subsidy for returning farmland to forest and grassland has been in the form of an eight-year subsidy for returning farmland to ecological forests, a five-year subsidy for returning economic forests, and a two-year subsidy for returning grassland. Among the farmers participating in the return of farmland to forests, farmers are the most important main body participating in the policy of returning farmland to forests. In view of the cumulative nature of the investment of the fund for returning farmland to forests and grasses, the cumulative method should be used when using the number of people withdrawing from farmland as an evaluation indicator. The study takes carbon sequestration by vegetation, soil and water conservation, water conservation and species diversity as the four ecological output indicators. The setting of output indexes should abide by the following principles, firstly, as a forestry project, when choosing the eco-efficiency output indexes, attention should be paid to the lagging relationship between them and the investment, which is usually between 2 and 3 years. Secondly, the eco-efficiency produced by the fallow project should be incremental. Assessment of forest ecological project construction should take into account the marginal benefits resulting from the protection, expansion and enhancement of some or all ecosystems and services by the forest ecological project. In addition, since the original ecological environment already had considerable

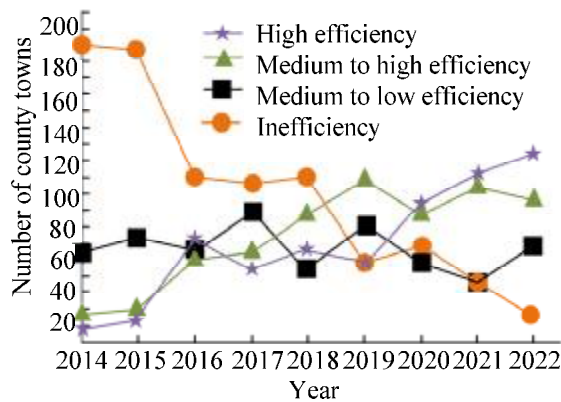
ecological effects before the zoning plan, the ecological effects before the fallow project need to be deducted when measuring the impact of the fallow project on the regional ecosystem, so as to obtain the actual impact of the ecosystem on ecological improvement after the fallow project.

3. Analysis of the Results of Eco-Efficiency Measurement of the Returning Farmland to Forest Project

The study selected as a sample dataset the data on area of returning farmland to forest, project funds and farm households in more than 200 regions of the Loess Plateau from 2014 to 2022, which were taken from the China Forestry Statistical Yearbook. Figure 1 shows the spatial and temporal change curves of ecological efficiency of the plough-return projects in the study area.



(a) Temporal changes in ecological efficiency of returning farmland to forests



(b) Regional changes in ecological efficiency of returning farmland to forests

Figure 1. Temporal and spatial variation curve of ecological efficiency in the project of returning farmland to forests

From Figure 1(a), it can be seen that in the time dimension of eco-efficiency of returning farmland to forest, the

eco-efficiency values of the four regions, namely, Loess Plateau, semi-humid region, semi-arid region and arid region, are in the stage of increasing year by year, with eco-efficiency values lower than 0.25 in 2014, while eco-efficiency values are higher than 0.55 in 2022, and in 2022, the values of eco-efficiency in descending order are those of the semi-humid region (0.66), semi-arid region (0.63), Loess Plateau (0.59) and arid region (0.57). From Figure 1(b), it can be seen that the regional changes in ecological efficiency of returning farmland to forests showed large differences at the four levels. In 2014, more than 180 counties were at low level of eco-efficiency, and the sum of the number of counties at medium-efficiency and high-efficiency was not more than 50. With the implementation of the project, the number of counties at low level of efficiency began to decrease, and in 2022 it dropped to less than 30, whereas counties at high-efficiency level ranked the first in the number, with the size of 128. this indicates that the retired farmland forest project has an environmental improvement facilitating effect.

4. Conclusion

In the context of the "two-carbon" strategy, the assessment of eco-efficiency can provide useful reference for other eco-environmental management projects to be carried out in the future. In view of this, this study measured the eco-efficiency of the return of farmland to forest project based on the DEA-Tobit model, and then carried out a multi-indicator analysis of the factors influencing the eco-efficiency, as well as statistical calculations. The results show that the eco-efficiency values of the four regions, namely, Loess Plateau, Semi-Humid, Semi-Arid, and Arid regions, in the time dimension, show an increasing trend with the progress of the project, and the final value is higher than 0.55. In the regional dimension, the number of regions with high efficiency and medium efficiency shows a fluctuating trend with the implementation of the project. Therefore, it shows that the proposed model has the ability to predict the eco-efficiency, which is helpful for the ecological decision-making.

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The Impact of Artificial Intelligence (AI) Technology on the Teaching Reform of Product Design Majors

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Abstract: Artificial intelligence (AI) technology is an important scientific and technological field in the world today, which has a far-reaching impact on various industries, including product design. As an important discipline for cultivating innovative talents, the product design major needs to adapt to the development and changes of AI technology in a timely manner, and carry out teaching reform and innovation.

Keywords: Artificial intelligence (AI) technology; Product design; Teaching reform; Data-driven design; Education

1. Introduction

Artificial intelligence (AI) technology is an important field in the field of science and technology in today's world. Its application has deeply affected all walks of life, among which the field of product design is no exception. The rise of AI technology has brought unprecedented opportunities and challenges to product design. At home and abroad, AI has begun to play a key role in product design, and has gradually changed the education mode and career development path of product design professionals.

At the international level, AI technology has shown significant potential in the field of product design. For example, Siemens, a giant in the industrial field, uses AI to improve the design of industrial machinery. Their AI system can analyse large-scale engineering data, help engineers optimise mechanical structures, and improve mechanical performance and energy efficiency. These applications broaden the designer's tools and thinking and have a far-reaching impact on product design. In addition, international universities and research institutions are also actively exploring how to integrate AI into the education of product design majors to cultivate students with technical and innovative ability.

China, with the rise of China's manufacturing industry and the improvement of innovation ability, the demand for AI technology in the field of product design is also increasing. Some domestic design companies and manufacturers have begun to use AI technology. For example, as a leading technology company in China, Huawei widely applies AI technology in product design. They use AI for product design, material selection and performance optimisation. AI is also used for intelligent control of production lines to improve production efficiency

and quality; and Gree uses AI technology in the design of air conditioning products to improve energy efficiency and comfort. AI can automatically adjust the operating parameters of the air conditioner according to the user's habits and environmental conditions to realise energy saving and intelligent control. However, the education system of domestic product design majors still needs to adapt to technological changes to cultivate students' skills and knowledge to adapt to the needs of the AI era.

Therefore, it is of great significance for the world and China to deeply study the impact of AI technology on the teaching changes of product design majors. This not only helps to understand technological trends and innovation opportunities, but also guides the reform of the education system, improves the competitiveness of students, and promotes innovation and sustainable development.

2. Application of Industrial Intelligence (AI) in Product Design

The application of artificial intelligence (AI) technology in the field of product design has a wide range of theoretical and practical applications. These applications provide designers and manufacturers with new tools and methods to help improve the quality and efficiency of product design.

2.1. At the theoretical level

AI technology can be applied to generative design. This means that the AI system can generate multiple potential design solutions based on a set of initial parameters and rules. Designers can choose the most suitable solution from them, thereby accelerating the design process and enhancing creativity.

The AI system can also analyze the work of designers and provide real-time feedback. For example, it can detect potential design errors or improvement opportunities and provide corresponding suggestions to designers to help them optimize their designs.

AI also plays a role in data-driven design. By analyzing big data and market trends, AI can help designers understand consumer needs and design products based on these insights. This helps to create products that are more adaptable to the market.

2.2. In practical applications

Many companies have adopted AI technology to improve their product design processes. For example, the Volkswagen Group adopts AI technology in automotive design. They use AI generative design tools to help designers quickly generate multiple car design solutions and optimize them in terms of performance, safety, and sustainability.

Sustainable design is also an important practical application field. AI can help designers optimize the sustainability of products, taking into account factors such as the environmental impact of materials and energy efficiency of production processes, in order to reduce resource waste and environmental impact.

3. Changes in the Teaching System of Product Design Specialty under Artificial Intelligence (AI) Technology

The impact of artificial intelligence (AI) technology on the teaching system of product design majors is mainly reflected in the following aspects:

Update and expand the course content. Due to the development and changes in AI technology, product design majors need to update and expand their course content to cover topics related to AI, such as machine learning, data analysis, human-computer interaction, etc. These themes not only help students understand and apply AI technology, but also expand their knowledge horizons and innovative thinking.

Innovation and diversification of teaching methods. Due to the application of AI technology, product design majors require innovative and diverse teaching methods to adapt to new needs and environments. For example, online education platforms and virtual laboratories provide students with the opportunity to learn AI technology.

Changes and improvements in student skill development. Due to the requirements of AI technology, product design majors need to change and enhance students' skill development to enable them to fully utilize AI assisted design tools.

Strengthening the connection between the education system and the industry. Due to the development and application of AI technology, the product design profession

needs to strengthen the education system and industry connections to ensure that the educational content is consistent with actual needs. The number of collaborative projects between schools and design companies will increase, providing students with practical project experience. This helps students better understand industry trends and needs, and provides new opportunities for industrial innovation.

Strengthening ethical education. Due to the application of AI technology, a series of ethical and privacy issues have arisen. Product design majors need to strengthen ethical education to enable students to consider these issues in design and ensure that their designs comply with ethical and legal standards [6].

4. The Role Evolution of Product Designers and Product Design Students under Artificial Intelligence (AI) Technology

The widespread application of artificial intelligence (AI) technology is reshaping the roles and responsibilities of product designers and students majoring in product design. This phenomenon is not only of great significance in practice, but also provides value for teaching and research in product design.

The evolution of the role from "creativity" to "AI assisted design": Due to the development and application of AI technology, many repetitive and cumbersome design tasks have been automated, which means that designers can devote more time and energy to more creative work.

The importance of data-driven design decisions: Due to the application of AI technology, data-driven design decisions have become possible. AI systems can provide a large number of data analysis tools to help designers make decisions based on objective data, rather than relying solely on subjective judgments [7]. This not only improves the accuracy and predictability of design decisions, but also provides designers with more information to support their innovative work.

Requirement for computer programming skills: Due to the close relationship between AI technology and computer programming, product designers and students need to master basic computer programming skills in order to be able to use and customize AI tools to support design decisions. This ability is crucial for collaborating with AI systems [3].

Improvement of cross domain cooperation ability: Due to the application of AI technology in product design often requiring cooperation in different fields, product designers and product design students need to enhance their cross domain cooperation ability in order to effectively communicate and collaborate with other professionals. This ability is essential for solving complex design problems.

In short, the impact of artificial intelligence (AI) technology on the teaching reform of product design is ubiquitous. It not only promotes innovation in the field of product design, but also brings new challenges and opportunities to the education system. In order to better cultivate students who meet the needs of the AI era, the education system needs to constantly update and adapt, promote students' cooperation across multiple fields, improve their innovation and ethical thinking, and ensure that the teaching reform of product design majors keeps pace with the times.

5. Acknowledgment

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Response and Management of Diverse Health Needs of Employees in Star Hotels in Hainan from a Whole Person Perspective

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Abstract: In the current fast-paced and competitive market environment, star-rated hotels in Hainan are facing new challenges in employee health management. Focusing on a whole-person perspective, this study explores the diverse health needs of these hotel employees and their effective management. While traditional benefits such as an excellent leave system and salary packages are still important, the physical and mental health of employees is emerging as a key factor that significantly affects the overall performance of a hotel. Many Hainanese star-rated hotels have deficiencies in psychological, social and mental health management. To address this issue, it is recommended that hotels establish a comprehensive wellness management system that includes personalised wellness programmes and proactive care for employees' mental and social health. This will not only improve the overall health of employees, but also enhance their job satisfaction and loyalty. By improving the health and well-being of their staff, Hainan star hotels can improve service quality and productivity, thereby maintaining an edge in the fierce competition for talent and promoting sustainable development. This shift is critical to the long-term success of the hotel, not only in attracting and retaining the best talent, but also in enhancing customer satisfaction and loyalty.

Keywords: Whole person; Hainan star hotels; Staff; Health; Management

1. Introduction

In today's fast-growing tourism industry, star-rated hotels, as an important part of the service sector, rely heavily on the health and well-being of their employees for service quality and efficiency. Especially in popular tourist destinations such as Hainan, employees of star hotels face intense work pressure and diverse health needs [1-2]. Therefore, exploring and implementing effective health management strategies from a whole-person health perspective is crucial to enhancing the overall health of employees and improving the operational efficiency of hotels. In recent years, the concept of whole-person health management has gradually gained attention, which not only focuses on the physical health of employees, but also includes integrated care for psychological, social and spiritual health [3-4]. In star-rated hotels in Hainan, employees are often subjected to intense work pressure and long workloads, which not only challenge their physical health, but also have an impact on psychological and social well-being. Therefore, hotels need to adopt effective health management strategies to ensure that employees receive appropriate support and care across all health dimensions. The study aims to analyse the current situation, challenges faced and strategies implemented by

star-rated hotels in Hainan in responding to the diverse health needs of their employees. By taking into account the physical, mental, social and spiritual health needs of employees, the study examines how to construct and implement an effective whole-person health management programme to promote the holistic development of employees, which in turn improves the service quality and operational efficiency of hotels.

2. Current Situation and Challenges of the Health Needs of Employees in Hainan Star-rated Hotels

2.1. Occupational characteristics and whole-person health risk analysis

From a whole-person health perspective, the health risks faced by employees of star-rated hotels in Hainan are not limited to physical health, but also include psychological, social and spiritual health. Long hours of standing, repetitive labour and night shift work are not only physically stressful, but can also lead to psychological fatigue and social isolation. Together, these factors affect employees' overall well-being, including job satisfaction and quality of life. In terms of mental health, in the face of customer

pressure and high-intensity work demands, employees may suffer from excessive stress and difficulties in managing their emotions, all of which require attention from a whole-person health perspective. For example, the provision of psychological counselling services and stress management training can help employees better cope with psychological challenges at work. In addition, social health is also an important component of whole-person health. Employees may neglect to communicate with family and friends during long working hours and irregular routines, which can have a negative impact on their social health. Hotels can promote social interaction by organising team activities or offering flexible working arrangements.

2.2. Whole-person response to diverse health needs of employees

Star hotels in Hainan focus on the physical, mental, social and spiritual health needs of their employees in terms of whole-person health management. In terms of physical health, in addition to routine medical check-ups and occupational health protection, it is vital to emphasise daily habits, nutrition and exercise. The hotel provides healthy eating and fitness facilities and encourages regular physical activity. Mental health management is equally critical. In the face of work-related stress, hotels offer mental health screening, stress management workshops and counselling services. For social wellness, team building and community involvement activities enhance employees' sense of belonging and satisfaction. In addition, flexible work arrangements and family contact support contribute to social health maintenance. Finally, mental health enriches employees' spiritual life and enhances their sense of well-being by providing cultural and artistic activities and entertainment.

2.3. Status and challenges of whole person health management

There are a number of current challenges in managing whole-person health in star-rated hotels in Hainan. Although some hotels have begun to focus on employee health, many still focus on traditional physical health maintenance, neglecting the mental, social and spiritual health of their employees. In terms of mental health management, hotels often fail to provide adequate support services. Employees are prone to anxiety and stress in high-pressure environments, but lack professional mental health services and education. In addition, due to long working hours and irregular work schedules, staff often neglect social interaction and spiritual nourishment, while hotels lack support in organisational culture and management strategies. The lack of a health management information system is also a major problem, making it difficult to effectively track the health status of employees and develop personalised health plans. Therefore,

the key to improving the effectiveness of whole-person health management is to strengthen the attention to psychological, social and spiritual health, establish a comprehensive health management system, raise employees' health awareness and participation, and establish an effective health management information system.

3. Issues and Problems in Responding to Employee Health Needs in Hainan Star Hotels

3.1. Deficiencies in the health management system

Star-rated hotels in Hainan face significant challenges in building a comprehensive employee health management system. First, while some hotels have begun to focus on the physical health of their employees, such as regular medical check-ups and health promotion activities, they have paid relatively little attention to psychological, social and spiritual health. This practice of favouring physical health at the expense of other health dimensions fails to meet the needs of employees' whole-person health. In particular, when faced with intense work pressure, challenges in customer service, and uncertainty in career development, employees may experience anxiety, excessive stress, and other mental health issues. However, most hotels lack professional mental health services and adequate mental health education resources to address these issues. In addition, there is a lack of care for employees' social and mental health in the health management system. For example, employees may neglect to communicate with family and friends during long working hours and irregular routines, adversely affecting their social health. Similarly, spiritual fulfilment and well-being, such as participation in cultural, artistic and recreational activities, are often neglected. These deficiencies result in the failure of holistic health management for hotel employees to realise its intended effects, affecting their overall well-being and performance.

3.2. Deficiencies in employee health awareness

There is a general lack of awareness of whole-person health among employees in the working environment of star-rated hotels in Hainan. On the one hand, this stems from a longstanding narrow understanding of health in social and organisational culture, whereby the absence of disease is considered healthy. Under this perception, employees tend to overlook the importance of mental and social health, believing that as long as they are physically healthy, they will be able to fulfil the demands of their jobs. However, in the current high-pressure work environment, especially during peak travelling periods, employees are often faced with excessive work stress and emotional management problems, but lack the awareness and skills to cope with these challenges. In addition, due to busy work schedules and irregular lifestyle habits,

employees have difficulties in maintaining social activities and personal interests, resulting in impaired social and mental health. This one-sided understanding of health and lack of comprehensive health awareness not only affects employees' personal well-being, but may also impact their productivity and quality of customer service.

3.3. Challenges in implementing health management strategies

Star-rated hotels in Hainan face multiple challenges in implementing whole-person health management strategies. First, hotels often lack relevance and efficiency in developing health management programmes that effectively meet the diverse health needs of their employees. For example, hotels may offer standardised health check-ups and health promotion activities, but these often fail to cover the specific needs of all employees, particularly in the areas of mental and social health. In addition, hotels fall short in integrating resources and providing holistic health support. For example, there is a lack of professional mental health counsellors, insufficient organisation of social activities, and neglect of spiritual needs. In addition, hotel management often lacks clear direction and innovative approaches in developing and implementing health management strategies. They may rely on traditional management models without taking into account the diversity and complexity of employees' health needs.

3.4. Challenges of intercultural health management

In the context of globalisation, the composition of the workforce in Hainan's star hotels has become increasingly diverse, including employees of different nationalities and cultural backgrounds. This diversity poses the challenge of cross-cultural health management. Employees from different cultures may have different understandings and needs about health. For example, some cultures may place more emphasis on mental health and social interactions, while others may focus more on physical health and personal privacy. Therefore, hotels need to develop more flexible and inclusive health management strategies to accommodate these different health perceptions and needs. This includes providing health information in multiple languages, respecting health practices in different cultures, and designing wellness activities and services that meet different cultural needs. However, the implementation of such cross-cultural health management is a completely new area for hotels and requires management to have cross-cultural communication and management skills, as well as an in-depth understanding of and respect for different cultural health concepts. It also requires hotels to innovate and adapt their human resource management and internal training to accommodate this diverse work environment.

4. Whole-Person Health Management Strategies and Implementation

4.1. Establishment of a comprehensive employee health management system

In order to effectively respond to the diverse health needs of employees, Hainan star hotels need to establish a comprehensive employee health management system. This system should be based on comprehensive monitoring, analysis and assessment of employee health, and develop corresponding prevention and control strategies. First of all, the hotel needs to collect employee health information through a variety of channels, including regular physical examination data, lifestyle surveys, mental health assessment, etc., to establish each employee's health file. This information will provide the basis for the development of a personalised health management plan. Next, the hotel should hire a team of health experts to meticulously analyse and assess the health status of employees based on the collected data. The team of experts can identify potential health risks among employees, such as psychological stress and sub-health status, and suggest preventive and intervention measures. These measures should include daily health care guidance, physical exercise, mental health counselling, dietary and nutritional advice, and disease prevention programmes. In addition, hotels should establish health standards and monitoring systems to keep track of employees' health dynamics in real time. These standards and systems should be combined with the specific working environment and occupational characteristics of employees to ensure the practicality and effectiveness of health management programmes. To this end, hotels also need to continuously improve the construction of health data informationisation, and make use of the Internet, big data and other technical means to enhance the efficiency and accuracy of health management.

4.2. Develop a personalised employee health management plan

Based on a comprehensive employee health assessment, Hainan Star Hotels should develop personalised health management plans for different employees. These plans should take into account the employee's health status, work and life habits, cultural background and other factors to ensure its effectiveness and feasibility. For example, for employees whose health condition is in a sub-healthy state, the hotel can provide targeted disease prevention programmes and lifestyle adjustment suggestions. For employees who have developed certain signs of illness, appropriate treatment programmes and rehabilitation plans should be developed. Health promotion activities are also an important part of a whole-person health management programme. Hotels should organise various health promotion and maintenance activities on a regular

basis, such as fitness courses, mental health seminars, and healthy eating and cooking courses. These activities not only improve employees' health awareness, but also enhance team cohesion and employees' job satisfaction. Finally, hotels should pay attention to health management at the cultural and psychological levels. Cultural salons, art exhibitions and outdoor development activities can be organised on a regular basis to enrich employees' spiritual life and enhance their sense of well-being. In addition, hotels should provide health support for employees from multicultural backgrounds, respect their cultural practices and health concepts, and ensure the inclusiveness and effectiveness of health management programmes. As shown in Figure 1, the whole-person health management strategies and their scores implemented by the star-rated hotels in Hainan are demonstrated.

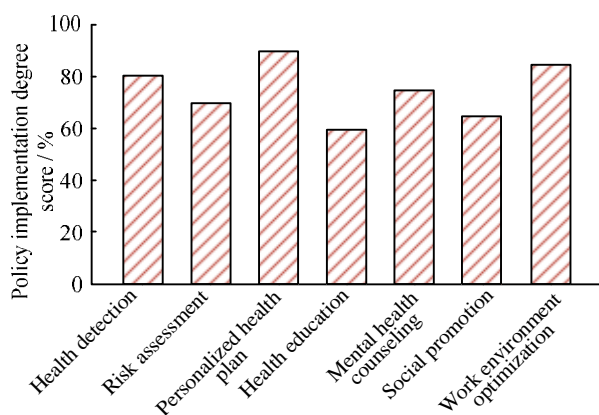


Figure 1. Implementation degree of whole person health management strategy

5. Employee Health Management Implementation in Hainan Star Hotels

5.1. Strengthening health management awareness and active leadership participation

The first step in implementing employee health management in a star-rated hotel in Hainan is to increase management's attention to it. Management must recognise that employee health has a direct impact on productivity and overall hotel performance. For this reason, hotels should organise regular training sessions on health management to ensure that management has an in-depth understanding of the importance and implementation details of whole-person health management. These trainings cover not only the basics of health management, but also specific implementation strategies and methods. In addition, management should proactively participate in the development and implementation of health management programmes to ensure that they meet the actual needs of

employees and can be implemented effectively. This includes formulating health policies, monitoring employee health status, and providing necessary health services and support. Management should also communicate with employees on a regular basis to understand their health status and needs, as well as their feedback and suggestions on the wellness programme, to ensure that health management measures are effectively implemented.

5.2. Creating a healthy work environment and culture

Creating a healthy work environment is essential to enhancing the overall well-being and productivity of employees. Star hotels in Hainan should aim to provide a safe and comfortable workplace, which includes good working facilities, comfortable rest areas, healthy catering services, and necessary health and safety facilities. For example, hotels can set up gyms, offer healthy catering options, and ensure that the work environment is clean and safe. In addition, hotels should also promote the right concept of health throughout the organisation. This includes not only promoting healthy knowledge and lifestyles, but also encouraging employees to have a work-life balance and reduce work-related stress. To this end, hotels can organise regular health education seminars, health promotion activities, employee team building activities, etc. At the same time, by strengthening the corporate culture, the concept of health is integrated into daily work to enhance employees' awareness of and participation in health.

5.3. Strengthening employees' personal health awareness and mental health care

Employees' personal health awareness is the key to achieving whole-person health management. Hotels should take measures to raise employees' awareness of their own health, including regular health education, training on healthy lifestyles and encouraging employees to participate in sports and fitness activities. For example, running clubs, yoga classes and healthy eating seminars could be organised on a regular basis. For mental health, hotels should pay special attention to employees' stress management and emotional regulation. Hotels can set up psychological counselling services to provide professional counselling and support. In addition, regular mental health screening and assessment can help identify employees' psychological problems in a timely manner and take effective intervention measures. The hotel should also establish open communication channels to encourage employees to express their psychological demands and provide them with the necessary support and resources. As shown in Figure 2 details the various aspects of the implementation plan for employee health management in star hotels in Hainan.

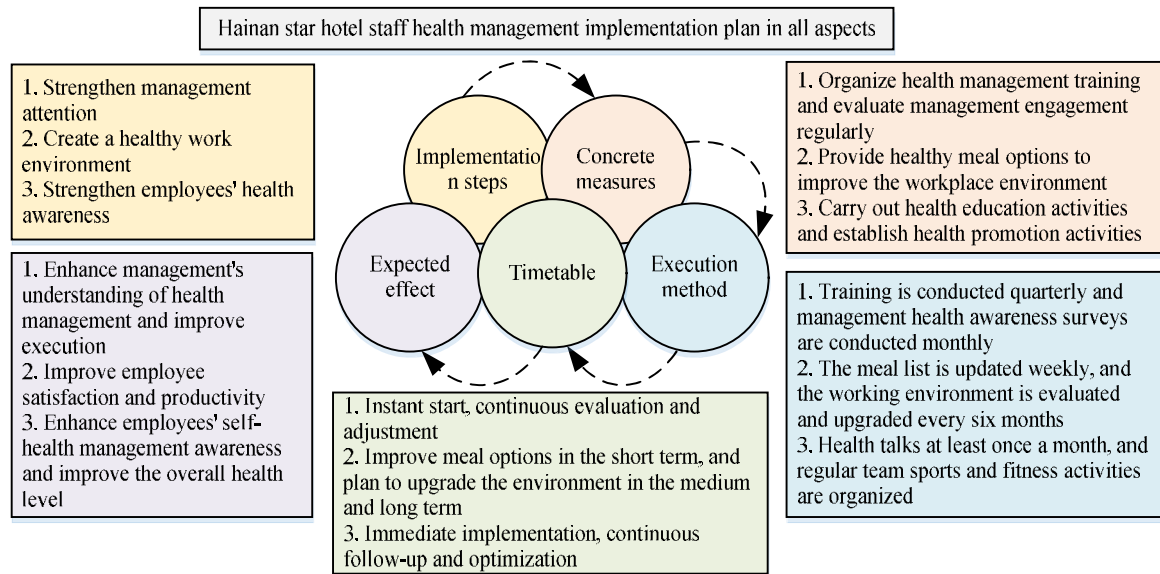


Figure 2. Implementation plan of staff health management in star-rated hotels in Hainan

6. Conclusion

The study explores the response and management of star-rated hotels in Hainan to the diverse health needs of their employees from a whole-person health management perspective. The analysis shows that although some hotels have begun to focus on employee health, the overall focus is still on traditional physical health maintenance, with insufficient attention paid to the full range of psychological, social and spiritual health. In the face of a high-intensity work environment, employees' mental health is particularly in need of care, and hotels' support services in this area are currently insufficient. In addition, hotels are deficient in establishing health management information systems, which affects the development and implementation of personalised health management plans. The importance of building a comprehensive employee health management system is emphasised, and it is proposed that hotels should enhance health awareness among management and staff, and actively promote mental health support and social interaction activities. Through regular health education, psychological counselling services, team building activities and health promotion programmes, the overall health and job satisfaction of employees can be effectively enhanced. In summary, the efforts of Hainan star-rated hotels in whole-person health management are crucial to improving the overall

well-being, service quality and work efficiency of their employees. Hotels should continue to explore and improve diversified and comprehensive health management strategies to respond to changing employee health needs in order to promote their sustainable development.

7. Acknowledgment

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Investigation on In-Plane Instability Mechanism of Gluing Bamboo Arches under Symmetrical Loading Condition

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Abstract: Gluing bamboo arches become the main load-carrying component of modern long-span bamboo structures for its elegant shape and reasonable mechanical behavior. In order to study the in-plane elastic and elastic-plastic instability mechanism and bearing capacity of gluing bamboo arches, the effects of middle-span and quarter-span point loads are considered in this study. The failure mechanism of two-hinge circular gluing bamboo arches made with Douglas fir under different load conditions is analyzed.

Keywords: Gluing bamboo arch; In-plane instability mechanism; Experimental study

1. Introduction

The ultimate load carrying problem of gluing bamboo arch can be divided into in-plane ultimate load carrying and out-of-plane ultimate load carrying. In terms of in-plane ultimate load carrying capacity, scholars at home and abroad have carried out a lot of related research work and achieved substantial research results [1, 2]. In this paper, the in-plane elastic and elastoplastic instability mechanism of gluing bamboo two-hinged circular arch were studied experimentally and analyzed. The results of this paper can provide an important reference for the de-

sign and construction of modern large-span gluing bamboo arch structures in China.

2. The Design of Specimen and the Arrangement of Measuring Points

2.1. Specimen design

Two groups (2 pieces in total) of gluing bamboo arches with different span ratio were fabricated using Douglas fir wood (2000mm×190mm×18mm) with moisture content of 10%~12% by pressure bonding with resorcinol formaldehyde resin adhesive. The specific dimensions are listed in Table 1.

Table 1. Dimension parameters of gluing bamboo circular arches

No.	Radius (m)	Number	Rise (m)	Span (m)	Rise-span ratio	Central angle (°)	Section(mm)		Testing conditions
							Width	Height	
A1-1	3	1	0.6	3.6	1/6	74	56	140	Symmetrical loading
A2-1		1	0.85	4.2	1/5	88	56	140	Symmetrical loading

Note: Symmetrical loading -- L/2 load on vault.

2.2. Arrangement of measuring points

A total of 5 measuring points are arranged at the vault, arch foot and quartile section of each arch rib. Three groups (6 strain gages) are symmetrically arranged along the arch rib height with equal spacing at each measuring

point section, and the upper edge and lower edge are equipped with one strain gage, respectively [3]. One dial gauge is arranged at each measuring point section. The specific arrangement of strain and displacement measuring points is shown in Fig. 1.

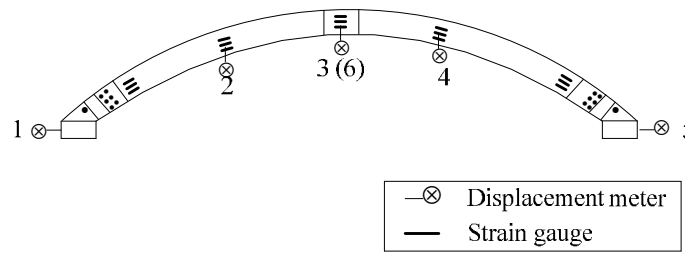


Figure 1. Measuring points on the arch rib

3. Test Loading Scheme

Experimental loading process includes two stages: preloading and formal loading. The purpose of preloading is to: A) ensure that all parts of the arch rib are in good contact and enter the normal working state, so that the relationship between load and deformation tends to be stable; B) Check whether the test device is effective and reliable; C) Check whether each test instrument is working normally. The load applied in the preloading stage shall not exceed 30% of the estimated ultimate load carrying capacity (P_u) of the arch rib, and the load increment of each stage is set to 4kN.

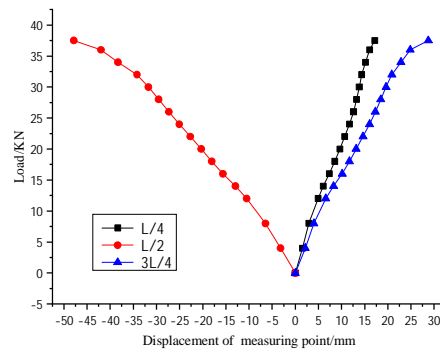
4. Test Results and Analysis

4.1. Failure characteristics and mechanism analysis of buckling instability

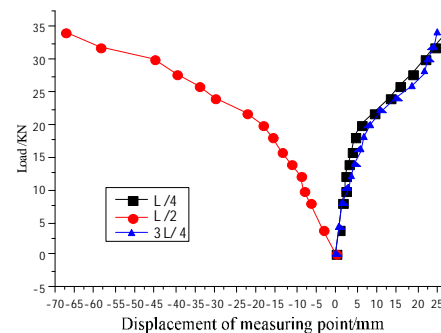
Under symmetrical loading condition, specimen A1-1 and A2-1 underwent two stages of elastic deformation and elastoplastic deformation. When the load was increased from 0 to $0.7P_u$, the gluing bamboo arch ribs were in the elastic deformation stage, and the vertical displacement and strain at each measuring point increased linearly with the increase of the load. When the loading reached $0.7P_u \sim 1.0P_u$ stage, the elastoplastic deformation occurred first in the vault area, and the load-displacement curve no longer showed a linear change, and the displacement growth rate accelerated obviously. When the load increased to $1.0P_u$, the arch ribs entered the failure stage. At this time, the load remained unchanged, the vertical displacement of the arch continued to increase rapidly, then ultimate tensile strength of the tensile edge materials was reached, resulting in brittle failure. At the same time, obvious reverse arch phenomenon occurred at 1/4 and 3/4 cross sections on both sides, forming three plastic hinges in the arch ribs.

4.2. Test results and analysis of in-plane ultimate load carrying capacity

Fig. 2 shows the load-displacement curves of gluing bamboo arch ribs under symmetrical loading conditions, respectively.



(a) Specimen A1-1



(b) Specimen A2-1

Figure 2. Load-displacement curves of gluing bamboo arch ribs under symmetrical loading condition

According to the analysis in Fig. 2, when the load increased to 14.0kN ($0.37 P_u$), the vertical displacement of specimen A1-1 in the plane did not increase linearly with the load due to reaching the elastic deformation limit ($D_{e\max} = 11.92\text{mm}$) and began to enter the stage of elastoplastic deformation, with the displacement growth rate accelerated significantly. After the load increased to 37.5kN (P_u), the specimen reached the ultimate bearing capacity, resulting in failure, and the displacement reached the maximum ($D_{u\max} = 47.88\text{mm}$). A2-1 was analyzed by the similar method mentioned above, and the load and displacement values under the elastic limit and

bearing limit states could be obtained respectively. The relevant test results are shown in Table 2.

Table 2. Experimental test results of gluing bamboo arch ribs under monotonic loading

No.	Specimen	Loading condition	Elastic limit condition		Bearing limit condition		P_e / P_u
			P_e (kN)	$D_{e\ max}$ (mm)	P_u (kN)	$D_{u\ max}$ (mm)	
1	A1-1	Symmetrical loading	14.0	11.92	37.5	47.88	0.37
2	A2-1		14.0	11.04	34.2	67.59	0.41

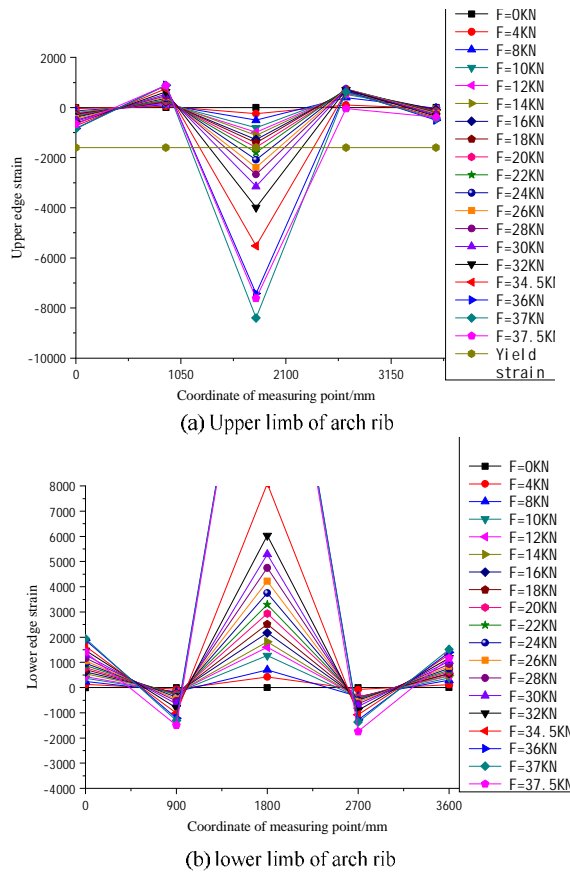


Figure 3. Load-strain curves of specimen A1-1 under symmetrical loading condition

According to the analysis in Fig. 3, when the load increased to 22kN, the strain at the upper edge of the mid-span measuring point for specimen A1-1 reached 1794 $\mu\epsilon$, and the material entered the stage of elastoplastic deformation, which caused the stress redistribution of the arch rib section. Through comparative analysis of the load-displacement curve, it can be seen that when the load increased from 0 to 26kN, the specimen was always in the elastic deformation stage, indicating that the plastic deformation of wood occurred earlier than the

nonlinear deformation of the arch rib structure. Through comprehensive analysis of the test results, it can be concluded that for 2 specimens, the stress redistribution of the arch rib section is first caused by the plastic deformation of the section material in the loading area, and then the internal force redistribution of the structure is caused by the reduction of the section stiffness, resulting in the failure of the specimens.

5. Conclusions and Discussion

Through the experimental study and finite element simulation analysis of the in-plane ultimate bearing capacity of gluing bamboo circular arch, the following conclusions can be obtained:

- 1) The in-plane ultimate bearing capacity of gluing bamboo arch significantly increases with the rise span ratio.
- 2) The in-plane bearing capacity of gluing bamboo arches calculated according to China's Code for Design of bamboo Structures is relatively conservative.

6. Acknowledgment

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Strategies for Home Care of Dementia Elderly People in Guangzhou City

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Abstract: Currently, home care for the elderly with dementia in Guangzhou is difficult to have a significant impact on patients. Therefore, a three-level nursing strategy led by home care was constructed in this study, and its effectiveness was verified. The experimental results showed that the overall recovery efficiency of Group B implementing the three-level nursing strategy reached 93.33%, much higher than Group A's 66.67%; And their quality of life remained between 84-95 points, showing a significant improvement. Overall, the three-level nursing strategy led by home care is effective in ensuring the quality of life of dementia elderly people and can be applied in actual home care for dementia elderly people in Guangzhou.

Keywords: Guangzhou city; Elderly people with dementia; Home care; Strategy; Validity

1. Introduction

Dementia is a neurodegenerative disease characterized by brain tissue damage, and its pathogenesis is not yet clear. The main symptoms are significant decreases in memory, computational ability, language ability, and other abilities, as well as varying degrees of personality changes, making it difficult to take care of oneself. Due to the clinical manifestation of dementia being a loss of self-care ability, and the fact that most families find it difficult to take long-term care of the elderly, strengthening home care is particularly important. Home care is a family based care that assists families in maximizing their health potential, preventing and addressing various hygiene issues that arise during family growth, and promoting and maintaining the health of the family and its members. Implementing home care can help detect and diagnose the health status of the elderly at an early stage, while ensuring that diet and rest are not disrupted. At the same time, it can effectively prevent the occurrence of dementia, even if the elderly have already fallen ill, it can effectively alleviate and to some extent cure the patient. However, as a relatively developed city in China, the implementation of home care in Guangzhou is no longer able to cope with the expanding population of dementia elderly people. Therefore, this study focuses on building a three-level nursing strategy of family community hospital with home care as the main focus. Its purpose is to enrich the home care strategies for dementia elderly people in Guangzhou and provide theoretical basis for curing the condition of dementia elderly people.

2. Analysis of Home Care Strategies for Dementia Elderly People in Guangzhou City

2.1. Current situation of nursing care for dementia elderly in Guangzhou

Dementia elderly refers to elderly patients with Alzheimer's disease, which is a hidden degenerative disease of the nervous system. Its main manifestations include cognitive impairment, speech impairment, hallucinations, and delusions. The expansion of the aging population has also led to the continuous expansion of the current population of dementia elderly. As a relatively developed city in China, Guangzhou has a high level of economic development among its residents, resulting in a severe aging population. Usually, it is rare to choose home care for elderly people with dementia in their families, and nursing institutions are usually chosen for care. Currently, there are many advanced nursing homes in Guangzhou, and regular training courses on dementia family care are conducted. Taking Kanghuayi Nursing Home as an example, it emphasizes medical ethics and nursing quality, providing meticulous medical, nursing, psychological, and faith care, and can provide care for 1000 elderly people. However, the mindset in China since ancient times has led many elderly people to be unwilling to live in sanatoriums, so establishing multi-level care with home care as the main focus has become a key focus of dementia elderly care.

2.2. Analysis of three-level nursing strategies based on home care

At present, the nursing homes, communities, and families for elderly people with dementia in Guangzhou are relatively independent, and there is a lack of coordination and linkage among the three, making it difficult to fully return to the effectiveness of resources at all levels. At the same time, the three-level nursing constructed in the

past was usually dominated by communities or hospitals. Therefore, the study considers the actual needs of dementia elderly care in Guangzhou and constructs a three-level nursing strategy of family community hospital with family care as the main focus. This strategy consists of three layers of mechanisms, namely community hospital, family community, and family community hospital. The main role of the community hospital mechanism is to carry out early prevention and diagnosis of dementia, and to build an early response medical system for dementia. Based on this system, the patient's medical information is recorded to assist them in seeking timely medical treatment and improve the level of diagnosis and treatment. The family community mechanism is a professional group established to achieve long-term care goals. Based on the patient's understanding of healthcare knowledge, it can provide medical security and life assistance to the patient. The rehabilitation and psychological counseling of the patient should follow the principle of "non pharmacological intervention as the main approach". At the same time, coordinate the communication between professional organizations such as hospitals and elderly care institutions, social organizations, and patient families, and conduct regular surveys on the needs of patient families for disease recovery and life care. Finally, the family community hospital mechanism requires close communication among the three levels of

care to implement home care for elderly people with dementia. This process establishes an expert seminar consisting of nursing support personnel from the Comprehensive Social Support Center, medical workers with cognitive impairment at the medical center, mental health welfare specialists, and care and welfare staff from the municipal government. The team regularly holds nursing seminars for the elderly with dementia to understand the needs of patients and the problems encountered during implementation. They visit the patient's family members and their own condition to discuss improving follow-up nursing plans.

3. Analysis of the Practical Application of Three-Level Nursing Strategies

To verify the effectiveness of the three-level nursing strategy led by home care, a study screened 30 dementia elderly people in Guangzhou to implement this strategy. The experiment lasted for one year to determine the recovery and quality of life of dementia elderly people. 30 elderly people with dementia were evenly divided into two groups based on community distribution. Group A adopted conventional home care strategies, while Group B adopted the three-level nursing strategy proposed in the study. The results are shown in Table 1.

Table 1. Recovery and quality of life of two groups of patients after nursing care

Comparison of recovery status between two groups					
-	Basic recovery	Mitigation	Significant progress	Invalid	Total effective rate
A	3	2	5	5	66.67%
B	8	4	2	1	93.33%
Comparison of quality of life between two groups of patients					
	Physiologic function	Physiological functions	Body pain	General health	
A	84.12 ± 4.70	44.82 ± 3.99	55.58 ± 4.46	65.39 ± 4.45	-
B	94.81 ± 3.29	85.11 ± 1.49	91.00 ± 6.80	84.00 ± 5.30	

From Table 1, the overall recovery efficiency of Group B reached 93.33%, which is much higher than Group A's 66.67%. Among them, Group B has the highest number of people who have basically recovered, with 8 people, while Group A has 3 people who have basically recovered. The vast majority are patients with significant progress and ineffectiveness. In the comparison of quality of life, Group B scored between 84 and 95 in terms of physiological function, physiological function, physical pain, and overall health, significantly higher than Group A, with the highest score reaching 94.81 ± 3.29 points. Overall, the three-level nursing strategy led by home care proposed in the study is effective, which significantly improves the quality of life of elderly patients with dementia.

4. Conclusion

In response to the problem that the current nursing strategy for dementia elderly in Guangzhou is difficult to meet the actual needs of the expanding aging population, a three-level nursing strategy of family community hospital was proposed with family nursing as the main focus, and its effectiveness was experimentally verified. The experimental results showed that after implementing the three-level nursing strategy, the quality of life score of dementia elderly people significantly improved, reaching a maximum of 94.81 ± 3.29 points, and the overall number of recovered patients was higher than that of the control group. Overall, the three-level dementia elderly care strategy proposed in the study is effective.

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The Development Path of Higher Vocational Education in the Context of Modernization

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Abstract: In the context of modernization, high-quality development of higher vocational education is of great significance. As a key way to cultivate skilled talents, higher vocational education plays an important role in meeting the demand for skilled workers and applied talents in modern society. Its development not only meets the needs of national policy, but also helps to adjust the economic structure, promote industrial upgrading and improve the overall competitiveness of the country. High-quality higher vocational education not only improves the quality of the national workforce, but also promotes the balanced distribution of educational resources, realizes educational fairness, reduces the gap between social classes, and eases the pressure of social employment at the same time. Led by the people-centered concept, higher vocational education should pay close attention to social needs, cultivate talents with both practical skills and comprehensive quality, promote the deep integration of industry and education, and contribute to the sustainable development of the country.

Keywords: High-quality development; Modernization; Higher vocational education; Integration of industry and education

1. Introduction

Driven by the wave of modernization in China, the development of higher vocational education has attracted much attention. With the rapid socio-economic development and profound changes in industrial structure, the demand for skilled workers and application-oriented talents has increased dramatically, and higher vocational education has become an important platform for training such professionals[1]. The country's urgent demand for the implementation of the innovation-driven development strategy and the strategic goal of enhancing the country's comprehensive competitiveness have given higher vocational education a more important mission[2]. This study will deeply explore the significance of high-quality development of higher vocational education, analyzing from the three aspects of national policy demand, the development requirements of higher vocational colleges and universities themselves, and the specific requirements under the concept of people-centeredness. At the same time, the study focuses on exploring a series of problems and challenges faced by higher vocational education in the process of development, and proposes innovative paths, in order to provide useful ideas for promoting the high-quality development of higher vocational education.

2. The Significance of High-quality Development of Vocational Education in the Context of Modernization

2.1. High-quality development of higher vocational education is an inevitable requirement for the development of higher vocational institutions themselves

The fundamental task of education is to establish moral character and the fundamental purpose of establishing moral character is to serve and safeguard economic and social development. Through the quality improvement project of higher education, the reputation and popularity of colleges and universities can be obtained, and the competitive position of colleges and universities can also be improved. By cultivating high-quality applied talents, higher vocational colleges and universities can stand out in the field of education, attract more excellent students and excellent teachers, and enhance the popularity and influence of the school. Realizing high-quality higher vocational education can train practical skilled applied talents for the society and cultivate talents that better meet the market demand. This strategy will effectively increase the employment rate of graduates, and the home-school relationship will become more interdependent, eventually forming a good interactive cycle. Modern and high-quality higher vocational education is also a necessary means to promote the healthy and sound de-

velopment of social economy, and vice versa, it can also accelerate the sustainable development process of higher vocational colleges. Adapting to the development trend of the times and constantly upgrading the level of education will help higher vocational colleges and universities remain competitive in the highly competitive education market. Therefore, in order to become bigger and stronger, higher vocational colleges and universities must realize high-quality development.

2.2. High-quality development of higher vocational education is a specific requirement of the people-centered concept in higher vocational education

Since the 18th CPC National Congress, the Party Central Committee has deeply implemented the people-centered development idea. The report of the 20th CPC National Congress points out that it is necessary to insist on the supremacy of the people and the people-centered development of education. Compared with ordinary higher education, people-centered higher vocational education requires close attention to the social demand for talents, adjusting the professional settings and curriculum content to ensure that the cultivated talents can better adapt to the development of society and industry, and paying more attention to cultivating the practical skills of students, so that they can better devote themselves to social practice and make contributions to society. People-centered higher vocational education not only pays attention to the cultivation of students' professional skills, but also pays attention to the cultivation of students' comprehensive qualities, including innovation, teamwork, social responsibility, etc., so as to make them become talents with all-rounded development, which enables the educated to integrate into the workplace more quickly.

3. Problems and Challenges in the Development of Higher Education

For a long time, due to the obvious difference between higher vocational education and higher education, both education quality and student quality, the public prejudice of higher vocational education, students and parents of higher vocational education recognition, vocational students are discrimination continues to occur, lack of graduate employment opportunities, especially high quality career opportunities. The curriculum of some higher vocational colleges and universities is out of touch with the actual industrial demand, which leads to the situation that students may face discrepancies with the market demand after graduation, and the employment rate is reduced. Some higher vocational colleges and universities still have deficiencies in the construction of faculty, resulting in relatively weak teaching level and practical ability, which affects the learning effect and employment competitiveness of students. Relatively weak in the construction of disciplines and scientific research, it is diffi-

cult to form special disciplines with core competitiveness, which restricts the overall development level of the school. Moreover, there is the problem of uneven distribution of educational resources, and some regional higher vocational colleges and universities are relatively weak in terms of teachers, laboratory equipment, etc., which affects the quality of teaching and learning, thus making scientific and technological innovation and practical application relatively lagging behind, and it is difficult to meet the ever-changing needs of science and technology and industrial development. In the field of higher vocational education, the insufficiency of implementing the new development concept is manifested in the problems of overly rigid education system, insufficiently innovative education content, and outdated education methods. The new development concept emphasizes innovation, coordination, green, openness and sharing, but the development of disciplines in some schools still shows the trend of homogenization, with a long cycle of knowledge updating and results transformation, and no major breakthroughs in the fields of disciplines and technologies for a long time. Moreover, the curricula and specializations of higher vocational education are out of touch with the economic development needs of the local region, making it difficult for students to adapt to the local or nearby job market after graduation and resulting in a low employment rate.

4. Innovative Paths for High-Quality Development of Modernized Higher Vocational Education

The 20th Party Congress has indicated the mission and tasks of the new era and new journey, and the essential requirement of Chinese-style modernization is to realize high-quality development. For the problems of higher education in high-quality development, the following measures are shown in Figure 1.

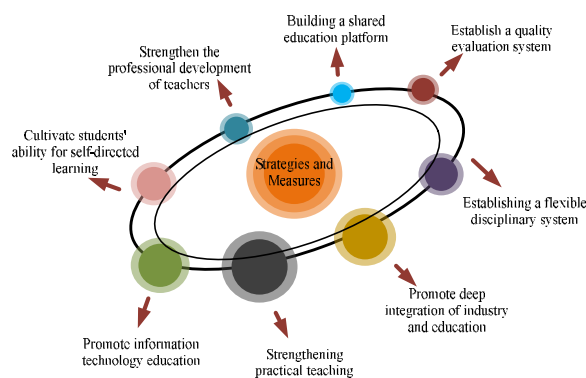


Figure 1. Strategies and Measures

Higher vocational education should establish a flexible and open subject system to better meet the comprehensive requirements of high-quality development of schools, teachers and students in higher vocational colleges. Encourage cross-disciplinary and professional integration, and train students with knowledge and skills in multiple fields to better adapt to the rapidly changing social needs. Strengthen the implementation of the integration strategy of industry and education, and organically combine the campus education with the industrial needs. Introducing enterprise professionals to participate in educational curriculum design and practical teaching to ensure that subject content closely follows industrial development. Strengthen practical teaching and emphasize the cultivation of students' practical operation ability. Through internships and practical training, students are exposed to and apply the latest technology and knowledge in a real working environment. Using the Internet, big data, AI and other information technologies to further promote the teaching progress of informatization and digitization. Developing education modes such as online courses and distance internships to provide more diversified learning paths and meet students' flexible and personalized learning needs. Build an educational information platform and strengthen the information integration cooperation between universities and industrial departments. Open up the campus educational resources, realize the resource sharing, and promote the integrated development. Through open educational resources, improve the overall level of higher vocational education and promote common development. Strengthen teachers' professional development, provide more professional development opportunities, encourage teachers to participate in industrial research projects, update teaching content, and maintain sensitivity to the latest knowledge and technology so as to better lead students to face the challenges of science, technology and industry. Encourage students to take the initiative to acquire knowledge and develop their ability to learn independently and continuously. Students are guided to make good use of various information resources to enhance their adaptability in the information age.

5. Conclusion

High-quality development of higher vocational education is an important part of China's modernization process, which is key to meeting national needs, promoting industrial upgrading and improving overall competitiveness. As the main way to cultivate skilled personnel, higher vocational education can provide the country with an adequate and high-quality technical and skilled labor force. However, higher vocational education also faces a series of challenges in its development, such as recognition of qualifications and disconnection from market demand. In order to cope with these challenges, it is necessary to innovate pathways, strengthen the combination of industry and education, promote practical teaching, build educational platforms, and establish a quality assessment system. In the new era, higher vocational education should adapt to the needs of social and economic development, realize high-quality development by implementing the new development concept, and make greater contributions to cultivating more excellent talents and promoting social progress.

6. Acknowledgment

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The Integration of Vocal Art Instruction and Performance Techniques in Chinese Ancient Poetry Art Songs

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Abstract: In the interpretation of Chinese ancient poetry art songs, vocal art instruction and performance skills complement each other. Through emotional expression and vocal control, the singers convey deep feelings and give the music a sense of hierarchy. In terms of rhythm and dynamics, artistic direction leads the singer to balance, and performance techniques adjust the dynamics of the music to create a sense of hierarchy. In the case of "SPRING MORNING", written by renowned Chinese composer Lai Yinghai and based on the poetry of Tang Dynasty poet Meng Haoran, the song requires the singer to make exquisite use of the half voice to demonstrate a melody with a concentrated range, maintain a fresh tone, and to sing the lyrics in a chant style and cleverly breathe in and out of phrases so that the melody blends in with the lyrics. The combination of in-depth artistic direction and performance skills results in a deeply emotional and meaningful musical picture.

Keywords: Chinese ancient poetry art songs; Vocal art instruction; Performance techniques; "SPRING MORNING"

1. Introduction

As a precious part of traditional Chinese music, Chinese ancient poetry art songs carry a deep cultural heritage and historical accumulation. In this unique form of music, the performance of vocal art plays a crucial role, both in conveying the emotion of the poems and in passing on the ancient music culture [1]. Ancient Chinese poetry is not only the art of words, but also an expression containing emotions, philosophy and historical memory. In art songs, the interpretation of poems requires vocal artists to unfold the emotions contained in the words layer by layer through the expression of voice to reach the resonance with the listeners' mind [2]. Therefore, vocal art direction becomes a key aspect, focusing on a deep understanding of classical literature, but also skilfully incorporating performance techniques to make the interpretation of the song more vivid and touching. The study will explore the mutual influence of classical literature and vocal technique through an in-depth study of vocal art instruction of ancient poetic art songs. At the same time, it will focus on the innovation and application of performance techniques, with a view to providing a more systematic and in-depth theoretical basis for the preservation and inheritance of traditional Chinese music. Through in-depth research in this field, it is expected that new vigour will be injected into the composition and performance of contemporary music on the basis of traditional culture, and the prosperity of Chinese music and art will be promoted.

2. The Integrated Application of Vocal Art Instruction and Performance Techniques in the Interpretation of Ancient Poetry Art Songs

2.1. Impact of the combination of vocal art direction and performance techniques on interpretation

were able to profoundly convey the richness of emotions contained in ancient poems. Whether it was the sorrow of mourning, the lightness of joy, or the silence of deep thought, all of them could be truly expressed in the changes of the singer's tones. The skilful use of register further brings the emotional distance between the singer and the listener closer. Secondly, in terms of the rhythmic and dynamic balance of the music, vocal art direction provides the singer with important guidelines for finding balance in the piece. Through skilful adjustments, performers make the musical melody present a layered and dramatically rich expression between movement and static. At the same time, an in-depth interpretation of the literary connotations of ancient poems becomes a source of inspiration for the performance. Vocal artists' understanding of poetic meaning is not only a matter of singing technique, but also a profound comprehension of classical literature. In the clever fusion of tradition and modernity, vocal art instructors encourage performers to innovate their performance techniques, so that the art songs of ancient poems retain the traditional flavour while bet-

ter catering to the aesthetic needs of modern listeners. Ultimately, through communication and interaction with the audience, vocal artists skilfully use performance techniques to establish emotional resonance with the audience, making singing a deep and fulfilling two-way spiritual exchange. This comprehensive combination of vocal art instruction and performance skills not only gives ancient poetry art songs a more colourful way of interpretation, but also enchants the listener to experience a richer and more moving musical journey.

2.2. The application of performance techniques in ancient poetic art songs

In the ancient Chinese poetic art song ""SPRING MORNING"", the tacit combination of vocal art direction and performance technique is crucial to the subtle presentation of the strength and rhythm of the piece. The introductory part is like the first ringing of the morning bell, opening the piece with solid intensity, and the left hand retains two beats in the bass chord, like the bell ringing to welcome the new day, foretelling the coming of spring. The opening tenor chords emphasise each beat distinctly, as if they were the sound of rain and wind in early spring, like a spring breeze, full of soulful rhythms. This musical conception makes the listener feel as if travelling through time, being in the early morning of spring, and feeling the beauty of the awakening life of the earth.

As we enter the second phrase of the introduction, the musical atmosphere changes to the left hand imitating the sound of water drops falling from the eaves of a house in spring rain, played softly with medium-weak intensity. The right hand, on the other hand, skilfully imitates the gentle chirping of birds, which is made more lively by the clever matching of weak chords and the addition of dissonant second intervals in the middle of the weak notes. Such meticulous treatment is not only a superb attention to the details of the piece, but also a telling of the elements of nature through the expression of sound, sketching out a vibrant spring scroll.

In the A section, similar to the second phrase of the introduction, the left hand and right hand music strengths and weaknesses are subtly contrasted, allowing for a natural transition between the changes in intensity in different parts of the piece. The piano accompaniment creates a musical feeling of slow and gradual strength and then weakness in the linking phrases, maintaining a sense of respiration between phrases. The entire phrase unfolds on a weak foundation, eventually decelerating to set the stage musically for the arrival of the B section. Such an interpretation not only demonstrates a deep understanding of the structure of the piece, but also shows a great grasp of the musical details, making ""SPRING MORNING"" a richer and more meaningful musical picture with the perfect blend of vocal art direction and performance skills.

3. Analysis of Vocal Interpretation and Performance Techniques of Typical Ancient Poetry Art Songs

The vocal melody of ""SPRING MORNING"" has a relatively concentrated range and is delicate with deep meaning. In singing, the emphasis is on the smooth transition of intervals, presenting the unique flavour of semi-vocal singing, which requires the singer to maintain a fresh and unified tone in the expression of the voice at all times. The use of semi-vocal techniques requires careful attention to the full support of the breath to ensure the smooth flow of the melody. In the prelude, the piano's resonance creates a peaceful and melodious atmosphere, where the singer needs to present the melody in a staccato manner, avoiding over-exaggerated emotions and focusing more on a gentle and soft soundscape, such as the spring breeze gently rippling. Figure 1 shows the score of ""SPRING MORNING"".

The figure displays a musical score for the song "Spring Morning". It consists of two systems of five-line staves. The top system features a vocal line (treble clef) and piano accompaniment (bass clef). The bottom system shows the piano accompaniment (bass clef) and vocal line (treble clef). The score includes dynamic markings such as "mp" and "Breathe" with red arrows pointing to specific notes in the vocal line, indicating where the singer should breathe.

Figure 1. Five-line score of "SPRING MORNING"

As shown in Fig. 1, the whole piece requires weaker strength, especially when dealing with the melody in the high register, the flow of breath needs to be mastered skilfully to make the weak singing more delicate and genuine. The lyrics can be sung in a chant style, with the phrases and breaths of the piece cleverly divided into phrases, while combining with the short stanzas of the pentameter poem to judge the breathing points. The breathing at the end of each phrase echoes the piano accompaniment, making the phrases more eye-catching and highlighting the clever interplay between the melody and the lyrics, just like a delicate landscape painting made by a painter's brushstrokes. In the connecting phrase, the timing of the breath is cleverly determined by the changes in melody and tone, and although there is only one "oh" in the lyrics, the melody still remains smooth and blends cleverly with the previous musical elements.

At this moment, the piano accompaniment becomes more and more climactic under the impetus of the emotion, and plays a wonderful role as a finishing touch. During the performance, special attention should be paid to the tacit co-operation with the singer to ensure the consistency of the melody and the emotion. In terms of performance techniques, the singer can emphasise the freshness and serenity of the piece through gentle stage movements, such as a slight swaying of the body or the use of hand gestures. Eye contact and smiles can increase the emotional resonance with the audience. In the climax of the music, gestures and body language can be moderately enhanced to make the whole performance more lively and interesting, attracting more attention from the audience. Such an all-round performance not only fulfils the musical requirements, but also makes the songs more profound and shows the unique beauty of Chinese musical works.

4. Conclusion

Lai Yinghai's "SPRING MORNING" demonstrates profound artistic attainments, skilfully blending ancient Chinese poetic traditions with Western compositional techniques. In performance, an accurate understanding of the compositional context becomes an indispensable element

in interpreting the musical image. The piece requires a semi-vocal singing mode in order to maintain a smooth transition of registers and present a unified and deep sound. At the same time, a more vivid musical image is injected through the use of performance techniques, including stage elements, to successfully capture the audience's attention. Under the combined effect of technology, aesthetics and cooperation, the unique beauty of the mood of the ancient poetry art song is interpreted. This combination of multiple dimensions not only enriches the connotation of the music, but at the same time injects new vitality into classical literature, making these precious ancient poems take on a new life on the modern music stage. Through such innovative expression, the artists have successfully passed on the essence of Chinese culture in music, providing a unique and thought-provoking example of the fusion of classical and modern.

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Optimized Bayesian Edge-based Intrusion Detection Model for Networks

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Abstract: With the development of Internet technology, the scale and complexity of networks are increasing, and network security problems are becoming more and more prominent. This research proposes an optimized Bayesian edge network based intrusion detection model by analyzing various attack behaviors and security events in edge networks. The research results show that using this method can improve the detection rate of intrusion detection reduce its model false alarm rate. This provides new ideas for research in this direction.

Keywords: Bayesian edge network; Intrusion detection; Internet

1. Introduction

With the rapid development of information technology and the popularization and application of the Internet, the problem of network security has become increasingly prominent. Intrusion behavior, as a major threat to network security, is constantly evolving and changing, bringing great challenges to the safe operation of information systems [1]. The detection and prevention of network intrusion behavior has become one of the key research directions in the current network security field. The aim of this research is to study the intrusion detection model based on optimized Bayesian edge network, and explore its application and advantages in network security. Through in-depth analysis of the key technology of intrusion detection and the principle of Bayesian edge network, in order to improve the network security protection ability and reduce the harm caused by intrusion behavior to the system.

2. Edge Networks and Intrusion Detection

Edge network is a new type of network architecture, which is mainly characterized by certain dynamics, openness, generality, adaptability and security. The edge node in the edge network is a distributed node, which can provide some basic services, such as distributed caching, distributed message service, distributed computing, etc., while it is close to the user. By collecting and analyzing the user's information, the edge node is able to dynamically adjust the edge network according to the user's demand and finally realize resource allocation. Intrusion detection system is a system based on information security technology for detecting and identifying possible attacks or abnormal behaviors in computer systems. It effectively protects computer systems from illegal attacks from outside or inside by analyzing and understanding the abnormal or attacking behaviors that may exist in

computer systems and making timely warnings or responses.

Edge networks have a relatively small size and deployment environment while providing very fast and low latency services, making it an ideal attack and defense scenario. However, edge networks face a number of challenges in detection and defense firstly the large amount of data in edge networks requires a large amount of computational resources to process, which results in slower processing speeds. In addition, there are many different types of attacks and security events in the edge network which can lead to higher traffic load, higher network latency, and higher data transmission in the edge network, all these issues can have an impact on the edge network intrusion detection.

Since there are many different types of attack methods and security events in edge networks, different types of detection models need to be constructed to cope with these problems. Currently, rule-based methods and machine learning based methods are widely used in the field of intrusion detection. Since traditional intrusion detection techniques have some problems in detecting anomalous data. Firstly due to the fact that traditional intrusion detection techniques use a single dataset, which leads to performance limitations when facing complex and variable attacks. Secondly, traditional intrusion detection techniques use static features to characterize the dataset, which causes intrusion detection techniques to encounter significant problems when dealing with large data. Finally, the intrusion features used in traditional intrusion detection techniques are mainly based on feature vectors derived from statistical methods, but due to the complexity, variability, and rapid changes in the network environment, it is difficult to accurately reflect the attack behavior and security events[2].

Aiming at the current development status and problems of edge network intrusion detection technology, this pa-

per proposes an optimized Bayesian-based edge network intrusion detection model. The model is based on Bayes' theorem to design a new framework for detecting various attack behaviors and security events in edge networks. The improved Bayesian edge network intrusion detection algorithm is first used to analyze the network traffic, and then the required feature vectors in the new detection framework are derived from the analysis results. Finally, the edge network traffic is classified and the intrusion feature vector is extracted based on the feature vector. The method is experimentally validated on a large number of edge network datasets, and the results show that the model has good performance. Optimized Bayesian edge network intrusion detection model is mainly, through the in-depth analysis of the attack behaviors and security events in the edge network environment, to find out the features, and then extract the feature vectors related to these features, and finally use the optimized Bayesian algorithm to train and learn the extracted feature vectors, so as to realize the detection of the attack behaviors and security events in the edge network environment.

3. Modeling of Intrusion Detection System based on Bayesian Edge Network

In the actual edge network environment, factors such as network topology, number of connected nodes and different types of attacks need to be considered. Therefore, the intrusion detection model based on Bayesian edge network needs to be used in the constructed system to categorize the different types of attacks. The intrusion detection model of Bayesian edge network is shown in Fig. 1.

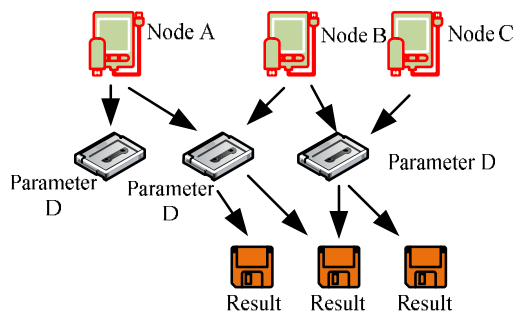


Figure 1. Intrusion detection model for Bayesian edge network

In Figure 1, if node A is connected to other node B, node A is marked as normal. This node A will receive traffic

from other node B and node A will not be marked as abnormal. First, the points connected to both A and B are labeled as normal; second, the points connected to both A and C are labeled as abnormal; and finally, the points connected to both B and D are labeled as normal. An optimal state sequence is obtained by adjusting the parameter D. When the value of D is larger, i.e., when the value of D is closer to 1, it means that the probability of connecting to the two points A and B is maximum. It can be seen that if the current state sequence can reach the optimal state sequence, then the state will be a normal state; if the current state sequence cannot reach the optimal state sequence, then the state will be an abnormal state [3].

Also due to the presence of multiple nodes A and B in the model constitutes different types of attack behaviors, and different types of security events in the edge network environment. Therefore these different types of attack behaviors and security events need to be classified. The optimal classification results are obtained by weighting each input parameter. Firstly, the network topology is categorized into three types the first one is unconnected set to 0; the second one is connected set to 1; and the third one is unconnected and connected set to 2. Where the first unconnected type network topology has only one node A and one node B constituting the network topology; the second connected network topology has more than one node A and B constituting the network topology; and the third unconnected and connected network topology has multiple nodes A and B constituting the network topology; and the third unconnected and connected network topology has multiple nodes A and B constituting the network topology. connected and connected network topologies have multiple nodes B and one node C constituting the network topology, and three different types of intrusion detection results are obtained after weighting.

4. Analysis of Results based on Optimized Bayesian Edge Network Intrusion Detection Model

In order to verify the effectiveness of the research-proposed optimized Bayesian edge network intrusion detection model, in the experimental process, firstly, the research-proposed optimized Bayesian edge network intrusion detection model is simulated and compared with the traditional Bayesian edge network intrusion detection model, respectively, the proportion of the attack type and the size of the dataset are set. As shown in Table 1.

Table 1. Simulation test model comparison results

/	Optimizing Bayesian network models			Traditional Bayesian network model		
	Tamper	Node Attack (Computing)	Network Monitoring	Tamper	Node Attack (Computing)	Network Monitoring
Norm						

Detection rate (%)	94.24	95.32	95.63	88.36	91.2	89.32
False alarm rate (%)	2.35	3.21	2.13	6.32	7.51	6.54

As shown in Table 1, in the simulation environment, the traditional Bayesian edge network intrusion detection model has a low detection rate for various attack types and a relatively high false alarm rate; while the optimized Bayesian edge network intrusion detection model proposed in this study has certain advantages in detecting the types of attacks, and at the same time, it has a better performance in detecting the detection rate of various types of attacks and the false alarm rate; in addition, the optimized Bayesian edge network intrusion detection model takes less time in segmenting the dataset compared to the traditional Bayesian edge network intrusion detection model.

5. Conclusion

This research builds an intrusion detection model modeling based on Bayesian algorithm by analyzing and studying edge network and intrusion detection, and optimizes the parameters in the modeling process. Firstly, an overview of edge network and intrusion detection is given, after which an intrusion detection model based on Bayesian algorithm is built, and finally the feasibility of the optimized model is verified by simulation of the model.

The results show that the new model can effectively detect and classify various attack behaviors and security events in edge networks. Meanwhile, due to the small data of this experimental study, training on a larger dataset will be carried out subsequently.

6. Acknowledgment

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Problems and Measures in English Teaching for Marine Engineering Majors

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Abstract: In order to cultivate high-quality talents in the shipping industry, it is crucial to strengthen English teaching in the field of marine engineering. Therefore, in order to promote the development of English teaching, the study first analyzed the importance of English teaching for marine engineering majors. Then, four existing problems in English teaching for marine engineering majors in recent years were proposed. On this basis, a reform path for English teaching is proposed from three aspects: teaching materials, faculty strength, and teaching mode, providing a certain reference for the reform of English teaching in marine engineering majors.

Keywords: Marine engineering; English teaching; Problems and countermeasures

1. Introduction

With the development of economic globalization, international trade and Marine economy are also developing, and ship transportation plays a crucial role in the global economy, so Marine engineering has broad prospects for development. The global economy has driven the development of the Marine transportation industry, and the demand for relevant talents is strong, which provides a good employment environment for Marine engineering graduates [1]. But in modern maritime transportation, English is the main language, so in order to train Marine engineering professionals with international competitiveness, it is of great significance to actively carry out English teaching. However, there are many problems in the course of Marine engineering English teaching, which can not fully meet the needs of English teaching. In view of the importance of Marine engineering English teaching, some studies have analyzed the current problems in Marine engineering English teaching, and proposed the reform path.

2. The Importance of Marine Engineering English Teaching

Marine engineering refers to the engineering major specializing in the study of Marine power plants and related systems, which is mainly divided into two directions: ship manufacturing and Marine turbine management, as shown in Figure 1 [2]. With the continuous progress of science and technology, the design, operation and maintenance of Marine power plants are becoming increasingly complex, which provides more employment opportunities and development space for Marine engineers. The international maritime industry is also constantly innovating and developing, and there will be more oppor-

tunities and challenges in the international market for Marine engineering graduates. Therefore, combined with the international situation, the development prospect of Marine engineering is still quite optimistic, especially in the process of globalization, its importance will be more prominent.



(a) Shipbuilding



(b) Offshore Engine Management

Figure 1. Marine engineering specialty direction

It is of great significance to carry out English teaching actively in order to train high quality Marine engineers with international competitiveness. Marine engineering English teaching mainly includes two parts: Marine English listening and conversation and Marine English reading. First of all, much of the knowledge, literature and latest technologies in the Marine engineering field are expressed in English, so mastering English can help students better acquire and understand the international leading engineering technology information. Secondly, with the development of globalization, Marine engineers may need to communicate and cooperate with foreign counterparts or customers, and good English ability can improve the efficiency and quality of communication. Finally, many international engineering codes, standards and certification examinations require English ability, so teaching English is conducive to students' future career development.

3. Problems in Marine Engineering English Teaching

In recent years, the English teaching situation of Marine engineering major shows that some colleges and universities have not fully implemented the requirements of the international market for talents, resulting in the bottleneck of professional development, and thus affecting the employment of Marine engineering students. This paper puts forward the following four problems in Marine engineering English teaching.

First, the choice of teaching materials is limited. The teaching materials used for Marine engineering majors in English teaching are generally the original English textbooks or the translated versions of the same professional textbooks, but both of these textbooks have certain shortcomings and cannot meet the needs of Marine engineering majors. First of all, the use of original English textbooks can effectively avoid the deviation of professional knowledge caused by translation, and also help to improve students' English level. However, for domestic students, the original English textbook is difficult to understand, because the compilation of the original English textbook did not take into account the practical problems of Marine engineering students in our country, and there are problems of lack of pertinency. Secondly, the use of translated textbooks can help students understand, which is of positive significance to the study of professional knowledge. However, the translated textbooks will cause students to over-rely on Chinese translation, making English teaching empty talk.

Second, exam-oriented education lacks practical application. At present, most English teaching of Marine engineering majors is still limited to classroom and examination, ignoring the importance of practical application. In the actual engineering English reading course, teachers often pay too much attention to the question bank, one-

sided pursuit of the passing rate of the exam, ignoring the teaching design, resulting in a single teaching mode. Marine engineering English listening and conversation courses also pay more attention to improving students' test-taking ability, ignoring the cultivation of English expression ability. The traditional teaching content of exam-oriented education may not have strong correlation with practical engineering technology and practical application, which makes it difficult for students to directly apply their English knowledge to professional fields.

Third, there is a shortage of teachers. In the actual teaching process, there are few teachers from this major who have been trained and studied abroad, and there is a serious shortage of Marine engineering English teachers. English teachers who do not major in Marine engineering may not adapt to the professional business content because they are not familiar enough, so the teachers who teach professional courses are usually not born English majors. Teachers' own English level is limited, and almost all bilingual teaching is carried out in the mode of English and Chinese, which hinders the cultivation of students' English ability.

Fourth, the level of information-based teaching is not high. At present, Marine engineering English teaching in China is still using the traditional teaching methods, the teaching content is boring, it is difficult to stimulate students' learning enthusiasm, mobilize students' learning initiative and enthusiasm. The regional differences are obvious, the school-based characteristics are uneven, and there is no high-quality and efficient teaching resource platform for Marine engineering English listening and speaking courses. Students may miss out on opportunities to use advanced technology to learn more effectively, and teachers may be limited in the space for more innovative teaching and personalized tutoring, which will also affect students' learning effectiveness and interest.

4. Reform Path of Marine Engineering English Teaching

The imperfect English teaching mode will bring about bad influence on the professional and students' development, so it is urgent to take effective measures to reform. To this end, the study analyzes the teaching materials, teachers and teaching mode, and provides some theoretical support for the path selection of Marine engineering English teaching reform.

First, enrich the selection of teaching materials in English teaching. At present, the development of China's shipbuilding industry started late, the manufacturing technology of shipbuilding equipment is still relatively backward, and the manufacturing of the main equipment in international ships basically uses foreign technology. Therefore, the technical data of ship main equipment can be appropriately introduced as English teaching materials to make up for the lack of English teaching materials for Marine

engineering majors. So can learn foreign advanced technology, is conducive to the enrichment of teaching resources, open up a new source of professional knowledge, and improve the teaching ability of teachers. It can also stimulate students' curiosity and further clarify their future career plans.

Secondly, optimize the teaching staff. The most convenient way is to hire foreign Marine engineering teachers, but this has certain requirements for the economic strength of colleges and universities. It can also train English pronunciation for Marine engineering teachers. Teachers engaged in the teaching of professional courses usually have learned Marine engineering English during school, or have maritime experience, and have a certain English listening, speaking or application ability, but they still need to further improve their oral pronunciation ability to ensure the accuracy of pronunciation and avoid misunderstandings among students. In addition, colleges and universities can jointly train a group of Marine engineering students with good English ability, so as to reserve teachers for the future English teaching of Marine engineering.

Finally, with the help of information technology innovation teaching mode. Different from the traditional teaching mode of one-way knowledge infusion, teachers can adopt situational teaching mode in the teaching process, and make use of information technology such as multimedia and online teaching and answering platform, so that students can obtain more high-quality teaching re-

sources and realize personalized teaching. It also helps to stimulate students' interest in learning and strengthen the communication between students and teachers. In addition, it can also cooperate with enterprises to provide students with more practical opportunities and strengthen the combination of theoretical knowledge and practice.

5. Conclusion

To sum up, the English teaching of Marine engineering major still faces some challenges in practice, which is difficult to meet the new requirements of international Marine transportation for Marine engineering students. In order to promote the promotion of Marine engineering major English teaching, the study points out the problems existing in English teaching such as lack of teaching materials, exam-oriented education, lack of teachers and low level of information technology. Finally, the paper puts forward the reform path of English teaching from three aspects: teaching materials, teachers and teaching mode, which will promote the development of Marine engineering major.

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The Application Methods of 3D Game Engines in Animation Production Technology in the Context of Virtual Reality

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Abstract: Traditional animation production techniques have problems such as low efficiency in the actual production process. Therefore, this study explores the application methods of 3D game engine animation production technology in the context of virtual reality. Taking the characters in animation production as an example, when the actual number of characters produced is 500, the adjustment time for a single character in traditional animation production technology is 10 minutes, and it takes 4 days to complete all character adjustments, And using Unreal 4 only takes a few hours to complete. Taking the avalanche scene in the animation as an example, it only takes 0.11 seconds for the same number of particles. Overall, 3D game engines have improved the level of animation production and saved a lot of time and cost, which can effectively improve the efficiency of actual animated movie production.

Keywords: Virtual reality; 3D game engine; Animation production technology; Number of particles; Time cost

1. Introduction

In contemporary film and television art, the development of production technology and software and hardware technology has also promoted the development of three-dimensional animation. The increasingly realistic characters and clear images have created a greater demand for traditional three-dimensional animation among audiences. Compared to traditional hand drawn animation, digital animation not only reduces a lot of repetitive labor to a certain extent, but also uses more sophisticated methods to reuse many resources. With the help of computer drawing technology, it can better express the ideas of designers and artists. With the development of electronic games, game engine technology has rapidly developed, and the one-stop animation editing ability of current game engines has made them applied in animation production. However, due to the late start of independent research and development on game engines and relatively weak technology in China, there is relatively little research in this area. Based on this, a detailed analysis was conducted on the application advantages and methods of 3D game engines in animation production technology, with the aim of expanding the research on 3D game engines in animation production and providing some reference for their development.

2. Analysis of the Application Methods of 3D Game Engines in Animation Production Technology

2.1. Advantages of 3D game engine animation production

Traditional animation production technology has low efficiency and high cost in current animation film production, while the development of virtual reality (VR) technology has brought opportunities for iterative upgrading of animation production technology. Compared with traditional animation production, the 3D game engine technology in the VR context has greatly optimized traditional animation production techniques. Firstly, the process of animation production technology has been improved, and the preparatory work in the early stages of animation production is one of the key factors for its success. However, in traditional animation production, the preparation work in the early stage is based on the experience of the director team, which is very time-consuming. However, using the real-time rendering system in 3D game engine technology can render the animation in real time, which effectively reduces the time required for the preparation work in the early stage. Secondly, the actual production time cost in the middle stage of animation has been effectively reduced. By the

middle stage of animation production, using game engines only requires a dedicated animation development function module to complete the editing and synthesis of the entire animation. In addition, the real-time presentation effect of the engine greatly improves the efficiency of intermediate production.

Then, 3D game engine technology enables animation to present diverse effects in post production. In the design and production of animation post production, it is necessary to layer and process post editing, special effects, subtitles, etc. In the traditional animation production process, post editing and special effects are usually added at the end, and the presented effects are often difficult to grasp. The 3D game engine can add it to the sequence program and add some special effects to the final effect, creating a unique effect for the final effect. Finally, the 3D game engine has changed the interactive mode of animation production. From the perspective of animation creation, the realism of scenes, character images, and visual impact in animation rely on the human eye to feel. In real life, it is difficult for the audience's emotions to intervene in the process of animation screening. However, with the advancement of 3D game engine technology, people can transition from passive acceptance to active participation, thereby achieving more sensory experiences.

2.2. Analysis of animation production process in virtual reality

The advantage of using 3D engine technology to produce animation in the VR context is essentially the optimization of the application methods of animation production technology. Overall, the optimization of animation production technology processes by 3D game engines is the key to its differentiation from and superiority over traditional animation production technologies. Among them, the traditional animation production process and the animation production process under the application of 3D game engine technology are shown in Figure 1.

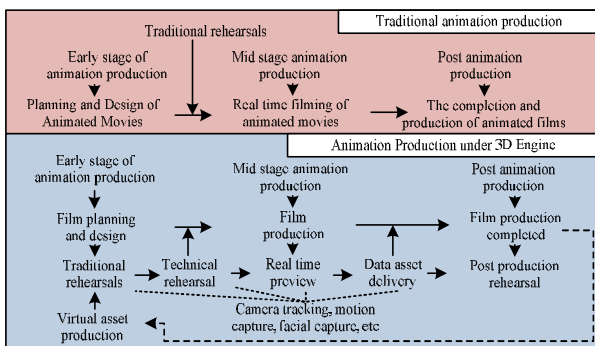


Figure 1. The process of traditional animation production and the animation production process under the application of 3D game engine technology

From Figure 1, it can be seen that both traditional animation production and animation production using 3D game engine technology can be divided into three stages: pre production, mid production, and post production. In the early stages of animation production, the main focus is on planning and designing animated films. The intermediate stage is the filming stage of the animated film, and the later stage is the processing stage of the animated film. In the traditional animation production process, there is only rehearsal before and after the animation starts, but in the 3D engine technology in the VR context, the animation production process is much more complex. Among them, in the planning and design of animation, in addition to concept rehearsals, it is also necessary to add technical rehearsals between the early and middle stages, and also conduct live shooting rehearsals in the middle. At the same time, asset delivery can be increased between the middle and later stages, and camera tracking, motion capture, and facial capture can be set up throughout the entire early and middle stages. The advantage of doing so is that it can not only greatly reduce the time required for animation production, but also enable virtual technology to enhance the animation's effects effectively.

3. The Application of 3D Game Engines in Animation Production

Taking the world-renowned game engine (Unreal Engine 4, UE4) as an example, this study analyzes the application of UE4 engine in 3D animation production to deeply explore its advantages and provide corresponding shortcomings. UE4 not only has good game development capabilities, but also has good graphics processing capabilities, real-time rendering quality, and particle systems. In the process of animation production, the UE4 game engine is the most important application, which can achieve the import of animation resources, the establishment and construction of scenes. Secondly, using the drawing visualization function of the UE4 game engine can compensate for the shortcomings of art creation in computer programming languages. At the same time, it can also link and compile program language nodes, and trigger animation scenes in real time.

Taking the characters in animation production as an example, when the actual number of characters produced is 500, the traditional animation production technology takes 10 minutes to adjust a single character, and it takes 4 days to complete all character adjustments, which consumes a lot of time, capital, and labor costs. However, using UE4 only takes a few hours to complete. Taking the avalanche scene in animation as an example, for the production of large-scale avalanche scene results, traditional animation production techniques usually take hours per frame, while UE4 takes seconds, which only takes 0.11 seconds for the same number of particles. However, it cannot be denied that the current 3D engine

technology still has many disadvantages, such as high hardware requirements for computers, which directly affect the real-time rendering effect. This indicates that the cost of 3D animation production is expensive. In addition, in terms of actual expression effects, the current 3D special effects software performs better than 3D engine technology, so it needs further improvement.

4. Conclusion

Traditional animation production techniques have the drawbacks of low efficiency and high time costs, while using 3D game engine technology to produce animation in a virtual context is another cost-effective option. It provides more efficient tools for animation production, saves a lot of time, and effectively breaks down barriers between game animations, providing viewers with a more interesting experience. For example, the production of large-scale avalanche scenes requires only 0.11 seconds for the same number of particles in 3D, which is much lower than traditional animation production tech-

niques. However, the current 3D engine technology still has a high threshold problem, and the actual expression effect is inferior to 3D special effects software, so it still needs to be improved.

5. Acknowledgment

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Blended Teaching Reform in Painting Technique Classes

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Abstract: A set of blended teaching mode is proposed to address the characteristics and requirements of painting technique courses in colleges and universities, combined with the contemporary development trend of online teaching. The model combines online resources and offline practice, aiming to create a complementary teaching environment so that students can acquire theoretical knowledge on the online platform and consolidate it through practical activities. The implementation of the blended teaching model not only improves the teaching quality of the painting techniques course, but also stimulates students' interest in learning and innovative thinking. This teaching reform establishes a complete curriculum system for painting technique courses in colleges and universities, realises the deep integration of online and offline content, and opens up new ways for students' comprehensive development.

Keywords: Drawing techniques; Blended; Teaching; Curriculum

1. Introduction

Against the background of the rapid development of information technology and the popularisation of the Internet, the art and design professions in Chinese higher education are undergoing a major reform of the teaching mode [1]. As the core of the profession, the reform of the teaching method of the painting technique course is particularly important. The blended teaching mode, which combines the advantages of online and offline teaching, has become the key to improving teaching quality. This mode not only breaks the traditional space limitations and provides a flexible learning environment, but also enhances the interactivity and convenience of teaching through the online platform. Blended teaching attaches importance to the interaction between teachers and students and emphasises the student-centred teaching concept[2-3]. In this mode, teachers become the guides of students' learning, while students change from passive receivers to active explorers, which promotes the enhancement of learning interest and creativity. Therefore, the application of blended teaching in the course of painting techniques not only improves the quality of teaching, but also opens up a new way to cultivate talents with innovative spirit.

2. Characteristics and Modes of Teaching in Drawing Techniques Programmes in Higher Education Institutions

2.1. Characteristics of painting techniques courses and practical teaching

As a core component of art and design education in tertiary institutions, courses in drawing techniques cover a wide range of disciplines, such as basic modelling, oil portraits to brushstrokes, as well as illustration design and graphic creativity. The teaching of these courses has three distinctive features. Firstly, teachers deliver core drawing techniques to students through systematic classroom lectures, ensuring that students are primed to understand and master these techniques. Secondly, the teacher adopts a personalised teaching method according to the characteristics and level of each student, and helps students to consolidate and deepen these techniques in long-term painting practice. Finally, the course not only enriches students' artistic knowledge, but also enhances their aesthetic ability and artistic cultivation by displaying and analysing high-level art works. This three-step teaching method enables students to fully grasp the theoretical knowledge and practical skills of the relevant painting genres.

2.2. Blended learning in drawing techniques courses

As a teaching mode that combines online and offline teaching resources, blended teaching shows its unique value and effect in painting technique courses. The mode breaks through the time and space limitations of the traditional teaching mode through the complementarity of online and offline teaching methods, and provides a more flexible and interactive learning platform for teachers and students. In addition, blended teaching not only stimulates students' interest in learning, but also guides them to form the habit of active learning, thus effectively enhancing the teaching effect. In this mode, teachers are able to use network resources to enrich classroom content, while

optimising the time and space layout of the teaching process to stimulate students' learning initiative and autonomy.

3. Design of A Blended Teaching Model for A Course on Painting Techniques

3.1. Integration and optimisation of curriculum resources

Under the blended teaching mode, the integration of teaching resources for the painting techniques course has become an important task. This includes the use of online teaching platforms such as Super Star Learning Pass, Wisdom Tree, MOOC, etc., to screen high-quality literature closely related to the course, including art theories, technique theories, classic paintings and online courses. These resources are classified into two categories, learning and appreciation. Learning literature is compulsory, while appreciation literature is offered to students for self-selected learning to enrich their artistic vision and enhance their appreciation. In addition, teachers will make use of modern information technology tools, such as digital art galleries, multimedia and technique training rooms, to build an integrated learning environment containing online and offline resources.

3.2. Online and offline integration of teaching content

Blended teaching of the painting techniques course is not only the establishment of an online communication platform, but also a comprehensive design that involves a number of aspects such as course preparation, online teaching, offline teaching, assessment and evaluation. In this teaching mode, teachers combine the theoretical knowledge of the course with the resources on the online platform, and the course content is expanded from inside the classroom to outside the classroom, so that students can obtain support anytime and anywhere. The pre-study tasks pushed on the online platform, online art exhibitions, and literature sharing all aim to promote students' active participation and in-depth learning.

3.3. Pre-course preparation and out-of-class exercises

In the blended teaching mode, pre-course preparation is an important part of stimulating students' interest in learning. Teachers will use the online platform to release pre-study tasks, including reading materials, watching relevant videos and work appreciation, so that students can understand and prepare for the course content before class. Extracurricular practice is an effective supplement to classroom learning, and students can upload practice assignments and interact with teachers through the online platform. This approach not only improves students' learning autonomy, but also enhances teachers' guidance and feedback on students' learning process.

4. Assessment and Evaluation Mechanisms in Blended Learning

4.1. Comprehensive assessment of student performance

In a blended learning environment, the assessment of students' performance needs to fully reflect the combined results of online and offline teaching and learning activities. The assessment involves three key aspects: proficiency in drawing skills, which accounts for 70% of the total grade and tests students' operational and creative standards in drawing techniques; theoretical knowledge and practical application, which accounts for 15% and focuses on the depth of students' theoretical learning and its application in practical drawing; and learning engagement, which also accounts for 15% and assesses students' participation, interaction and attendance in class. This comprehensive assessment method aims to measure the overall performance of students in the learning process of painting techniques.

4.2. Comprehensive evaluation of teaching effectiveness

Teaching effectiveness evaluation is divided into two dimensions: institutional evaluation and student evaluation. Institutional evaluation is the responsibility of the teaching institution and involves departmental leaders, supervisory teams and peer teachers, and is based on the actual classroom situation to form a comprehensive rating of the teacher. Student evaluation is organised by schools and professional departments, aiming at reflecting teachers' teaching level and results from the perspective of students. The evaluation covers a wide range of aspects such as teacher ethics, teaching ability, curriculum quality, teaching methods, teaching effectiveness, teacher-student interaction, etc., and the results are directly related to the teachers' annual appraisal and career development.

4.3. Construction and application of thematic repositories

To facilitate blended learning, the development of a thematic resource bank has become a key step. The resource bank contains a wide range of learning options for students, from masterpiece albums to virtual exhibitions, teacher and student portfolios, as well as museum and gallery resources. Through these resources, students can regularly review and improve their work, effectively enhancing their drawing skills. At the end of the course, the painting exhibitions organised are not only occasions to showcase the teaching results, but also platforms for students to present themselves and build up their confidence. In addition, students are able to provide feedback on the teaching resources and test questions on the platform, which contributes to the continuous improvement of the

resources. Eventually, these optimised teaching materials will be integrated into the resource library to form a comprehensive and efficient teaching system for painting techniques. The application of the thematic resource library in blended teaching is shown in Figure 1.

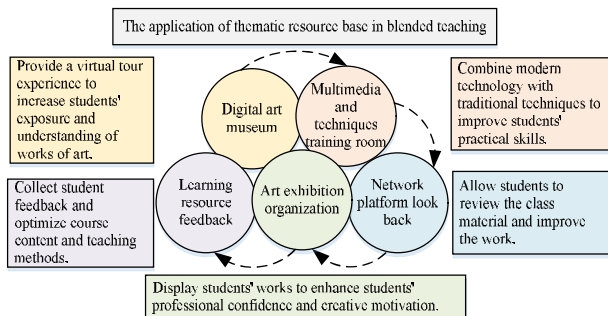


Figure 1. The application of thematic resource base in blended teaching

5. Conclusion

The application of the blended teaching mode in the painting techniques course marks an important reform in the field of education in adapting to the information technology era. This mode integrates the extensive resources of the Internet and the interactive advantages of traditional teaching, which significantly improves the visual

appeal of the teaching content and the efficiency of information exchange, and at the same time enhances students' active learning awareness and participation. Under the background of "Internet Plus", the teaching of painting techniques courses is undergoing profound changes, and teachers as facilitators need to explore and practice new strategies, accumulate experience, and form efficient and comprehensive teaching methods. The success of blended teaching not only optimises the learning experience, but also improves the quality of teaching. To sum up, the blended teaching mode has injected new vigour into the teaching of traditional painting techniques, demonstrating the innovation and progress of the educational field in the face of technological development. This reform is crucial to improving students' artistic literacy and practical skills, and provides a useful reference for the future direction of art education.

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The Role of Classroom Observation in English Reading Teaching: A Case Study at GXUST University in China

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Abstract: This paper conducts an in-depth exploration of the role and impact of classroom observation in English teaching through on-site observation of English classes at Guangxi University of Science and Technology. The study adopts a combined method of literature review and empirical analysis to reveal the relationship between classroom observation and student-centeredness, English reading teaching, and provides detailed analysis and interpretation of the observation results. The research results indicate that classroom observation plays an important role in English teaching and has a positive impact on improving teaching quality and promoting student learning outcomes. This study provides scientific basis for improving and optimizing English teaching methods and provides important reference for the development of English teaching at Guangxi University of Science and Technology.

Keywords: English teaching; Classroom observation; Student-led; English reading teaching; Guangxi university of science and technology

1. Introduction

As an important part of the global education field, the discussion on English teaching methods and their effectiveness has always been a focus of educational researchers. Among various teaching methods, the role of classroom observation has gradually attracted attention. Especially in an environment like Guangxi University of Science and Technology (GXUST), the role of classroom observation in improving the quality of English teaching cannot be ignored.

Guangxi University of Science and Technology is located in the south of China, and the quality of its English teaching has always been a focus of attention for the school and education department. In this context, this study observes the English teaching of Guangxi University of Science and Technology to explore the role of classroom observation in English teaching and the aim is to provide valuable reference for the English teaching reform of GXUST.

2. Review of Literature

2.1. Classroom observation

The post-modern curriculum perceived that teachers should play a central role in the evaluation process, rather than a spectator evaluator outside the classroom (Doll, 2015). Although grading system is one of the most popular methods to test students' learning achievements, it seems not enough for the teachers. Systematic observa-

tion, attitude, regular survey of examinee's skills, and beliefs are important and necessary (Aigul Akhmetova, 2022), and classroom as the only opportunity for students to actually "read" should be used optimally by teachers to teach reading skills and strategies explicitly in foreign context (Melyann, 2014). Furthermore, classroom observation, a kind of professional activity that records, analyzes and researches the running status of the classroom through observation, and seeks to improve students' classroom learning and promote teachers' development on this basis. It provides objective and comprehensive data to help educators understand the actual situation of teaching, thus providing a basis for educational reform and improving teaching quality.

Classroom observation is a very detailed task that requires observers to carry out comprehensive observation of the classroom teaching process, including the teacher's teaching attitude, teaching methods, teaching content, classroom atmosphere, and other aspects. Through observation, objective and comprehensive data can be obtained to help educators understand the actual situation of teaching, thus providing a basis for educational reform and improving teaching quality.

The advantages of classroom observation lie in its systematization and planning. By developing clear observation plans and indicators, the orderliness of the observation process and the accuracy of the observation results can be ensured. At the same time, classroom observation can provide rich data information, including the interac-

tion between teachers and students, student participation and response, etc., helping educators understand the actual situation of teaching more comprehensively.

2.2. Classroom observation and SLA

With the transformation of educational philosophy, the status of students' subjectivity is increasingly prominent in classroom teaching. Student-led classroom teaching modes emphasize students' initiative and enthusiasm, encouraging them to participate in classroom discussion, express their views, and engage in independent learning and self-assessment. This teaching model aims to improve students' independent learning ability, critical thinking ability, and innovative spirit, promoting students' comprehensive development.

In student-led classroom teaching, classroom observation plays an important role. Observers can assess the implementation effect of student-led classrooms by observing students' performance, participation degree, and interaction. They can observe students' speech content, thinking methods, expression ability, etc., understanding students' learning situation and thinking characteristics. In addition, observers can also observe students' participation degree and interaction to understand students' participation and enthusiasm in the classroom.

Through classroom observation, observers can provide suggestions for improvement to promote students' learning effect. They can propose targeted suggestions for improvement based on observation results to help students better play to their strengths and potentials. At the same time, observers can adjust teaching strategies and methods based on observation results to better meet students' learning needs and promote students' learning effect improvement.

2.3. Classroom observation and English reading teaching

Classroom observation plays an important role in English reading teaching. By observing the process of English reading teaching, one can understand the teacher's teaching strategies, methods, and effects, and evaluate the development of students' reading abilities. At the same time, classroom observation can also provide reflection and suggestions for improving English reading teaching. Observers can propose corresponding improvement measures for problems in the teaching process, promoting the improvement of English reading teaching quality. In addition, classroom observation can also provide empirical data for research on English reading teaching, and promote the development of both theory and practice in English reading teaching.

Therefore, observation, as a vital naturalistic inquiry, was chosen in EFL classes in order to inquire and describe the real and authentic teaching and learning process (Gu et al., 2013; Chen, 2016). In the present study, the class-

room observation form was constructed by the researcher to provide reference points for assessment for enabling the teacher and students to accurately make reflections themselves and diagnose their behavioral performance in class from a view of a third angle, meanwhile, it was regarded as one of the supplementary methods to validate the effectiveness of using the integrated instructional model, making the process more meaningful, fair, and useful.

3. Methodology

3.1. Participants

30 English majors who rolled in English Reading Course (Level 1) at Guangxi University of Science and Technology and Observer A and Observer B were teaching fellow at Foreign Language School of GXUST. They were qualified professional teachers.

3.2 Instruments

According to principles for the design of English reading classroom observation (Gu et al., 2013), building upon the reading lesson observation framework developed by Henk et al. (2000) and GXUST's classroom observation, considering the factors affecting English reading skills and the contents of the integration of blended learning and task-based learning models in this study, classroom observation form for English reading lesson included blanks for indicating the teacher being observed, the evaluator, the school year, the date of the observation, the number of students presented, and which phases of the lesson (i.e., before, during, or after reading) were witnessed.

In essence, the classroom form took the form of a checklist with seven major components: (a) Pre-reading task stage, (b) During-reading task stage, (c) Post-reading task stage, (d) Reading skill instruction, (e) Materials and tasks of the lesson, (f) Evaluation, and (g) Classroom Environment. Under each component, a series of items are included that represent criteria for evaluating the component's various aspects. In all, there are a total of 30 items. A brief description of the components and key aspects follows.

The Pre-reading task stage items included the encouragement of the reading skills, the activation of prior knowledge (such as pre-testing), the stimulation of interest, the identification of genre and the lesson's objectives, and making instructional adjustments.

For the During-reading task stage, the instrument focused on the process of acquiring the reading skill, independent and online reading, group work reading, Q&A, teacher modeling and monitoring, interaction between the teacher and students, students and the internet, and text structure recognition.

In the Post-reading task stage, items involved the confirming of the reading skills, writing as an extension of reading (such as posters), and continued teacher monitoring of student comprehension and students' self reflection (such as post-testing).

Reading skill instruction centered on teacher explanations and modeling, explicit teaching, contextualization and use of the skills, and scaffolding.

Factors associated with Materials and tasks of the lesson included considerations of ability and diverse learning needs, text and task authenticity, the nature of independent online work, modes of reading task and thematic instruction.

The Evaluation component included a focus on the types of assessment, such as online practices, pre-post testing and exercises, the execution of recommended online learning platforms, student engagement, and curricular alignment.

The Classroom climate component dealt with the physical setting, students' access to authentic reading materials, the provision of a designated reading for small-group instruction, active student engagement and social interaction, and practices.

For each item, the lesson observer can indicate one of four responses: O = Observed, C = Commendation, R = Recommendation, N = Not applicable.

An O response indicated that the aspect was observed and judged to be of satisfactory quality. The C response denoted that the aspect was not only observed but also of very high quality. An R response is given when an appropriate aspect was either not observed or judged to be unsatisfactory. The N response meant that the aspect was not observed, presumably because it was not pertinent to the lesson. The check-off boxes to the right of the instrument allow for easy use by the observer.

Refer to the frequency and number of observations, because lessons are sequential, hence there should be a reasonable amount of time between classroom observations, that is, the number of observations per teacher also need to be considered. The preponderance of evidence in this regard suggests that a reliable assessment of teaching requires multiple observations (Felipe et al., 2016). Ho & Kane (2013) suggested that at least two different observers, each observing four lessons may be needed, while Erlich and Shavelson (1978) suggested that as many as seven or more lessons may be required for generalizations involving a single observer. Felipe et al. (2016) reported a study that some large-scale observation systems required two and six observations, respectively, for the same groups.

Therefore, this research was designed to require 2 different observers for the same group, whose major were English, and in charge of the related English courses at GXUST, as well as with qualified teacher status have the appropriate training and professional skills, were invited

to be volunteers for peer observation (Zhu, 2005) in the classroom of English Reading course. In this process, the lecturers should record and analyze in detail how the teacher conducted teaching, including various teaching activities, teaching methods and classroom management.

Secondly, It is worth noting that the phases and objectives of the integrated instructional model, the period span of this course and sustainability characteristics of classroom observation (Zhang J. R., 2007). Two lecturers both conducted the observation for the whole three reading phases of a unit in order to comprehensively realize the implementation process of this integration of BL learning and TBLT learning instructional models on reading skills.

3.3. Data collection

Firstly, the data collection was conducted at least three times for each observer in the semester, that is one observer covered three phases of any one unit while the other observer constantly focused on any one phase of a unit for three times, in accordance with the period span of this course.

Secondly, teachers usually introduce the overall teaching plan of the semester in the first class, which is conducive to understanding the overall teaching situation (Gu, 2013). In order to collect data quickly and effectively, observers at GXUST were explained the aims, the context of the lesson and specific items of this form to be observed in order to ensure they can meet a particular observation's goals.

The samples were allowed to fill in the form independently. Then they were collected back by the researcher. Each sample was labeled, marked with numbers and sorted by the researcher.

3.4. Date analysis

At first, the original data of 2 lectures was respectively analyzed by using content analysis with descriptive statistics. Secondly, the common characteristics of GXUST were interpreted and extracted from the answers of three lectures respectively. Finally, the common dimensions of the content, including internal factors and external factors to supplement and support the evidence for effectiveness of the integrated instructional model.

4. Results

The results indicated that, in During-Reading Task Stage belonged to 'O' level, that is, "this stage was observed and was judged to be of satisfactory quality". Refer to other components related to During-Reading Task Stage, the Highest Category of components "Reading Skills Instruction", "Classroom Environments" and "Evaluation all belonged to "observed and was judged to be of satisfactory quality" level, however, component "Materials and Tasks of the Lesson" was observed and was judged

to be of 'very high' quality. Therefore, on the whole, the result of classroom observation form for Unit 2,3,4,5 indicated that During- Reading Task Stage of this model "was observed and was judged to be of satisfactory quality" with 64 "O", 33 "C", 2 "R" and 1 "N".

This study conducted in-depth research on classroom observation in English teaching at Guangxi University of Science and Technology, and obtained a series of meaningful research results. These results help us more comprehensively understand the role of classroom observation in English teaching and provide important reference for improving teaching practice.

Firstly, the study found that classroom observation plays a crucial role in English teaching. By observing the teaching process, teachers can obtain valuable feedback information, understand the students' learning needs and problems, adjust teaching strategies, and improve teaching effectiveness.

Secondly, classroom observation and student-centered teaching mode promote each other. In classroom observation, observers can clearly see students' participation and performance in the classroom, providing strong support for student-centered teaching. At the same time, the student-centered teaching mode also provides broader observation space and richer observation content for classroom observation.

Finally, this study also found a close relationship between classroom observation and English reading teaching. By observing the teaching process of reading classes and students' reading performance, teachers can better evaluate the effectiveness of reading teaching, identify students' reading difficulties, and provide targeted guidance and assistance. This is of great significance for improving students' reading ability and language level.

In summary, classroom observation plays an important role in English teaching. It not only provides teachers with a basis for improving their teaching but also promotes the implementation of student-centered teaching modes and forms a beneficial interaction with English reading teaching. These research results provide important reference for the further development and improvement of English teaching at Guangxi University of Science and Technology.

5. Conclusion

After conducting in-depth research on the role of classroom observation in English teaching, this study has reached a series of conclusions regarding the importance and impact of classroom observation in English teaching at Guangxi University of Science and Technology. Classroom observation, as an effective evaluation tool, plays a non-negligible role in improving teaching quality and promoting students' learning outcomes. At the same time,

the close combination of classroom observation with student-centered teaching models and English reading teaching has provided effective directions for improving English teaching at Guangxi University of Science and Technology.

Looking ahead, we hope that Guangxi University of Science and Technology can further promote the widespread use of classroom observation in teaching practice and provide professional training for teachers to improve their classroom observation abilities. In addition, future research can further explore the combination of classroom observation with other teaching modes to seek more effective methods to improve students' English abilities and overall qualities. Through continuous research and practice, we believe that classroom observation will play a greater role in improving the quality of English teaching at Guangxi University of Science and Technology.

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Exploration and Practice of Building a Hybrid "Golden Course" of Online and Offline Management Courses

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Abstract: By analyzing the meaning of the hybrid "golden course" of online and offline, clarifying the factors that restrict the improvement of teaching quality in university management courses, reflecting the construction value of the hybrid "golden course" of online and offline management courses in universities, using networked teaching methods to gradually systematize management courses, cultivate professional teaching staff, and explore new ideas for the hybrid "golden course" teaching of online and offline management courses, Clarify the construction system of blended online and offline "golden courses" for university management courses, and cultivate high-quality management professionals.

Keywords: Management courses; Online and offline; Jin ke

1. Introduction

In 2018, the Ministry of Education clearly proposed the importance of building a hybrid online and offline "golden course", and proposed the construction standards for creating a "gender oriented" golden course [1]. In December 2021, at the 12th Xinhua Education Forum, it was emphasized that blended online and offline teaching will become the new norm in higher education teaching in the future. On this basis, blended online and offline teaching has received widespread attention from university teachers, actively promoting the construction of "golden courses", deepening the integration of online and offline blended teaching, using "gender equality" as the curriculum construction standard, combined with corresponding teaching methods and assessment methods, to improve the teaching quality of management courses, cultivate students' comprehensive abilities and self-learning abilities.

2. Problems in Management Classroom Teaching

Firstly, there are fewer class hours and more use of large class teaching. At the same time, teachers mostly engage in teaching and research work in schools, without being exposed to practical management for a long time. When encountering practical problems, they lack practical management experience and cannot keep up with the times. They often directly require students to follow the textbook, lacking flexibility and innovation[2]. Causing a dull classroom atmosphere, most students lose interest in learning.

Secondly, current curriculum teaching places more emphasis on theory than practice. In the classroom, teachers often focus on theoretical deduction and cannot apply theory to practice, resulting in students' professional knowledge not being effectively integrated with practical applications. Due to the lack of a teaching approach that combines theory and practice, it is difficult to cultivate students' comprehensive ability and high-level thinking to solve practical problems, making it difficult to meet the high standards of "golden course" construction. At the same time, due to the limitations of teachers themselves, they lack the learning of cutting-edge knowledge in curriculum content, and are unable to achieve "innovation" in the construction of "golden courses".

Thirdly, in the existing teaching mode, the final exam often adopts a grading based assessment method, neglecting the process in the middle of the course. This assessment method cannot fully reflect students' learning status, and more importantly, it is students' last-minute rote memorization, which is difficult to understand the knowledge points learned, and there is no differential assessment of students with different foundations, resulting in a decrease in students' sense of achievement in learning.

3. Specific Content of the Construction of Online and Offline Hybrid "Golden Courses" for Management Courses

Based on the analysis of the learning situation and teaching objectives, the teaching process of management courses is designed into three stages: pre class, in class, and post class. In each stage, teachers design the classroom teaching to maximize the integration of high-

quality teaching resources, mobilize student enthusiasm, and give full play to their subjectivity to achieve teaching objectives.

3.1. Pre class session

In the pre class guidance section, the teacher pushes accurately selected online and offline resources to students in a task based manner according to the teaching plan. Based on software such as Learning Pass and Rain Classroom, the teacher guides students to learn. Through online self testing statistics, forum interactive information, etc., the teacher understands the students' self-learning situation and knowledge mastery level, and fine tunes the teaching content for the research stage based on this. Students need to fully utilize MOOC resources for knowledge exploration in this stage, and participate in pre class knowledge activities released by teachers through platforms such as Learning Pass and Rain Classroom, promoting understanding of knowledge and establishing difficult problems, thus forming a knowledge exploration goal with teacher guidance and student self-learning as the main body.

According to the training plan and teaching objectives, teachers will publish the designed courseware, homework questions, expansion resources, and teaching micro lesson videos in the teaching space of Xuetong. After the electronic teaching resources are uploaded, students will be organized to participate in frontline classroom activities. Through the teaching task list, students will be guided to complete the preview of basic knowledge points, allowing them to have a clear understanding of the course learning objectives. Students can provide timely feedback to teachers when encountering key and difficult points, and teachers can create targeted teaching materials based on the content of student feedback for some key and difficult points. Teachers can monitor the self-learning situation of students through the Xuetong backend, understand and master the level of student mastery of knowledge points based on the generated data from the backend, and provide online supervision and guidance.

3.2. In class session

Teachers use the SPOC platform to monitor student feedback in real-time and adjust the corresponding teaching pace; Teachers can use classroom tests to understand the students' mastery of important and difficult knowledge points while explaining them; Taking students as the main body, creating situations through immersive learning, promoting group discussions, and assisting students in collaborative communication[3]. Students have divergent thinking in exploratory learning and actively participate in group discussions to brainstorm; Teachers can use the "grouping" function in SPOC software to teach in groups and stimulate their desire for learning.

In the teaching process, practical cases in the industry can be introduced to guide students to think and explore from a practical perspective, cultivate students' ability to flexibly apply professional knowledge so that knowledge is not limited to books. This teaching method is conducive to the cultivation of applied talents in universities. Emphasizing the compatibility between case studies and the course being taught enables the perfect integration of case studies into the course. This not only stimulates students' interest in learning, but also leaves a deeper impression on them, thereby firmly mastering the relevant knowledge they have learned.

3.3. After class session

The after-school session focuses on practice, forging students' ability to apply and integrate knowledge. Teachers can consolidate knowledge based on the learning situation of students in the pre class and in class stages, by pushing review questions or conducting post class reflection and summary. Teachers use "Rain Classroom" and "Learning Pass" to push the summary of the PPT chapter to students and arrange different forms of homework to ensure timely and effective review after class; At the same time, after class, the teacher terminal immediately receives process data and other information, including detailed information such as class size, student data, exercise data, and courseware data.

3.3.1. Diversified course evaluation methods

To avoid "one test paper determines the world", the first step is to increase the proportion of process grade and stage assessment grade in the grading. In traditional offline teaching models, process based grades are generally rated based on students' attendance and classroom performance. However, the evaluation criteria are subjective, single, and classroom time is limited, making it difficult for teachers to pay attention to all students. In the blended learning mode, the process grade can also be collected and statistically analyzed based on the online attendance of students, the duration of online self-directed learning, the frequency of participation in online interaction, and the level of interaction. The scoring criteria are more scientific and cover all students. The phased assessment score is based on the course learning of each chapter, to timely understand students' knowledge mastery and strengthen their ability to apply theoretical knowledge. Through diversified course evaluation methods, comprehensively assess students' learning attitudes, knowledge abilities, and comprehensive qualities.

3.3.2. Based on practice, innovate assessment methods

In assessment, emphasis should be placed on assessing students' ability to integrate and apply knowledge, rather than rote memorization, which requires teachers to inno-

vate assessment methods. In the blended teaching mode, teachers can fully utilize the advantages of online platforms and modern information technology tools, and use online platforms to timely comment on assignments and share excellent assignments. At the same time, with the help of specific practical cases from the teacher's research project, share the specific applications in practical management, and add specific real cases during the learning process, using a grouping mode as part of the process assessment.

4. Conclusion

In summary, the exploration and practice of the online and offline hybrid "golden course" teaching mode for management courses fully combines the advantages of traditional teaching and online teaching, changing the previous teaching methods and paths. Through online and offline hybrid teaching, teaching resources and interactive environments are provided anytime and anywhere, combined with multimedia teaching resources, online discussion and interaction, real-time feedback and other functions, Enable students to have a more comprehensive understanding and mastery of knowledge, provide personalized learning plans and guidance, and help students better understand and master knowledge; At the same

time, it provides students' learning data and feedback, helping teachers understand their learning situation. Through learning data, teachers can understand students' weak links in the course and make targeted teaching adjustments. Through online and offline blended teaching, students can deepen their understanding and ask questions in traditional classrooms, consolidate and expand on online platforms, and improve learning effectiveness. This provides direction and research ideas for the teaching reform of mixed online and offline "golden courses" in management courses.

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Teaching Reform and Practice of Thesis Writing in Undergraduate Colleges and Universities

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Abstract: In the practical teaching system of undergraduate colleges and universities, the quality of graduation thesis writing is an important indicator to measure the orientation and quality of talent training in colleges and universities, this paper aims to improve the quality of course teaching and improve the level of students' thesis writing from the perspective of the course of "thesis writing", combined with the reform and practice of course teaching, and the two dimensions of practice-oriented course teaching reform and optimization of the thesis organization form, so as to improve the teaching quality of undergraduate colleges and universities.

Keywords: Essay writing; Pedagogical reform; Quality of teaching

1. Introduction

Undergraduate colleges and universities are important platforms for talent cultivation in our country. In order to meet the society's demand for various talents, undergraduate colleges and universities need to continuously adjust and reform the talent cultivation mode. The quality of talent cultivation in undergraduate colleges and universities largely depends on the graduates' ability to combine theoretical knowledge with practical application, and to cultivate students' practical abilities and professional skills. Therefore, the graduation thesis, as an important part of practical teaching, plays a crucial role in the talent cultivation process of undergraduate colleges and universities.

2. The Importance of Writing a Graduation Thesis

The graduation thesis is an important part of the practical teaching system in undergraduate colleges and universities, and it is a key criterion for evaluating the level of undergraduate education over the four years. It not only tests students' ability to comprehensively apply professional knowledge, but also cultivates their ability to independently conduct academic research. At the same time, it is also a necessary condition for obtaining a degree. For some students, after nearly four years of professional knowledge learning, their writing and research abilities may not have reached the required level of scientific research ability and academic standards. The graduation thesis, as an important form of practical teaching, is of great significance for cultivating students' research ability, problem-solving ability, comprehensive quality improvement, and career development.

3. The Main Problems in the Process of Writing a Graduation Thesis

3.1. Lack of independent academic research awareness among students

In the daily teaching process, teachers generally use a "spoon-feeding" teaching method, which leads students to become accustomed to passive knowledge acquisition and lack of independent analysis and problem-solving abilities. This situation is particularly prominent in the writing of graduation theses. Some students are unable to choose topics independently and lack effective literature review and collection skills, resulting in low-quality literature review sections. During the initial drafting process of the thesis, some students even encounter issues where the content does not match the title, indicating that they still lack logical thinking and research literacy before graduation.

3.2. Improper attitudes of students towards thesis writing

Through course surveys, students generally consider obtaining certificates, taking postgraduate entrance exams, taking civil service exams, internships, and job hunting to be more important than writing a graduation thesis. They believe that there is no significant difference between a graduation thesis and regular course papers. Therefore, they hastily complete a thesis by compressing the writing time, leading to lower-level errors such as irrelevant content, incoherent sentences, and even non-standard formatting in the thesis.

3.3. Inadequate guidance from instructors

Although the graduation thesis is a student-centered teaching practice, and many schools encourage students to independently select topics, complete thesis writing, and defend their work, due to the lack of independent academic research awareness among some college students and their improper attitudes towards writing, if the school does not explicitly require instructors to provide guidance and supervision, the quality of the graduation thesis cannot be guaranteed. Therefore, the guidance and instruction of thesis supervisors are crucial. However, the ratio of students to thesis supervisors in some undergraduate institutions is very unbalanced, making it difficult for instructors to effectively guide students outside of their teaching duties, resulting in low-quality student thesis writing.

4. Strategies for Curriculum Reform

Based on the aforementioned issues, some undergraduate institutions have been employing various methods to address these problems. One low-cost solution is to offer a "Thesis Writing" course as a prerequisite for the graduation thesis. The offering of this course to a certain extent alleviates the issues of students' academic abilities and attitudes, while also reducing the repetitive work for supervising instructors.

4.1. Adjusting and optimizing the content of course practice

Curriculum reform should involve organizing and adjusting course resources, optimizing existing teaching content, emphasizing mastery of basic knowledge, and focusing on cultivating comprehensive application abilities. Writing a graduation thesis requires a high level of comprehensive knowledge application. Therefore, increasing the proportion of practical case analysis and problem-solving exercises in the course will allow students to encounter as many real academic problems as possible, and cultivate their independent thinking and problem-solving abilities.

4.2. Diversified application of practical teaching methods

Curriculum reform should focus on diversified practical teaching methods, integrating research methods commonly used in thesis writing into course teaching. Firstly, organizing field research and interviews, and writing research reports or summaries. Secondly, strengthening practical writing, allowing students to practice writing in class to experience the process and skills of writing in practice and better master the essentials of thesis writing. Thirdly, using case analysis to enable students to understand the problems and challenges they may encounter in actual thesis writing through analyzing real cases.

4.3. Online platforms to assist teaching

Curriculum reform should fully utilize online teaching platforms to achieve diversified experimental teaching methods through the integration of online and offline mixed classrooms, flipped classrooms, and other teaching methods, providing students with freshness and anticipation. Teachers can release experimental content, relevant text, video materials, and requirements online in advance, allowing students to prepare for writing content and literature review in advance, saving time and making sufficient preparations for course practice.

4.4. Optimizing the course assessment and evaluation system

Curriculum reform should change the problem of a single form of assessment and a lack of assessment elements in the original assessment and evaluation system, and establish a scientific and diversified course assessment and evaluation system. The diversified assessment system emphasizes recording students' performance in pre-class, in-class, and post-class processes, recording their preparation, initiative, practical application ability, teamwork ability, analysis and problem-solving ability, innovation ability, and experimental report writing ability, to understand their overall performance in the course.

Through these methods, we can help students better understand and master the skills and norms of thesis writing, stimulate their learning interests, and cultivate their innovation and practical abilities, thereby achieving better teaching results.

5. Optimizing the Organization of Thesis Writing by Teaching Units

In addition to the curriculum reform, teaching units at undergraduate universities should also optimize the organization of theses to ensure the quality of student thesis writing from an institutional perspective, thereby enhancing the overall quality of talent cultivation.

5.1. Adjusting the teaching plan

Adjust the original teaching plan to ensure that students have sufficient time for thesis writing. Schedule internships, practical training, and thesis writing guidance at different times, ensuring both relative independence and coordination. This means that various departments of the university need to change their management mode, make reasonable and scientific unified arrangements, and transform the previous separated and single teaching activities into an integrated and coordinated teaching approach.

5.2. Establishing an appropriate thesis evaluation system

Although the existing thesis management system is relatively sound, there is still room for improvement in the thesis evaluation system. With the background of thesis sampling, thesis writing should not only comply with

norms but also emphasize the value of content. Therefore, it is necessary to change the original evaluation method, which was solely based on internal teachers' evaluation and grading, and introduce industry experts to assess the theses. Additionally, establish a reward mechanism for outstanding theses.

5.3. Strengthening the construction of practical training bases

The selection of topics for graduation theses should be as much as possible based on social practice. This requires the university to increase the construction and investment in internships and practical training bases, ensuring that students have access to as many new internship and practical training opportunities as possible, and exposure to the forefront of the market and cutting-edge technology. This will enhance students' enthusiasm for thesis writing, stimulate their research and innovation consciousness, and provide a platform to improve the overall research level of the university.

6. Summary and Outlook

"Thesis Writing" is a course with strong practical guidance significance. Through the reform of course teaching, it can truly stimulate students' enthusiasm and initiative

in learning, and play a positive role in improving students' innovative thinking ability, investigative research ability, and problem-solving ability, thereby enhancing the quality level of thesis writing.

7. Acknowledgment

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Inquire Into the Teaching Supervision Work of Application-Oriented Universities in the Age of Information in Education

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Abstract: Application-oriented colleges and universities aim at cultivating high-quality application-oriented talents. In the face of the new characteristics, new forms and new technologies in the age of information in education, their teaching supervision work should be constantly transformed and upgraded. This paper discusses the construction of the teaching supervision system of application-oriented universities in the age of information in education, in order to provide reference for related work.

Keywords: Application-oriented universities; Teaching supervision; Educational informationization

1. Introduction

With the transformation of China's higher education from large-scale development to quality strategy, teaching supervision is an important link and key guarantee for colleges and universities to implement the national education guidelines and policies, and improve the quality of education and teaching, and has a strong driving force for the improvement of teaching quality in colleges and universities. In February 2020, the General Office of the Communist Party of China Central Committee and the General Office of the State Council issued the "Opinions on Deepening the Reform of the Education Supervision System and Mechanism in the New Era" put forward: "improve education supervision methods, vigorously strengthen the information technology application, make full use of the Internet, big data, cloud computing to carry out the supervision evaluation monitoring work, gradually formed by modern information technology and big data support intelligent supervision system." As the latest programmatic document of national education supervision, it points out the direction for the teaching supervision in colleges and universities in the new era. The teaching supervision work of application-oriented universities in the age of education information has its new characteristics. This paper discusses the construction of the teaching supervision system with the characteristics of application-oriented universities in the age of education information, in order to provide reference for the teaching supervision work of application-oriented universities.

2. The Characteristics of University Teaching Supervision in the Age of Information in Education

With the rapid development of information technology and the popularization of intelligent teaching equipment and educational information products, the teaching, ecology, teaching methods, teaching mode and learning concept in the educational information age have changed greatly, and the teaching supervision work in colleges and universities has also shown new characteristics.

2.1. Data integration into the whole process of teaching supervision

The rapid development of modern information technology has promoted the wide application of the Internet, cloud storage, big data, artificial intelligence and other technologies in the field of higher education, and the teaching activities of higher education have also ushered in a new ecology of information technology. The progress of science and technology makes resource sharing and open interconnection a reality. Big data technology records and forms a large amount of data in the process of teachers 'teaching and students' learning. Teaching supervision in colleges and universities involves the whole link of teaching, including teaching management concept, teaching operation management, professional construction management and so on. Big data technology can record many behavior tracks of participants in the process of teaching implementation and management, form data, and conduct data statistics and analysis according to the needs of teaching management, so as to lay a foundation for developing scientific and intelligent teaching supervision and further optimizing the supervision and feedback mechanism.

2.2. The concept of differentiated teaching supervision was realized

Traditional teaching supervision mainly focuses on the actual implementation of teaching work, and most checks the specific teaching situation of teachers. Most of the teaching supervision work in colleges and universities lacks the attention to the individual differences between teachers and students. In the context of educational information age, data technology can not only record user behavior, but also support the whole-process and all-factor data recording, and capture teaching activities and students' daily learning activities. Teaching supervision can be processed and analyzed according to the data needs through the combination of objective data and subjective data, change the leading role of teachers, promote the play of the main role of students, and lay a foundation for promoting personalized and differentiated teaching supervision work.

3. The Current Situation and Problems of Teaching Supervision in Application-Oriented Universities

3.1. Supervision mode the application level of traditional information technology is not high

At present, most application-oriented colleges and universities adopt the traditional teaching supervision method, mainly for in-class lectures. Although it can understand the teachers' teaching and classroom management to a certain extent, it is highly subjective because the supervision evaluation is based on individual supervision. In addition, the application level of information technology in the teaching supervision of application-oriented universities is limited. Most application-oriented undergraduate universities have not yet established a teaching quality monitoring platform integrating teaching, supervision, evaluation and feedback, so they cannot effectively carry out online and offline teaching supervision.

3.2. It is common that teaching supervision attaches importance to theory and ignores practice

Due to the influence of traditional teaching supervision habits, the teaching supervision of most application-oriented undergraduate universities basically systematically controls the monitoring of theoretical teaching, but the supervision of practical teaching is relatively lacking. The supervision of lectures and students' online evaluation are more inclined to theoretical courses, the quality evaluation standard of practical teaching is not perfect, and the supervision and inspection are not in place. However, practical teaching is the key link of talent training in application-oriented undergraduate universities, and the neglect of teaching supervision will affect the quality of talent training.

3.3. Lack of communication and feedback in teaching supervision and inspection

In the teaching, the supervision work of colleges and universities has the function of inspection, supervision and evaluation on the one hand, and on the other hand, it has the function of feedback, consultation and guidance. At present, the teaching supervision of most application-oriented universities focuses on inspection and supervision, and ignores the feedback and communication. The feedback of teachers' problems in the teaching process is not comprehensive and timely, and the corresponding consultation and guidance are not in-depth enough. There is also a lack of follow-up improvement work, which affects the effect of teaching supervision to some extent.

4. Teaching Supervision and Construction of Application-Oriented Universities in the Age of Information in Education

4.1. Reflect the characteristics of the supervision work of application-oriented universities

Different types of colleges and universities undertake different tasks, service functions and scope, and their talent training orientation is also different. Teaching supervision work should be adapted to the school conditions. The talent training of application-oriented undergraduate universities serves the regional economic development, and cultivates application-oriented talents with high comprehensive quality, solid professional foundation, strong professional skills and practical ability. Therefore, the focus of teaching supervision should highlight skill teaching and practical training supervision, and inspection, supervise, evaluation, analysis, feedback and guidance on classroom teaching, practical teaching and school-enterprise cooperation.

4.2. Build a multi-comprehensive teaching evaluation mechanism based on informatization

Traditional teaching supervision is a supervision and evaluation mechanism formed based on the teaching status quo of in-class lectures and spot check of teaching materials. In the educational information age, big data brings about new data collection methods, storage devices and analysis methods. With the help of information means, teaching supervision in colleges and universities can realize accurate dynamic data capture of demand oriented, comprehensively collect the behavior trajectory of the whole process of teaching and learning by teachers and students, and establish a comprehensive teaching evaluation and quality assurance mechanism through quantitative analysis. Adhere to the student-centered, pay attention to the differences of teachers, to achieve the whole coverage before, during and after class.

4.3. Promote the feedback and application of the results of supervision results

"Opinions on Deepening the Reform of the Education Supervision System and Mechanism in the New Era" point out that we should "optimize the management system, improve the operation mechanism, strengthen the application of results as the breakthrough point, and constantly improve the quality and level of education supervision". In the college teaching supervision, the feedback and application of the results have been relatively weak. Through the education supervision information platform, the time and space restrictions of teaching supervision can be broken, and the feedback path of teaching supervision results can be optimized by means of data visualization technology, so as to form an intelligent teaching supervision system based on information technology and big data analysis. Truly achieve to supervise the reform, to guide the construction of the work goal.

5. Conclusion

To sum up, in the face of education information age new characteristics, new form and new technology, applied undergraduate course teaching in colleges and universi-

ties supervision work and transformation and upgrading, grasp the new characteristics of the Internet thinking to guide the teaching supervision work, to adapt to the new form provides more accurate personalized supervision, with the help of new technology to complete more intuitive the supervision results application and implementation, give full play to the role of the teaching supervision in colleges and universities in practice.

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Exploration of a New Talent Cultivation Model for Applied Universities in the Era of Artificial Intelligence

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Abstract: With the rapid advancement of generative AI technology, artificial intelligence has entered a new era. This has brought about tremendous changes in society and an increasing demand for talents who are adaptable to this new age. As such, it is crucial for applied universities to explore how they can adapt to this era, change their training methods, and cultivate the necessary talents. This has become an urgent issue that universities must address.

Keywords: Artificial intelligence; Applied universities; Talent cultivation; New mode

1. Introduction

In the face of the rapid advancement of artificial intelligence (AI), there has been a significant shift in the demand for talent in society. As such, applied universities must adjust their talent training modes accordingly. However, many universities have yet to keep up with the pace of technological innovation, resulting in traditional and outdated training methods and content. This is due to a lack of information literacy among teaching staff and insufficient knowledge reserves on AI, as well as slow updating of new knowledge and outdated educational concepts. These shortcomings highlight a significant gap between the quality of talent cultivation in universities and the needs of society and enterprises in the AI era. Therefore, it is imperative that application-oriented universities actively explore new talent cultivation models that meet the demands of this emerging field.

2. Opportunities and Challenges Brought by Artificial Intelligence to Talent Cultivation in Applied Universities

2.1. The rapid development of AI has brought new opportunities for cultivating innovative talents in universities.

Artificial intelligence presents significant opportunities for talent cultivation in universities. To adapt to the development trend of AI technology, universities must update their curriculum, strengthen practical teaching, and integrate industry, academia, and research. Additionally, universities should collaborate with enterprises and research institutions to carry out innovative projects and promote the comprehensive development of students and

teachers. Only through these efforts can universities effectively respond to the talent cultivation needs of the AI era.

2.2. The widespread application of AI has changed the demands and skill requirements of traditional positions, posing new challenges to talent cultivation in universities

The process of transforming and reconstructing traditional skills necessitates that universities adjust their curriculum to align with market demands. This includes cultivating students' ability to master emerging technologies and interdisciplinary skills. In addition, universities must also update their teaching models and methods by introducing AI-related courses and practical projects. These efforts are aimed at fostering students' innovative thinking and problem-solving abilities.

2.3. Artificial intelligence (AI) provides students and teachers with more personalized and intelligent learning and teaching experiences

Through AI technology, students can customize their learning plans according to their own learning needs and interests, obtain accurate learning resources and personalized tutoring. Teachers can use AI tools to analyze the learning situation of students, provide targeted guidance and evaluation, and improve teaching effectiveness and student satisfaction. At the same time, evaluating educational quality and student learning outcomes through data analysis and model building, and providing scientific decision-making support for higher education.

2.4. Artificial intelligence (AI) has prompted universities to establish new mechanisms for interdisciplinary cooperation and exchange in talent cultivation

The application of artificial intelligence involves multiple disciplines, such as computer science, engineering, mathematics, statistics, psychology, etc. In order to cultivate talents with comprehensive qualities and interdisciplinary abilities, universities should promote cooperation and communication between different disciplines, build interdisciplinary learning platforms and practical opportunities. Through interdisciplinary collaboration, students can acquire knowledge and experience from experts and scholars in different fields, improve their problem-solving abilities and innovative thinking.

3. The Dilemma of Talent Cultivation in Applied Universities in the New Era of Artificial Intelligence

3.1. Oncept obsolete

The educational philosophy directly affects the quality of talent cultivation in universities. In the new era of artificial intelligence, talent training programs in universities should be more in line with the characteristics of personalized student training and avoid being uniform. At present, some applied universities hold a conservative attitude towards new educational concepts and methods, outdated talent cultivation concepts, and lack correct understanding and judgment of the development prospects of artificial intelligence. They still adopt traditional concepts for cultivation.

3.2. Obsolete content

At present, there is a disconnect between the training content of various disciplines and the current social needs in applied universities. The content of talent cultivation should match the actual needs of various jobs in the new era of artificial intelligence. However, currently, most applied universities do not truly consider the actual talent needs of the industry from the perspective of current economic and industrial development when designing talent training programs and content, ignoring the pertinence and practicality of course content. This leads to course content not matching actual needs, unable to meet the employment needs of enterprises, and unable to meet the learning needs of students. It cannot meet the quality and ability requirements of the new era of artificial intelligence society for talents.

3.3. Mode lag

Currently, some application-oriented universities still rely on clearly defined disciplines and a comprehensive approach to talent cultivation, neglecting the development of students' innovation and practical skills. This is

due to inadequate efforts in integrating school and enterprise training, insufficient integration of theoretical knowledge with social practice teaching, and insufficient artificial intelligence knowledge and digital literacy among university teachers. As a result, students are disconnected from their theoretical learning, social development, and practical application. Therefore, it is urgent for application-oriented universities to continuously explore innovative talent training models that adapt to societal development.

4. Innovative Strategies for Cultivating Talents in Applied Universities Adapting to the Era of Artificial Intelligence

In the context of artificial intelligence, there is an urgent need for reform and innovation in the cultivation of applied talents in universities, in order to effectively solve the difficulties of talent cultivation in universities and adapt to the constantly changing social needs and technological development. To this end, we propose four key strategies for the transformation of talent cultivation models:

4.1. Setting up and integrating artificial intelligence courses or knowledge to build student intelligence literacy

The updating of curriculum and teaching methods is an important aspect of talent cultivation reform in universities. In response to the rise of artificial intelligence, universities and enterprises should closely introduce relevant courses and technologies to provide students with systematic and in-depth artificial intelligence education. By introducing these courses, students will have the opportunity to understand and master the core concepts and technologies of artificial intelligence, preparing them for future careers in related fields.

4.2. Innovative talent cultivation system through interdisciplinary ability and creative thinking cultivation

In addition to specialized knowledge in artificial intelligence, universities should also cultivate students' interdisciplinary abilities and creative thinking. The field of artificial intelligence requires comprehensive talents who not only possess technical skills, but also possess interdisciplinary thinking and abilities. Therefore, universities can integrate disciplines such as humanities, social sciences, and natural sciences into artificial intelligence education through interdisciplinary education, cultivating students' comprehensive literacy and innovative thinking.

4.3. Strengthen practical teaching and the integration of industry, academia, and research, continuously improve the cultivation of students' practical abilities

The integration of practical teaching and industry-academia research is another crucial strategy for the reform of talent cultivation in applied universities. Universities should enhance opportunities for internships, practical training, and project practice, providing students with more chances to engage with real-world work. This practical teaching approach not only assists students in applying the knowledge they have acquired to practical scenarios but also fosters their cooperative spirit and teamwork abilities.

4.4. Establish a mechanism to connect talent cultivation with industry needs, and promote students to meet social needs

Establishing a mechanism for aligning talent cultivation with industry demand is a vital component of the reform of talent cultivation in universities. Universities should conduct research on industry needs and trends, optimize subject and major configurations, adjust course content, and ensure that the talents cultivated are well-suited to the demands of the industry.

5. Conclusion

In summary, artificial intelligence has had a profound impact on talent cultivation in applied universities. Therefore, applied universities must actively face and explore ways to cultivate innovative talents. By harnessing the power of artificial intelligence, applied universities should strengthen the integration of artificial intelli-

gence and talent cultivation, and explore the development of cross-disciplinary innovative applied talents by providing personalized and intelligent learning and teaching experiences. At the same time, educators should continuously update their educational concepts and knowledge structure, enhance their teaching abilities and practical skills, and make greater contributions to nurturing innovative talents. Only through these efforts can the talent cultivation of applied universities continually adapt to the needs of the artificial intelligence era and provide robust support for social innovation and development.

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The Vark Learning Styles on the Training Programs for Administrative Employees in China

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Abstract: The effectiveness of learning style towards other variables is studied in many guises of literature. However, there is only a dearth of literature that examines learning style beyond education and psychology. Particularly, the effectiveness of learning style in providing training programs for employees in various organizations is still a novel discussion. In this study, descriptive-comparative design was utilized in order to mainly identify the effectiveness of the Visual, Auditory, Reading/Writing, and Kinesthetic (VARK) model in training administrative employees in the selected higher education institution and compare the effectiveness of the learning styles, specifically on the VARK model used in training administrative employees in the selected higher education institution. The result found that all four learning methods (reading and writing, visual learning, aural learning, and kinesthetic learning) to be highly effective.

Keywords: Learning styles; VARK; Administrative employees; Learning methods

1. Introduction

Learning style is a concept that is generally utilized in the fields of psychology and education. It was first recognized in the writings of Aristotle when he believed that "each child possessed specific talents and skills" [1]. In the workplace, the "learners" are the adults which means that the use of the terms learning styles and learners are not based on pre-adult learning. Specifically, learning style is defined in this study as "the way each learner absorbs or retains information and/or skills" [2]. In this study, the term "learners" was used to refer to the administrative employees and "learning styles" to refer to the context of managing adult learning in the workplace. Hence, the intention of the study is to examine the association between the learning styles and administrative training provided to administrative employees through quantitative analysis. Particularly, this study served as a reference regarding the use of different learning styles in the field of business management which will be of use to the human resource department and administrators of higher education institutions and other related organizations.

2. Significance

Generally, this research may help the school management to support the design and implementation of training materials and programs that are appropriate to the learning styles and strategies of their administrative employees. This research may also aid the human resource department to identify appropriate training approaches, strate-

gies, techniques, and methods that optimize the learning of the administrative employees. Specifically, this research may also enable administrative employees to identify the most effective learning style they can use to further improve their job. Furthermore, this research may serve as a reference for future researchers interested in studying similar variables.

3. Methods

The research used a quantitative research design. This research design described the effectiveness of the Visual, Auditory, Reading/Writing, and Kinesthetic (VARK) model in training administrative employees in the selected higher education institution.

At present, Chongqing Vocational College of Urban Management has 10 secondary colleges. There are an estimated 80 administrative workers in the their school.

The primary data source for this research came from the adopted VARK Questionnaire (Version 8.01) that was originally proposed by Fleming and Mills in 1992 and later developed by Bonwell and the VAK Test by UMass Dartmouth.

4. Conclusions and Recommendations

Following the findings of the study, the subsequent conclusions were arrived into:

A. Administrative staff have actively participated in training programs aimed at enhancing their professional and personal growth. The VARK Learning Style is a very highly effective tool for training administrative em-

ployees though some indicators are considered to be highly effective.

B. Many administrative employees have shown a strong commitment to their professional development. Factors namely ample facilitators, dedicated time, and allocated resources further substantiates their dedication to the success of these programs.

C. Training sessions related to safety, quality, and teamwork are relatively short, ranging from half a day to several days. These sessions typically do not require individualized guidance and can be effectively delivered by knowledgeable resource speakers.

D. Administrative employees have found all four learning methods (reading and writing, visual learning, aural learning, and kinesthetic learning) to be highly effective. Reading and writing, as well as visual learning, received the highest average ratings, while aural and kinesthetic learning methods, driven by technology advancements, also demonstrated effectiveness.

E. The number of facilitators in training programs does not significantly impact the quality of training. Whether there are more or fewer facilitators, the effectiveness of the training programs remains consistent.

F. The number of participants in a given training program does not have a significant impact on the effectiveness of the learning style. This suggests that the quality and effectiveness of the program remain consistent regardless of the number of participants.

G. Learning styles do not appear to be influenced by the number of days provided in a training program. This indicates that the length of training days does not have a direct impact on the effectiveness of learning styles.

H. There is a negative correlation between the characteristics of the training (such as the number of participants, facilitators, and training days) and the effectiveness of the VARK learning styles.

5. Recommendations

In light with the conclusions made in this study, the following recommendations are put forward:

A. While there is an active participation in training programs among them, administrative employees should be encouraged to diversify their training engagements including quality training, team training, and safety training, and not only those that relate to their job descriptions.

B. Competency-enhancement programs should not be intentionally made longer to accommodate more in-depth knowledge and practical opportunities. In relation to this, these programs should remain efficient, precise, and job-specific.

C. In order to cater to diverse learning styles, learning methods in training programs must be kept diverse as well. The diversity of training programs contributes to tapping into other competencies that can potentially improve staff and employees holistically.

D. An ample number of facilitators to implement training programs should be maintained, as this has been proven a contributor to the success of training programs.

E. The number of participants affects the dynamics of training. In this regard, trainings must accommodate different group sizes.

F. The length of training sessions should be regularly assessed for improvement. Since learning preferences and technological advancements are inevitable, how and how long trainings should be conducted should be adaptive as well.

Other Recommendations: Future researchers should delve deeper into the correlation between program characteristics and learning styles to establish a stronger empirical foundation. They should also conduct longitudinal studies to track the evolution of learning preferences and their impact on training program effectiveness over time. Additionally, they may explore the potential benefits of personalized training approaches tailored to individual learning styles for improved training outcomes.

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Factors Affecting the Satisfaction Level of Residents in Chengyu Economic Circle

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Abstract: In the past few decades, the development of the circular economy has introduced the economic model known as the "economic circle" or the "circular economy". This model attempts to change the direction of the economic landscape from an expendable system to a more sustainable and renewable system. In this study, we examine a rising economic circle around the two cities, Chengdu and Chongqing. The study is to answer, "How satisfied are the residents of Chengdu and Chongqing with the economic, social, technological, innovative and environmental factors that affect the comprehensive development of Chengdu and Chongqing economic circles?" A descriptive study design was used to identify the above factors, and 58 questionnaires were distributed to 450 respondents in these areas. This study found that residents were generally satisfied with the progress and measures of these factors. Although residents are generally satisfied, it is important to maintain a balanced way of development. This means ensuring that economic growth also requires measures to promote social well-being, technological progress and environmental sustainability.

Keywords: Economic circle; Chinese economy; Satisfaction; Sustainability

1. Introduction

The concept of an economic circle dates back to the 1930s, when economist Nicholas Georgescu Logan proposed the concept of an "economic circle" economy. Economic circle, also known as big cities, urban agglomeration, large economic zone, large economic zone, metropolitan area, and metropolitan area centered on big cities or radiating cities. The development of economic circles can have a broad impact on the country's economic growth and development, which can help create new business opportunities and jobs, especially in the areas of recycling, renovation and product design. It can also help promote innovation and competitiveness as it encourages businesses to find new ways to use resources more effectively [1]; help to promote more sustainable and equitable economic growth by reducing reliance on limited resources, reducing pollution and waste and enhancing community resilience; in addition, it helps address income inequality as it can create jobs and economic opportunities in low-income communities, help reduce poverty and improve living standards. Therefore, this study is based on the conceptualization of relevant literature to understand how the economic growth and development of China Chengdu-Chongqing economic circle affects the satisfaction of its residents and consumers. Furthermore, this study aimed to assess the extent to which economic, social, technological, innovative and environmental factors influence the experience of residents / consumers within the Chengdu-Chongqing economic circle. These four factors are discussed below.

2. Issue Statement

In China, the government has implemented a series of policies and plans to promote the construction of economic circles. The Chinese government has set goals for economic development by 2020, and has developed a series of policies and plans to achieve them. The Chinese government has also established the National Development and Reform Commission (NDRC) and the Ministry of Environmental Protection (MEP) to coordinate and implement circular economy policies [2]. Chengdu Chongqing Economic Circle is one of the most famous economic circles in China, with Chengdu and Chongqing as the center, as part of the Chinese government's "Western Development" policy, aiming to promote economic development and narrow the regional gap in the western region [3]. Chengdu Chongqing Economic Circle is a regional economic development initiative designed to promote economic growth and development in Sichuan and Chongqing, China, into a major economic, technological and innovation center with a focus on the development of high-tech, advanced manufacturing and modern service industries. Improve transportation and logistics infrastructure and promote cooperation and collaboration between regions to promote the movement of goods, services and people. Through a thorough understanding of resident / consumer satisfaction in Chengdu Chongqing Economic Circle, this paper will provide a benchmark for future assessments and help identify areas for improvement. Moreover, it can provide a way to track the progress of the economic circle and determine whether

the policies and actions taken to improve the economic circle are effective. The study aims to answer: "How satisfied are Chengdu and Chongqing residents with economic, social, technological, innovation and environmental factors?"

3. Methodology

3.1. Study design, study population, and study site

This study used a descriptive study design to describe the satisfaction level of the residents of Chengdu and Chongqing regarding the economic, social, technological, innovation, and environmental factors influencing the integration and development of the Chengdu-Chongqing economic circle. The stratified random sampling technique included 450 respondents, including 238 residents from Chengdu and 212 residents from Chongqing, China.

3.2. Data collection tools

The data collection tool for this study was a self-administered questionnaire based on reading materials and literature reviews, used as the basis of the questionnaire items. Therefore, the questionnaire can be considered a self-made questionnaire with items derived from the relevant literature review and reading. By using this method, researchers are able to collect relevant data for the study and provide accurate images of the level of satisfaction of the participants. This study conducted the validity and reliability tests to ensure the accuracy and reliability of the results.

3.3. Data collection procedures

The following procedures were carefully designed to ensure that the data collected in this study are of the highest quality and relevance to the research undertaking. Ethical permission from the local research ethics committee was obtained before initiating the study. Subsequently, he obtained a license from the deputy secretary of the Municipal Party Committee of Chengdu, China. Once licensed, the investigators explained the importance and purpose of the study to the residents before issuing the questionnaire. Finally, the collected data were also analyzed statistically, analyzed and interpreted.

3.4. Data processing

General weighted averages are used to process the data. It shows the satisfaction of residents in Chengdu and Chongqing with the economic, social, technological, innovative and environmental factors affecting the comprehensive development of Chengdu and Chongqing economic circle. In the analysis, very satisfied (VS) is 3.25 4.00, indicating that the residents have a strong positive understanding of the measurement factors of Chengdu and Chongqing economic circle, and they are very satisfied. Satisfaction (S) of 2.50 3.24 indicates that resi-

dents had positive views and satisfaction with the factors being measured, but they had some minor concerns or areas that they felt need improvement. Dissatisfaction (D) is 1.75 2.49, indicating that residents have negative opinions and dissatisfaction with the measurement factors of Chengdu and Chongqing economic circle. They also believe that the level of development in these areas is insufficient and needs to be improved. Very dissatisfaction (VD) of 1.00 1.74 indicates that residents have strong negative views and were very dissatisfied with the being measured factors. Their level of development in these areas is very poor and requires significant improvement.

4. Results and Discussion

This section makes a quantitative analysis of the resident satisfaction data of the comprehensive development of Chengdu and Chongqing economic circle. The overall average satisfaction of Chengdu Chongqing residents with the comprehensive economic development of Chengdu Chongqing was 2.95, indicating that residents have a strong positive perception and high satisfaction with the measurement factors of Chengdu Chongqing economic circle. They also believe that these areas have a better level of development compared to other regions.

4.1. Level of satisfaction with economic factors

The overall average satisfaction of residents in Chengdu Chongqing with the comprehensive development of Chengdu Chongqing economic circle was 2.89, indicating that the overall satisfaction of residents was high. This average score is based on a rating of various factors related to economic development, job opportunities, infrastructure, education, investment, and overall economic status. The high satisfaction with factors such as the infrastructure development of the energy sector and government support for SMEs indicates the positive impact of the economic circle on sustainable development and entrepreneurship [4].

4.2. Level of satisfaction with social factors

The overall average satisfaction rate was 2.95, indicating that the residents of Chengdu and Chongqing were generally satisfied with the comprehensive development of Chengdu and Chongqing economic circle. Mean scores were derived from scoring various factors related to health services, education, housing, public services, social cohesion and stability. Emotions in the population. High levels of satisfaction with factors such as medical services and social cohesion showed a positive impact of the economy.

4.3. Satisfaction level with technology and innovation factors

The overall average satisfaction was 2.95, indicating that Chengdu Chongqing residents are generally satisfied

with the comprehensive development of technology and innovation in Chengdu Chongqing economic circle. This average score was derived from ratings of various factors related to technology accessibility, Internet quality, transportation systems progress, entrepreneurial support, educational opportunities, and government support. The high satisfaction of residents (2.95) shows that residents are able to obtain and utilize the latest technologies and innovative products within the economic circle. To further support the integration and development of technology and innovation, providing adequate training programs is essential. These opportunities allow individuals to possess the skills and knowledge necessary to fully leverage and benefit from technological advances. Increasing training opportunities may improve residents' competence and increase their satisfaction.

4.4. Level of satisfaction with environmental factors

From the perspective of environmental factors, the overall average satisfaction of Chengdu Chongqing residents with the comprehensive development of Chengdu Chongqing economic circle was 3.01, indicating the overall satisfaction of the population. It shows that the residents of Chengdu and Chongqing have positive satisfaction with the environmental factors of the integration and development of Chengdu-Chongqing economic circle. The high level of government satisfaction with efforts to protect biodiversity and the availability of green space demonstrates the importance of conservation and exposure to nature [5].

5. Conclusion

In general, residents are generally satisfied with the progress and measures of these factors. Satisfaction reflects the positive impact of economic growth, social welfare, technological progress, and environmental sustainability on the overall experience of residents within the economic circle. Although the residents are generally satisfied, it is important to maintain a balanced development approach. This means taking measures to ensure economic growth while also promoting social well-being, technological progress and environmental sustainability. Efforts should be made to address any potential differences or challenges that may arise in these areas to maintain resident satisfaction.

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