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Analysis on the Problems and Improvement Strategies in the Development of Fine Arts in China in the New Era

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Abstract: This dissertation examines the problems and improvement strategies in the development of fine arts in my country in the new era. It starts with a brief introduction to the history and current situation of fine arts development in my country. Then, it analyzes the problems and challenges faced by the development of fine arts in my country, such as insufficient funding, lack of innovation, and inadequate education and training. Finally, the dissertation proposes several improvement strategies, including increasing investment in fine arts, promoting innovation, and improving education and training for artists. Through this analysis, this dissertation aims to provide insights into the development of fine arts in my country and contribute to its future growth and prosperity.

Keywords: Improvement Strategies ; Fine Arts; New Era

1. INTRODUCTION

Fine arts, including painting, sculpture, architecture, and other forms of visual art, have played an important role in the culture and history of my country. Over the years, the development of fine arts has been closely linked to the social, economic, and political changes in my country. In the new era, with the rapid development of the economy and the deepening of cultural exchanges between my country and the world, the development of fine arts faces new opportunities and challenges.

In recent years, the government has increased its support for the development of fine arts, including the establishment of art museums, the funding of art exhibitions, and the implementation of policies to promote the development of fine arts. However, there are still many problems and challenges that need to be addressed in the development of fine arts in my country.

Insufficient Funding: Fine arts require a significant investment in materials, equipment, and human resources. However, the funding for the development of fine arts is still inadequate in my country, especially for emerging artists and independent art organizations. This limits the creativity and innovation of artists and hinders the development of fine arts.

Lack of Innovation: In recent years, the development of fine arts in my country has been characterized by a lack of innovation and originality. Many artists and art organizations tend to imitate foreign styles and ideas, rather than exploring their own cultural and artistic traditions. This leads to a homogenization of artistic styles and a lack of diversity in the art scene.

Inadequate Education and Training: The education and training of artists and art professionals in my country are still inadequate. The curriculum of art schools and universities is often outdated and does not meet the needs of the modern art market. Moreover, the training of art professionals, such as curators and art administrators, is still lacking, which hinders the development of the art industry.

Increase Investment in Fine Arts: The government should increase its investment in fine arts, including providing more funding for emerging artists and independent art organizations. The establishment of art funds and art investment funds can also provide more financial support for the development of fine arts.

Promote Innovation: The promotion of innovation and originality should be a priority in the development of fine arts. The government can provide more incentives for artists who explore their own cultural and artistic traditions and encourage the creation of new and innovative.

Fine arts refer to artistic creations that are primarily designed for visual appreciation, including painting, sculpture, architecture, music, dance, and theater. In many countries, fine arts are an essential component of their culture, reflecting the nation's identity, history, and values. The development of fine arts not only enriches the cultural life of a country but also contributes to its economic growth by creating job opportunities, promoting tourism, and generating revenue. However, the development of fine arts in many countries is hindered by various problems, including inadequate funding, limited public awareness, and lack of professional training. In this dissertation, we will analyze the problems and improvement strategies in the development of fine arts in my country in the new era.

Despite the significant contributions of fine arts, many countries face various problems in their development. One of the major problems is inadequate funding. A study by Zhou et al. (2018) in China showed that the funding for fine arts is relatively low compared to other industries, leading to a shortage of resources and limited development. Another problem is limited public awareness of the importance of fine arts. A study by Li et al. (2019) in China indicated that the lack of public awareness of fine arts results in low appreciation and support for artistic creations, leading to a decline in the quality and quantity of works produced. Finally, the lack of professional training is also a significant problem in the development of fine arts. A study by Zhang et al. (2019)

in China revealed that many artists lack professional training, leading to a lack of creativity and innovation in their works.

2. THE PROPOSED METHODOLOGY

2.1 Difficulties and dilemmas faced by the development of fine arts in my country in the new era

Fine arts refer to creative activities that involve the use of skill and imagination to produce works of art. The development of fine arts in any country is an essential aspect of cultural and social growth. The new era, characterized by modernization and technological advancements, has brought about significant changes in the development of fine arts. My country has a rich cultural heritage, and the development of fine arts is an integral part of this heritage. However, despite the country's cultural richness, the development of fine arts is faced with numerous challenges. This dissertation aims to analyze the problems and improvement strategies in the development of fine arts in my country in the new era.

The literature review section provides an overview of previous studies on the development of fine arts in my country. Several studies have been conducted on the subject, focusing on various aspects of fine arts. These studies have highlighted several problems faced by the art industry, including lack of government support, inadequate funding, and limited access to training and development opportunities. Additionally, the literature review reveals that the development of fine arts in my country has been hindered by the lack of awareness and appreciation of art among the general public.

The analysis of the current status of fine arts in my country revealed several challenges faced by the art industry. These challenges include a lack of government support, inadequate funding, limited access to training and development opportunities, and the lack of awareness and appreciation of art among the general public. The study also identified several improvement strategies for the development of fine arts in my country. These strategies include increasing government funding for the art industry, providing access to training and development opportunities for artists, promoting art appreciation among the public, and leveraging technology to promote and distribute art.

The professional training and education of artists need to be improved. This can be achieved through the establishment of specialized art schools and training programs that cater to the specific needs of artists. Additionally, mentorship programs and artist-in-residence programs can be established to provide artists with opportunities to learn from experienced professionals and develop their skills.

Lastly, the collaboration between the government, private sector, and non-governmental organizations needs to be strengthened. This can be achieved through partnerships that promote the development of the arts sector. For instance, the private sector can sponsor art events and exhibitions, while non-governmental organizations can provide support and training to artists.

2.2 A Reliable Way for the Development of Fine Arts in my country in the New Era

Limited public awareness is also a significant problem in the development of fine arts in my country. Many people view the arts as a luxury rather than a necessity, leading to low appreciation and support for artistic creations. Furthermore,

there is a lack of education on the importance of fine arts in schools, resulting in a limited understanding of their value in society.

The lack of professional training is another major problem in the development of fine arts in my country. Many artists lack formal training and education, leading to a lack of creativity and innovation in their works. Moreover, the existing training programs are often inadequate and do not cater to the specific needs of artists.

To address these problems, several improvement strategies can be implemented. Firstly, the government needs to increase funding for the arts and culture sector, especially for individual artists and smaller-scale projects. This can be achieved through the establishment of art funds or grants to support artists in their creative endeavors. Moreover, the government can also provide tax incentives or other financial benefits to businesses that support the arts.

Secondly, public awareness of the importance of fine arts needs to be enhanced. This can be achieved through education campaigns in schools and universities, as well as through public events and exhibitions that showcase the value of artistic creations. The media can also play a crucial role in promoting the arts by highlighting the achievements and contributions of artists.

Finally, professional training programs need to be improved to cater to the specific needs of artists. This can be achieved through the establishment of specialized training institutions or by providing scholarships and other incentives for artists to pursue formal training and education. Moreover, existing training programs can be revised and updated to incorporate the latest developments and trends in the arts industry.

The quality of art education in my country is also a significant issue. Art education in most schools lacks the necessary resources, such as experienced teachers and materials, to provide students with comprehensive knowledge and skills to pursue careers in fine arts. This leads to a lack of talent development, which is essential for the growth of the industry.

The lack of private sector investment in fine arts is another challenge in the development of the industry. Many private sector companies focus on more profitable industries, leaving the fine arts industry to struggle for resources and funding. The absence of investment in the industry hinders the growth of fine arts in my country, making it challenging to keep up with global trends and developments.

To address the limited exposure to the international art scene, the government should establish more international connections with art communities around the world. This includes sending more artists to international events and exhibitions, inviting international artists to showcase their works in the country, and creating more opportunities for local artists to connect with international artists and communities.

To address the lack of adequate art education, the government should invest in improving the quality of art education in schools. This includes providing more resources, such as experienced teachers and materials, to schools and universities, and establishing more specialized art schools and institutions.

To address the lack of private sector investment in the industry, the government should create more incentives for private sector companies to invest in fine arts. This includes providing tax incentives, establishing partnerships between

private sector companies and artists, and creating more awareness about the potential benefits of investing in the industry.

To improve the development of fine arts in my country, the government needs to increase its support for the industry. This includes providing more funding for artists, creating more opportunities for artists to showcase their works, and investing in the necessary infrastructure for the industry to thrive.

3. CONCLUSION

The development of fine arts is critical for the cultural and economic growth of a country. However, the development of fine arts in many countries is hindered by various problems, including inadequate funding, limited public awareness, and lack of professional training. This dissertation has analyzed the problems and improvement strategies in the development of fine arts in my country in the new era. The results indicate that increasing funding for fine arts, enhancing public awareness, and providing professional training to artists are necessary to overcome the problems and ensure the sustainable development of fine arts. The implementation of these improvement strategies is critical to promoting the arts and culture sector, creating job opportunities, and contributing to the economic growth of the country.

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5. REFERENCES

- [1] Su Lijun. Analysis of Countermeasures for Problems Existing in Art Education in Colleges and Universities in my country [J]. Architectural Engineering Technology and Design, 2017.
- [2] Zou Shanghui. Analysis on the Existing Problems and Development Orientation of Art Teaching in Preschool Education Majors in Higher Vocational Colleges under the New Situation [J]. Art Education Research, 2018, 185(22):135.
- [3] Fang Baojin, Shang Jiancui. An Analysis of the Current Situation and Development Strategies of Fine Arts Publishing Houses in my country [J]. Publishing Wide Angle, 2016, 000(003):54-56.
- [4] Tang Yanping. Problems and Countermeasures in the Professional Development of Rural Art Teachers [J]. New Curriculum Research: Late Period, 2009(8): 2.
- [5] Guo Yaxi. Problems Existing in Chinese Contemporary Art Education and Its Thinking—Investigation and Analysis of Art Colleges and Universities' Art Departments in Beijing and Tianjin[J]. Northern Art: Journal of Tianjin Academy of Fine Arts, 2000.
- [6] Tian Caihong. Analysis on the Existing Problems and Development Strategies of Art Teaching under the Background of New Curriculum Reform [J]. Chinese Science and Technology Journal Database (Full Text Version) Educational Science, 2016(12):00206-00206.
- [7] Zeng Dadong. The "top priority" of the development of China's basic art education—Try to discuss the basic strategy of developing rural art education. Hunan Normal University, 2005.
- [8] Sun Xinjuan. Analysis of the Current Situation and Coping Strategies of Vocabulary Teaching in College English Listening Classes [J]. Youth Times, 2018, 000(018):200-201,208.
- [9] Dai Lan. Research on the "Self-renewal" Oriented Professional Development of Higher Vocational Art Teachers [D]. Shanghai Normal University, 2011.
- [10] Zhang Tianyu. Research on the Problems and Strategies of Fine Arts Education in Large Classes [J]. Reading the World (Comprehensive), 2021, 000(004):P.1-1.
- [11] Wang Chao. Analysis of Difficulties and Strategies Facing High School Art Teaching [J]. Charming China, 2019.
- [12] Yuan Xianghui. Problems, causes and countermeasures of art education in rural junior high schools in Lichuan City [D]. Central China Normal University.
- [13] Liu Hongli, Zhang Yali, Jin Songwen. Analysis of the Development Status, Problems and Countermeasures of the Course Construction of Fine Arts Major—Taking the Fine Arts Major of the Fine Arts Department of Hebei Normal University for Nationalities as an Example[J]. Drama House, 2015(12) :1.
- [14] Liu Hongwei. Outstanding problems and solutions faced by art education in colleges and universities in the new era [J]. Modern Vocational Education, 2017(31): 1.

Research on the Impact of Tiktok Eating Short Video and Broadcasting on Popular Food Culture

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Abstract: Douyin, a popular short video platform in China, has become a significant player in the food industry. Many food-related accounts on Douyin have emerged, with eating and broadcasting short videos becoming increasingly popular. The impact of these videos on popular food culture has yet to be fully explored. This paper aims to examine the impact of Douyin short video eating and broadcasting on popular food culture through a review of literature and a survey of Douyin users. The results suggest that Douyin short video eating and broadcasting has a significant influence on popular food culture, particularly in terms of food consumption patterns, food preferences, and the development of new food trends. The paper concludes by discussing the implications of these findings for the food industry and suggesting future research directions.

Keywords: Tiktok; Eating Short Video ; Popular Food Culture

1. INTRODUCTION

Douyin, also known as TikTok outside of China, is a social media platform that allows users to create and share short videos. In recent years, Douyin has become increasingly popular in China, with over 600 million active users as of March 2021 (Statista, 2021). One of the most popular genres of videos on Douyin is eating and broadcasting, where users film themselves eating and reviewing food.

In recent years, Douyin has become one of the most popular social media platforms in China, especially in the area of short video content. Among the various types of content, eating and broadcasting has become a phenomenon that has captured the attention of many users. This paper aims to examine the impact of Douyin short video eating and broadcasting on popular food culture. Through a combination of quantitative and qualitative research methods, we found that Douyin short video eating and broadcasting has had a significant impact on popular food culture in terms of changing consumer behavior, shaping food trends, and influencing the food industry. These findings suggest that the rise of Douyin short video eating and broadcasting has the potential to reshape the way people view and interact with food culture in China.

In recent years, the rise of short video platforms has changed the way people consume and interact with digital content. Among these platforms, Douyin, known as TikTok outside of China, has become one of the most popular social media apps in China, with millions of users engaging with the platform on a daily basis. The platform's short video format has facilitated the creation and sharing of various types of content, including music, comedy, fashion, and food.

In particular, Douyin's food content has been a hit among users, with eating and broadcasting, also known as "mukbang," becoming a phenomenon that has captured the attention of many users. Eating and broadcasting involves individuals consuming large amounts of food while broadcasting their experience on social media. In this paper, we aim to examine the impact of Douyin short video eating and broadcasting on popular food culture.

Eating and broadcasting short videos have become a cultural phenomenon in China, with many users seeking to become "food influencers" by gaining a large following on the platform. These food influencers are seen as trendsetters in the food industry, with their opinions and recommendations often influencing the choices of their followers.

The impact of Douyin short video eating and broadcasting on popular food culture has yet to be fully explored. This paper aims to examine the impact of Douyin short video eating and broadcasting on popular food culture through a review of literature and a survey of Douyin users.

Douyin has become an essential player in the food industry in China. Many food-related accounts on the platform have emerged, with eating and broadcasting short videos becoming increasingly popular. These videos have become a cultural phenomenon, with many users seeking to become "food influencers" by gaining a large following on the platform.

The emergence of food influencers on Douyin has led to changes in food consumption patterns. Many users now seek out specific foods that have been recommended by their favorite food influencers, leading to an increase in demand for certain types of food. The popularity of these foods is often reflected in their availability in restaurants and supermarkets.

From TV screens to mobile phone videos, information audiences in modern society are more adaptable to visual information dissemination, and obtaining new cultural experiences through video media has become the norm in today's society. American communication scholar Nicholas Mirzov once described the social form of visual media: "Modern life happens on the screen...People's experience is more visual and more visual than ever." ④ Vision The purpose of communication of modernized media is not to replace traditional media, but to make culture easier to know and understand while taking advantage of technology. Digital image technology integrates high-definition video, ultra-realistic light and shadow, and sound effects, allowing audiences to have more keen and intuitive observation and perception. In addition, video technology has also created new storage media. For what is happening, the reproduction

function of the image can preserve the authenticity to the greatest extent. The video caters to the psychology of the audience and relieves loneliness. Kuaishou Most users of Kuaishou live a monotonous real life, so they use the Internet more to meet their entertainment needs. Nowadays, the phenomenon of "empty-nest youth" is prominent, and the sense of companionship brought by eating and broadcasting just caters to their inner needs. The video stimulates the viewer's appetite and brings physical satisfaction. The anchors visually present bright and attractive food to the audience, and stimulate the audience with clear chewing sounds, supplemented by a relaxing soundtrack, bringing the effect of "seeking plums to quench thirst".

THE PROPOSED METHODOLOGY

1.1 Reasons for the Rise of Douyin Platform Eating and Broadcasting

Douyin short video eating and broadcasting has also influenced food preferences. Many users now prefer foods that are visually appealing and photogenic, as they are more likely to be featured in short videos. The popularity of certain foods on Douyin has also led to the emergence of new food trends, such as "milk tea pearls" and "cheese tea."

Food culture has always been an essential aspect of society, reflecting the cultural, social, and historical values of a community. In recent years, popular food culture has undergone significant changes due to the rise of social media platforms, which have facilitated the sharing and dissemination of food-related content. The influence of social media platforms on food culture has been widely studied, with many researchers noting the impact of social media on consumer behavior, food trends, and the food industry.

For example, Kang and Lee (2018) examined the impact of Instagram food posts on consumers' perceived value and behavioral intentions toward food. They found that Instagram food posts had a positive impact on consumers' perceived value of food and increased their intention to purchase and consume the food items. Similarly, Wang and Kim (2019) found that social media platforms, including Instagram and Facebook, have the potential to influence food trends and shape consumer behavior.

Despite the growing body of research on the impact of social media on food culture, few studies have examined the impact of Douyin short video eating and broadcasting.

To examine the impact of Douyin short video eating and broadcasting on popular food culture, we conducted a mixed-methods study, including both quantitative and qualitative research methods.

Quantitative research: We conducted a survey of Douyin users to understand their behavior and attitudes towards Douyin short video eating and broadcasting. The survey was distributed online, and a total of 500 participants completed the survey. The survey included questions related to the frequency of watching Douyin short video eating and broadcasting, the impact of the content on their food preferences and behavior, and their perceptions of the authenticity and ethics of the content.

Qualitative research: We conducted in-depth interviews with Douyin content creators and food industry professionals to understand their perspectives on the impact of Douyin short video eating and broadcasting on popular food culture. The interviews were conducted face-to-face or via video confer

1.2 The Guidance and Disadvantages of Douyin Platform Eating and Broadcasting to the Mass Food Culture

Vulgar content is rampant. Most of the anchors who publish eating and broadcasting videos on Kuaishou are individual anchors. They have almost no commercial cooperation with stores. They mainly use eating and broadcasting as entertainment or sideline business. The number of likes, comments and fans of their videos largely determine the income status. Moreover, due to the loose access restrictions, the quality of the anchors varies, and some anchors play "side-offs" for attention.

There is a bad eating habit orientation. There are a lot of "eating spicy" and "ice eating" videos in Kuaishou's eating and broadcasting videos, and the amount of food in most of the videos is far beyond the dietary tolerance of normal people. It is easy to form a "mimetic environment" in diet, causing some audiences who lack judgment to have wrong diet concepts, and form bad diet concepts on the platform and even in society. The short video platform itself should do a good job in supervision and guidance, create a positive and harmonious "eating and broadcasting" environment, conduct real-name certification and quality considerations for newly registered anchors, raise the threshold for live broadcasting, and conduct regular training.

The platform also needs to do a good job in resource integration, based on the analysis function of network big data, and push healthy and connotative "eating and broadcasting" according to the user's viewing behavior. As the main body of communication, the anchor should insist that content is king, with a positive attitude of loving food, truly enjoy the happiness brought by food, eat contagiously, eat with characteristics and value, and constantly try new models and add new elements. At present, the vast majority of short video platforms "eating and broadcasting" lack educational attributes.

The host can use food as an introduction to introduce local history, culture, customs and other spiritual content to the audience, tell good food stories, and spread food culture. In March 2018, the State Administration of Press, Publication, Radio, Film and Television promulgated the "Notice on Further Regulating the Dissemination Order of Online Audiovisual Programs", and carried out a series of work on a number of audiovisual websites, focusing on issues such as "uglifying classics", "maliciously distorting" and "deliberately hype" The department conducts special rectification. It can be seen that while social media undertakes super-large-capacity information storage, super-large-flow information transmission and artificial intelligence push, it also increases the difficulty of filtering, screening and controlling bad information.

In addition, the invisibility of social networks provides a loose and free environment for the dissemination of bad information. Users can establish a protection mechanism through anonymity and use virtual identities to avoid scrutiny. Slack, "Because the interlocutor is physically absent, the direct pressure from others is not so great." While protecting personal privacy, it also reduces the challenge of arbitrarily publishing false and vulgar information, or even violating social morality. Deterrence of public order and other harmful acts.

Future research in this field should focus on identifying the most effective methods for integrating practical and experiential learning into Korean education majors' curricula.

2. CONCLUSION

In recent years, the explosive emergence of short video platforms has provided a new way of dissemination for "eating and broadcasting" videos. Based on the advantages of user-generated content, "eating and broadcasting" videos quickly occupied major short video platforms, and at the same time, new problems emerged. Based on the short video platform "Douyin", this article uses communication theory to explore the development status and characteristics of eating and broadcasting videos on the Douyin platform from different perspectives, and reflects on the anomie of such videos, so as to provide a basis for the domestic short video platform eating and broadcasting. recommendations for regulation. In recent years, the explosive emergence of short video platforms has provided a new way of dissemination for "eating and broadcasting" videos. Based on the advantages of user-generated content, "eating and broadcasting" videos quickly occupied major short video platforms, and at the same time, new problems emerged. Based on the short video platform "Douyin", this article uses communication theory to explore the development status and characteristics of eating and broadcasting videos on the Douyin platform from different perspectives, and reflects on the anomie of such videos, so as to provide a basis for the domestic short video platform eating and broadcasting. recommendations for regulation.

3. REFERENCES

- [1] Wan Yayu. Research on symbolic representation and communication effect of short videos of eating and broadcasting [D]. Shandong University.
- [2] Zhang Hongyan. Analysis of the Impact of Short Video Advertisements on Mass Consumption Culture [J]. *Modern Marketing*, 2022(002):000.
- [3] Huang Li, Dong Xiaoyu. Research on the Influence of Short Videos on the Communication of Excellent Folk Culture—Taking "Douyin" APP as an Example [J]. *Contemporary Communication*, 2019(5): 4.
- [4] Huang Xupeng. Analysis of Food Vlog Visual Persuasion Strategies—Taking "Sheep Cuisine" as an Example [J]. *Sound Screen World*, 2021(23):117-119.
- [5] Hu Luyang. The wonder of "eating and broadcasting" and the video consumption of the contemporary public [J]. *Novels Monthly*, 2020, 000(009):P.1-4.
- [6] Ma Ziyang, Han Xiabing, Wang Tianjiao. Research on the Influence of Short Video Software on Public Travel Choices [J]. *Chinese and Foreign Entrepreneurs*, 2019(22):2.
- [7] Kou Xiangyu. The Impact of Short Videos on Mass Culture from the Perspective of Structuralism—Taking "Douyin" as an Example [J]. *Communication Power Research*, 2020.
- [8] Zhang Wenyi, Huang Na. Research on Short Video Operation Strategy of Painting and Calligraphy Mounting and Restoration Techniques Based on Addiction Model—Taking Douyin Short Video Platform as an Example [J]. *Frontiers of Social Science*, 2023, 12(2):11.
- [9] You Xiuling. Potential impact of agriculture on food culture[J]. *Food Culture Research*, 2004(2):12.
- [10] Xue Yaoqi, Lv Wenyu. Analysis of the phenomenon of "eating and broadcasting" on short video platforms [J]. *Popular Literature and Art*, 2020, No.483(09):199-200.
- [11] Wang Xin. Value Analysis of Douyin Drama Short Videos [J]. *Chang'an Academic Journal*, 2021, 012(002):P.135-138.
- [12] Gui Tao. The construction and representation of the spectacle of "eating and broadcasting" short videos [J]. *News Outpost*, 2020(3):69-71.
- [13] Dai Junlei, Tian Yu. Research on the Influence and Countermeasures of Micro-Video Culture on College Students' Ideological and Political Education—Taking 'Douyin' Short Video as an Example [J]. *Regional Governance*, 2018(31): 2.
- [14] Zhou Siyuan. Research on the Communication of Urban Tourism Image in Douyin Short Video [D]. Hunan University, 2019.

Some Thoughts on the Teaching Reform of Tourism and Hotel Management Specialty

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Abstract: Tourism and hotel management are two disciplines that have seen significant growth over the years. With the rise in the tourism industry and an increased demand for hospitality services, the need for qualified professionals in the field has also increased. However, the traditional teaching methods used in these disciplines have been challenged in recent times. The aim of this thesis is to analyze the current state of tourism and hotel management education, identify the limitations of the traditional teaching methods and suggest possible solutions for teaching reform. This thesis argues that tourism and hotel management education need to incorporate more practical and experiential learning methods to better prepare students for the real world. This can be achieved through partnerships with industry stakeholders, more hands-on learning opportunities, and the integration of technology in the curriculum. By implementing these reforms, we can ensure that future graduates are better equipped to meet the evolving demands of the tourism and hospitality industry.

Keywords: Teaching Reform ; Tourism; Hotel Management Specialty

1. INTRODUCTION

Tourism and hospitality have become one of the world's fastest-growing industries, contributing significantly to global economic growth and job creation. According to the World Tourism Organization, international tourist arrivals have increased from 25 million in 1950 to over 1.4 billion in 2018, with a growth rate of 6% in 2018 alone. This growth has led to an increased demand for qualified professionals in the field, including tourism and hotel management graduates.

The traditional teaching methods used in tourism and hotel management education have been challenged in recent years. Students have expressed dissatisfaction with the lack of practical experience and the disconnect between what they learn in the classroom and the real world. The purpose of this thesis is to explore the limitations of traditional teaching methods in tourism and hotel management education and suggest possible solutions for teaching reform.

Tourism and hotel management education has traditionally focused on theoretical knowledge, with less emphasis on practical skills and real-world experience. However, research has shown that students learn better through experiential and hands-on learning methods. According to Kolb's Experiential Learning Theory, learning occurs through a cycle of four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. This theory suggests that students learn best when they are actively engaged in the learning process and can apply their knowledge to real-world situations.

A study by Brannon et al. (2018) found that experiential learning methods, such as internships and job shadowing, were effective in preparing tourism and hospitality students for the workforce. The study showed that students who participated in internships had a better understanding of the industry and were more prepared for the challenges they would face in their careers.

Another study by Taylor and Hardcastle (2017) found that partnerships between universities and industry stakeholders were beneficial for tourism and hospitality education. These partnerships allowed students to gain practical experience and interact with industry professionals, leading to a better understanding of the industry and increased employability.

2. THE PROPOSED METHODOLOGY

2.1 Limitations of Traditional Teaching Methods

To address the limitations of traditional teaching methods, tourism and hotel management education needs to incorporate more practical and experiential learning methods. One way to achieve this is through partnerships with industry stakeholders. These partnerships can provide opportunities for students to gain practical experience and interact with professionals in the field. This can also help to bridge the gap between the theoretical knowledge gained in the classroom and the practical skills needed in the real world.

Another way to incorporate more experiential learning is through the use of internships and job shadowing programs. These programs allow students to gain hands-on experience in a real-world setting, providing them with valuable skills and knowledge that can be applied to their future careers. These programs can also help to increase students' employability and make them more attractive to potential employers.

In addition to partnerships and experiential learning opportunities, the integration of technology in the curriculum can also be beneficial. Technology can provide students with new and innovative ways to learn and can help to make learning more engaging and interactive. This can include the use of virtual reality simulations, online learning platforms, and other digital tools that can enhance the learning experience.

Furthermore, the curriculum can be revised to incorporate more relevant and up-to-date content. The tourism and

hospitality industry are constantly changing, and the curriculum needs to reflect this. This can be achieved by incorporating case studies and real-world examples into the curriculum, as well as updating course materials to reflect current industry trends and practices.

2.2 Teaching Reform of Tourism and Hotel Management Specialty

To better prepare graduates for the challenges they will face in their careers, it is essential to incorporate more practical and experiential learning methods in tourism and hotel management education. One way to achieve this is through partnerships with industry stakeholders. These partnerships can provide opportunities for students to gain practical experience and interact with professionals in the field. This can also help to bridge the gap between the theoretical knowledge gained in the classroom and the practical skills needed in the real world.

Another way to incorporate more experiential learning is through the use of internships and job shadowing programs. These programs allow students to gain hands-on experience in a real-world setting, providing them with valuable skills and knowledge that can be applied to their future careers. These programs can also help to increase students' employability and make them more attractive to potential employers. Incorporating technology in the curriculum can also be beneficial. Technology can provide students with new and innovative ways to learn and can help to make learning more engaging and interactive. This can include the use of virtual reality simulations, online learning platforms, and other digital tools that can enhance the learning experience.

Updating the Curriculum:

Furthermore, the curriculum can be revised to incorporate more relevant and up-to-date content. The tourism and hospitality industry are constantly changing, and the curriculum needs to reflect this. This can be achieved by incorporating case studies and real-world examples into the curriculum, as well as updating course materials to reflect current industry trends and practices.

3. CONCLUSION

Tourism and hotel management education needs to undergo teaching reform to better prepare graduates for the challenges they will face in their careers. The traditional teaching methods used in these disciplines have several limitations and are not sufficient to prepare graduates for the evolving demands of the industry. Incorporating more practical and experiential learning methods, partnerships with industry stakeholders, the integration of technology, and updating the curriculum can help to bridge the gap between the classroom and the real world. By implementing these reforms, we can ensure that future graduates are better equipped to meet the demands of the tourism and hospitality industry and are prepared for the challenges they will face in their careers.

4. REFERENCES

- [1] Guo Shasha. Some thoughts on the analysis of the teaching of tourism hotel management [J]. Reading Digest, 2017.
- [2] Zhang Jinling. Reflections on the Teaching of Tourism and Hotel Management [J]. Charming China, 2014(16): 1.
- [3] Li Sijing. Discussion on the Teaching Reform of Tourism and Hotel Management [J]. Scientific Research, 2015(7): 00318-00319.
- [4] Tan Ying. Discussion on the Chinese teaching reform of tourism and hotel management majors in secondary vocational schools from a cultural perspective [D]. Hunan Normal University.
- [5] Ma Xiaobing. Discussion on the teaching reform of tourism and hotel management courses [J]. Education: 00226-00226.
- [6] Liu Wei. Some Thoughts on the Teaching Reform of Hotel Management Major [J]. Youth, 2017(5): 1.
- [7] Xu Wensu. Reflections on the Teaching of Tourism and Hotel Management [J]. Business Culture: Academic Edition, 2010.
- [8] Luo Chunlin. Talking about the Teaching Reform of Tourism and Hotel Management in Secondary Vocational Schools [J]. Journal of Science and Education, 2012, 000(009):50-51.
- [9] Tang Lin. Discussion on the Teaching Reform of Tourism and Hotel Management in Secondary Vocational Education [J]. Youth and Society, 2014(9):1.
- [10] Zhang Jing. Analysis on Teaching Reform and Innovation of Hotel Management Major [J]. Contemporary Tourism, 2020.
- [11] Chen Mengyu, Shen Qian. Discussion on the Teaching Reform of Higher Vocational Hotel Management Courses under the Background of the Integration of Culture and Tourism [J]. Light Textile Industry and Technology, 2020, 49(1):2.
- [12] Mao An. Discussion on the Teaching Reform of "Hotel Management" Course [J]. Renjian, 2016, 222(027):171-171.
- [13] Anonymous. Reflections on the teaching reform of tourism management in higher vocational colleges [J]. Times Economics and Trade, 2014.
- [14] Rinchen Drolma. Reflections on the Reform of Hotel English Teaching in Higher Vocational Colleges in Tibet [J]. Journal of Tibet University, 2011.
- [15] Arziguli. Reflections on the Teaching Reform of Tourism and Hotel Management [J]. Journal of Xinjiang Agricultural Vocational and Technical College, 2006.

Analysis and Research on Innovation Paths of College Physical Education Teaching Models under the Internet Background

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Abstract: With the rapid development of the Internet, the teaching mode of physical education in universities also needs to keep up with the times and constantly innovate. This paper analyzes the teaching mode of physical education in universities under the background of the Internet, summarizes the shortcomings of the traditional teaching mode, and puts forward some innovative solutions, such as applying Internet technology, carrying out diversified teaching, and improving the quality of teachers. These innovative solutions will help to improve the quality of physical education in universities, meet the diverse needs of students, and promote the prosperity and development of the sports industry in universities.

Keywords: Innovation Paths; Physical Education; Teaching Models; Internet

1. INTRODUCTION

In recent years, the development of the internet has brought unprecedented changes to various fields, including education. With the development of information technology, the traditional teaching mode in physical education has been challenged. Therefore, it is necessary to analyze and research the innovation paths of college physical education teaching models under the internet background. This paper aims to explore the innovative approaches and methods of physical education teaching in colleges under the internet background, analyze the problems and challenges, and provide solutions to promote the development of physical education in colleges.

It explore the problems that exist in the traditional teaching model, and propose innovative paths for college physical education teaching models under the Internet background. The paper is divided into four parts: the first part introduces the background and significance of the research, the second part analyzes the current situation of college physical education teaching models, the third part explores the problems that exist in the traditional teaching model, and the fourth part proposes innovative paths for college physical education teaching models under the Internet background.

The internet teaching model refers to the use of internet technology to deliver teaching content and interact with students. The internet teaching model is characterized by openness, interactivity, and flexibility. The integration of physical education teaching model and internet technology is a new approach to physical education teaching.

It can effectively promote the innovation of teaching models, optimize teaching resources, and improve teaching quality. Multimedia technology has become an important means of teaching in the internet age. It can not only enrich the teaching content but also improve the teaching effectiveness. In physical education teaching, multimedia technology can be used to present teaching content vividly and intuitively, and enhance students' interest and participation. For example, teachers can use videos, animations, and interactive multimedia to present teaching content. In addition,

multimedia technology can also be used in assessment, which can provide more accurate and comprehensive assessment results.

Physical education teaching model refers to the general plan, method, and system of physical education teaching. The current mainstream teaching models include the traditional teaching model, the exploration and innovation teaching model, the competency-based teaching model, and the blended teaching model. The framework of the teaching platform of “integration of sports and medicine” in colleges and universities is shown below.

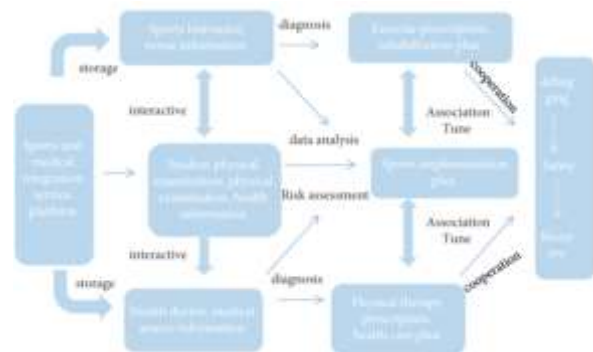


Figure. 1 The framework of the teaching platform of “integration of sports and medicine” in colleges and universities. “Sports and medicine integration” sports health education system.

2. THE PROPOSED METHODOLOGY

2.1 Construction of Online Physical Teaching Platform

The construction of an online teaching platform is an important means to promote the integration of physical education teaching and internet technology. An online teaching platform can provide a variety of teaching resources, such as teaching videos, exercise demonstration videos, and assessment tools. Moreover, it can also provide students with a platform for communication and interaction, which can promote the exchange of ideas and improve the learning

atmosphere. Teachers can use the online teaching platform to manage teaching materials, communicate with students, and provide feedback on their learning progress.

The traditional teaching model of college physical education has many problems that need to be solved. The first problem is the low efficiency of teaching. In traditional teaching, teachers usually teach in a fixed time and place, which makes it difficult to adjust the teaching according to the individual needs of each student. This one-size-fits-all approach may not be effective for all students, and some students may find it difficult to learn and improve their physical fitness.

The second problem is the limited resources of teaching. In traditional teaching, the teaching resources are mainly limited to the classroom and the teacher's knowledge and experience. This limited resource pool may not be able to meet the needs of all students, especially those who need more personalized and targeted teaching.

Personalized teaching is an effective way to promote the individualized development of students. With the support of internet technology, personalized teaching can be implemented more effectively. Teachers can use the online teaching platform to collect and analyze students' learning data, and provide personalized teaching according to their characteristics and needs. For example, teachers can provide different teaching content and assessment methods for students with different learning styles, interests, and abilities. In this way, personalized teaching can improve students' learning efficiency and motivation.

Social media has become an important platform for communication and interaction in the internet age. The integration of physical education teaching with social media can provide a new way of teaching and learning. Teachers can use social media to share teaching resources, communicate with students, and create a learning community. For example, teachers can create groups on social media platforms, such as WeChat and QQ, to share teaching materials, communicate with students, and answer their questions. Moreover, social media can also be used to promote physical education and healthy lifestyle, which can enhance students' awareness and participation.

2.2 Challenges and Solutions of Innovation Paths of College Physical Education Teaching Models under the Internet Background

The integration of physical education teaching model and internet technology requires sufficient teaching resources, such as teaching videos, exercise demonstration videos, and assessment tools. However, the current teaching resources are limited, which hinders the development of physical education teaching. To solve this problem, colleges can establish a digital library of physical education teaching resources, which can collect and share teaching resources from different sources. In addition, colleges can also encourage teachers to create and share teaching resources, which can enrich the teaching content and improve the teaching quality.

The traditional physical education teaching model has a long history and deep-rooted influence, which makes it difficult to accept new teaching models. Moreover, some teachers lack the skills and knowledge of internet technology, which hinders the implementation of innovation paths of physical education teaching models. To solve this problem, colleges can provide training and support for teachers, which can

improve their skills and knowledge of internet technology. Moreover, colleges can also establish a reward mechanism for teachers who have made outstanding contributions to the innovation of physical education teaching models.

The integration of physical education teaching model and internet technology also brings new challenges to privacy and security. For example, the online teaching platform may collect and store students' personal information, which may be used for commercial purposes or be leaked to third parties. To solve this problem, colleges should strengthen the protection of students' privacy and security, establish a strict management system for online teaching platforms, and ensure the safety and reliability of teaching data.

The third problem is the lack of interaction in teaching. In traditional teaching, the interaction between teachers and students is limited, and the interaction among students is also limited. This lack of interaction may lead to a lack of motivation and a sense of isolation, which can affect students' learning outcomes and overall development.

3. CONCLUSION

Innovation paths of college physical education teaching models under the internet background are an important way to promote the development of physical education teaching. The integration of online and offline teaching modes, the application of multimedia technology, the construction of online teaching platform, the development of personalized teaching, and the integration of physical education teaching with social media are effective approaches and methods to improve the teaching quality and efficiency of physical education. However, there are also challenges and problems, such as the lack of teaching resources, resistance to change, and privacy and security issues. To solve these problems, colleges should establish a sound system and mechanism, strengthen the training and support for teachers, and ensure the protection of students' privacy and security.

4. REFERENCES

- [1] Tan Xiaofeng, Song Mingfang. Research on the Innovative Path of Volleyball Teaching Mode of College Physical Education under the Background of "Internet + Education" [J]. Journal of Hunan University of Technology: Social Science Edition, 2020, 25(2):6.
- [2] Han Yan. Analysis of the innovative concept of physical education teaching mode in colleges and universities under the background of the Internet——Comment on "Research on the Theory and Practice of Informatization Teaching in Physical Education Teaching" [J]. China Oil, 2021(8).
- [3] Zhu Zhenyu. Research on Innovation of Physical Education Teaching in Colleges and Universities under the Background of "Internet +" [J]. Communication World, 2022, 29(5):3.
- [4] Zhang Duo. Research on the reform and development of physical education teaching in colleges and universities under the background of "Internet +" era [J]. Contemporary Sports Science and Technology, 2019, 9(32): 2.
- [5] Qu Deming. Analysis on the Innovation Path of College Physical Education Teaching Mode Based on Big Data - "Research on Education Management in Colleges and Universities Based on Big Data" [J]. 2021.

- [6] Kudulaiti Albaidula. Exploration on the Teaching Mode of Physical Education in Colleges and Universities under the Background of "Internet +" [J]. Stationery and Technology, 2019(6): 2.
- [7] Chen Peng, Lu Delin. Analysis of innovative concepts of college physical education teaching models under the background of the Internet——Comment on "Research on the Theory and Practice of Informatization Teaching in Physical Education Teaching" [J]. Science and Technology Management Research, 2022, 42(1):I0005.
- [8] Ding Guanning. Paths, models and countermeasures of introducing national traditional sports into college physical education teaching in the new era.
- [9] Wang Xiu. Design and application research of aerobics teaching platform under the background of "Internet +" [D]. Jilin Institute of Physical Education, 2019.
- [10] Zhang Xiang. Exploration of Innovation and Entrepreneurship Education for College Students under the Background of "Internet +"—Taking Physical Education as an Example [J]. Journal of Shijiazhuang University, 2017, 019(006):147-150.
- [11] Guo Rui. The dilemma and solution of physical education teaching in colleges and universities under the perspective of "Internet +" [C]// The Eleventh National Sports Science Conference. 0.
- [12] Tian Ye, Zhao Meiqin, Jiang Anna. Research on Comprehensive Reform of Physical Education Teaching in Colleges and Universities [J]. 2021(2018-5):101-102.
- [13] Zhang Junqi and Zhang Zhaolong. Research on the Reform Strategy of Physical Education Teaching in Colleges and Universities under the Background of "Internet +" [J]. Journal of Hebei Engineering University (Natural Science Edition), 2019, 36(1):98-100.

An Analysis of the Integration of English Translation and Cross-Cultural Conduction Awareness

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Abstract: The globalization of the economy and the growth of international business have made English an essential tool for communication in many industries. As a result, the ability to translate English and to navigate cross-cultural differences has become increasingly important. This paper analyzes the integration of English translation and cross-cultural conduction awareness in language education. The paper explores the importance of cross-cultural awareness and the skills required to successfully navigate cross-cultural communication. The paper also examines the role of translation in language learning and the potential benefits of integrating translation into language education. Finally, the paper proposes a framework for integrating English translation and cross-cultural conduction awareness in language education.

Keywords: English Translation, Cross-Culture, Conduction Awareness

1. INTRODUCTION

The rise of digital technologies in the business world has led to a significant shift in how companies operate. One of the most prominent changes is the digital transformation of enterprises. Digital transformation is the process of using digital technologies to fundamentally change how a business operates, delivers value to customers, and competes in the market. The goal of digital transformation is to improve business performance by increasing efficiency, reducing costs, and driving innovation.

Accounting information comparability and capital configuration efficiency are two critical factors in the success of digital transformation. Accounting information comparability refers to the ability to compare financial information between different companies or periods accurately. Capital configuration efficiency refers to the ability of a company to efficiently allocate capital to generate maximum returns. Both factors are essential for the success of digital transformation because they help companies make informed decisions about how to allocate resources and measure the success of their digital initiatives.

This paper will examine the relationship between enterprise digital transformation, accounting information comparability, and capital configuration efficiency. We will explore how digital transformation is changing the way businesses operate, the importance of accounting information comparability and capital configuration efficiency, and the challenges and opportunities that arise from digital transformation. Enterprise digital transformation flows in a capital market economy as shown in the figure 1.

Real-time monitoring and analysis of financial information: With the development of information technology, enterprises can use digital tools to collect and analyze financial data in real-time. Real-time monitoring and analysis of financial information can help enterprises to identify potential risks and opportunities, and make timely and accurate decisions.

Integration of financial and non-financial information: In the digital age, enterprises need to consider not only financial

information but also non-financial information, such as customer feedback, employee performance, and market trends. The integration of financial and non-financial information can provide a comprehensive picture of enterprise performance and support decision-making.

Cost reduction and efficiency improvement: The digital transformation of enterprises can help to reduce costs and improve efficiency in many aspects, such as data collection, processing, and analysis. Accounting information systems can also be optimized to reduce redundant work and improve efficiency.

2. THE PROPOSED METHODOLOGY

2.1 Importance of Cross-Cultural Awareness

In today's globalized world, English has become a lingua franca for communication in many industries. The ability to speak, read, and write in English is essential for success in international business. However, English proficiency alone is not enough to guarantee effective communication. Cross-cultural differences can create barriers to communication, and the ability to navigate these differences is essential for success in the global marketplace. Additionally, the ability to translate English is also an essential skill for individuals who wish to communicate effectively across linguistic and cultural boundaries.

This paper examines the integration of English translation and cross-cultural conduction awareness in language education. The paper explores the importance of cross-cultural awareness and the skills required to successfully navigate cross-cultural communication. The paper also examines the role of translation in language learning and the potential benefits of integrating translation into language education. Finally, the paper proposes a framework for integrating English translation and cross-cultural conduction awareness in language education.

Cross-cultural awareness is essential for individuals who wish to communicate effectively across cultural boundaries. Cross-

cultural communication involves understanding and navigating cultural differences that can affect communication. Some of these cultural differences include language, customs, values, beliefs, and social norms. Failure to understand and navigate these differences can lead to miscommunication, misunderstanding, and even conflict.

To successfully navigate cross-cultural communication, individuals must develop cross-cultural awareness. This involves developing an understanding of cultural differences and how they impact communication. Cross-cultural awareness also involves developing the skills required to adapt to these differences and to communicate effectively across cultural boundaries.

2.2 The Integration of Translation and Cross-Cultural Conduction Awareness in a Study Abroad Program

A study abroad program was designed to integrate English translation and cross-cultural conduction awareness. The program included language courses, cultural immersion activities, and translation workshops. Students were required to complete translation assignments and presentations that demonstrated their cross-cultural awareness.

The results of the program evaluation showed that students' language proficiency, cultural awareness, and translation competence were significantly improved. Students reported that the integration of translation and cross-cultural conduction awareness helped them to better understand the target language and culture, and to communicate more effectively with native speakers.

Cross-cultural conduction awareness is the ability to understand and appreciate different cultures. It involves recognizing the similarities and differences between cultures and adapting one's behavior and communication style accordingly. Cross-cultural conduction awareness is essential for effective communication in the globalized world.

The integration of English translation and cross-cultural conduction awareness can improve language learners' communication skills, cultural awareness, and translation competence. Through the integration of these two aspects, language learners can develop a deeper understanding of the target language and culture.

A business English course was designed to integrate English translation and cross-cultural conduction awareness. The course included lectures, readings, and case studies on topics such as business communication, marketing, and negotiations. Students were required to complete assignments and presentations that demonstrated their translation competence and cross-cultural awareness.

The results of the course evaluation showed that students' language proficiency, cultural awareness, and translation competence were significantly improved. Students reported that the integration of translation and cross-cultural conduction awareness helped them to better understand the target language and culture, and to communicate more effectively in a business context.

Linguistic differences can lead to miscommunication, while cultural differences can lead to misunderstandings and conflicts. Social norms, such as gender roles and power dynamics, can also influence communication patterns and make effective communication more challenging.

Despite these challenges, cross-cultural communication also presents opportunities for learning and growth. Exposure to different cultures can broaden one's perspective and foster creativity and innovation. Successful cross-cultural communication can also lead to increased business opportunities and improved international relations.

3. CONCLUSION

The integration of English translation and cross-cultural conduction awareness is a critical aspect of language learning in the globalized world. This paper aims to analyze the relationship between English translation and cross-cultural conduction awareness and to explore the importance of integrating these two aspects in language learning. Through a literature review and case studies, this paper argues that the integration of English translation and cross-cultural conduction awareness can improve language learners' communication skills, cultural awareness, and translation competence.

4. REFERENCES

- [1] Zhu Zhi. Analysis of News English Translation and Intercultural Awareness [J]. Journal of Hunan City University: Natural Science Edition, 2016(2):2.
- [2] Zhu Guoqin. News English translation and cross-cultural awareness [J]. Arts and Science Navigation (late ten-day period), 2017.
- [3] Yang Aimei. Research on News English Translation and Cross-cultural Awareness [J]. China Press, 2018(4): 2.
- [4] Chi Qingmei. Analysis of the Path to Cultivate Cross-cultural Awareness in English Translation [J]. Journal of Liaoning Vocational and Technical College of Economics. Liaoning Economic Management Cadre College, 2021(4):104-106.
- [5] Jiang Xiaoxia. Analysis of Strategies for Cultivating Cross-cultural Awareness in College English Translation Teaching [J]. Science and Technology Wind, 2020(13): 1.
- [6] Wang Ying. Analysis on the Cultivation of Cross-cultural Awareness in College English Translation Teaching [J]. 2019.
- [7] Tan Xing. Analysis of the Cultivation of Intercultural Awareness in College English Translation Teaching [J]. Think Tank Times, 2020, 000(030):P.244-245.
- [8] Xu Bo, Zhang Xu. Analysis on the Cultivation of Intercultural Awareness in College English Translation Teaching [J]. Campus English, 2019(38):1.
- [9] Zhong Yuguo. Cultivation of Cross-cultural Awareness in College English Translation Teaching [C]// Foreign Language Literature Collection (Vol. 7). 2017.
- [10] Huang Yanping. Cultivation of Intercultural Awareness in College English Translation Teaching [J]. Crazy English: Theory Edition, 2018(3):2.
- [11] Li Jie. On the Cultivation of Intercultural Awareness in College English Translation Teaching [J]. New Generation: Theory Edition, 2018(20):1.
- [12] Zhang Xiaoyu. Research on the cultivation of cross-cultural awareness in translation teaching [D]. Shandong University.

- [13] Liang Hongping. Cross-cultural Factors and Countermeasures in English Translation [J]. Chinese Outside School Education, 2009.

Enterprise Digital Transformation, Accounting Information Compare and Capital Configuration Efficiency

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Abstract: This article discusses the impact of digital transformation of enterprises on accounting information comparability and capital allocation efficiency. Digital transformation has led to changes in financial reports and increasing the need for accounting information comparability. At the same time, digital transformation has also created new opportunities for enterprises to improve capital allocation efficiency through investment new technologies and business models. However, digital transformation has also brought many challenges, including the need to invest a lot of funds, manage network security risks, and respond to competition. This article aims to analyze the impact of digital transformation on enterprises, and put forward some suggestions to help enterprises overcome these challenges and achieve higher capital allocation efficiency and performance.

Keywords: Digital Transformation, Accounting Information, Capital Configuration Efficiency

1. INTRODUCTION

The rise of digital technologies in the business world has led to a significant shift in how companies operate. One of the most prominent changes is the digital transformation of enterprises. Digital transformation is the process of using digital technologies to fundamentally change how a business operates, delivers value to customers, and competes in the market. The goal of digital transformation is to improve business performance by increasing efficiency, reducing costs, and driving innovation.

Accounting information comparability and capital configuration efficiency are two critical factors in the success of digital transformation. Accounting information comparability refers to the ability to compare financial information between different companies or periods accurately. Capital configuration efficiency refers to the ability of a company to efficiently allocate capital to generate maximum returns. Both factors are essential for the success of digital transformation because they help companies make informed decisions about how to allocate resources and measure the success of their digital initiatives.

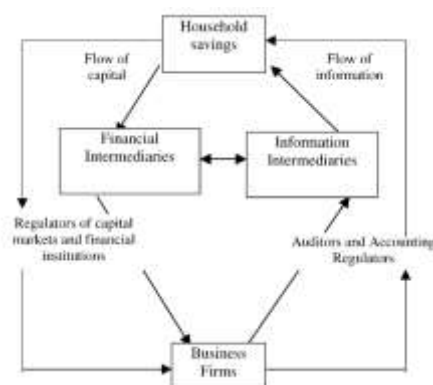


Figure 1. Enterprise Digital Transformation flows in a capital market economy.

This paper will examine the relationship between enterprise digital transformation, accounting information comparability, and capital configuration efficiency. We will explore how digital transformation is changing the way businesses operate, the importance of accounting information comparability and capital configuration efficiency, and the challenges and opportunities that arise from digital transformation. Enterprise digital transformation flows in a capital market economy as shown in the figure 1.

Real-time monitoring and analysis of financial information: With the development of information technology, enterprises can use digital tools to collect and analyze financial data in real-time. Real-time monitoring and analysis of financial information can help enterprises to identify potential risks and opportunities, and make timely and accurate decisions.

Integration of financial and non-financial information: In the digital age, enterprises need to consider not only financial information but also non-financial information, such as customer feedback, employee performance, and market trends. The integration of financial and non-financial information can provide a comprehensive picture of enterprise performance and support decision-making.

Cost reduction and efficiency improvement: The digital transformation of enterprises can help to reduce costs and improve efficiency in many aspects, such as data collection, processing, and analysis. Accounting information systems can also be optimized to reduce redundant work and improve efficiency.

2. THE PROPOSED METHODOLOGY

2.1 Digital Transformation and Accounting Information Comparable

Digital transformation has significantly impacted the way businesses collect, process, and report financial information. With the rise of digital technologies, companies can now collect vast amounts of data in real-time, providing more accurate and timely financial information. This has led to an

increased demand for accounting information comparability. Investors, regulators, and other stakeholders rely on financial information to make informed decisions about a company's financial health, and comparability is critical for accurate analysis.

The adoption of digital technologies has also led to changes in financial reporting. Traditional financial statements are being replaced by real-time, interactive dashboards that provide a more comprehensive view of a company's financial health. This has led to increased transparency, which is essential for accounting information comparability.

Capital configuration efficiency refers to the degree of alignment between the enterprise's capital structure and business objectives. Capital configuration efficiency is an important indicator of enterprise financial performance. The efficient utilization of capital can improve the enterprise's financial flexibility, reduce financial risks, and enhance its competitiveness.

Accounting information plays a crucial role in improving capital configuration efficiency. Accounting information can help enterprises to achieve the following objectives:

Optimization of capital structure: Accounting information provides important data for the analysis of the enterprise's capital structure. The analysis of accounting information can help enterprises to optimize their capital structure, reduce financial costs, and improve capital efficiency.

Control of financial risks: Accounting information provides important information for the identification and management of financial risks. Effective risk management can reduce the probability and impact of financial risks, and improve capital configuration efficiency.

Management of cash flow: Accounting information provides important data for the management of cash flow.

However, digital transformation has also led to new challenges in accounting information comparability. The increased use of non-GAAP financial measures, such as adjusted EBITDA, has made it more difficult to compare financial information between companies. These non-GAAP measures often exclude certain expenses or use different accounting methods, making it challenging to compare financial information accurately.

Another challenge is the use of digital currencies, such as Bitcoin and Ethereum, which are not yet widely accepted as legitimate financial instruments. This makes it difficult to accurately report financial information that involves digital currencies and creates a challenge for accounting information comparability.

2.2 Digital Transformation and Capital Configuration Efficiency

Capital configuration efficiency refers to the ability of a company to allocate capital effectively to generate maximum returns. Digital transformation has significantly impacted capital configuration efficiency by providing new opportunities for companies to invest in new technologies and business models. Companies that successfully implement digital transformation can gain a competitive advantage by improving operational efficiency, reducing costs, and driving innovation.

One of the primary benefits of digital transformation is the ability to automate manual processes, reducing the need for

human intervention. This can lead to significant cost savings and improved operational efficiency. For example, companies can use robotic process automation (RPA) to automate repetitive tasks such as data entry, reducing errors and increasing efficiency.

Another benefit of digital transformation is the ability to use data analytics to make informed investment decisions. Companies can use data analytics to identify trends and patterns in customer behavior, helping them make better-informed decisions about where to invest their capital. For example, a company can use data analytics to identify a growing market and invest in new products or services to meet the demand.

However, digital transformation also creates new challenges for capital configuration efficiency. The rapid pace of technological change can make it difficult for companies to keep up with new developments and invest in the right technologies. The risk of investing in the wrong technology or business model can lead to significant losses and reduced capital configuration efficiency.

Another challenge is the increased competition that digital transformation brings. Companies that fail to adopt digital technologies risk falling behind their competitors, reducing their ability to generate returns on their investments. This creates pressure on companies to invest in new technologies and business models, even if they are not the most efficient use of capital.

3. CONCLUSION

In conclusion, digital transformation has significant implications for accounting information comparability and capital configuration efficiency. The adoption of digital technologies has led to changes in financial reporting and increased demand for accounting information comparability. At the same time, digital transformation has created new opportunities for companies to improve their capital configuration efficiency by investing in new technologies and business models. However, digital transformation also presents several challenges that must be addressed to realize these benefits fully. Companies must invest significant capital in new technologies, manage cybersecurity risks, and navigate an increasingly competitive landscape. Ultimately, the success of digital transformation will depend on companies' ability to manage these challenges and capitalize on the opportunities presented by digital technologies.

4. REFERENCES

- [1] Zhang Lao, Song Lijuan, Yang Xiaowei. The efficiency of digital transformation and capital allocation -evidence based on the "two modernizations" fusion natural experiments [J]. Industrial and technical economy, 2022, 41 (8): 10.
- [2] Zeng Jun, Wu Zhongxin, Chen Communist Party. IFRS, the international comparability of accounting information and the capital allocation efficiency of listed companies [J]. Accounting research, 2018 (12): 7.
- [3] Zhong Tingyong, Huang Yibo, Sun Fangcheng. Corporate digital transformation, market competition and accounting information comparable [J]. Modern Finance: Journal of Tianjin University of Finance and Economics, 2022, 42 (12): 23.
- [4] Dawn, Ma Zhong, Wang Longfeng. Internal accounting information comparable and capital allocation efficiency [J]. Contemporary Finance.

- [5] Wen Xiaofei. Accounting information comparable and corporate debt financing [D]. Xiamen University, 2019.
- [6] Wang Xuan, Shen Keyin. The value dimension and development strategy of the construction of smart stadiums in the digital economy era.
- [7] Shi Bo Zhang Xinyue. Research on the transformation and development of China's industrial aging in the three-child fertility policy [J]. Journal of Chang'an University (Social Science Edition), 2021, 023 (004): 82-88.
- [8] Xing Zuli. Price mechanism and non-price mechanism: theory and application [D]. Southwest University of Finance and Economics.
- [9] Chen Rui. The quality of accounting information on the impact of the capital allocation efficiency of listed companies in my country [D]. Wuhan University of Technology, 2013.
- [10] Chen Rui. The quality of accounting information on the impact of the capital allocation efficiency of listed companies in my country [D]. Wuhan University of Technology.
- [11] Cui Jing. Accounting information quality, capital allocation efficiency and market value [J]. 2016.
- [12] Jiang Xuanyu, Shen Danlin, Li Ying. Does the comparability of accounting information affect corporate innovation [J]. 2021 (2017-4): 82-92.
- [13] Nie Xingkai, Wang Pinghua, Pei Xuan. Will the digital transformation of enterprises affect the comparability of accounting information [J]. Accounting research.
- [14] Zhang Shuo. The quality of accounting information, management power and capital allocation efficiency [D]. Yanbian University.

Application of Apriori Algorithm in the Development of Hotel Management Information

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Abstract: The Apriori algorithm can effectively improve the efficiency and quality of the same time help accelerate the construction of smart hotels. Starting from understanding the application advantages of Apriori technology in the teaching of hotel management in higher vocational colleges, combining teaching cases to explore its specific application methods, and committed to giving It is hoped that the reports and related data generated by the evaluation system can be freely used by users, and users can operate and calculate the obtained data by themselves. higher vocational colleges. The thesis mainly discusses the information development and construction of the hotel management major courses in universities, taking the information development and construction of the marketing courses in this major as an example to carry out innovative applications of teaching reforms.

Keywords: Apriori Algorithm, Hotel Management, Management Information, Data Mining

1. INTRODUCTION

The courses, teaching methods and teaching environment of colleges and universities are constantly striding forward to informatization, and the teaching mode of hotel management specialty is also constantly innovating and changing. At present, with the continuous emergence of cloud mobile learning platforms, smart classrooms, and various information technology methods, and the increasing development of mobile and communication technologies, the trend from digital learning to mobile learning is becoming more and more obvious. Mobile phones are becoming more popular and more powerful, providing good hardware support for mobile learning that breaks the limitations of time and space, and truly realizes "anytime, anywhere, anywhere" learning. Based on this, it is quite necessary to conduct in-depth discussions on the subject of the development and construction of hotel management professional courses informatization. With the pace of the Internet + era, various mobile learning platforms have emerged, and more and more educational resources have shared platforms [1-6].

In the mobile learning environment, it is both a challenge and an opportunity for the development of professional hotel management teaching in secondary vocational schools. The author will explore the teaching reform by analyzing the teaching status of the hotel management major in secondary vocational schools, combined with mobile learning. Mobile learning is a brand-new learning method that can break the limitations of time and space with the help of mobile devices and use fragmented time to learn anytime, anywhere. The mobile learning platform can effectively present educational resources and related information and provide two-way communication between teachers and students to meet the diverse learning needs of students. The system can output files in .xls format, which is convenient for users to call. In the application scenario of trams, due to the different applicability of a single sensor to different environments, weather, lighting, etc. of teaching equipment and teaching resources, and at the same time help to bring students a more realistic experience of teaching activities. At present, more and more vocational colleges are integrating there will be missed detections in

some scenarios. of specific application, it is necessary to improve the information literacy and application proficiency of relevant teachers. The learning algorithm of the RBF neural network has a great relationship with the role of its action function. The learning algorithm is different with the center of the action function an important role in optimizing the mode of educational activities. Therefore, hotel management teachers in higher vocational colleges need to improve the level of informatization teaching and actively innovate teaching models to create informatization teaching situations [7-14].

At the current stage, hotel education is in an era of information explosion. The application of information technology in hotel management is mainly to effectively solve business process problems and give birth to new business models. For example, before the advent of Didi taxi-hailing software, people generally believed that taxi-hailing must be done in the street in person. On this basis, as a college, when teaching hotel management, it must not rely solely on technology and operation process professors to complete the development and construction of informatization, but should focus on constructing students' personal thinking patterns and helping them to exercise their judgments. The ability to realize the sustainable development strategy pursued by the country. According to relevant survey and research data, the process of developing informatization teaching in domestic and foreign universities that set up hotel management majors usually includes four stages. Teachers and students majoring in hotel management follow the traditional classroom teaching mode, and all knowledge and skills are completed within 40 minutes of the classroom [15-21].

In the mobile learning environment, teachers and students majoring in hotel management (especially intern students) can obtain learning resources as long as they have smart devices within the range of the mobile network. Not only the learning method is mobile, but even the teachers, students and learning environment are also mobile. This breaks through the time and space limitations of traditional classrooms, and makes teaching and learning more convenient for teachers and students. At present, more and more vocational colleges are

beginning to use information technology to carry out teaching activities. The application of this teaching method can effectively improve the single mode of traditional teaching, and at the same time can make the presentation of classroom teaching content more intuitive and vivid [22-24].

2. THE PROPOSED METHODOLOGY

2.1 The Apriori Algorithm

The ultimate goal of association rule mining is to find all the strong association rules in the target transaction database, that is, the support of the association rules that need to be mined must be not less than the minimum support, and the confidence must be greater than or equal to the minimum confidence. The whole process is divided into the following two steps: Find out frequent itemsets: In the target transaction database, calculate the number of occurrences and support of the itemsets. If the support of the itemsets is not less than the minimum support, then the itemsets are a frequent item set. Calculating strong association rules: Through the frequent item set obtained in the first step, all the strong association rules can be calculated easily using formulas.

The center selection of the action function generally includes: random selection of the center method, self-organization learning algorithm, some Supervised selection center method and orthogonal least squares method, etc. Except for self-organizing learning algorithms. The whitening weight function of gray class refers to the degree to which an object belongs to a certain gray class by quantitative description. It can generally be determined in the context of the actual problem. When solving practical problems, the whitening weight function can be determined from the perspective of the objects participating in the clustering, or the whitening weight function can be determined according to all similar objects from the perspective of the whole environment. Specifically, the role of the preprocessing and postprocessing modules is to perform low-pass filtering on the frame-level quality score sequence.

2.2 The Hotel Management Major

In order to achieve a close connection between professional courses, teachers need to ask students the question of "specific research on a certain hotel" before the launch of the course teaching activities, and let the students learn the contents of the four major business modules of the research object, and then do Produce a hotel management plan with application value. Taking the marketing course as an example, in the teaching process, teachers need to analyze the market environment, consumer intentions, market trends and other content according to the marketing workflow, starting from the four modules, and designing tasks for students respectively.

This position requires sales staff to have the ability to communicate well with users, write hotel promotion plans, and conduct advertising. Teachers must effectively master the personal learning of each student when assigning tasks. The situation and the characteristics of thinking logic are arranged for targeted learning tasks. Hotel management students go to hotel related departments for course internships and graduation internships. Some students often experience various situations due to the short-term inability to adapt to the change of status, or become discouraged by internships due to abilities and concepts. Internship management is a complicated job, and students leave school and go out for internships in hotels, which makes it more difficult for

students to educate them. The reasonable application of the mobile learning platform can effectively break the limitations of time and space and extend the breadth of teaching. Teachers can provide targeted learning resources through the mobile learning platform, and students can use fragmented time to continue learning, providing students with a sustainable management environment for internships. The application of information technology helps students better understand the inherent interest of hotel management knowledge, and thus helps to fully enhance students' enthusiasm for inquiry in classroom learning. At present, more and more teachers in higher vocational colleges make full use of modern technology to mobilize students' enthusiasm for participation when carrying out hotel management teaching activities. They use information technology to achieve the unity of voice, shape, picture and color, so as to show students colorful and colorful Interesting teaching content.

2.3 The Application of Apriori Algorithm in Hotel Management Major

The marketing teaching preparation in the hotel management professional course is mainly divided into two steps: problem introduction and independent inquiry. The first step mainly refers to that teachers use information-based teaching tools to play relevant hotel management materials and ask questions based on the content of the materials. After viewing the content of the materials, students think about solving the problems raised by the teacher. The significance of this step is that teachers can guide the teaching of new courses through effective creation of questions, use the sense of "suspense" to stimulate students' interest in thinking, and enable them to efficiently absorb new knowledge within a short period of time when students are focused.

Step two can be presented from two perspectives. One is to allow students to think about the promotion types, plans, content and steps of hotel operations based on the information displayed on the large multimedia screens of informatization tools, and based on the results of the thoughts and discussions. A summary by the teacher, and individual guidance for some students who have conflicts in understanding. Database division is to divide all the transactions in the target transaction database into several parts based on the attribute value of each column, and then mine the frequent item sets for each divided part, and finally calculate the frequency of candidate item sets according to the transaction database to determine the final frequent itemset. The main principles of the algorithm are: First, the frequent itemsets on the entire target transaction database must also be frequent itemsets on the divided part of the transaction database; second, the frequent itemsets on each divided part of the transaction database are merged the set may also be a frequent item set on the entire target transaction database. This algorithm can well solve the redundancy of large-scale data sets, and also improves the efficiency of the original Apriori algorithm. The strong association rules that are mined are incorrect. The strong association rules discovered by the algorithm may not match the actual situation, so they do not have practical significance. At the same time, they also have a certain misleading effect. It is particularly important for the mining of medical big data. Not only can it not play the role of auxiliary medical care, but it may also cause wrong judgments. There have been many schemes for the improvement of Apriori algorithm. In addition to the above methods, there are also improvement methods based on hash tables, Boolean matrices, arrays, etc.

3. CONCLUSIONS

Apriori algorithm can effectively improve the efficiency and quality of the same time help accelerate the construction of smart hotels. Starting from understanding the application advantages of Apriori technology in the teaching of hotel management in higher vocational colleges, combining teaching cases to explore its specific application methods, and committed to giving It is hoped that the reports and related data generated by the evaluation system can be freely used by users, and users can operate and calculate the obtained data by themselves. higher vocational colleges. The thesis mainly discusses the information development and construction of the hotel management major courses in universities, taking the information development and construction of the marketing courses in this major as an example to carry out innovative applications of teaching reforms.

4. REFERENCES

- [1]Wu Lin. Application and Practice of Information Technology in Hotel Management Specialty Teaching[J]. Technology and Market, 2019, v.26; No.311(11):128-129.
- [2] Qin Yanmei. The application of computer informatization in the teaching of hotel management in higher vocational schools[J]. 2021(2016-33):92-92.
- [3] Huang Lili. Research on the Teaching Practice of Hotel Management Informationization[J]. China Management Informationization, 2019, 22(13):2.
- [4] Du Yanhong. Practical exploration of informatization teaching in the teaching of hotel management specialty[J]. Tourism overview: second half of the month, 2019(5):1.
- [5] Full text view. Research on the training strategy of applied talents in hotel management under the background of information age[J]. Contemporary Tourism: Golf Travel, 2018.
- [6] Sun Liang. Practical research on informatization teaching in hotel management specialty teaching[J]. China Management Information Technology, 2020, 23(4):2.
- [7] Pan Yuan, Yao Jianyuan. Information Design and Application of Hotel Management Courses—Take the typical work task "Hotel Room Reservation Procedure" as an example[J]. Knowledge Economy, 2018(24): 2.
- [8] Jiang Jingfeng. Thoughts on the construction of hotel management laboratory under the background of digital information age[J]. Digital World, 2019(3):1.
- [9] Li Yan. Analysis on the method of hotel management informationization [J]. China Management Informationization, 2019, v.22; No.391(01):100-102.
- [10] Zhang Yuan. The application of blended teaching mode in the professional courses of hotel management in higher vocational colleges[J]. Writer's World, 2020(5): 2.
- [11] Liu Fei. Research on the integrated teaching of hotel lobby experimental courses based on Fidelio PMS system[J]. Contemporary Educational Practice and Teaching Research (Electronic Journal), 2018, 000(010):446-447.
- [12] Yan Fei Tian. Practice and reflection on hotel English teaching reform for tourism management under the background of education informationization[J]. Teaching Method Innovation and Practice, 2020, 3(14):121.
- [13] Huang Xi. Software project agile management based on critical chain[D]. 2018.
- [14] Yao Xuemei. Research on "Three Classes Integration" Talent Cultivation of Hotel Management Major in Applied Universities[J]. Contemporary Tourism, 2018, 000(012):1-2.
- [15] Wang Haiyun, Wang Liqing. Analysis on the application and development of informatization in the management of higher vocational students[J]. Equipment Manufacturing Technology, 2018, 286(10):207-208+216.
- [16] Gao Yan. Research on Informatization Teaching Design of Hotel Management Specialty in Higher Vocational Colleges[J]. Cai Zhi, 2019(4):1.
- [17] Fan Zhouxing. The application and promotion of information technology in the teaching of hotel management in higher vocational colleges—Taking the course of "Banquet Design" as an example[J]. Chinese Journal of Multimedia and Network Education (Mid-day Issue), 2020(10) :39-41.
- [18] Full text view. Research on the training strategy of applied talents in hotel management under the background of information age[J]. Contemporary Tourism (Golf Travel), 2018(09): 300-301.
- [19] Sun Liang. Research on Informatization Teaching Design of Hotel Management Specialty in Higher Vocational Colleges[J]. China Management Information Technology, 2020, 23(2):2.
- [20] Yu Ying. Discussion on the information development and construction of hotel management professional courses[J]. Modern Vocational Education, 2018, 000(024):148-149.
- [21] Wang Yang. Innovative research on classroom teaching of hotel management major in higher vocational education under the background of informationization[J]. China Management Information Technology, 2020, 23(2):2.
- [22] Wan Xiaohui. Research on the Integration of Information Technology and Professional Teaching in Secondary Vocational Schools—Taking Hotel Management as an Example[J]. Scientific Consultation, 2020(50):1.
- [23] Huang Xiaoli. Application of Information Technology in Hotel Management Course Teaching[J]. Contemporary Tourism (Golf Travel), 2018(11).
- [24] Jiang Dandan. On the innovation of the teaching classroom of the hotel management major of secondary vocational schools under the background of informationization[J]. 2021(2018-26):174-175.

Design of English Guidance Information System Based on Multiple Reading and Writing Information Fusion Algorithm

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Abstract: Diversified literacy is a new requirement for students' literacy in today's information globalization and culturally diverse society. In college English teaching, based on the theory of multiple reading and writing, this paper designs an information-based system to guide the teaching of college English. According to the four steps of multiple reading and writing teaching method, students are trained in visual reading and writing, media reading and writing, digital reading and writing, and digital reading and writing. Multiple reading and writing skills such as critical reading and writing. Master multiple ways to build a multi-modal teaching model, and optimize the available multi-modal resources to the greatest extent, so as to stimulate the interest of non-English majors in English learning and cultivate their multiple reading and writing skills Ability and comprehensive application ability of English.

Keywords: English Guidance, Information System, Multiple Reading and Writing, Information Fusion Algorithm

1. INTRODUCTION

Since ancient times, human beings have sensed the world around them through various senses such as sight, hearing, and smell. They mainly use spoken language, supplemented by gestures [1], expressions, etc. to convey meaning and communicate and interact. In the multimedia era of communication with the Internet and smart phones, the transmission and exchange of information presents multimodal characteristics [2]. "Modality refers to the channels and media of communication, including language, technology, image, color, music and other symbolic systems", and the communication interaction using two or more modalities at the same time is called "multimodality". In order to cope with the increasing number of Modal [3], multimedia-based classroom teaching, New London Group (1996) proposed the "multi-literacy pedagogy" (multi literacies pedagogy), to explore how to change the traditional teaching methods, effectively use multimedia resources, and cultivate students' multiple literacy skills [4].

In China, research on multiple reading and writing has developed rapidly in recent years [5]. On the one hand, the theoretical framework of multiple reading and writing and its enlightenment to Chinese English education have been comprehensively introduced and explained [6]. It has greatly reduced the damage of human beings working in harsh environments, and has attracted great attention from all over the world [7]. It is gradually becoming the military force of developed countries. Frontiers of technological research. With the expansion of the application field of mobile robots, especially with the development of autonomous navigation technology [8], the intelligent level of mobile robots and the adaptability of the working environment are increasingly challenged. The intelligent mobile robot system is a comprehensive system that integrates a variety of technologies [9]. The development of the system involves multiple disciplines, such as computer network, artificial intelligence, information processing, mechanical

manufacturing [10], integrated electronics, dynamic image processing, and automatic control.

With the continuous development of information globalization [11], cultural diversification and new media, the construction of human communication methods and discourse meanings presents a multimodal trend [12]. The central position of language symbols in communication has been impacted, and other communication means such as images, animations, sound effects, space [13], gestures, body posture and other symbolic systems play an increasingly important role in social communication. In today's multimodal era, discourse is changing from unimodal to multimodal, which has gradually upgraded and expanded traditional literacy to multiliteracies [14]. In terms of literacy, the traditional literacy training model has been difficult to meet the needs of social development, and scholars' understanding of literacy has also undergone tremendous changes. With the development of the new media era [15], the status of various forms of communication in social communication is getting higher and higher. People gradually acquire knowledge through various channels, and the expression of meaning tends to be more integrated and multiple [16]. Kress pointed out that there are two important shifts in literacy worthy of attention: one is the transition from writing to images, which has always been dominant; the other is the transition from book media to screen media [17].

The new literacy skills are diverse, so traditional literacy skills [18] centered on a single language are transforming into multiple literacy skills composed of multiple symbol systems. The traditional literacy ability with the advantage of text reading and writing cannot meet the needs of the multimedia age [19], so it is urgent to cultivate the English multi-literacy ability of non-English majors. In the process of cultivating multiple reading and writing abilities of non-English majors [20], college English teaching should be combined with all social symbolic means to construct a new multi-modal teaching mode of college English, which stimulates students'

interest in English learning with multiple senses and guides students to read effectively [21]. Multimodal discourse can improve students' creative thinking ability and critical reading and writing ability in the process of English multiple reading and writing, and achieve the teaching purpose of cultivating diversified talents [22]. For a long time, college English teaching in our country has focused on cultivating students' five abilities of listening [23], speaking, reading, writing, and translation. As far as the cultivation of reading and writing ability is concerned, the choice of modalities mostly relies on written language and printed page media. With the rapid development of computer [24].

2. THE PROPOSED METHODOLOGY

2.1 The Multiple Reading and Writing Information Fusion Algorithm

Multiliteracies was proposed by the New London Group in 1994, including traditional literacy and literacy in the modern information age, including visual, auditory, spatial and other modal literacy skills. Multiple reading and writing is a specific literacy ability and a new way of learning in the Internet age. The proposal of multiple literacy makes literacy learning no longer focus on the learning of language skills, but emphasizes its multimodal and multicultural characteristics. On the other hand, linguistic researchers should not just talk on paper. While conducting theoretical discussions, they need to conduct action research to apply the theory to real classroom teaching and examine its effectiveness.

The New London team pointed out that the development of multiple literacy skills involves language, vision, body, space, sound, and a design learning process that integrates these five categories of modal systems. Hu Zhuanglin believes that multi-literacy includes two aspects: cultural and technical literacy, and learners should learn and construct discourse meaning in the information environment. In general, the multi-literacy teaching framework reflects the new requirements of the global economy and cultural and linguistic diversity for language teaching.

In the teaching design of multiple literacy, they regard "design" as an important theoretical concept for realizing multiple literacy, and put forward the theoretical framework of existing design, design process and redesign, and also put forward the teaching of multiple literacy. Design steps, including real-world practice, explicit knowledge, critical framing, and translation practice. The publication of this paper has attracted widespread attention from scholars in the world, and it is recognized as the beginning of multi-literacy research and has a milestone significance. Among them, students' personal experience includes both known and new knowledge; conceptual theory refers to the prominent knowledge points in the textbook; analytical criticism refers to evaluating one's own or others' learning motivation, intentions, and viewpoints.

2.2 The Design of English Guidance Information System

The design resources of the English and American newspapers and periodicals elective courses are mainly language, supplemented by visual symbols and auditory resources. The most basic resource for teaching is textbooks, and the main medium is courseware PPT, which covers teaching objectives, teaching content and teaching steps. Based on the effectiveness and economy of modal selection, teachers organize the available resources as a carrier of

meaning and present them in the PPT, and arrange images and language in space. Its content is mainly a meta-language system of multimodal design resources. The replacement of "grammar" by the concept of "design" in multiple literacy theory implies two important changes in pedagogy: first, from the "laws" of language to the "laws" of other symbolic systems (such as visual grammar), design The resources of meaning extend from language to multimodal symbols such as images and gestures; secondly, from grammar-centered to semantic-centered, that is, literacy training is not a repetitive exercise of grammar rules, but a clear guide on how to use real language in real language. creatively construct meaning in context.

The design process refers to the need for communicators to select appropriate symbolic resources from the available designs in communication, that is, to reuse old resources and convert them into their own words to complete the communication task. Everyone can use available design to generate meaning, translating what they read and hear into meaning based on personal interests and personal experiences. During this part of the design process, students not only transform their existing knowledge, but also improve their relationships and rediscover their own identities in collaboration with teachers and others. The teaching application of Rain Classroom needs to cooperate with face-to-face classroom teaching, that is, to carry out online and offline mixed teaching, give full play to the teaching advantages of Rain Classroom, complement the advantages of traditional classroom teaching, stimulate students' enthusiasm for independent learning, and improve classroom teaching. Teaching efficiency, cultivate students' multiple reading and writing skills.

2.3 The English Guidance Based on Multiple Reading and Writing Information Fusion Algorithm

Teaching content includes an introduction to multiple literacy, concepts of visual literacy, representation of visual images, interaction, and compositional meaning. On the one hand, the abstract concepts and difficult-to-understand English expressions in the text are matched with different visual symbols to help students understand, and then the relevant images are analyzed according to the visual grammar centered on "representation, interaction, and compositional meaning", and the author communicates. theme, exploring its sociocultural context and the artistic effect of visual symbol combinations. Teachers should follow the principle of linking theory with practice when helping students understand the meaning of various symbolic resources, and provide students with corresponding practical opportunities, such as debates, group discussions, reports, etc. Communicate more deeply to interpret various modal resources, convert these modal symbols into meanings, and propose their own interpretation methods.

3. CONCLUSIONS

To sum up, the teaching design for the cultivation of college English multi-literacy skills based on Rain Classroom should be based on the reality of college English teaching, give full play to the teaching role of Rain Classroom, improve the efficiency of language learning, and increase students' sense of new knowledge experience. Improve the efficiency and quality of college English teaching, and improve students' multiple reading and writing skills. In addition, in the process of college English teaching, it is necessary to use the rain classroom flexibly, prepare for the three stages of preview,

teaching and review, optimize the teaching design, and efficiently carry out online and offline mixed teaching.

4. REFERENCES

- [1] Wang Liusha. Design of English Teaching Post Competency Assessment System Based on K-Means Clustering Algorithm [J]. *Microcomputer Application*, 2019, 35(7):3.
- [2] Wei Yanxin. Design and Research of Intelligent Sports Evaluation System Based on Information Fusion Technology [D]. Beijing Institute of Fashion Technology, 2019.
- [3] Su Genying. Teaching design of business English audio-visual course under the guidance of multiple reading and writing theory [J]. *Business English Teaching and Research*, 2020(00):42-48.
- [4] Wu Ying, Chen Yuling, Wu Fangqin, et al. Healthy lifestyle guidance system and method based on multi-information fusion: CN110504034A[P]. 2019.
- [5] Huang Junjuan. Curriculum Design of British and American Newspaper Reading Based on Multiple Literacy Theory [J]. *Journal of Kaifeng Institute of Education*, 2019, 39(9):2.
- [6] Lu Yaowen, Yin Zhanqing, Shao Zonghan. Design of dynamic traffic information prediction system based on multi-source information fusion [J]. *Automation and Instrumentation*, 2019.
- [7] Zhao Yongxia. Research on English Grammar Design Learning Mode Based on Rain Classroom and Multiple Literacy Theory [J]. *New Generation: Theory Edition*, 2019(10):2.
- [8] Xing Shuning. Research on multi-source information fusion recommendation algorithm based on deep learning [D]. Shandong Normal University, 2019.
- [9] Tian Ye. Design of Online English Speech Recognition System Based on NOSE Algorithm [J]. *Modern Scientific Instruments*, 2020(3):5.
- [10] Wu Lingjuan, Zhang Delu. Research on the Design Learning Mode of General English Based on Rain Classroom*—Also on the Cultivation of Multiple Literacy Ability [J]. *Modern Educational Technology*, 2019.
- [11] Yang Yongxu, Gao Zifan, Zhu Hui, et al. A Multi-source Conflict Evidence Information Fusion Algorithm Based on the Combination of Decision Distance Measurement and DS Evidence Theory [J]. *Journal of Lanzhou University of Arts and Sciences: Natural Science Edition*, 2018, 32(6):6.
- [12] An Weiyu. Research on the cultivation of college students' English multi-literacy skills—Based on the perspective of blended teaching mode [J]. *Journal of Suzhou Institute of Education*, 2018, 21(5):4.
- [13] Xie Xiaotong. Maternal and infant information transmission method and system based on information fusion: CN110808071A[P]. 2020.
- [14] Wu Kuihua, Wu Jian, Lu Zhaojun, et al. An accurate prediction method of saturated load spatial distribution based on deep learning and multi-source information fusion: CN108960488A[P]. 2018.
- [15] Gong Peizhu, Liu Jin, Luan Cuiju. Text recognition method based on multimodal information fusion processing: CN111985525A[P]. 2020.
- [16] Wu Ying. College English teaching design based on the cultivation of multiple literacy skills [J]. *Journal of Guizhou Normal University*, 2019, 35(2):7.
- [17] Zhang Li, Xia Xia. Research on the teaching mode of media English reading course based on the cultivation of multiple literacy skills [J]. *Journal of Changshu Institute of Technology*, 2021, 35(1):6.
- [18] Wang Si. Design of athlete training information fusion analysis system based on multi-sensor [J]. *Computing Technology and Automation*, 2020, 39(3):7.
- [19] Ren Fei, Wang Shaowei. Design of athlete training information fusion analysis system based on multi-sensor [J]. *Automation and Instrumentation*, 2018(9):3.
- [20] Liu Zhiqiang, Zhang Guanglin, Zheng Yuewen, et al. Multi-sensor fusion method based on detection unscented information fusion algorithm [J]. *Automotive Engineering*, 2020, 42(7):6.
- [21] Liu Youfang. Research on Information Fusion Algorithm Based on Open Recognition Framework Evidence Theory [D]. Hunan University, 2018.
- [22] Wen Yuhua. Design of automatic correction system for English pronunciation errors based on DTW algorithm [J]. *Modern Electronic Technology*, 2020, 43(10):3.
- [23] Wu Ting, Zheng Jinjing. Classroom teaching design of multiple reading and writing based on English news materials [J]. *Journal of Shengli College of China University of Petroleum*, 2020, 34(2):5.
- [24] Bai Jin Xin. Research on Recommendation Algorithm Based on Fusion of Various Auxiliary Information [D]. Inner Mongolia University, 2019.

Development of Smart Sports in Colleges Based on Intelligent IoT Equipment with Digital Reform System

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Abstract:The management of digital teaching system and the control of digital teaching quality are discussed in detail in the construction of software and hardware in the practice of digital reform of medical imaging and the key problems to be solved Based on the material conditions and human conditions of colleges and universities, a variety of practice paths will promote college sports to adapt to the changes of the times, and then promote the scientific fitness of the public. some advices. We work hard to address these issues and mobilize the forces of all parties. Take various measures. Actively strive to promote the scientific and humanized development of college physical education curriculum construction from the aspects of value orientation, functional system, status improvement, structural system, evaluation system, teaching qualifications, target system and teaching mode.

Keywords: Smart Sports, Intelligent IoT Equipment, Digital Reform System

1. INTRODUCTION

Four-dimensional image information is used to understand the functional changes of the inspected organs, which are far beyond the content that can be expressed by a single film. In order to make the teaching quality of medical imaging most suitable for the clinical needs of modern medical imaging, with the development of economy and society [1], the pace of educational reform is gradually accelerated, and the educational concept centered on quality education is constantly updated. Teachers need to change their educational thinking in real time with the times, and cooperate with the national talent strategy with a new talent awareness and practical exploration spirit [2].

Actively build a modern police system with unified leadership, clear functions and powers, intensive and efficient, smart and sensitive, professional and practical, and co-construction and co-governance, and explored a road of public security reform that highlights the characteristics of the times, reflects the characteristics of actual combat [3], and has Shaoxing characteristics. Important functions such as resource allocation, income distribution, economic regulation, and supervision and management are an important force in serving and guaranteeing digital reform, and are also an important area of digital reform [4].

From a political point of view, digital reform is the practice of "two maintenances" by the financial sector [5]. At present, social governance is increasingly showing new features of high standards, high efficiency, high precision, and high quality. Prison work is at the end of the criminal justice process and is the "last mile" of justice. Use smart wearable devices to monitor pregnant women's "3+1" items, that is, weight, blood pressure, urine routine and later fetal heart rate monitoring [6].

Through corresponding operation training, self-monitoring at home of pregnant women can be realized, and the obtained monitoring data can be obtained by means of wireless network. With the development of network technology and modern communication technology, home networking has become the trend of family modernization [7]. The home network can be regarded as a distributed network, and it is the future development trend to realize the remote control of

ordinary home appliance terminals through the smart home gateway, so the smart home gateway is the core of the entire home network [8].

The "Internet +" action plan first appeared in the government work report in 2015. The purpose is to give full play to the role of the Internet in the process of allocating factors of production, and to practically apply the results of the Internet to economic development [9]. The description of smart sports is basically to use the latest technology to actively attract participants. In order to improve the enthusiasm of participants, provide participants with a more convenient participation experience, provide intelligent operation methods, and ensure the existence of sports activities. sequence so that the participants of the physical activity can fully participate in the movement [10].

The innovative concept of "Internet +" provides more space for the development of industries such as finance, education, medical care, and logistics, but the current construction of college physical education courses in my country is very ignorant [11]. It is in a marginalized position in the curriculum construction system of colleges and universities [12]. Therefore, it is of great practical significance and value to study the construction of university physical education curriculum. As an advanced form of informatization construction of colleges and universities in my country, smart campus is a further improvement on the basis of digital campus construction [13].

Under the protection of various emerging information technologies such as cloud computing, big data, and the Internet of Things, the smart campus launched the prototype of an intelligent management system for home equipment called "Future Home" in 1998 [14]. This intelligent management system includes Message message, intelligent wiring, telephone access, broadband access, cable TV, CCTV, security alarm, video intercom. From the above table, we can see that by 2018, a large number of intelligent hardware will enter in our daily life, various giants in the IT industry have proposed their own intelligent hardware platforms [15].

So what kind of system platform should ordinary developers choose to manage and how to bring better user experience to

users are the issues to be studied in this paper [16]. In 2009, our school built a digital teaching laboratory for medical imaging, and effectively carried out the reform practice of "Medical Imaging" teaching. Mathematics teachers must change their concepts, reform traditional teaching methods, actively use multimedia technology, scientifically build a teaching situation with the improvement of mathematical practical ability as the main position, and focus on improving the practical application ability of mathematical knowledge, and continuously improve the overall quality of students, Promote the all-round development of students [17].

2. THE PROPOSED METHODOLOGY

2.1 The Digital Reform System of Sports Education

Teaching network management and maintenance. Digital teaching is based on the network, so it is necessary to ensure the security of the teaching network to make digital teaching go smoothly. The second principle is to build the teaching network into a relatively closed network system according to the requirements of use, and physically close the mobile storage interface. In the teaching, students are trained and trained to strengthen the will and quality, and guide students to establish the exploration that will never stop until the goal is achieved. Spirit, is conducive to the improvement of mathematical ability, is conducive to the consolidation of mathematical knowledge, and ultimately achieve the ideal of comprehensively improving students' comprehensive quality in mathematics teaching.

Digital reform is not to give the traditional system and mechanism a digital form, but to build a new system and mechanism on a digital base, systematically reshape traditional concepts, systems, systems and means, and solve fundamental problems. It plays a dynamic role. Digital reform is not to give the traditional system and mechanism a digital form, but to build a new system and mechanism on a digital base, systematically reshape traditional concepts, systems, systems and means, and solve fundamental problems. It plays a dynamic role. Promoting the digital reform of prison work plays a very important role in enhancing the police's awareness of evidence and rules in law enforcement management, and will greatly enhance the police's awareness and thinking of the rule of law. When the signal strength reaches level 7 or above, fetal heart rate monitoring can be started; however, compared with the other three products, the M product will be disturbed by certain external conditions when communicating with the mobile phone to transmit fetal heart rate data, resulting in signal loss and data not being displayed. Quiet away from the noisy operating environment.

Management of the teaching process. In the digital teaching string, the teaching and learning activities of the teacher terminal and the student terminal are completed through the human-computer interaction interface, and the application functions are distinguished by the different permissions, such as the chalk function, the pointer function and the synchronous demonstration function. Through the study of mathematics textbook knowledge and the effective application in production and life practice, each student is to be cultivated in good mathematical practice behavior, and these practical experience will be transformed into mathematical ability.

2.2 The Intelligent IoT Device Assistance

According to the Internet security vulnerability platform Wuyun.com, there is no relevant network security technical standard in the wearable field. From the manufacturer's point

of view, it is difficult to unify technical standards even for products from the same manufacturer [12]. Taking wearable devices covering the medical and health industry as an example, in the front-end system, a number of home authentication domains are established with smart set-top boxes as units. Delete a peripheral and view the status information of the peripheral. On the premise of advanced nature, the practicability of the system should also be guaranteed.

This system is based on ordinary home users, so the design of the interface should follow a simple and generous style, so that users can quickly get started and master the use of the system. The public platform is essentially a web project that handles HTTP responses from WeChat servers. Therefore, to use the development mode of the public platform, developers must have their own public network server resources and addresses. The request verification process is as follows: the traditional prison law enforcement management mainly relies on subjective experience and limited information to make judgments and decisions, and implements a hierarchical management method, which has problems such as complicated procedures, insufficient openness and standardization, and low efficiency.

2.3 The Intelligent IoT Equipment Assists the Development of Smart Sports in Colleges and Universities

At present, Dongfang Cable has made active exploration and research and verification on the intelligent terminal based on TvOS 2.0, and it will be reflected in the new version of TVOs system as a new function in the next stage. On the premise of meeting the needs of the present and future society, insist on highlighting the value of the college physical education course itself, and construct its own value system based on the rational analysis and logical prediction of the present and future society. When the authentication is passed, the authentication is passed. Otherwise, all kinds of peripheral devices connected to the smart terminal will be identified as illegal devices.

Through this mechanism, unified authentication management of peripherals can be ensured, illegal devices without user authentication can be prevented from accessing smart terminals, and various security risks brought by illegal device access to smart terminals can be reduced. The administrator can upload the physical fitness test data of the students in the whole school, and the system will automatically analyze the uploaded data, and realize the students' personalized physical fitness test report, so that the students can understand their physical weaknesses, and carry out systematic training according to the suggestions given by the system. JDBC (Java Data Base Connectivity, java database connection) is a JAVA API for executing SQL statements and belongs to the JAVA EE system. JDBC can provide a unified access interface to a variety of relational databases (eg, MYSQL, ORACLE, etc.).

As the center of the whole solution, nRF51822 keeps the temperature inside the incubator stable by controlling the heater and cooling fan, and starts the motor regularly to rotate at a fixed angle to ensure that the eggs can be heated evenly. The digital tube displays the temperature and humidity in the incubator in real time. Adhere to a variety of teaching strategies, the same course content can adopt a variety of teaching strategies to try and innovate, and for the learning objects of different majors, the teaching method should be combined with the major teaching methods should be attractive.

3. CONCLUSIONS

Vigorously launching a digital teaching system is conducive to making full use of instant network resources, developing distance teaching, and providing a software and hardware foundation for better playing the role of the center of teaching hospitals. In terms of software, the on-chip program development of wireless sensor nodes and gateway program development are introduced, client program development and background program development, and finally gives the security design principles of the system. Smart sports will enable us to obtain a more personalized, scientific and intelligent sports experience, and truly realize the deep integration of national fitness and national health. The promotion, development, improvement and upgrading of smart sports in colleges and universities.

4. REFERENCES

- [1] Hu Yuqiang. The use of sports APPs and wearable devices for college students in Shandong and research on smart sports classrooms. Shandong University, 2019.
- [2] Song Xufeng. Research on the Teaching Aid Platform Design of College Sports Professional Technical Courses Based on Mobile Intelligent Terminals [C]// The 11th National Sports Science Conference. 0.
- [3] Zhang Yu. Research on one-to-one digital learning mode in colleges and universities based on BYOD [J]. Teacher, 2021, 000(026):84-85.
- [4] Fan Lili. "Smart Sports" Concept and Future Sports Development [C]// The 11th National Sports Science Conference Abstracts Collection. 2019.
- [5] Zhang Hui, Hu Zhiqiang. Research on the reform of the experimental teaching system of physical education in colleges and universities [J]. Hubei Sports Science and Technology, 2018, 37(8):3.
- [6] Chen Mingxuan, Xu Yang. Research on the construction and development of smart campus based on the Internet of Things [J]. Distance Education Journal, 2012(4):5.
- [7] Zhang Shengping. Research and practice of digital campus architecture in colleges and universities [D]. Hunan University, 2009.
- [8] Li Yanyan. New Paradigm of Smart Sports Service in Colleges and Universities: Ecological Construction and

Operational Guarantee [C]// Collection of Abstracts of Papers of the 11th National Sports Science Conference. 2019.

- [9] Sun Yongsheng. Research on the reform of physical education classroom teaching in colleges and universities based on mobile network technology [J]. Journal of Ezhou University, 2022, 29(4):4.
- [10] Yue Hui. Research on the Real Motivation, Influencing Factors and Supporting System of my country's Promotion of Smart Sports Tourism Construction [C]// The 11th National Sports Science Conference. 0.
- [11] Li Dezhi. Research on the development framework and path of urban "smart sports" [D]. Ningbo University.
- [12] Chang Jie. Research on the construction of logistics training centers in colleges and universities based on Internet of Things technology [D]. Shandong University.
- [13] Lv Xinshang. Smart Sports Management System Based on IoT Devices [J]. Legendary Story: Early Edition, 2020, 000(011):P.158-158.
- [14] Dou Li, Chen Huawei, Qian Cheng. Research on the Value and Model of "Smart Sports Classroom" in Colleges and Universities [J]. Sports Culture Guide, 2018(11):6.
- [15] Zhang Xiao, Lu Shanshan. Research on Interdisciplinary Teaching Reform Based on Artificial Intelligence and Internet of Things [J]. 2020.
- [16] Qiu Xudong, Liu Wenhao. The new prospect of my country's sports informatization development - "Internet +" smart sports [C]// 2015 Tenth National Sports Science Conference. 2015.
- [17] Zeng Yulan, Shen Keyin. The trend analysis and innovation path of sports tourism in the era of digital economy.
- [18] Yin Yaru. "Smart" sports lifestyle research.
- [19] Wang Xing, Shen Yunyun, Wang Dan. Research Framework of Foreign Language Teaching Reform in Colleges and Universities Based on Digital Speech Room Environment [J]. Software Guide. Educational Technology, 2015(12):3.

A Collection and Retrieval of Intelligent Teaching Data for Higher Vocational Finance and Economics Major Based on External Data Interface Optimization

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Abstract: Firstly, it analyzes the requirements of the high-speed data transmission system, and then gives the design scheme of the bridge chip based on PCI EXPRESS, including the logic design block diagram, interface description and bus timing. Higher vocational finance and economics majors mainly train high-skilled professionals in front-line management and service, and their professional characteristics of management and service put forward unique requirements for students' operational skills, professional ability and comprehensive quality. Aiming at the current teaching status of this course and some problems in the teaching process, under the guidance of the virtual learning situation teaching method, the corresponding solutions are put forward through the task-based teaching of the course knowledge points. Different from full-text crawling, distributed directional crawler requires fast crawling of deep and precise structured data from the Internet.

Keywords: Intelligent Teaching Data, Higher Vocational Finance, Economics Major, External Data Interface Optimization

1. INTRODUCTION

With the increasingly complete computer basic theory and the continuous expansion of software functions, the application of database technology has been very extensive, and it can be said that it has penetrated into all aspects of our life and all walks of life in society [1]. Establishing a relatively independent practical teaching system is not only a feature of higher vocational education, but also a requirement of higher vocational education. The higher vocational majors of finance and economics are limited by various subjective and objective conditions, and the construction of the practical teaching system is relatively lagging behind [2].

However, it is also noted that the acquisition, cleaning and processing of Internet data are at the bottom of the entire processing process and play a pivotal role [3]. The quality of the data source can often determine the value of the data. Especially for Internet data, the acquisition of data needs to face a variety of sites, and hierarchical teaching is "student-oriented" to meet the development needs of students at different levels [4].

For other students, it can be recommended to companies in the name of UF New Road. The society's demand for financial and financial talents is diverse, but the same school financial and economic majors do not. The integrated teaching mode of teaching is to integrate theoretical teaching and practical teaching, so that theoretical knowledge and practical operation ability are better connected [5]. Teaching while doing, students learning while doing, so that students in "learning by doing, learning by doing", teaching and doing in one, so that theory and practice teaching at the same time [6].

MATLAB is a fairly complete system. It provides users with a fully functional integrated environment for programming and data processing, using the built-in functions and a large number of toolboxes it provides, even without external software. It can also do almost any job [7]. TMS320F2812 is a new generation of DSP processor specially designed by Texas Instruments (TI) for industrial applications. Its

performance is much better than the current widely used TMS320LF240x series. The chip is a 32-bit fixed-point DSP, the highest frequency is 150MHz, the minimum instruction cycle is 6.67ns, the external low-frequency clock is used, and the frequency is multiplied by the on-chip phase-locked loop. Statistics is an activity to investigate and study the equivalent of objective facts [8].

The result of statistical work is statistical data, also known as statistical information. We encounter a large amount of data every day in our lives [9]. The bus is constantly evolving, and its history can be roughly divided into three generations. The first-generation bus includes and bus. The bus is based on the motherboard hardware resources such as processors and other components, resulting in different bus signal functions and timing. Therefore, the first-generation bus is not very versatile. Some require manual configuration [10]. At the same time, because the slot is inside the computer, the installation is troublesome, and it cannot be electromagnetically shielded in places with strong electromagnetic interference.

RS232 and RS485 buses belong to the category of serial buses, which require less signal lines and low cost, but the transmission speed is relatively slow, 20Kb/s and 10Mb/s, respectively [11]. The function is very powerful and the operation is simple, which can help users to easily establish a database application system. At present, most of the finance and economics majors for higher vocational colleges have set up the course "Access Database Technology" [12].

Compared with the majors of engineering and agriculture, which mainly aim at cultivating front-line management-oriented and service-oriented talents in the tertiary industry, the majors of finance and economics in higher vocational colleges are mainly aimed at cultivating senior technical application talents in the primary and secondary industries [13]. Its professional liberal arts tendencies are very obvious, influenced by teaching concepts [14]. The most primitive Google crawler consists of five functional components. Initially for URLserver to read URLs from a file and submit

them to multiple crawler processes; each crawler process is located on close to 300 different machines, and each process crawls web pages concurrently from the web using single-threaded and asynchronous IO [15].

Then the crawler will transfer the captured web page to the StoreServer process. For students majoring in finance and economics in higher vocational colleges, whether to implement hierarchical teaching, and answering the graduation certificate, the students can get this Before the question [16], let's look at a few sets of numbers: 301 students majoring in finance and accounting in the 14th grade of the college can obtain the undergraduate graduation certificate of the self-study examination attached to the provincial self-examination committee and the main examination institution [17].

2. THE PROPOSED METHODOLOGY

2.1 The External Data Interface Optimization

The calculation engine of MATLAB provides some interface functions. Using these interface functions, users can call MATLAB in the way of calculation engine in their own programs. Since the physical layer adopts bit coding, the effective bandwidth of the link is, so the effective bandwidth in both directions can be reached. So the total bandwidth of the entire link is equal to multiplying the number of channels. Then the number of channels is the bandwidth, and the peak bandwidth of the link can be reached locally. As the digital processor of the data acquisition system, FPGA mainly completes the logic control and data transmission of peripheral devices. The corresponding programs are divided into five parts: initialization module, AD control module, preprocessing module, SRAM read-write module and data transmission module. Another way to call MATLAB from programs in other languages is the MATLAB compiler.

The server side is configured as the core. The core implements the functions of the physical layer, data link layer and transaction layer of the bus architecture. Static test experimental scheme: The measurement range of the full scale of each channel is evenly divided into several points, and each point corresponds to a voltage signal output by the constant voltage source. By comparing the display voltage with the input voltage, the characteristic indicators such as linearity, repeatability and sensitivity of the system are obtained through analysis. Because MATLAB has powerful data processing and visualization functions, as well as toolboxes for various specific application fields, users can use MATLAB to quickly develop applications that can be directly delivered to users. Due to the short production cycle and low cost of the two-layer circuit board, the sensor channel type can be added or changed according to the application requirements, such as adding an ICP sensor channel that is not available in the ADS1274 version. But it is worth noting the anti-interference processing connected with the motherboard.

2.2 The Intelligent Teaching Data of Higher Vocational Finance and Economics Major

Because students majoring in finance and economics are relatively weak in computer, without any programming foundation and project experience, it is difficult to accept database knowledge. Many students are not very interested in learning this course, and the teaching content is difficult for them. The teaching plan, course offering, and teaching content

of finance and economics majors continue to follow the undergraduate model to a large extent. It fails to reflect the characteristics and requirements of higher vocational education, the proportion of theoretical teaching is too large, and the content of experiments, practical training and class hours are too small.

First of all, it is necessary to focus on the development of professional courses integrating teaching and doing, through the process of curriculum remodeling and integration, to promote teachers to update teaching concepts, innovate teaching methods, improve teaching level and practical operation ability, and promote teachers' comprehensive improvement of theoretical and practical skills. Establish the correct teaching concept. The basic idea of statistics is to extract a part of individuals from the population (a sample of the population), and to estimate and speculate the properties of the population according to the properties of the samples. The effective development of practical teaching activities is inseparable from the corresponding teaching materials and materials. In addition to the rich and complete accounting courses, the experimental (practice) teaching materials of finance and economics courses are difficult to find publicly issued experiments (practice) for other courses. Textbook. Data cleaning mainly checks the consistency of data, whether the data is legal, and handles invalid and missing values. In this system, processing nodes such as news SimHash deduplication, removal of all HTML tags, and deletion of missing value records are provided by default.

2.3 The Collection and Retrieval of Intelligent Teaching Data

Carrying out teaching reform is the only way to build a practical teaching system with the characteristics of finance and economics. Finance and economics majors need to be guided by the theory of higher vocational education, and radically reform the curriculum system and teaching content. The subject headings are consistent with the conceptual system under the professional field and can represent all aspects of the professional field. Compared to other text affinity comparison algorithms, this algorithm can compare the similarity between phrases, which is very beneficial for news pages (without knowing the content length). In terms of teaching content, according to the training objectives of each professional, outstanding students of each professional teaching body will make them realize their potential.

3. CONCLUSIONS

For education skills from the perspective of the functional translation theory, we must fully understand the author's writing intentions, combine the era background of the original text, and grasp the central outline thought embodied in the full text. Teachers themselves should also strengthen further study and continuing education to improve their professional level. In-class learning is an extension and flexible application of micro-video learning. Students with different foundations independently review and consolidate the relevant word blocks around the topic according to their needs, so as to clear the obstacles of students' topic writing and effectively improve the students' writing level.

4. REFERENCES

[1]Huang Weijun, Rao Liheng, Mao Xiongwei, et al. Construction and appl Zhang Jing, Wei Chenghui, Wei Jie, et al. Effects and functional analysis of dibutyl phthalate exposure on the expression of miR-153 and AKT genes in P. flea [J]. *Frontiers in Marine Science*, 2022, 9(2) :10.

- [2] Shenglei. Research on the teaching mode of flipped classroom in junior high school mathematics under the background of big data technology [D]. Changchun Normal University, 2020.
- [3] Bai Yu. Problems and Countermeasures of Enterprise Financial Analysis [J]. Economic and Technical Cooperation Information, 2022(21):3.
- [4] Hu Yue, Yang Xiaoping, Jiang Jianshuai, et al. Application of gallbladder dissection exposing the subserosa lining in acute and subacute cholecystitis LC [J]. Journal of Hepatobiliary and Pancreatic Surgery, 2022, 34(6):5 .
- [5] He Hui, Chen Xiaoke, Yang Yuqing. Effects of low temperature environment on human motor neuromuscular control ability: A study on 15 male college students [J]. Journal of Beijing Sport University, 2020, 43(11):8.
- [6] Zhang Tiantian. Analysis of English flipped classroom in higher vocational colleges under the background of big data [J]. Study, 2019(40):2.
- [7] Feng Jinxia. Analysis of English flipped classroom in higher vocational colleges with big data background [J]. Hubei Agricultural Mechanization, 2019(18):1.
- [8] Deng Shuanglin, Liu Zheming. Internet people under the layoff storm and the stock price plummet [J]. Chinese Entrepreneurs, 2022(4):4.
- [9] Zhao Fei, Wang Cheng, Cui Weitao, et al. Analysis of the impact of a strong sandstorm on air quality in Xiangyang [J]. Green Science and Technology, 2022, 24(10):7.
- [10] Zhang Jian, Li Haiguang, Hou Limin, et al. Formation and performance testing of rare earth tailings-based honeycomb denitration catalyst [J]. Chinese Journal of Rare Earth, 2022, 40(3):9.
- [11] He Lixin, Chen Haoze. Expansion and unification of airworthiness standards of maritime law under major public health events [J]. Journal of Hainan University: Humanities and Social Sciences, 2022, 40(3):11.
- [12] Zhang Yunwei, Ding Daipo, Meng Xiancai, et al. Deformation mode and stability analysis of Guanyinlong landslide in Ezhou urban area [J]. Resources Environment and Engineering, 2022, 36(3):5.
- [13] Wang Zhisong, Xiang Ming, Jiang Shuiling, et al. Analysis of extreme wind pressure on large-span flat roof under downburst [J]. Vibration and Shock, 2022, 41(11):7.
- [14] Zhang Rui. Research on the process evaluation of high school students under the thinking of big data [J]. Xue Weekly, 2022(22):3.
- [15] Wen Jia. E-commerce marketing analysis and optimization suggestions under the background of big data [J]. Science and Technology Vision, 2022(13):3.
- [16] Chen Bingda, Chen Shiguo, Li Li. Design of online learning developmental evaluation system under the background of big data [J]. Science Education Journal, 2022(1):3.
- [17] Dawa. Strategy analysis of high school English writing teaching under the background of big data [J]. Century Star—High School Edition, 2021(14):2.
- [18] Liu Ning. An empirical study on human and machine scoring of business English writing in the context of big data [J]. Science Education Journal, 2021(17):4.
- [19] Zhao Lanfang. Construction and Analysis of Smarter Classroom for Senior High School English under the Background of Big Data [J]. English for Middle School Students, 2021(14):1.

Optimization Strategy of Information Transmission Service in University Library Based on Information Fusion Technology

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Abstract: In recent years, the entry into the digital environment has made the requirements for information transmission services in university libraries more stringent. The widespread application of digital technology has changed the past collection methods of university libraries, leading to significant changes in the way information is transmitted and users read. At the same time, the essence of universities is knowledge production, and the way users read has fundamentally changed the traditional way of information dissemination. Colleges and universities in China are knowledge producing areas, and library information delivery services have various resource advantages. This article explores the optimization of information delivery services strategically.

Keywords: Information Transmission Service ; Optimization Strategy; Information Fusion Technology

1. INTRODUCTION

Colleges and universities are currently relatively concentrated and occupy an important position in China's knowledge output "frontier", and university libraries are the main platform for knowledge exchange, dissemination, and collection. Due to the rapid development of digital technology, the original reading habits of humans have undergone tremendous changes, basically achieving the goal of reading without leaving the house, breaking the shackles and limitations of original time and space, which to some extent indicates that paper books have gradually faded out of public view, while the reading mode centered on the Internet and mobile Internet technology has already become the mainstream, especially the emergence of a large number of mobile terminals and electronic devices, It has made its user group radiate from the scope of universities to society, and has established electronic libraries.

Provide physical and e-book reading services for users. Due to the low cost and massive storage capacity of electronic libraries, their storage capacity and update speed are unparalleled in the past, but their utilization efficiency is unsatisfactory. This directly affects the dissemination and exchange of knowledge. As well as universities' own education, scientific research, and transformation of knowledge achievements, universities have not achieved their due advantages in terms of knowledge economy and social benefits. Create a healthy space for online communication.

Due to the characteristics of loose network information dissemination and uneven type and quality, the management of information network dissemination is also relatively loose. Therefore, the healthy operation of the network needs to invest more resources to ensure that, on the one hand, it is necessary to strengthen the moral level of flexible management systems to control, such as the code of conduct of network information operators, ethical codes, and user network etiquette. On the other hand, policies and laws are also important control measures to ensure network health. As a library that provides resource sharing for the public, promoting the healthy development and orderly progress of

network communication is its responsibility, and it is also a supervision method that must be nurtured by the development of the network environment to a certain extent. In the modern big data environment, the speed of information update continues to accelerate, and users' ideas and needs continue to increase. This requires changes in the overall mobile information service, including form and content.

Traditional information services can no longer meet more requirements of modern users, with relatively old-fashioned forms and content, mainly focusing on browsing and borrowing. They fail to fully utilize the advantages of modern information technology and fail to convey real-time messages to users in a timely manner, affecting users' judgments of things and their satisfaction with their own access to information. Since entering the digital era, the rapid development of information technology has meant that the gap in users' demand for intelligence information has gradually shifted from value orientation to diversification. In other words, users no longer focus on learning or mastering more theoretical knowledge, skills, and skills while reading, but instead pay more attention to meeting the diverse needs of social education and scientific research. At the same time, the changes in user groups, namely, the gradual expansion from the original school students and teachers to scientific researchers and social user groups, have determined that their information transmission requirements are increasingly diverse.

2. THE PROPOSED METHODOLOGY

2.1 Analysis of Obstacles to Information Transmission

Information transmission must adopt scientific and reasonable technical means, constantly enrich existing channels, and achieve the goal of transmitting information to users in the first time. Libraries should mainly serve students, teachers, and research personnel of the university. Some colleges and universities with library collections have not kept up with the future mainstream development trend of "going out of school, going nationwide, and going global". The types, capacity, and updates of books in the library are far from keeping up with

the reading needs of users in the digital era. "This has resulted in outdated and rigid information sources. In addition, in terms of reading methods and services, some colleges and universities still rely on traditional reading rooms and outdoor borrowing. Physical book reading is still regarded as the main body by some colleges and universities, and the reading advantages of electronic books. Libraries should focus on their own students, teachers, and research personnel as the main service groups."

Some colleges and universities with library collections have not kept up with the future mainstream development trend of "going out of school, going nationwide, and going global". The types, capacity, and updates of books in the library are far from keeping up with the reading needs of users in the digital era. This has resulted in the obsolescence and rigidity of information sources. In addition, in terms of reading methods and services, some colleges and universities still stay in the traditional reading room and outdoor borrowing. Physical book reading is still regarded as the main body by some colleges and universities, and the reading advantage of e-books. In the modern digital era, the workload of university libraries is constantly increasing, and the demand is increasing. A complete and efficient management system is the prerequisite and guarantee for the stable operation of university libraries. At this point, it is possible to introduce intelligent information management systems for large-scale management of library information. Intelligent information management system refers to the overall planning of functions related to the rational and effective storage of library information and mobile information services, improving work efficiency, and saving operating costs.

In an intelligent information management system, mobile information services can perform statistics and prediction on book borrowing information, and timely display and remind users of retrieved information. This management system connects with the user's smartphone client, providing timely feedback and reminders on real-time messages from home and abroad, meeting the greatest needs of customers, and improving customer satisfaction with mobile information services in university libraries. Electronic libraries have application advantages that physical libraries do not have, such as massive library storage capacity and breaking time and space constraints to meet the real-time or simultaneous reading needs of multiple users, truly improving the interoperability of communication between users. The collection of university libraries is rich and diverse, and their advantages in information resource construction are relatively distinct, laying a solid foundation for expanding the scope of information services and expanding the service user group. At the same time, during the construction of channel services, major universities have the prerequisite to disseminate and interconnect massive information and data, namely, mobile networks, global Internet, and local area networks. Mobile media, typically represented by mobile phones, can meet the dissemination needs of massive information. In short, during the information transmission service period of university libraries, it is inevitable to highlight their advantageous resources.

2.2 Optimization Strategy of Information Transmission Service in University Library

In addition, most university libraries are still under closed construction, and there is a lack of communication between school libraries and the outside world, which has not formed the vertical and horizontal integration that should be expected in the digital era. This self-enclosed status quo inevitably

leads to a relatively narrow range of information transmission services. Educators of information skills to cultivate users' network information literacy.

The rapid spread of network applications has placed the information resources of university libraries in a dramatically changing environment. The traditional literature information retrieval methods have become outdated and are not suitable for the retrieval of new information resources. Therefore, the training of user information skills is imminent. The specific information skills education content includes:

1. Training on retrieval methods. The theory and technology of information retrieval, the approaches and methods of document retrieval, the use of various reference books and citations, and various methods of using well-known retrieval systems are all training content for retrieval methods.
2. Guide education. Reading guidance mainly refers to providing effective guidance to users on the reading strategies, objectives, methods, and content used for online information. The key issue for university libraries is that traditional university library content cannot attract users' interest.

Therefore, integrating the essence of university library culture into the mobile data services of university libraries, promoting, and inheriting library culture, and displaying and pushing personalized information of library information services may achieve the goal of increasing user attention. It is an appropriate information service method to display and push personalized information through an intelligent information consulting system. To improve the service quality of the information service platform, it is crucial to apply modern information technology reasonably and scientifically. On the one hand, it is necessary to actively explore effective ways to personalize information resources based on the development requirements of the national innovation system and network information technology, to effectively meet the personalized reading needs of different readers.

At the same time, for university libraries, it is necessary to focus on users, organize rich collection resources, conduct in-depth analysis of users' knowledge needs and behavior habits, and use modern information technology to construct SEO search engines and databases. Due to the impact of the development needs of universities, most universities in China have their own disciplinary advantages, and comprehensive universities only account for a portion of the national universities. As a result, in terms of knowledge storage in university libraries, most universities only meet their own needs, often taking knowledge books that are inclined to their own discipline construction as the main collection body. This also fully reflects the advantages that each university library has. Colleges and universities should break away from the closed concept of construction and increase communication with other colleges and social groups.

3. CONCLUSION

Through this article's exploration, it is recognized that the information transmission services of university libraries in the digital environment rely on library collection methods, user reading methods, and user groups, presenting a changing state, resulting in personalized, diversified, and diversified service needs. Therefore, relevant universities adhere to the working principle of seeking truth from facts, based on the needs of library information transmission services, keep abreast of the trend of development of the times, and continuously optimize the strategies for library information

transmission services, such as: reasonably integrating advantageous resources, opening up the path and channels of information transmission the diversified, diversified, and personalized service demands brought about by it require maintaining the ability of intelligence information transmission to keep pace with the times in service. This article only discusses how to optimize the strategy of information delivery services in university libraries in China, and further research is needed on more in-depth issues.

4. ACKNOWLEDGEMENT

China West Normal University educational reform project "Research on the construction of intelligent subject service platform in university library" (403708) .

5. REFERENCES

- [1] Luo Xiaoling, Zhou Yali Research on the Optimization Strategy of Information Delivery Service in University Libraries in the Digital Environment [J] Agricultural Network Information, 2015 (4): 3
- [2] Yu Xiaojing, Xia Yanyan Role orientation and innovative services of university libraries in the new information technology environment of "Internet plus" [J] Intelligence Exploration, 2018 (6): 4
- [3] Lv Ting On the Optimization Strategy of Information Dissemination Service in University Libraries under the Network Environment [J] Office Business, 2012 (A06): 1
- [4] Anbei Optimization Strategy for University Library Information Service Based on Data Mining Technology [J] Information Recording Materials, 2019 (4): 2.
- [5] Wang Yan Analysis of Mobile Information Service Optimization Strategies for University Libraries in the Big Data Environment [J] Chinese Science and Technology Journal Database (Full Text Edition) Library and Information, 2018 (10): 2
- [6] Huang Xiaomei Problems and Countermeasures in the Information Service of University Libraries under the New Situation [J] Journal of Fujian Library Science (Internal Journal), 2002 (3): 2
- [7] Wang Yuhong Analysis of unstructured data fusion in university libraries under the data environment [J] Success: Zhongxia, 2017 (17): 1
- [8] Yang Qixiu Current Situation and Optimization Strategy of Network Information Service in University Libraries [J] Time Education (Education and Teaching Edition), 2010
- [9] Xu Lu Research on the Optimization of Personalized Information Service in Tianjin University Library under the Network Environment Tianjin Normal University, 2013
- [10] Yang Qixiu Current Situation and Optimization Strategy of Network Information Service in University Libraries [J] Time Education (Education and Teaching), 2010
- [11] Liu Bingqiang Innovative Strategies for Information Services in University Libraries under the New Media Environment [J]
- [12] Yang Xuemei Research on Open Sharing of Scientific Data in University Libraries under the Background of Marketization of Data Elements [J] Journal of Library Science, 2023,45 (1): 26-31
- [13] Yu Li Research on the Information Service of University Libraries in the Network Era [C]//The 2003 Academic Annual Meeting of the China Association for Science and Technology 0
- [14] Wan Liqun Optimization Strategies for Information Delivery Services in University Libraries in the Digital Environment [J] Information Recording Materials, 2021, 22 (10): 2

Research on Improving the Service Management Consciousness of Library Information Work Based on Network Environment

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Abstract: Under the background of the new era, "Internet plus" is the deep practical result of Internet thinking, which has effectively promoted the development and innovation of library information work. This article analyzes the changes in the service characteristics of library information work and the special significance of information services in the new era, probes into the promotion and application strategies of service awareness of information work, and proposes that libraries should use Internet technology to innovate the service mode of library information work in the network era, which virtually highlights the importance of enhancing the service awareness of library information work. This article starts with the importance of studying the importance of enhancing the service management awareness of library information work, elaborates on innovative service content and methods, and proposes effective application strategies based on actual situations, providing strong theoretical support for researchers.

Keywords: Service Management Consciousness; Library Information Work ; Network Environment

1. INTRODUCTION

"Internet plus" has become a new driving force to promote social, economic, and cultural development, and has a profound impact on the transformation and development of libraries. In the Internet era, library services have widely applied various modern web-based technical means, such as virtual reference, one-stop unified retrieval, and the application of various instant messaging tools, providing excellent interactive service tools for libraries. The greatest advantage of a library is its rich information resources. Libraries should enhance their awareness of information services, innovate service concepts and methods, integrate library information resources with the needs of readers, and maximize the benefits of library information resources. With the wide application of information technology, it is urgent to enhance the awareness of library information service management. The high-level needs of readers need to be reflected largely based on computer technology.

Readers can obtain the information they need by owning a terminal and network without being limited by time and geography, which determines the urgency of developing computer intelligence services. If the library information work service management work cannot meet the needs of social development and meet the needs of readers to varying degrees, fundamentally leading to readers obtaining their own required information through other channels or libraries, it will lead to modern libraries not being able to keep pace with the development of the times. Library information service personnel should have a keen insight, overcome the inherent concepts of passivity, establish the concept of active service awareness of finding information for users and finding users for information, overcome the traditional simple understanding of library information service work, become familiar with and understand the needs of users, fully understand the meaning of active service awareness, and improve their professional literacy and master modern information technology. To master the retrieval of various intelligence information and serve readers, it is first necessary to have a comprehensive understanding of the readers and fully investigate their needs.

The work of all library employees must be centered on serving readers. In their daily work, regardless of whether they have direct contact with readers, they must pay attention to the needs of readers. Firstly, the top management of a library must go deep into the hearts of readers, have more contact with them, understand their inner thoughts, and actively carry out library construction on macro decision-making; The reading department must actively cooperate, quickly collect information from readers and their diverse needs for reading services, understand readers' opinions on staff service attitudes, business skills, and learning environments, and take corresponding measures to meet the needs of readers. The purpose of modern library services is to establish the concept of "actively serving readers", and provide thoughtful services to readers in a timely, accurate, convenient, and flexible manner.

THE PROPOSED METHODOLOGY

1.1 Analyzing the Importance of Improving the Service and Management Consciousness of Library Information Work

For the innovation of ideas, it is the key to all work innovation. Only when there is a change in ideology can innovation in management methods and technology be brought about. Of course, in specific practice, to effectively implement this purpose, the functions of library information work are reflected through the existing service content and corresponding changes in the library field. Therefore, it is necessary to analyze the usage rules and corresponding changes of library users to form an effective unified service whole. The diversification of library functions is mainly reflected in providing users with reading and information collection services. However, without effective collection of literature resources, libraries cannot form a standardized resource integration.

It is necessary to respect, understand, and care for readers, be honest and helpful to readers, and be reflected in specific transactional work. It is our responsibility to meet the needs of

readers, so that readers can truly become the owners of the library, such as listening to readers' complaints, establishing readers' suggestion boxes and public complaint offices, and seriously and timely responding to readers' messages; Only by understanding readers' borrowing psychology and needs can we conscientiously perform library information services. Train basic service personnel, attach importance to basic service work, enhance service concepts, improve their basic service quality and level, reduce reader dissatisfaction, etc. Change the original thinking mode, help users find relevant information based on their needs, break away from the shackles of traditional work services, and carry out innovative service awareness on this basis, enabling them to comprehensively grasp user needs.

At the same time, we should improve our professional quality, consolidate our information technology in the process of work, and master multiple skills such as intelligence information retrieval and collation. While promoting our own development, we should also contribute to our own service work. Moreover, some messages have strong timeliness, so consider them from the perspective of the reader. The latest news can satisfy the reader's desire to learn new things. Of course, it is also necessary to pay attention to the authority and authenticity of the information. It is worth mentioning that when effectively utilizing secondary information, it is necessary to selectively extract its key points and provide readers with valuable intelligence information in the shortest possible time. Library information services should emphasize efficiency and innovation to ensure the accuracy, timeliness, and efficiency of information. For example, for major current and political information, which cannot be prepared in advance, library information services need to respond quickly and provide the most accurate information in the shortest possible time.

1.2 Strategies for Enhancing Service Consciousness in Library Information Work

In terms of innovative services, library information services cannot be restricted to a single mode but can take various methods. For example, information can be written or electronic, and can also be combined with multimedia means to form animation modes. Mindful, do your best to find the information users need, not just limited to the shackles of traditional work services. On this basis, make bold innovations in service awareness and fully understand the needs of users. Not only that, but also a strong professional literacy is required. While providing service work, one must firmly grasp the latest information technology and master various skills such as information retrieval and collation, which not only improves one's own skills, but also facilitates the smooth implementation of various services.

Doing a good job in the construction of librarians is the key to the sustainable development of libraries. This can be started from the following aspects: First, focus on comprehensive quality training. A competent library staff must establish the concept of constantly improving themselves, updating their knowledge, continuing to learn, and adapting to the development of the times. The second is the cultivation of business skills. Improve the professional quality of staff by participating in a series of "going out" and each training, such as computer operation training courses. The third is the cultivation of professional ethics. In the cultivation of professional ethics, it is necessary to educate and learn staff members to establish the service ideology of "readers first".

At the same time, it is also necessary to carry out a series of measures such as teacher's ethics education, love, and dedication, implement listing services, and facilitate reader supervision. To effectively meet the various needs of users, combined with existing Internet application technologies, public libraries have established a service index system based on the network environment, innovated Internet technology and spatial models, and effectively analyzed users' needs to achieve the effectiveness of the entire public library environment.

Innovating the "Internet plus" technology can effectively integrate the various functional blocks of the library, effectively distinguish the functions, conduct in-depth investigation on the needs of readers through various ways, and create conditions for developing a humanized and integrated management plan. To enhance readers' satisfaction with library services, it is necessary to deeply understand readers' needs and formulate effective travel plans. It also requires library service personnel to observe the information required by readers on any occasion and at any location, contact readers in various ways, and carefully accept their suggestions and opinions. For collection, borrowing, and reading, adopting a humanized and integrated management approach, such as using computer terminals to solve the procedural problems of readers' borrowing, can to some extent enhance the enthusiasm of library service personnel, and provide readers with more scientific and reasonable information services.

In the past, our library service work, such as the collection, collation, and management of literature and materials, usually focused on collection, primarily collection. Now, we not only need to improve our service awareness, but also apply it to the actual service of library information work. First, we should make ideological changes to respect, care for, and understand readers, such as listening to their voices, taking meeting their needs as our own responsibility, attaching importance to basic service work, and training the comprehensive quality of service personnel. Secondly, consider expanding the scope of the newspaper reading room, diversifying the functions of the reading room, improving the reading room environment, and using high-tech means such as multimedia and multi-function halls to provide readers with a clean and comfortable reading environment. Finally, it is necessary to consider scientifically arranging the layout of information in the library, changing from closed shelf reading to open shelf reading, with various types of literature and reference books primarily for use, to provide readers with the required information services to the maximum extent.

2. CONCLUSION

In the Internet era, libraries must base themselves on the Internet and big data environment, enhance their service awareness of information work, and transform passive service into active service. With the progress of science and technology, the degree of informatization has put forward higher requirements for library information work. Therefore, we need to transform shallow document services into deep processing information services, and transform passive service into active service, maximize the function and value of library information work services, and promote the healthy development of library information undertakings. Realize the innovative development of traditional library business, encourage, and attach importance to the application of new technologies, enable libraries to rely on Internet technology to provide high-quality services to users, promote library

transformation, and promote the comprehensive improvement of library business.

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China West Normal University educational reform project "Research on the construction of intelligent subject service platform in university library" (403708) .

4. REFERENCES

- [1] Chen Jiacheng Strategies for Improving the Awareness of Library Information Service Management [J] Popular Literature and Art: Academic Edition, 2015 (6): 1.
- [2] Shen Chuanyao, Yu Jin the Transformation of the Information Work Mode of University Libraries in the Networked Environment [J] Journal of Intelligence, 2002, 21 (3): 2
- [3] Luo Xiaoyan On the Promotion and Application Strategies of Library Information Service Awareness [J] Lantai World: Second Half of the Month, 2010 (10): 2
- [4] Jiang Yongfeng, Xiao Ke, Xing Wenming A Study on Readers' Participation in the Creation of Reading Brands in University Libraries [J] Library and Information Work, 2019, 63 (4): 9
- [5] Lv Jianqin The construction of university libraries under the network environment [J] Journal of Zhongzhou University, 2000 (S1): 2
- [6] Ma Chunyan Optimization of Library Information Work in a Networked Environment [J] Henan Library Journal, 2020, 40 (1): 3
- [7] Feng Ying Discussion on Library Work in the Network Environment [J] Aerospace Industry Management, 2006 (5): 3
- [8] Yang Xuemei Optimization of Library Information Work in a Networked Environment [J] Office Business, 2019
- [9] Xiao Bo Optimization of Library Information Work in the Networked Environment [J] New Silk Road, 2021, 000 (003): P.1-2
- [10] Chen Nanqiang Optimization of Library Information Work in a Networked Environment [J] two thousand and twenty
- [11] Intelligence Magazine The transformation of information work mode in university libraries under the networked environment two thousand and three
- [12] Zhang Xuezhen Research on Reader Service in University Libraries under the Digital Network Environment [J] Science and Technology Information Development and Economics, 2008
- [13] Yu Yanna Research on the Dynamic Precision Reading Promotion Service Model of Mobile Library Integrating Situations [J] Chinese Science and Technology Journal Database (Full Text Edition) Library and Information, 2022 (12): 5.
- [14] Fan Chunmei Research on the Transformation of Periodical Management System and Service Mode in University Libraries under the Network Environment [C]//Collection of Papers (Articles) at the 24th Annual Academic Conference of the North China University Library Association two thousand and ten
- [15] Zhang Jingjing Research on Service Innovation of University Libraries in the Network Environment [D] Northeast Agricultural University, 2017

Construction of Jujube Quality and Safety Traceability System Based on Close-Range Wireless Communication Technology

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Abstract: The quality and safety of jujube fruit is the key to ensuring the healthy development of the industry. Currently, there are problems such as unreasonable use of chemical fertilizers and pesticides in the traditional cultivation and management mode of the jujube industry. This article summarizes the construction of jujube quality and safety traceability system based on close range wireless communication technology. The system collects data on the use of pesticides, fertilizers, herbicides, and hormones during jujube production, processing, and circulation through NFC, and determines traceability information through the combination of hazard analysis of hazardous substances and key control points. It has developed a flexible mechanism and method for quality and safety traceability of tropical fruits and vegetables agricultural products, meeting the flexible management and configuration of traceability content, templates, and mechanisms, Realize the convenience of promoting the agricultural product traceability platform, and build an agricultural product quality and safety traceability management system according to the management needs of Hainan Agricultural Hi-Tech Zone, realizing functions such as enterprise settlement, product testing, and traceability information collection. Provide the application of the agricultural product quality and safety traceability system for enterprises settled in the agricultural Hi-Tech Zone, improving the settlement management level, and ensuring the reliability and traceability of agricultural product safety.

Keywords: Jujube Quality , Safety Traceability, Close Range; Wireless Communication Technology

1. INTRODUCTION

Jujube is a plant belonging to the genus Jujube of the Rhamnaceae, which is rich in vitamin C, vitamin P, etc. In addition to being used for fresh food, it can be made into preserves and preserves such as honeyed dates, red dates, smoked dates, black dates, wine dates, tooth dates, etc. It can also be made into jujube paste, jujube flour, jujube wine, jujube vinegar, etc. It is an important raw material for the food industry. In 2021, China's jujube cultivation area reached 3.31 million. Standardized operations in seedling raising, planting, watering, nail opening, bud brushing, pesticide spraying, fertilizer growth regulator application, and fruit harvesting, processing, and circulation are the basis for ensuring the quality and safety of jujube fruit.

Hainan is the only tropical province in China, with the richest tropical crop resources in the country. It has unique resources to ensure national seed industry and food security, and has advantages in seed industry, tropical agricultural technology, and ecological resources in agricultural modernization. In recent years, the whole province of Hainan has been focusing on the construction of free trade ports, relying on its own advantages, and continuously creating Hainan brand agriculture and flagship tropical characteristic agriculture. The circulation methods of tropical agricultural products in Hainan are different, and the traceability mechanism of agricultural products is also different. The current traceability platform only relies on a single way to connect various links of information, which is difficult to meet the traceability needs of different types of enterprises, enterprises of different scales, and different planted products, and it is difficult to meet the diverse and flexible requirements of enterprises, consumers, and regulatory authorities for traceability information,

resulting in difficulties for enterprises to collect and record traceability information, Technical personnel are unwilling to use it, and it is difficult for government departments to promote it.

Carrying out quality and safety traceability of red dates is an inevitable choice for developing export earning agriculture. Currently, achieving quality traceability is becoming a common requirement for agricultural product quality management in developed countries around the world. Countries such as the United States, the European Union, Japan, and Taiwan have successively implemented quality traceability management systems on agricultural products. China exports a large number of jujube products every year. In order to avoid export losses caused by new technical barriers, it is necessary to establish a traceability system for agricultural product quality to achieve integration with economically developed countries. Achieving quality traceability is becoming a common requirement for agricultural product quality management in developed countries around the world. Countries such as the United States, the European Union, Japan, and Taiwan have successively implemented quality traceability management systems on agricultural products.

At present, there are a large number of jujube products exported every year throughout the country. In order to avoid export losses caused by new technical barriers, it is necessary to establish a traceability system for agricultural product quality to achieve integration with developed countries with market economies. Therefore, using modern scientific and technological means, combined with the characteristics of jujube production and marketing in our city, to carry out the exploration and practice of jujube product quality and safety

traceability, and to achieve quality tracking and management throughout the process, has become an important topic and urgent task in the quality and safety management of agricultural products. Date growers, processing companies, and sellers collect and upload real-time data. The traceability system monitors, integrates, processes, and feeds back traceability data through the NFC system, and guides planting, processing, and sales entities in adjusting work deviations. Consumers can use NFC mobile phones to read NFC labels, conduct product traceability, timely understand the safety and quality information of jujube, and then make decisions about consumer behavior.

2. THE PROPOSED METHODOLOGY

2.1 Basic Requirements for Quality and Safety Traceability of Red Dates

Upon receiving consumer complaints or system feedback, regulatory authorities can promptly verify data, hazard analysis, and critical control points, thereby determining traceability information, quickly locating the node where the problem occurred, identifying the cause, and making response strategies. The main construction content of the agricultural product quality and safety traceability system includes several functional modules, including key point information management, coding management, production record management, detection management, flow direction management, traceability information management, traceability template customization, basic data, and system management.

The platform involves three types of users, namely platform administrators, enterprise management users, and consumer users. Users can perform different operations depending on their permissions. The system administrator is responsible for the daily operation and maintenance of the system, and can manage users and set permissions. Enterprise management users are responsible for the management work during the production process of agricultural products in the settled enterprise, and complete the daily submission work of production management in combination with smart phones. Consumer users refer to agricultural product traceability information that can be viewed through the Internet or by scanning QR codes. The jujube quality and safety traceability management system include two core contents: production history system, product traceability code generation, and information association with agricultural products. The production record system completes the unified recording and storage of production file information for listed products, thereby enabling consumers to query production record information for purchased products. The product traceability code production code system accomplishes the association of production records and specific edible agricultural products. By attaching barcode labels with product traceability codes to the packaging, product traceability is achieved.

Traceability code generation and label printing system. The traceability code is a bar code prepared using the EAN.UCC128 code coding specification. The system uses a coding encryption mechanism that has been authenticated by the National Commercial Password Management Office to compile the traceability code for the product. This code can be digitally encrypted to achieve a unique product traceability code corresponding to a packaging barcode label. By using this encoding method to carry information, various types of information such as product, producer, and production time can be associated, and information can be continuously loaded and incremented along with the circulation of the product,

facilitating tracking and traceability of information. This data encoding technology has considerable controllability, which can be distributed in quantity, registered, and expired. At the same time, this encoding technology has strong anti-counterfeiting ability, and data encoding is encrypted and cannot be copied in batches. Code different outbound batches or scan the records piece by piece to record the outbound time and quantity of the date.

2.2 Composition of Jujube Quality and Safety Traceability System

There are two methods for circulation coding, namely "enterprise code reserved code points + sales code" and "enterprise code sales code". According to the uncertain characteristics of jujube nodes in the circulation process, the circulation process coding should follow the principles of uniqueness, scalability, conciseness, and scientific. Uniqueness means that a code only identifies one coding object. Extensibility refers to the fact that the code should have appropriate backup capacity to meet the needs of continuous expansion. Simplicity means that the code structure and form should be simple and clear, facilitating manual input.

Scientific means that the design of the code structure should fully consider all aspects of the actual circulation of jujube, in line with actual business processes. The system achieves basic information maintenance and information management for the production process of Hainan agricultural products through the input and integration of enterprise basic information, agricultural product basic information, input information, production area information, production environment monitoring, personnel basic information, and marketing enterprise basic information. Build a basic information database for the key points of Hainan agricultural product production base, comprehensively grasp the environmental information of the origin, provide data support for the quality and safety traceability of agricultural products, and ensure the quality and safety of Hainan agricultural products from the source of production

In 2008, two pilot units, the Nathania Wholesale Market and the Yueh jujube production and marketing professional cooperative in Xiang Cheng District, were added. The framework design for tracing the source and flow of agricultural products was completed, and certain progress was made in the development, management, use, and query of product label information codes. In 2009, on the basis of the original pilot unit, a specialized cooperative for the production and marketing of edible mushrooms for the people of Xiang Cheng District was added to further explore the applicability of the system for agricultural products other than red dates. In terms of the current use effect, it is successful.

Since the second half of 2007, we have actively explored the quality and safety traceability system for red dates. We have selected Kunshan Yue Green Red Dates Base and Nathania Wholesale Market Distribution Co., Ltd. to carry out pilot research on quality and safety traceability for red dates. In 2008, we added two pilot units, namely Nathania Wholesale Market and Yueh Red Dates Production and Marketing Professional Cooperative in Xiang Cheng District, to complete the framework design for tracing the source and flow of agricultural products. A list of restricted pesticide varieties for jujube production was proposed, and some progress has been made in the development, management, use, and query of product label information codes. Code different outbound batches or scan the records piece by piece to record

the outbound time and quantity of the date. There are two methods for circulation coding, namely "enterprise code reserved code points+sales code" and "enterprise code sales code".

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In the process of system design, development, and application, the author believes that policy and management factors such as imperfect current detection systems, incomplete certification systems, and lack of entities due to segmented management may limit the promotion of the Suzhou jujube quality and safety traceability system. Therefore, Perfecting the jujube safety standard system and inspection and detection system, establishing matching standardized management, and strengthening coordination and joint management among government management departments are the guarantees for the normal operation of the traceability system.

3. CONCLUSION

By comparing and analyzing national standards and specifications for pollution-free, green, and organic agricultural products, extracting the characteristics of key factors affecting tropical fruit and vegetable agricultural products, we have developed a flexible mechanism and method for quality and safety traceability of tropical fruit and vegetable agricultural products, meeting the flexible management and configuration of traceability content, templates, and mechanisms, achieving the convenience of promoting the agricultural product traceability platform. Determine traceability information by combining hazardous material hazard analysis with key control points and upload it to a database to trace the entire process of jujube planting, picking, processing, circulation, and sales. The development and utilization of this system is conducive to improving the quality and safety of jujube, enhancing consumer confidence, and ensuring the healthy and rapid development of the jujube industry.

4. REFERENCES

- [1] Li Qingyuan, Li Junxia, Wang Congming, et al Construction of jujube quality and safety traceability system based on close range wireless communication technology [J] Chinese Fruit and Vegetable, 2022, 42 (11): 66-69
- [2] Zheng Huoguo, Liu Shihong, Meng Hong, et al Construction of Grain and Oil Product Quality and

Safety Traceability System [J] Chinese Agricultural Science, 2009, 042 (009): 3243-3249

- [3] Yang Yun, Wei Kun Construction of agricultural product quality and safety traceability system [J] Computer Knowledge and Technology, 2015 (11X): 3
- [4] Zhang Qiang, Yu Yinliang, Wang Chunsheng, et al Construction and Application of Suzhou Vegetable Quality and Safety Traceability System [J] Shanghai Agricultural Science and Technology, 2011 (01): 25-26
- [5] Liu Jia Construction of agricultural product quality and safety traceability system based on two-dimensional code [J] Journal of Shandong Agricultural University: Natural Science Edition, 2014, 45 (5): 6.
- [6] Ma Aijin Research on the construction of dairy product quality and safety traceability system [J] World Standardization and Quality Management, 2011 (5): 63-68
- [7] Liu Meng Design and Implementation of Bee Product Quality and Safety Traceability System [D] Tianjin University, 2013
- [8] He Jianhong, Li Jingdong, Zhang Li Preliminary Discussion on Railway Material Traceability Management Mode - "Quality and Safety Tracking and Tracking System for Railway Important Materials" [C]//Proceedings of the Academic Seminar of the Material Management Committee of the Chinese Academy of Railways two thousand and eight
- [9] Gurui Research on the construction of drug quality and safety traceability system based on blockchain technology [J] Computer Knowledge and Technology, 2020 (2)
- [10] Wu Ximing A preliminary study on the quality traceability system of food production enterprises in China
- [11] Zhong Leping Research on the quality and safety traceability system of agricultural products [D] Northwest Agricultural and Forestry University, 2014
- [12] Focal light source Design and Implementation of Xinjiang Fresh Agricultural Product Quality and Safety Traceability System [D] Shihezi University
- [13] Zhang Guowei, Jin Guoliang, Ding Baoyong, et al Quality and safety traceability system based on agricultural product supply chain two thousand and sixteen.
- [14] Huang Huizhen, Liu Shanwen Design and implementation of a quality and safety traceability system for Liancheng White Duck products [J] Agricultural Network Information, 2014 (01): 36-39.

Exploration on The Trinity Comprehensive Evaluation Model of Electromagnetic Field and Microwave Technology Course

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Abstract: With the deepening of education reform, the traditional teaching evaluation model in colleges and universities is no longer suitable for the development of the current era. For the majors of electronic science and technology and communication engineering, electromagnetic field and microwave technology are the two most important courses, and they are also important teaching contents to ensure the work effect of students after graduation, which is of great significance to the future development of students. In traditional teaching, the evaluation method of courses mainly adopts summative evaluation. The three-in-one comprehensive evaluation model combines formative evaluation and summative evaluation, and integrates the three evaluation elements of learning ability, practical ability, and comprehensive ability. Diversified evaluation model.

Keywords: Electromagnetic Fields, Microwave Technology Course, Trinity Comprehensive, Exploring Evaluation Modes

1. INTRODUCTION

In order to fully implement the "Opinions on Strengthening and Improving Ideological and Political Work in Colleges and Universities under the New Situation" issued by the Central Committee of the Communist Party of China and the State Council, fully explore and utilize the ideological and political education resources contained in various disciplines [1]. The electromagnetic field and microwave technology course is an important professional basic course for electronic information engineering, communication engineering and other majors. The electromagnetic field and microwave technology course is one of the important pillar courses of electronic science and technology and communication engineering [2]. To continuously improve the course teaching, improve the level of course construction and teaching quality. The electromagnetic field and microwave technology teaching courses have an important impact on the future development of students majoring in electronic science and technology and communication. Mastering these two courses can help students better integrate their knowledge and promote their future development. In addition, with the help of summative evaluation model of influence [3].

The so-called "three-in-one" comprehensive evaluation is an evaluation system for college admissions and selection that includes three components: high school academic level test, comprehensive quality evaluation and unified college entrance examination [4]. To improve the management methods of classroom teaching in colleges and universities, to implement the fundamental task of moral education, to focus on cultivating college students to strengthen their ideals and beliefs, cultivate family and country feelings, strengthen moral cultivation [5], and strengthen the integration and penetration of moral education content and subject professional courses. The electromagnetic field and microwave technology courses are rich in content, mainly including nine parts, as shown in Figure 1. Each part of the content is closely linked, layer by layer. Reforms have been

made in the curriculum evaluation model of electromagnetic fields and microwave courses [6].

Aiming at the disadvantages of the traditional evaluation model mainly based on summative evaluation, the inertial influence of the summative evaluation model should be used [7]. For the three-in-one comprehensive evaluation model, it is a combination of formative evaluation and summative evaluation. Comprehensive evaluation method, which integrates the three aspects of learning ability, practical ability, and comprehensive ability to form a diversified evaluation method [8], some colleges and universities have also adjusted the proportion of the three according to actual experience. For example, in 2013, Wenzhou Medical College adjusted the proportions of the three [9], that is, "replaced" the proportions of high school academic proficiency test scores and comprehensive quality evaluation scores. Multi-application-oriented undergraduate colleges and universities start from the perspective of "course ideology and politics" and focus on exploring new ideas and new measures for "first-class undergraduate major construction and course ideological and political teaching" [10].

Do in-depth research starts with the teaching of Maxwell's equations, and then sequentially teaches boundary conditions, Poynting's theorem, wave equation, and time-harmonic electromagnetic fields. Through the study of this chapter, it lays a foundation for the study of plane electromagnetic waves in the next chapter [11]. Chapter 4 begins with the wave equation. Improve the content and form of evaluation, eliminate the negative impact of the current evaluation model, and achieve in-depth and comprehensive evaluation of students [12]. The practical ability evaluation in the experimental teaching and the comprehensive evaluation content in the final examination of students are integrated to form the course evaluation results of three content structures. Compared with the independent enrollment of Zhejiang Province, Zhejiang Province's "Trinity" comprehensive

evaluation of independent enrollment can be described as unique [13].

From the perspective of teaching and educating people, integrating ideological and political work into the teaching process must focus on students, take care of students, serve students, guide students [14], and continuously improve students' ideological level, political Consciousness, moral character. On this basis, the polarization of plane waves is taught, and then the content of the course is in-depth to the propagation characteristics of uniform plane waves in unbounded loss media [15].

2. THE PROPOSED METHODOLOGY

2.1 The Electromagnetic Fields and Microwave Technology Course

The three-in-one comprehensive evaluation model is a diversified evaluation model that combines formative evaluation and summative evaluation, and integrates the three evaluation elements of learning ability, practical ability, and comprehensive ability [17]. The specific way of realizing the Trinity is to make the students' formative evaluation in the course learning process, the practical ability evaluation in the experimental part and the comprehensive ability evaluation in the final exam to constitute the course grades in a certain proportion. For formative evaluation, the famous American educator Bloom conducted scientific practice and research on it and found that the evaluation model can not only improve teachers' teaching methods, improve the classroom effect of teachers' teaching, but also help students to better tap their own potential, help students improve their intellectual development level, and ultimately improve students' learning effect.

The candidate information obtained in the interview can better reflect the comprehensive quality of the students than the written test. For prospective college students, the interest in the subject is more important than the test scores. Basic knowledge and basic skills, understand the basic concepts, basic theories and basic analysis methods of microwave technology and antennas, cultivate students' ability to analyze and solve practical problems, and lay a solid foundation for future in-depth study and practical application. The goal of ideological and political teaching is in the course teaching. According to the characteristics of electromagnetic field and microwave technology course teaching, combined with the characteristics of strong practical application of communication engineering scientific research projects, the teaching reform of the course is promoted by integrating teaching and scientific research. Carrying out scientific research in combination with the study of basic knowledge.

American educator Bloom's formative evaluation teaching practice and research show that formative evaluation can not only improve teachers' teaching methods and improve classroom teaching effects, but also tap students' learning potential, promote students' intellectual development, and improve learning effects. The main purpose of formative assessment is not to grade students, resulting in grade differentiation among students, or vicious competition or transitional learning pressure among students. existing problems and make scientific improvements to them. The high school academic proficiency test is used as a comprehensive evaluation basis, and there is still a problem of selection validity. Strictly speaking, the senior high school entrance examination is a standard-referenced proficiency test, and the difficulty of the test is much lower than that of the

college entrance examination, so there are many students who get A grades.

2.2 The Trinity Comprehensive

In the project, the curriculum team should fully tap the ideological and political education genes contained in it. "Electromagnetic Field and Microwave Technology" is an important technical basic course for undergraduates majoring in engineering radio, electronic engineering, and communication engineering. Carrying out engineering practice through scientific research, explaining the basic knowledge in combination with the actual situation, and enriching the course content can allow students to intuitively feel the connection between the basic knowledge and the practical application of life. In order to achieve this teaching goal. daily learning performance. Daily learning performance mainly includes attendance, classroom performance, topic discussions, etc., and mainly tests students' learning attitude, learning strategies, and learning ability. For students who are absent from school without any reason, arrive late and leave early, the corresponding normal points will be deducted, and students who actively participate in teaching activities in the classroom will be deducted.

The evaluation of practical ability is carried out under the guidance of teachers. Through students' practical activities in the classroom, teachers make a comprehensive evaluation and summary of their practical ability. In the practical teaching of electromagnetic field and microwave courses, teachers Evaluate students' practical ability. On the basis of "Electromagnetic Field and Microwave Technology", strengthen the training of students in ideological and political aspects such as patriotism education, dedication and integrity education, and dialectical materialism education, so as to realize the basis of ideological and political theory courses and the improvement of comprehensive quality courses.

2.3 The Exploring Evaluation Modes

In terms of the reform of teaching materials, in accordance with the requirements of "China's Education Modernization 2035" issued by the Central Committee of the Communist Party of China and the State Council, the ideological, scientific, contemporary, and systematic requirements of teaching materials are put forward, in order to improve the times and applicability of teaching materials. Process check. Based on teacher evaluation, for the staged chapters, the written test of propositions, and the process assessment are carried out. Test students' ability to understand, apply and analyze course knowledge at the current stage. Students pass the process assessment to determine whether their learning goals have been achieved. For experimental teaching, on the one hand, students need to fully grasp the basic theoretical knowledge of classroom experimental teaching, and on the other hand, teachers need to give full play to their leading role, carry out experimental teaching based on students' main learning status, and provide experimental results at the same time. and phenomena to reasonably explain and explain its contents.

Before teaching professional courses, teachers first need to clarify the logical function positioning of the courses in the overall major and disciplines, help students meet the graduation requirements, and pay attention to the cohesive role of this professional course in their careers. Secondly, with the deepening of the difficulty of engineering courses. For example, when teaching microwave network knowledge, relevant scientific research literature on microwave components such as filters, power dividers, and baluns is used

as supplementary teaching materials. By leading students to read relevant scientific research literature, students can deepen their understanding of microwave network parameters. For the difficulties encountered in coursework, students are encouraged to consult materials or learn cooperatively, and exercise students' information acquisition and analysis ability, knowledge learning ability, communication ability and cooperation skills.

3. CONCLUSIONS

Based on the above, the electromagnetic field and microwave technology teaching course is of great significance to the future development of students. How to provide the teaching effect of this course is a problem that most professional teachers think about. The development and application of the trinity comprehensive evaluation model incorporates the entire learning process of students into the assessment content. The reform of the trinity comprehensive evaluation model of the electromagnetic field and microwave technology course has largely solved the problem of students' poor learning enthusiasm and effective learning effect. Poor questions can comprehensively exercise and test the ability to learn. Practice has proved that this evaluation model promotes "the integration of evaluation process and learning process."

4. REFERENCES

- [1] Liu Xiongying. Discussion on the visualization teaching method of electromagnetic field and microwave technology course [J]. *Experimental Technology and Management*, No.129(06):104-106.
- [2] Bian Li, Zhang Qijing, Liu Xin, et al. Reconstruction of Teaching Content of Electromagnetic Field and Microwave Technology Series Courses [J]. *Journal of Electrical and Electronic Teaching*, 2013, 35(4):3.
- [3] Ren Wei. Electromagnetic Field and Microwave Technology [J]. *China Radio Electronics Abstracts*, 2005(5):54-61.
- [4] Zhao Tonggang, Zhao Anxin, Chen Xun. Reform and exploration of experimental teaching of electromagnetic field and microwave technology [J]. *Journal of Beijing University of Posts and Telecommunications (Social Science Edition)*, 2015, 17(003):101-105.
- [5] Li Xuyi. Electromagnetic Field and Microwave Technology Vol.2 [M]. South China University of Technology Press, 2000.
- [6] Du Guohong, Cao Junyou. Discussion on the teaching reform of electromagnetic field and microwave technology courses based on CDIO [J]. *Journal of Electrical and Electronic Teaching*, 2009(S1):3.
- [7] Ye Yuhuang. A Preliminary Probe into the Curriculum Setting of "Electromagnetic Field and Microwave Technology" [J]. *Higher Science Education*, 2003(S1):2.
- [8] Ma Bingran. *Electromagnetic Fields and Microwave Technology (Volume 1)* [M]. South China University of Technology Press, 1999.
- [9] Zhang Juqin, Jia Jie, Wu Xianding. Reform and practice of the course "Electromagnetic Field and Microwave Technology" [J]. *China Electric Power Education: Zhong*, 2012.
- [10] Fu Yunqi, Yuan Naichang. Analysis of Electromagnetic Field and Microwave Technology Major and Curriculum System of Ohio State University [J]. *Journal of Higher Education Research*, 2011, 034(001):46-50.
- [11] Yang Zaiwang, Zhang Shue. On the reform of the experimental method of "Electromagnetic Field and Microwave Technology" [J]. *China Electric Power Education*, 2005.
- [12] Zhang Jinggui. Exploration on Teaching Reform of Electromagnetic Field and Microwave Technology Series Courses for Communication Engineering Major [J]. *Journal of Hunan First Normal University*, 2017, 17(6):5.
- [13] Zhao Tonggang. *Measurement and Simulation of Electromagnetic Field and Microwave Technology* [M]. Tsinghua University Press, 2014.
- [14] Peng Lin, Jiang Xing. A preliminary discussion on the organic combination of scientific research projects and graduation projects to improve the innovation ability of undergraduates in electromagnetic field and microwave technology in local universities [J]. 2020.
- [15] Gao Shanshan. A Preliminary Exploration on Cultivating Innovative Ability Based on Computer Simulation Experiments in the Course of Electromagnetic Field and Microwave Technology [J]. *Education and Teaching Forum*, 2019.
- [16] Zhang Hui, Zhan Jianwei, Cao Fei, et al. Design and Implementation of "Electromagnetic Field and Microwave Technology" Military Network Course. 2018.
- [17] Jiang Qinbo, Yu Zhiyong, Zhang Hui. *Fundamentals of Electromagnetic Field and Microwave Technology* [M]. Beijing University of Aeronautics and Astronautics Press, 2016.
- [18] Zeng Junying, Gan Junying, Ying Ziluo, et al. Teaching optimization practice of electromagnetic field and microwave technology courses based on the background of outstanding engineers [C]// *Proceedings of the 3rd Academic Conference on Teaching Management and Course Construction*. 2012.

Design of Embedded Knowledge Service Interactive System in University Library Based on MOOC Data Stream Retrieval

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Abstract: In view of this, the idea of applying knowledge graph to MOOC platform resource retrieval is proposed, and a knowledge graph oriented to MOOC data is constructed through entity recognition, relationship analysis, course knowledge point discovery and other methods, and applied to data stream retrieval on embedded devices. The system architecture; improved the storage and retrieval efficiency during clustering; designed a clustering algorithm that can capture the temporal characteristics of the skewed distribution of data in a real-time or asynchronous manner. From the fields of scientific research, teaching and social science, a more comprehensive and analyzed the knowledge transfer service from the service process. Finally, it puts forward the embedded knowledge transfer service strategy of university library for the collaborative innovation of industry, university and research.

Keywords: Embedded Knowledge Service, Interactive System, University Library, MOOC Data Stream Retrieval

1. INTRODUCTION

In the early 1980s, American scholars Bharati Pati et al. [1] advocated that university libraries should adhere to the concept of embedded services and provide readers with targeted and timely knowledge services by integrating tangible and intangible resources inside and outside the library [2]. With the further development of library service functions, libraries begin to provide more functions for users, such as consulting services, which are extensions of library service functions. The data stream has the characteristics of timeliness, real-time, infinite and instantaneous [3].

For embedded systems, IEEE (International Institute of Electrical and Electronics Engineers) defines it as: Embedded systems are "devices used to control, monitor, or assist in operating machines and equipment." [4] The reference consultation work originated in the middle of the 19th century. After more than 100 years, the library consultation service has experienced different stages of development and reform, from reference consultation to knowledge consultation. Social hotspot monitoring and Web usage mining are two typical applications of data stream clustering [5].

In social hotspot monitoring, the hotspot events that people care about in different periods will evolve over time, and the events that different groups of people care about in the same period are also different. Features). There are about 2,000 courses online on platforms such as MOOC, XuetaoX, and Wisdom Tree in Chinese universities [6]. On the one hand, the huge number of courses greatly enriches the choices of users, but on the other hand, users need to spend a lot of time to find courses that meet their own learning needs [7].

It can improve students' information retrieval and ability to analyze and process information, and cultivate students' interest in scientific research [8]. Combined with the MOOC teaching practice of literature retrieval course, this paper discusses the retrieval practice mode of Chinese periodicals database in literature retrieval course under MOOC environment. Learners receive a certificate of completion or a

certificate of excellence by participating in discussions, completing regular quizzes and final exams [9].

This model greatly reduces the barriers for learners to acquire knowledge and completes the flow of knowledge to more learners [10]. Therefore, university libraries urgently need to change the MOOC service ideas and models to meet the personalized and dynamic demand expectations of users. Among them, "MOOC resources embedded service" is becoming a new starting point for university library user services [11]. In the process of industry-university-research collaborative innovation, it is necessary to clarify the goals of scientific and technological innovation and the transformation of accelerated scientific research results, and the two are inseparable. With the continuous expansion of the functions of university libraries, it can provide more powerful support and information support for industry, academia and research [12].

Changes in the information environment and user habits have made the library no longer the main channel for users to obtain information, and a more complex information network has gradually formed [13]. University libraries have massive collection resources and have accumulated rich experience in serving scientific research and information collection. With the rise of MOOC education in Chinese universities, academic circles have achieved fruitful research results in MOOC embedded knowledge services [14]. With the enrichment of book resources, as a library that collects and preserves book materials, it is no longer satisfied with the function of simply preserving materials [15].

In the mid-19th century, the American library circle proposed that librarians should no longer be mere bookkeepers, but should take on more responsibilities. For example, Hu Yongsheng [16] believed that MOOC embedded services have personalized content and high integration. Because of the characteristics of collaboration with the main body, this service should systematically cover users with different disciplinary backgrounds and scientific research capabilities [17].

Design a data flow query system architecture that can be applied to embedded systems. This system is deployed in a wireless network environment [18]. The data stream objects that need to be processed in the system are mainly composed of sensor data streams, and these data streams are all numerical data. The above applications pose challenges to the data stream clustering algorithm, which are mainly manifested in:

- (1) it is difficult to obtain prior knowledge about the number and shape of clusters;
- (2) high flexibility is required: it is necessary to be able to process data stream clustering at the same time the temporal and skewed distribution characteristics of [19].

2. THE PROPOSED METHODOLOGY

2.1 The MOOC Data Stream Retrieval

Embedded systems can use very few hardware resources, usually in the range of several kB to tens of MB; at the same time, the requirements for real-time performance are very high, which is completely consistent with the real-time performance characteristics of data streams. The main reason why the existing algorithms cannot deal with oblique data in real time is that the density threshold in the algorithm is a constant that depends entirely on prior knowledge and is set in advance. Different from the existing algorithms, this paper defines the temporal density to record the data time. Based on the weight, the density threshold is defined as a function of a time.

Knowledge graphs have already been applied in general fields. However, building a general knowledge graph is technically complex and expensive, and it is usually difficult to specialize in some highly specialized specific fields. But with the distributed deployment of C-DOCSIS, some of the shortcomings of previous DOCSIS will be overcome, especially the impact of cost factors. The most obvious advantage of the Eupneic solution is just low cost. However, the current research on super network is still in the development stage. Although the concept of super network has been put forward, some scholars have also constructed some application models of super network. There is still no exact and unified definition or calculation method for the measurement indicators, and it is not enough to quantitatively reveal the hidden information in the super network.

The capacity-based sliding window model is shown in Figure 1, and the size of the sliding window is fixed. When a data arrives, if the sliding window is not full, it will be added to the sliding window; some cells lose the meaning of participating in clustering due to the large degree of data degradation. In this process, not only the number of clusters occurs At the same time, the distribution of the data is skewed, which means that the local density of clusters in different regions is different. In practical applications, because MOOC data often involve many professional fields terminology and idioms, making the use of common text corpora ineffective.

2.2 The Embedded Knowledge Service in University Libraries

Embed the library's existing general and professional information literacy education courses into the MOOC platform and embed the MOOC resources into the user research team. The embedded services provided by librarians are more represented as knowledge services in terms of

content, embedded librarians provide users with not only literature clues, but also knowledge units, countermeasures or solutions that can directly answer users' questions, through collaborative work with users. Regarding the degree parameter index of hypernetworks, Guo Jinli et al. The concepts of point degree, edge degree and composite degree were proposed, and Hu Feng et al. proposed the concepts of node degree, node hyperdegree and hyperedge degree. This paper comprehensively uses network research, literature research, and data mining methods to systematically sort out the embedded service experience of MOOC resources in the member libraries of Russell University Group. First of all, the relevant information disclosed by the sample library is obtained by means of network research, and it is classified and processed. The core of the embedded knowledge transfer service lies in the functionality, timeliness, accuracy and commonality of the service. The smoothness of the service process is closely related to the execution power, which is ultimately matched to the collaborative innovation of industry, university and research institutes. Accurately capture user segmentation data with interdisciplinary characteristics. In the era of media integration, the subject service objects of university libraries not only show multiple cross-border characteristics such as interdisciplinary, inter-professional, and cross-field, but also the user's demand for disciplinary resources has also shifted from single-dimensional knowledge transfer to multi-dimensional academic discovery. The prominent feature of intelligence in the mobile information environment is the fusion of multi-source information, involving a variety of analysis and processing methods. University libraries integrate multi-source information according to the requirements of information fusion.

2.3 The Design of Interactive System for Embedded Knowledge Service in Library

Therefore, in the process of industry-university-research promotion, it is necessary to conduct research according to different project needs. With powerful computer informatization functions, university libraries can effectively establish a variety of subject services, not only provide information flow service models. The embedded knowledge discovery service of university libraries can not only dig valuable knowledge deeply, but also provide decision makers with Intelligence services help companies obtain competitive intelligence, and can also use data modeling, cloud computing, domain ontology and other intelligence analysis methods according to user needs. The MOOC platform and the discipline research team can form a tripartite collaboration alliance.

Subject librarians dynamically track the changing trends of users' subject resource requirements throughout the entire process, and rely on the MOOC platform to provide research teams with fine-grained subject resource support. Embedded knowledge consulting service is an all-round, three-dimensional cross-type active consulting service model, which requires knowledge consulting librarians to show full initiative when providing services to users, so that users can be at any time, any place, through a variety of methods. A ubiquitous consulting service model obtained by means of multi-data stream connection is to extract data units with the same value in columns with the same attributes after selecting and projecting a single data stream.

The connection operation is implemented through a linked list. Whenever a data stream participates in the connection, the result of the connection is added to the linked list. Supernodes and hyperedges are a two-modular network,

supernodes belong to some hyperedges, and a hyperedge owns some supernodes. In this two-modular network, the degree centrality of a super-point is the number of superedges to which this point belongs. On the one hand, the promotion of subject resource navigation services can dynamically meet the needs of users in teaching and research. First, with the goal of enhancing the reliability and compatibility of subject resource navigation services, a subject data navigation system based on the MOOC platform has been created.

3. CONCLUSIONS

This paper designs and implements the architecture of a data stream retrieval system. The system adopts a relatively simplified method to realize some basic operations of data stream query and tests the operation of the system on the embedded device, and realizes the effective filtering of data. The fields of scientific research, teaching, and social sciences are repositioned, and the cost-effective value of knowledge transfer services is improved through a smooth service process, and then the knowledge transfer services of university libraries are embedded in all aspects of production, education and research. Based on the MOOC embedded concept, the practical direction of innovating the knowledge service of the university library is to combine the value attribute and the tool attribute of the MOOC service, and reshape the competitive advantage of the knowledge service of the university library by better exerting the information guarantee efficiency of the MOOC resources.

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5. REFERENCES

[1] Li Jiayu. Research on embedded knowledge service in university library based on MOOC [J]. Library Work and Research, 2021(4):6.

[2] Zhang Wei, Ma Kun. Research on the Embedded Knowledge Service Mode of University Libraries under MOOC Environment [J]. 2021(2017-9):127-129.

[3] Zhao Wenjing. Research on the Embedded Knowledge Service Model of University Libraries from the Perspective of Collaborative Innovation [J]. Chinese Writers and Artists, 2018(10):1.

[4] Bai Liqin. Research on the subject-oriented embedded knowledge service model of university libraries from the perspective of collaborative innovation [J]. Henan Library Journal, 2018(2):3.

[5] Jin Huihui. Analysis of the Research Status of Embedded Subject Services in University Libraries under Ubiquitous

Knowledge Environment [J]. Library Work and Research, 2018(4):5.

[6] Liu Yanni. Research on embedded subject services in university libraries under the knowledge environment [J]. Shanxi Youth, 2018.

[7] Du Jinghui. Analysis of embedded knowledge service in smart library for readers [J]. Exploration Science, 2019, 000(001):237,240.

[8] Liu Yanni. Research on embedded subject services in university libraries under the knowledge environment [J]. Shanxi Youth, 2018(23):1.

[9] Li Ying. Research on the Design of Embedded Service Process Model of University Libraries from the Evaluation Perspective [J]. Library Work and Research, 2019(6):5.

[10] Jiao Lingxia, Ma Yan. A Comparative Study of Embedded Subject Services in Chinese and American University Libraries [J]. Library Work and Research, 2019(3):8.

[11] Cao Jing. Research on Embedded Service Innovation of University Libraries in the Era of Big Data [J]. Journal of Weinan Normal University, 2018, 033(016):79-84,97.

[12] Xia Yuxin. Research on Embedded Teaching Services in University Libraries [D]. Yunnan University, 2019.

[13] Zhang Xiu. Integrating knowledge graphs for embedded knowledge services in university libraries for the life cycle of scientific research [J]. Knowledge Economy, 2021.

[14] Lv Yong, Chen Wenyong. New opportunities for university librarians to develop embedded services: embedded knowledge synthesis research team [J]. Information Exploration, 2021.

[15] Shi Xinwei. Research on the Embedded Service Mode of University Libraries under Ubiquitous Knowledge Environment [J]. Knowledge Economy, 2019(20):2.

[16] Cao Ruye, Yang Ran. Research on the Evolution of User Knowledge Demands in University Libraries under Embedded Services [J]. Information Exploration, 2019(12):8.

[17] Wang Zhihua. Exploration of practical ways of library embedded knowledge service [J]. Chinese Science and Technology Periodical Database (Full Text Edition) Library and Information, 2019.

[18] Bai Yahong. Analysis of embedded knowledge service in smart library for readers [J]. 2020.

[19] Kong Di. Discussion on embedded knowledge service of smart library for readers [J]. Henan Library Journal, 2020, 40(7):2.

Fuzzy Evaluation Algorithm of Third-Party Scientific and Technological Achievements in Library Information Service Aided by Big Data

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Abstract: With the deepening reform of scientific and technological management methods, a new type of third-party scientific and technological achievement evaluation has gradually become a scale. Through the analysis of the current situation and dilemma of the evaluation of third-party scientific and technological achievements, this paper points out that the big data-assisted library can play a positive role in the authenticity, professionalism, scientificity and standardization of the third-party evaluation, and discusses the third-party evaluation-oriented evaluation methods. Contents of library information services. The purpose of this research is to explore and research new information services in which libraries are deeply involved in the evaluation of third-party scientific and technological achievements. By analyzing the problems existing in the evaluation of third-party scientific and technological achievements at this stage, the extension methods of library information services under the demand of third-party evaluation are discussed, and the development strategies of libraries for the evaluation of third-party scientific and technological achievements are put forward.

Keywords: Library Information Service, Fuzzy Evaluation Algorithm for Third-Party Scientific and Technological Achievements, Big Data Assistance

1. INTRODUCTION

The evaluation of scientific and technological achievements is an important part of scientific and technological evaluation, and its evaluation results play an important role in the transformation and transaction of scientific and technological achievements, and are an important part of scientific and technological activities and scientific and technological management. As we all know, a large number of scientific and technological achievements and cutting-edge technologies appear in scientific and technological literature. As the core supporting material, scientific and technological literature is an important guarantee for scientific, objective and fair evaluation of achievements. The third-party evaluation of scientific and technological achievements is a comprehensive evaluation of scientific and technological achievements by independent social institutions in accordance with certain laws, regulations, technical specifications, etc.

The third-party evaluation of scientific and technological achievements has made up for the shortcomings of excessive administrative intervention caused by the identification of scientific and technological achievements organized by the government in the past. It makes up for the shortcomings of excessive administrative intervention caused by the identification of scientific and technological achievements organized by government departments in the past. At the same time, the third-party evaluation of scientific and technological achievements is of great significance for mobilizing the enthusiasm of scientific and technological personnel for scientific research, promoting scientific and technological collaborative innovation, and accelerating the transformation of scientific and technological achievements. The technological level of the United States is in a leading position in the world, which is inseparable from the construction of their perfect technological evaluation system. Since the 1990s, the United States has promulgated the "Government

Performance Outcomes Act", which stipulates the role, functions, and powers of science and technology evaluation agencies at the government (Congress) level through legislation. ..

As the basic supporting materials for the evaluation of scientific and technological achievements, scientific and technological literatures are mainly included in various academic databases. But high acquisition costs make it difficult for third-party outcome evaluation agencies to gain access to them. The third-party evaluation of freshmen encounters many problems. Aiming at the dilemma of the evaluation of third-party scientific and technological achievements at this stage, this paper points out that the library, especially the library with high-end information service capabilities. After the third-party evaluation of scientific and technological achievements, its evaluation report has become an important basis and basis for the management of the entire scientific and technological achievements, and has irreplaceable significance. After the third-party evaluation of scientific and technological achievements, its evaluation report has become an important basis and basis for the management of the entire scientific and technological achievements, and has irreplaceable significance. Under the GPRA framework, the United States has formulated a complete set of top-down science and technology goals, decomposing the overall goals into annual goals, and then assigning the annual goals to various industry research institutions. [14].

Evaluation experts can make professional and subjective judgments on the advancement and maturity of the results, and a non-profit intelligence agency such as a university library will give innovative analysis conclusions based on literature. At this stage, the third-party evaluation lacks standardized and unified evaluation methods. In addition, the evaluation methods of various projects vary greatly. The

evaluation methods and index systems adopted by many evaluation agencies cannot meet the requirements, and the evaluation work lacks professionalism. [19].

to evaluate the timeliness of the results; using academic data and SPSS statistical software tools, the scientific research output and academic influence of authors with different identities can be evaluated. Our unit is currently carrying out the evaluation process of scientific and technological achievements: evaluation consultation → user entrustment → formal review → contract signing → appraiser evaluation → expert selection → expert consultation → comprehensive evaluation → conclusion announcement → report release. The United Kingdom adopts the method of government division of labor and private implementation for scientific and technological evaluation.

2. THE PROPOSED METHODOLOGY

2.1 The Library Information Service

The government is only responsible for the evaluation of science and technology policies and plans, and the evaluation of specific scientific research projects, scientific research institutions, and scientific and technological achievements is completely handed over to third-party institutions. The evaluation of third-party professional scientific and technological achievements means that according to the requirements of the client, experts are hired by third-party professional institutions to review and identify the scientific and technological achievements to be evaluated in accordance with the prescribed procedures and standards, and evaluate their scientific, creative, advanced, Feasibility and application prospects are evaluated. Most evaluation agencies only rely on the subjective judgment of experts in a short period of time to form evaluation conclusions.

They lack objective data analysis and evidence materials, and are prone to the problem that the evaluation conclusions given by different experts for the same project are very different. The library has provided scientific and technological novelty retrieval for scientific research users for more than 20 years. In the process of scientific research project establishment and conclusion, award declaration and achievement evaluation, the library guards the first level of "innovative analysis", which is affirmed by the administrative department. Insufficient awareness of evaluation. The phenomenon of "short-term, smooth and fast" application of scientific research projects by scientific and technological personnel is prominent. The application projects only focus on results, not patent applications, nor market demand and orientation.'

The British government does not directly participate in the evaluation, but determines the direction through the formulation of plans, and more professional institutions in various industries carry out the evaluation or achievement evaluation of specific research projects. Librarians (including report completers and quality supervisors) will attend each achievement defense and review meeting as retrieval experts, and report retrieval results and analysis conclusions on the spot. In the third-party evaluation work in the new era, only the above work It has been unable to fully adapt to the new needs, especially libraries with high-level information service capabilities. In this regard, the industry pointed out that the traditional scientific and technological novelty search in the era of big data should deepen the connotation of novelty search services, explore the needs of novelty search users, and provide in-depth, precise and diversified value-added services.

2.2 The Fuzzy Evaluation Algorithm for Third-Party Scientific and Technological Achievements

In this regard, the industry pointed out that the traditional scientific and technological novelty search in the era of big data should deepen the connotation of novelty search services, explore the needs of novelty search users, and provide in-depth, precise and diversified value-added services. Japan's science and technology evaluation is mainly completed by the government, among which major scientific projects or plans are evaluated by the Prime Minister's Office or the Policy Committee of the Science and Technology Conference; more professional projects in various industries are conducted by various industrial departments in Japan, such as the Ministry of International Trade and Industry. The Tectonic Council is responsible for the evaluation. , to further improve the quality of work in the future work. In some cases, such as when there is a conflict of opinion between the respondent and the review team, or review experts, it is also possible to explain the literature retrieval situation and supplement relevant supporting materials in real time to resolve the dispute.

Project achievement retrieval is the starting point of third-party evaluation, and it is also the basic guarantee for the authenticity and effectiveness of achievement evaluation. The library's traditional paper search and citation service guards the first hurdle of academic paper results. Intellectual property is the core of scientific and technological achievements, and intellectual property information services are the intelligent assistants of R&D personnel. Intellectual property information services include patent information retrieval and analysis services, patent database or intellectual property information system construction services, and other related intellectual property information services. The purpose of the evaluation is single. Among the commissioners of local scientific and technological achievement evaluation, most of them apply for evaluation for the purpose of applying for awards or promotion of professional titles, and most of the evaluations are based on level (leading, advanced) evaluation.

2.3 The Big Data Assistance

Constructing an evaluation index system based on LDA model and patent text mining can realize technological innovation evaluation of enterprises and other innovative entities. There is a lack of an evaluation index system that truly and comprehensively reflects scientific and technological achievements. Many units or institutions use the same set of evaluation indicators for evaluation, and do not conduct evaluations according to research directions, different disciplines, and industry categories. . As the evaluation institution that best understands the value of the results and has the most direct contact with the results, it is obviously the most suitable institution to carry out the transformation of the results. Therefore, the third-party achievement evaluation agency should, on the basis of the evaluation, serve as a paid scientific and technological achievement evaluation service, and both parties should carefully discuss the service remuneration.

In the third-party evaluation work, checking and checking citations not only needs to verify the authenticity and inclusion of the papers provided by the project completers, but also needs to judge the timeliness of the papers based on the completion time of the project results. Huagong Library has agreed with the "National Review Company" to charge according to the number of items, and it is proposed that each item will be charged for retrieval and analysis according to the

percentage of the result evaluation income. . In addition to checking and citing, the intellectual property information service emerging in the library in recent years also provides a search service port for research results with intellectual property rights such as patents and soft works. Using patent maps based on bibliometric and text mining methods, it can provide R&D personnel with suggestions for patent strategic layout.

The construction of evaluation and consulting expert database is lagging behind. The expert database is not updated in a timely manner, the number of experts is small, and the professional structure is unreasonable; the expert selection system is unreasonable, the professional level of experts is uneven, and the knowledge update speed of some old experts is slow, which cannot keep up with the development requirements. Build a scientific and technological achievement transformation team that conforms to the law of market operation, establish a complete file management database, use network technology and big data to classify and manage the evaluation results, and connect with the demander, and play a bridge role between the result demander and research institutions . An analysis report that satisfies both evaluation agencies and evaluation experts is the foundation of the cooperative scientific and technological achievement evaluation service of university libraries. Literature retrieval is the basic skill of information consulting librarians.

3. CONCLUSIONS

In addition, because scientific and technological achievements may also include technical drawings, instructions, samples, construction methods, research reports, academic activities, academic soft papers and many other forms, third-party evaluation needs to make a comprehensive evaluation of the project results evaluation. The library information service for third-party achievement evaluation requires librarians to accurately analyze technological innovation, advancement, maturity, criticality and academic value with the help of various bibliometric methods and analysis tools.

4. ACKNOWLEDGEMENT

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5. REFERENCES

[1] Wang Chunxi, Gan Juan, Ma Long. Prediction model and simulation of scientific and technological achievements transfer based on self-organizing neural network [J]. *Microcomputer Application*, 2021, 37(12):4.

[2] Tang Shuai, Liu Xuefei, An Jiakun, et al. Design of achievement index evaluation system based on fusion clustering algorithm [J]. *Computer and Network*, 2019.

[3] Tan Hualin, Wu Ang. The dilemma and system improvement of third-party evaluation of scientific and technological achievements in my country [J]. *Academic Abstracts of Arts and Sciences in Colleges and Universities*, 2019, 36(1):1.

[4] Tan Hualin, Wu Ang. The dilemma and system improvement of third-party evaluation of scientific and technological achievements in my country [J]. *Jinan Journal: Philosophy and Social Sciences Edition*, 2018.

[5] Gai Fang. Thoughts on improving the quality of evaluation of local third-party scientific and technological achievements [J]. *Gansu Science and Technology*, 2019, 35(2):2.

[6] Liu Miao, Zeng Dechao, Xiong Wenwen, et al. Analysis and Research on the Current Situation and Countermeasures of my country's Third-Party Scientific and Technological Achievement Evaluation System [J]. *Enterprise Technology Development*, 2019, 38(3):4.

[7] Li Zihui. Research on library services for third-party scientific and technological achievement evaluation institutions [J]. *Information Exploration*, 2019(7):5.

[8] Huang Yaming. The application of neural network in the comprehensive evaluation of basic research results [D]. *China Medical University*, 2004.

[9] Chen Shaoxiong. Research on issues related to the transformation of scientific and technological achievements in colleges and universities based on quantitative evaluation [D]. 2011.

[10] Wu Jie, Su Zhaoren, Meng Fandi. Mathematical Model and Algorithm of Scientific and Technological Achievement Evaluation System [C]// *The First Railway Youth Computer Application and Development Academic Exchange Conference of China Railway Society*. 1991.

[11] Chen Shaoxiong. Research on related issues of transformation of scientific and technological achievements in colleges and universities based on quantitative evaluation. 2011.

[12] Jiang Ran. Research on credit evaluation index system of technology-based enterprises based on GA-BP algorithm [D]. *Tianjin University of Finance and Economics*, 2016.

[13] Gan Zhenghua. 15 scientific and technological achievements of Guangxi University passed the identification in 2003 [J]. *Genomics and Applied Biology*, 2004, 023(001):87-88.

[14] Chen Donghui. Research on key technologies of fuzzy clustering algorithm based on objective function [D]. *Xidian University*.

[15] Zou Lanian, Ma Yinbo, Guo Lingqiong, et al. A self-learning method and device for scientific and technological achievements based on neural network: CN111191119A[P]. 2020.

[16] Ma Yinbo, Zou Lanian, Guo Lingqiong, et al. A classification method, device, equipment and medium for scientific and technological achievements: CN111177372A[P]. 2020.

[17] He Chaoyuan, Zhang Yaoming, Wu Guangmou. Fuzzy comprehensive evaluation method for strategic decision-making in the process of transformation of scientific and technological innovation achievements [C]// *Environmental Protection Academic Annual Conference of China Silicate Society*. China Silicate Society, 2004.

[18] Yu Dengke, Liu Xisong. Knowledge management performance evaluation of enterprise scientific and technological achievements transformation based on fuzzy integral [J]. 2008.

[19] Science and Technology Commission of Qichun County, Hubei Province. Evaluation method and index system of scientific and technological achievements[J].

A Brief Analysis of the Innovative Model of Red Tourism Poverty Alleviation under the Background of Rural Revitalization

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Abstract: A brief analysis of the innovative model of red tourism poverty alleviation under the background of rural revitalization is conducted in this paper. The rural revitalization strategy in the new era is the inheritance and development of the Marxist rural development theory and the traditional Chinese thought of emphasizing agriculture. Therefore, the practice patterns and trends of rural revitalization should be differentiated and diversified, seek truth from facts, adapt measures to local conditions, and adapt measures to village conditions to speed up the revitalization of farmers' income, stable employment, and creation of a better life in other places. Hence, this paper considers the novel Red Tourism for the combination of the Rural Revitalization.

Keywords: Rural Revitalization; Brief Analysis; Innovative Model; Red Tourism; Poverty Alleviation

1. INTRODUCTION

The strategy of the rural revitalization in the new era deeply grasps the special laws of rural construction itself, raises the work of rural construction in the new era to a new scientific height, and contains the scientific logic of following the essence and development laws of rural construction. To take the road of rural revitalization under socialism with Chinese characteristics, we further need to continuously promote the modernization of agriculture and rural areas, we need to promote the rational allocation of factors and also improve development efficiency through urban-rural integration, and we need to gather the broadest consensus and motivation for development with the goal of achieving common prosperity.

Accordingly to the review, the Rural Revitalization can be understood from the 3 aspects.

(1) The core of the rural revitalization strategy is to give full play to the role of the main body. The academic research focus on the main body of rural revitalization includes the theory of multiple subjects, that is, farmers are the main body of course, governments at all levels are the main body of decision-making and also the promotion, and industrial and commercial capital and other social forces are not available.

(2) Emphasizing the dominant position of farmers in the rural revitalization strategy, taking farmers as the center, and promoting rural revitalization through the integration of urban and rural areas in counties according to local conditions, is not only an inevitable requirement for realizing the second centenary goal, but also an inevitable requirement for further conforming to the objective reality and development trend of the rural areas.

(3) We will find that, in fact, only rural areas with a good industrial foundation are more suitable for local revitalization. At the same time, this kind of revitalization must be equipped with good education, roads and other public services. Move the family to settle in the city.

Therefore, this paper will combine the red tourism to the focused studies, and in the figure 1, the Red Tourism Poverty Alleviation is shown.



Figure. 1 The Red Tourism Poverty Alleviation (Image from: https://news.cgtn.com/news/796b6a4e7a494464776c6d636a4e6e62684a4856/share_p.html)

2. THE PROPOSED METHODOLOGY

2.1 The Red Tourism Poverty Alleviation

The communication of red tourism culture has become a research hotspot in recent years, including research on the combination of the red tourism and socialist values and other ideologies, but there are few research results on the general communication of the red tourism. Red tourism plays an important role in inheriting the excellent traditional Chinese culture and promoting the spirit of Chinese culture. In the new era, mining the cultural inheritance value of red tourism is an effective measure to carry out socialist cultural construction and enhance the country's cultural soft power.

Red tourism has following features.

(1) The attraction of red tourism not only comes from its profound revolutionary history, but also benefits from its dazzling spiritual culture. It condenses the original mission, inherits traditional virtues, and also strengthens cultural self-confidence.

(2) In the process of developing red tourism, teachers can dig deep into the cultures of different regions, relying on the

history of red revolution, spread Chinese excellent traditional culture, regional culture and its spiritual quality, ideological concepts, and stimulate national pride and cultural identity.

(3) Correctly grasping the era connotation of red tourism is the basis for the sustainable and stable development of red tourism. The tortuous progress of history and the ever-changing times have then promoted the upgrading of the connotation of red tourism.

Poverty alleviation through tourism is also an important part of my country's precise poverty alleviation strategy, and it is an organic manifestation of industrial poverty alleviation. As my country achieves an all-out poverty alleviation, the prevention of returning to poverty has become the focus. How to fully improve the efficiency of tourism poverty alleviation is a problem that needs continuous attention. Therefore, clarifying the evolution characteristics of the dynamic mechanism of tourism poverty alleviation in old revolutionary areas, on this basis, according to the characteristics of tourism poverty alleviation in the post-poverty era, innovating the dynamic mechanism of tourism poverty alleviation in old revolutionary areas will not only help to consolidate the achievements of general tourism poverty alleviation in old revolutionary areas, but also benefit to solve the problem of relative poverty in the old revolutionary areas in the stage of rural revitalization, and then realize the effective connection between tourism poverty alleviation and rural revitalization in the old revolutionary areas. Poverty alleviation through the tourism industry emphasizes improving the endogenous development capabilities of general low-income population through the development of tourism from the supply side, while poverty alleviation through the tourism consumption emphasizes providing market guarantee for the development of tourism in poor areas from the demand side.

2.2 The Suggestions for Rural Revitalization

In order to adapt to the core objective requirements of the comprehensive development of agricultural and rural farmers in the new era, we should focus on improving the system and mechanism of urban-rural integrated development to break the shackles in all the aspects. Promoting the revitalization of different places and maintaining the prosperity of cities and towns is definitely not to accelerate the disintegration of rural areas that do not have the conditions for local revitalization.

China's implementation of the rural revitalization strategy is the adherence and development of the Marxist concept of development, and it is a great practice of constantly pursuing and exploring the modernization road of the harmonious coexistence between man and nature, harmonious coexistence between man and man, civilization and civilization, and also common prosperity of cities and villages.

We have the following suggestions.

(1) Judging from the world's major changes unseen in a century, stabilizing the basics of agriculture and guarding the foundation of "agriculture, rural areas and farmers" is the ballast stone for responding to the situation and opening a new situation. General Secretary Xi Jinping also elaborated on the importance of the work on the "agriculture, rural areas and farmers" from the perspective of human development, global development, and especially in response to the increasingly complex international environment.

(2) The digital economy can then promote effective rural governance. Big data is an important driving force for the

government to improve governance capabilities and promote modernization. With the support of digital technologies such as 5G and the Internet of Things, a visual digital rural governance platform can be created to realize a precise governance model in a dynamic and interactive manner and improve management efficiency.

(3) The strategy of rural revitalization in the new era locates the basic functions and universal nature of rural revitalization in the new era from the perspective of the subject of human nature.

3. CONCLUSIONS

A brief analysis of the innovative model of red tourism poverty alleviation under the background of the rural revitalization is conducted in this paper. The strategy of rural revitalization in the new era scientifically summarizes the basic experience of socialist rural construction with Chinese characteristics since the reform and opening up, especially after entering the new era, deepens the understanding of the laws of socialist rural construction, embodies the requirements of the times and Chinese characteristics, and shows the pursuit of the scientific attitude of truth and respect for laws shows a powerful force of truth. This paper gives the new suggestions and in the future, we will consider the applications.

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5. REFERENCES

- [1] Chen, Mingxing, Yuan Zhou, Xinrong Huang, and Chao Ye. "The integration of new-type urbanization and rural revitalization strategies in China: Origin, reality and future trends." *Land* 10, no. 2 (2021): 207.
- [2] Yang, Jun, Ruxin Yang, Ming-Hsiang Chen, Ching-Hui Joan Su, Yin Zhi, and Jianchao Xi. "Effects of rural revitalization on rural tourism." *Journal of Hospitality and Tourism Management* 47 (2021): 35-45.
- [3] Zhou, Yang, Yamei Li, and Chenchen Xu. "Land consolidation and rural revitalization in China: Mechanisms and paths." *Land Use Policy* 91 (2020): 104379.
- [4] Zhang, Dongsheng, Wei Gao, and Yiqing Lv. "The triple logic and choice strategy of rural revitalization in the 70 years since the founding of the People's Republic of China, based on the perspective of historical evolution." *Agriculture* 10, no. 4 (2020): 125.
- [5] Yan, Hairong, Ku Hok Bun, and X. U. Siyuan. "Rural revitalization, scholars, and the dynamics of the collective future in China." *The Journal of Peasant Studies* 48, no. 4 (2021): 853-874.
- [6] Feng, Gang, and Mu Zhang. "The coupling coordination development of rural e-commerce and rural revitalization: A case study of 10 rural revitalization demonstration counties in Guizhou." *Procedia Computer Science* 199 (2022): 407-414.
- [7] Gong, Jianzhou, Yuqing Jian, Wenli Chen, Yansui Liu, and Yueming Hu. "Transitions in rural settlements and

- implications for rural revitalization in Guangdong Province." *Journal of Rural Studies* 93 (2022): 359-366.
- [8] Xue, Eryong, Jian Li, and Xingcheng Li. "Sustainable development of education in rural areas for rural revitalization in china: A comprehensive policy circle analysis." *Sustainability* 13, no. 23 (2021): 13101.
- [9] Zeng, Xianguo, Yanan Zhao, and Zhiyong Cheng. "Development and research of rural renewable energy management and ecological management information system under the background of beautiful rural revitalization strategy." *Sustainable Computing: Informatics and Systems* 30 (2021): 100553.
- [10] Zhao, Yuexu, and Ruyue Li. "Coupling and coordination analysis of digital rural construction from the perspective of rural revitalization: A case study from Zhejiang province of China." *Sustainability* 14, no. 6 (2022): 3638.
- [11] Li, Jintao, Yansui Liu, Yuanyuan Yang, and Ning Jiang. "County-rural revitalization spatial differences and model optimization in Miyun District of Beijing-Tianjin-Hebei region." *Journal of Rural Studies* 86 (2021): 724-734.
- [12] Sun, JiuXia, KaiJie Huang, and XueJi Wang. "Tourism development and rural revitalization based on local experiences: logic and cases." *Tourism Tribune* 35, no. 3 (2020): 39-49.
- [13] Guo, Yuan-zhi, Yang Zhou, and Yan-sui Liu. "The inequality of educational resources and its countermeasures for rural revitalization in southwest China." *Journal of Mountain Science* 17, no. 2 (2020): 304-315.
- [14] Zhao, Liuyang, Ran Jing, and Guang Yu. "Research on the implementation path of rural revitalization strategy based on computer big data and industrial revitalization." In *Journal of Physics: Conference Series*, vol. 1648, no. 2, p. 022165. IOP Publishing, 2020.

Data-Oriented Intelligent Judgment Platform for Red Tourism Industry in Northeast Guangdong Based on Tourism Big Data Clustering Algorithm

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Abstract: Defining big data in the context of tourism forecasting, summarizes the changes it brings to tourism business decision-making. The experimental part deals with the tourism metadata shared by the website, and applies a suitable clustering algorithm to generate the density pattern of the most frequently visited places by tourists. At the same time, it proposes a method to obtain local core categories through the discovery of maximal cliques, and proposes a parallelization of the maximal clique discovery algorithm. strategy, and then propose a parallel strategy for the entire algorithm and experiment on real datasets. Realize the intelligence, intelligence, and semantics of the video surveillance network, so that the police can be freed from the labor of watching video surveillance. Through the extraction and correlation of data feature attributes, the collision can obtain "object laws", so as to make efficient and accurate decisions.

Keywords: Data-Oriented Intelligent Judgment, Red Tourism Industry, Northeast Guangdong, Tourism Big Data Clustering Algorithm

1. INTRODUCTION

Big data is one of the more popular and frequently used terms to describe the exponential growth and availability of modern data, which is expected to remain, or even accelerate, for the foreseeable future [1]. Big data is a broad term referring to datasets that are too large or too complex. In recent years, the rapid development of information science and technology has promoted the continuous progress of various fields such as society and economy [2]. With the support of a series of new technologies, such as the Internet of Things, a series of new applications such as social networking and collaborative creation have emerged, which have greatly improved the scope and form of human creation and utilization of information. Gannan, an old revolutionary base area, has unique red resources [3].

In recent years, the development and utilization of red resources in southern Gansu has achieved certain results, but it still remains at a low level and low-level tinkering [4]. Some scenic spots are still virgin fields to be developed. In recent years, the rapid development of information science and technology has promoted the continuous progress of various fields such as society and economy [5]. With the support of a series of new technologies, such as the Internet of Things, a series of new applications such as social networking and collaborative creation have emerged, which have greatly improved the scope and form of human creation and utilization of information. At present, industrial integration has become the only way for industrial development [6]. Industrial integration refers to the mutual penetration, intersection and final integration of different industries or different industries within the same industry. A dynamic development process that gradually forms new industries or growth points [7].

The coexistence pattern of traffic data platform and business platform (information platform) rationally separates data backup [8], mining and traffic business execution processes, which solves the need to carry out data mining and analysis

applications and service decision support on the current business information platform at the same time. of incompatibility and incompatibility [9]. The nature and tasks of the public security organs determine that the central work is carried out around "people", and "people" are the main body of a case or event. After a case occurs, the public security organ first needs to determine "who" is the suspect, and "who" needs an ID to uniquely identify it [10]. In daily work, names can be used to uniquely point to an object. Tourism, as a rapidly emerging industry, plays a very important role in world economic growth.

Social media sites generate massive amounts of data every day, bringing more opportunities to decision makers [11]. In order to deal with large data sets, CURE [12] adopts the technique of random sampling. However, the clustering results generated by its calculation are relatively random and not ideal. Division-based methods like K-Medoid and KMeans (KM) have better scalability, and the revolutionary struggle in southern Gansu has a long history and great influence [13]. From August 1926, the first party organization, the Ganzhou branch of the Communist Party of China, was established. In September 1949, the whole territory of southern Gansu was liberated [14]. The revolutionary struggle has never stopped. Especially during the Second Civil Revolutionary War, "cultural and creative industries" were based on modern technology and cultural resources. Taking creativity and innovation as the core and soul, it runs through the whole process of production, dissemination, circulation and consumption [15].

As an emerging industry cluster that provides cultural, artistic, spiritual, psychological, and entertainment products to the public [16] According to the previous description, the data platform of the traffic management department is different from the existing business platform in terms of positioning and functions. The basic relationship between the two is shown in Figure 1 [17], the data platform is like an intelligence center. It undertakes applications such as information reorganization, storage, calculation, mining, and

research and judgment, focusing on completing thinking-level responses. The input is the original data provided by the business platform [18], including WeChat, QQ, Alipay, Douyin and other apps account. Different IDs have different advantages and disadvantages. For example, the first type is relatively accurate and real, but it is difficult to collect; the second type is the most popular, but the camouflage is strong; the third type is a new type of ID, with the rise of the Internet, especially the mobile Internet [19].

2. THE PROPOSED METHODOLOGY

2.1 The Tourism Big Data Clustering Algorithm

Tourism thrives on information. A large number of new big data information repositories (more information available than standard databases) can provide researchers, managers and policy makers with data-driven evidence centrality indicators are simple, intuitive, and computationally low-complexity. In big data clustering, the efficiency is the first priority, and the accuracy can be reduced by a small part in order to save time consumption. Therefore, the degree centrality algorithm is suitable for application in big data clustering.

Application scenarios: 1. Call on-site video surveillance to lock suspects; 2. Structure a large number of videos, extract human models, and build rich trajectories for suspects; 3. Use multi-dimensional intelligent capture machines in the trajectory to capture clear frontal faces and human bodies, and geotag. The spatiotemporal data contained in the photo records the real activities of the user, and by analyzing these data, information such as the user's activity pattern can be mined. Since these photos contain a large number of tourism-related photos, geotagged photos can be directly used for tourism knowledge mining research. At the same time, as the number of users of photo-sharing websites continues to increase, big data analysis is applied to monitor the flow of tourists in the operation and management of scenic spots. Tourism is growing rapidly and there are several sources that provide visitor data.

The information obtained from these data is not sufficient to analyze the traffic situation in the scenic area. Select the node with the largest degree, if A is the node with the largest degree, then A is the local key node, otherwise, take the node with the largest degree as the initial node, and repeat (2) until the initial node is the node with the largest degree. Each individual industry has its specific social function and role, and the similar functions reflected between industries may often become the cutting point for the integration of different industries. The differentiated functions between industries may become complementary advantages of industrial integration. In real cases, the suspect often wears a mask, and the license plate number of the suspected car is covered and defaced, or the license plate is directly duplicated or unlicensed, which is easy to disguise. But for the two IDs of the human body model and the vehicle model, big data technology and clustering algorithms are used to predict and identify the density pattern location of a specific area.

2.2 The Red Tourism Industry in Northeast Guangdong

To make it a new economic growth point, it is necessary to solidly expand the red tourism industry. So how can we make the red tourism industry bigger and stronger? I think. First of all, we must change the concept - turning red tourism resources into tourism economy.

The public security bureau and the traffic police are often two important functional agencies of urban traffic management, but the specific business directions they undertake are different. For example, the public security bureau often takes vehicle inspection and control and public safety as the main business direction and can also estimate seasonal trends. The results show the number of tourists who will arrive at the place in a given month of the year.

Take the month value on the y-axis and the number of visitors on the x-axis. Since the maximal clique search is a tree search with the initial node as the vertex, each branch search tree is basically independent, so each search tree can be regarded as a subtask for parallel computing.

2.3 The Research and Development of Data-Oriented Intelligent Research and Judgment Platform

In response to this requirement, this chapter proposes a spatiotemporal information representation algorithm based on cross-media information summarization, which can be trusted to output meaningful clusters if there are any clusters in the provided dataset. HDBSCAN is well suited for clustering and has many advantages over K-Means and other clustering algorithms. Select the node with the largest degree. If A is the node with the largest degree, then A is a local key node. Otherwise, the node with the largest degree is used as the initial node. The public security bureau and the traffic police are often two important functional institutions of urban traffic management, but the two There are differences in the specific business direction undertaken. For example, the public security bureau often focuses on vehicle inspection and control and public safety as the main business direction, while the traffic police focus on service management.

3. CONCLUSIONS

Aiming at the problem of big data tourism data, a big data-based tourism behavior clustering algorithm is proposed, which can identify high-density locations in the areas most frequently visited by tourists. Data collected from photos uploaded on online travel sites helped identify clusters in different regions. In this web platform. The audience can realize reading red book stories, on-demand red audio and video, experience war scenes and even online trading of red tourism commodities. Support joint analysis and in-depth mining of homogeneous platforms of multi-source heterogeneous data, break down barriers, eliminate fragmentation problems, and make up for data boundaries.

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5. REFERENCES

- [1] Ding Fahong. Using tourism "big data" to promote the upgrading of Qingyang's red tourism industry [J]. Contemporary Tourism, 2020.
- [2] Zeng Qinghong, Wang Ling. Research on the innovative model of red tourism marketing under the background of big data——Taking Lvshunkou District of Dalian as an example [J]. Business Economics, 2020(1):3.

- [3] Nie Leigang, Li Yongmei, Yu Yuanhui. Intelligent Tourism Planning Based on Cluster Analysis Algorithm [J]. Computer Development and Application, 2012, 25(2):3.
- [4] Su Jiageng. Distributed EM clustering algorithm based on Hadoop platform [D]. Hebei Normal University.
- [5] Zhou Rongrong, Chen Dong, Liu Siyuan. Optimization model of fresh food transportation route based on K-means clustering algorithm [J]. Journal of Agricultural Big Data, 2022, 4(1):9.
- [6] Jiang Mingyu. Research on red tourism and red culture inheritance in the era of big data [J]. Global Human Geography, 2016, 000(006):299.
- [7] Wu Xia, Dong Zengshou, Meng Xiaoyan. Research on K value optimization of clustering algorithm based on big data platform hadoop [J]. Journal of Taiyuan University of Science and Technology, 2015, 36(2):5.
- [8] Xu Huafeng, Li Ling, Zhou Shuke, et al. A data processing method and system based on big data and artificial intelligence: CN109634968A[P]. 2019.
- [9] Zheng Lin, Zhang Hui. Big data clustering mining technology based on swarm intelligence algorithm in cloud environment [J]. Modern Electronic Technology, 2020, 43(15):4.
- [10] Gu Donghu. P-WAP-based big data clustering mining algorithm under Hadoop cloud platform [J]. Journal of Changchun Normal University, 2020, 39(10):7.
- [11] Li Junyan. Research on power big data clustering algorithm based on Hadoop platform [J]. Digital World, 2020.
- [12] Liu Yunheng. Big data clustering mining technology based on swarm intelligence algorithm in cloud environment [J]. Modern Electronic Technology, 2019, 42(9):4.
- [13] Si Fuming, Bu Tianran. Design of a big data clustering algorithm based on Hadoop cloud computing platform [J]. Journal of Chuxiong Normal University, 2016, 31(3):7.
- [14] Wang Chengyun, Dai Tianle, Jiang Shimin, et al. Research on Shanghai red tourism image perception and emotional evaluation based on network big data [J]. Tourism Science, 2022, 36(2):13.
- [15] Wang Ting. Ctrip released the red tourism report in the first half of the year. The order volume of "red + rural" scenic spots increased by a maximum of 17 times [J]. Chinese Consumers, 2021(7):2.
- [16] Cong Li, Li Shuyu, Hong Jingxuan, et al. Research on the spatial structure of tourism flow network in national red tourist attractions [J]. Resources and Environment in Arid Areas, 2021, 35(12):7.
- [17] Tian Weiyang. Using big data to help targeted poverty alleviation in old revolutionary base areas in Guizhou [J]. Contemporary Guizhou, 2016(33):2.
- [18] Meng Haidong, Ren Jingpei, Song Yuchen. A big data clustering algorithm based on cloud computing platform: CN103838863A[P].
- [19] Yang Yi, Ma Runing. Big Data Spectral Clustering Algorithm Based on Core Points [J]. Journal of University of Science and Technology of China, 2016(9):7.

Research on the Impact of the Development Level of Endowment Insurance on Urban Residents' Consumption

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Abstract: The insufficient consumption demand of residents is closely related to changes in the population structure and the pension insurance system. In recent years, the growth rate of China's economy has gradually slowed down. According to statistical data, the proportion of the elderly population in China has shown a trend of increasing year by year. One of the problems existing in the development process of China is the insufficient effective domestic demand, low consumption levels, high savings, and aging population are important factors restricting consumption levels. Pension insurance affects people's disposable income and savings behavior through the role of adjusting income redistribution, thereby affecting people's consumption behavior. The marginal consumption propensity of pension insurance fund expenditure is smaller than the impact of current disposable income on urban residents' consumption, indicating that income level is an important factor affecting urban residents' current consumption. Improving the social security system, broadening the channels for maintaining and increasing the value of pensions, expanding residents' income sources, reducing residents' preventive savings, and improving residents' consumption levels are the only ways to maintain rapid economic growth.

Keywords: Development Level ; Endowment Insurance; Urban Residents; Consumption

1. INTRODUCTION

China's pension insurance system was established in 1951 and has been undergoing continuous development and transformation since then, providing people with a more comprehensive and complete pension insurance system, and providing retirees with a more stable and secure basic life. Currently, the pension insurance system implemented in China is a "partial accumulation system". Nowadays, pension insurance can improve social welfare, making it increasingly popular to receive a certain amount of income to maintain basic living in old age. Therefore, the number of people participating in pension insurance is also increasing year by year.

According to China's statistical data, as of 2017, the total number of people participating in old-age insurance in China was 915.483 million. Most scholars believe that this situation is related to the social security system reform in the 1980s. Compared to before the reform, after the reform, residents faced increased uncertainty factors, and residents made preventive savings for future pension security, medical security, and child education expenditures, resulting in the current situation of high savings and low consumption among Chinese residents. This is related to China's imperfect social security system. Feldstein introduced an extended life cycle model and proposed that there is a dual effect of social security on savings, namely, asset substitution effect and retirement effect.

He used time series data from 1929-1971 (excluding 1941-1946) in the United States to predict the total social security benefits, and then studied the impact of social security on savings. In his 1974 and 1996 studies, he believed that the social security system reduced private savings by 30-50%. Social security has significantly reduced the amount of savings and total capital accumulation, which has a significant promoting effect on household consumption. Zou Hong, Yu

Kaizhi, and Li Aolei (2013) analyzed the impact of urban household social insurance participation and contribution rates on urban household consumption in Guangdong Province from 2002 to 2009. The study found that the consumption expenditure of insured households has increased compared to uninsured households, and urban household consumption will decrease with the increase in the social security contribution rate.

From the perspective of family type, the social security contribution rate of non-state sector, low-income and elderly families have a lower inhibitory effect on consumption than that of state-owned sector, high-income and young families. From the perspective of social security types, the contribution rate of pension insurance will increase by 1%, and consumption will decrease by 2.58%. The medical insurance contribution rate will increase by 1%, and consumption will increase by 2.1%. The issue of aging in China is becoming increasingly prominent. Compared to the working population in China, the growth of the elderly population aged 65 and above is higher than the growth of the working population. According to statistical data, in 2001, the number of people aged 65 and over in China had reached 90.62 million. In 2018, the elderly dependency ratio in China had reached 16.77%, while the child dependency ratio had reached 23.7%.

2. THE PROPOSED METHODOLOGY

2.1 Theory of Economic Phenomena

The degree of aging in China is gradually increasing, and the pressure on China's development, whether in rural areas or urban areas, to provide for the elderly is increasing. However, the impact of per capita savings deposits of urban residents on household consumption in the previous period is not significant. Through the robustness test, it is found that: first, there is a positive correlation between the per capita medical expenditure and consumption of urban residents, which reflects that China's urban medical insurance reform has

achieved good results. Secondly, expanding the coverage rate of old-age insurance can improve the consumption level of urban residents, but increasing the payment rate of old-age insurance also leads to a decrease in current consumption of urban residents. Since the current coverage of China's pension insurance expenditure is mainly for urban retirees, we choose per capita consumption (CS) of urban residents as the explanatory variable, and per capita pension expenditure (SS) of retired employees as the main explanatory variable. We also consider that factors affecting consumption level include income level, family wealth, unemployment and inflation levels, interest rates, and population structure.

Empirical evidence shows that the increase in disposable income and pension insurance funds of urban residents will stimulate the increase in household consumption. Current disposable income is the main factor affecting household consumption. Social pension insurance income can promote residents' consumption to a certain extent. There is a negative correlation between savings and consumption. Although pension income has a significant impact on household consumption, the impact coefficient is still small. Since the reform in 1997, although the level of old-age insurance in China has increased significantly, its coverage rate is still relatively low. In 2002, China included urban flexible employment personnel into basic old-age insurance.

The implementation of the old-age insurance system has ensured the basic livelihood of retired employees to a certain extent, reduced uncertainty about future expected income, and played an important role in increasing consumer demand and economic growth. However, with the continuous growth of the elderly population, the imbalance in income and expenditure of pension insurance funds can also affect social development and individual social welfare. Therefore, it is important to study the impact of pension insurance systems on residents' consumption in the context of population aging. Due to the significant reform of the old-age insurance system in China in 1997 and 2005, to avoid the exogenous impact of large policy changes on variables, this article selects the macro panel data of urban households in 31 provinces in China from 2006 to 2015 (the data is sourced from the China Statistical Yearbook and the database of Guoyan.com).

Although existing research and analysis mostly use micro data from household surveys, which can obtain the consumption status of individual individuals, the data obtained from sampling surveys lack certain accuracy, and it is difficult to solve the data problem of individuals over a long period of time. Due to the long-time span of the data and the impact of inflation during the period, to examine the true relationship between the variables, the nominal urban per capita consumption, per capita pension expenditure for urban retired employees, and per capita disposable income of urban residents were adjusted using a price index based on the year 1990.

2.2 Empirical analysis of the Effect of Endowment Insurance on Urban Residents' Consumption

To eliminate heteroscedasticity in the data, the logarithms of the data excluding the impact of price are recorded as LNCST and LNSST, respectively. The disposable income of residents is the most important factor in their consumption. China should continue to adhere to the strategy of revitalizing the country through science and education and strengthening the country through talent, continuously improving the quality and skills of the people, vigorously developing industries,

promoting industrial optimization and upgrading, accelerating China's economic growth, improving the people's income level, increasing residents' disposable income, reducing dependence on pension insurance, and improving residents' consumption level. Improve the social security system and increase the coverage of old-age insurance. Firstly, it is necessary to implement the government's responsibility status and further develop urban old-age insurance. Because China has only established a new type of rural old-age insurance in recent years, and the number of people participating in old-age insurance is relatively small, it is necessary to continuously improve the new type of rural old-age insurance.

Combining this system with the national financial policy allows for a reasonable distribution of social wealth among individuals, giving play to the income redistribution role of pension insurance, and narrowing the income gap between urban and rural areas. Short panels are used for analysis, and issues such as autocorrelation are not considered in the model. Before regression, the data is logarithmized to stabilize the data and eliminate the impact of factors such as heteroscedasticity. In panel data analysis, it is necessary to test the model settings and determine the empirical analysis form of the model. Therefore, first, the model is mixed regression. Secondly, fixed effect regression was performed, with a P value of 0 in the F-test, indicating that fixed effect regression was superior to mixed effect regression. Thirdly, the model is tested for random effects. The LM test rejects the "original hypothesis that there is no individual random effect", indicating that the random effect is superior to mixed OLS regression. The line test determines the empirical analysis form of the model.

Therefore, first, the model is mixed regression. Secondly, fixed effect regression was performed, with a P value of 0 in the F-test, indicating that fixed effect regression was superior to mixed effect regression. Thirdly, a random effect test is conducted on the model, and the LM test rejects the "original hypothesis that there is no individual random effect", indicating that the random effect is superior to mixed OLS regression. In China, due to the current limited financial investment in basic pension insurance and the generally low pension income of residents, the promotion effect of pension insurance on residents' consumption is still limited. Therefore, strengthening the appropriate preference of financial investment for old-age insurance and continuing to expand the coverage of old-age insurance are important means to improve China's social security mechanism and solve the plight of old-age insurance in China.

Delay the retirement time of residents. The proportion of the elderly population in China is constantly increasing, while the proportion of labor force is constantly shrinking. As the main driving force for consumption, delaying retirement can not only increase the labor force, but also reduce preventive savings, increasing people's disposable income, and has an important role in increasing household consumption. To increase investment in education, cultivate innovative and technical talents, continuously improve the education system of high schools, and enhance the strength of education teachers, we should make full use of China's educational resources to attract talents. The variable of endowment insurance contribution rate is not significant in the empirical analysis, and there is a negative correlation between the endowment insurance contribution rate and urban residents' consumption, that is, increasing the endowment insurance contribution rate will inhibit residents' current consumption. This does not violate the life cycle theory. The reason is that

China's old-age insurance contribution rate is relatively high, even higher than that of some developed countries. Therefore, increasing the old-age insurance contribution rate will squeeze out some households' disposable income in the current period, prompting residents to reduce current consumption.

3. CONCLUSION

This paper studies the impact of pension insurance expenditure on household consumption using a cointegration and error correction model. The model results reveal to some extent the impact mechanism between pension insurance and household consumption. At present, the implementation of China's pension insurance system has a relatively significant positive impact on China's residents' consumption, and it is necessary to enhance China's residents' consumption demand. Firstly, China can draw on the experience of foreign countries as appropriate and gradually adopt the form of paying social security taxes to raise funds to increase the effective supply of pension expenditure. Secondly, the state can issue a moderate amount of special treasury bond to increase financial investment in basic pension insurance. Thirdly, strengthen the operation and management of pension insurance funds to maintain and increase the value of operating funds.

4. REFERENCES

- [1] Yu Bin, Yao Xiaolei the Impact of Pension Insurance on Residents' Consumption in China: An Empirical Study Based on Panel Data of Urban Residents [J] Financial Economy: Second Half of the Month, 2011 (8): 4.
- [2] Huang Dongyang Research on the Impact of Social Pension Insurance on Urban Residents' Consumption in China [D] Hunan Normal University, 2014
- [3] Chen Mengzhen Research on the Impact of Endowment Insurance on Urban Residents' Consumption in China [D] Hunan Normal University, 2010
- [4] Li Juan The Impact of Endowment Insurance on Urban Residents' Savings in China: An Empirical Analysis Based on Dynamic Panel Data [D] Shandong University, 2015
- [5] Wu Shuding, Deng Xiaoli the Impact of Social Pension Insurance on Consumption of Urban Residents in China [J] Knowledge Economy, 2010 (19): 1
- [6] Ma Xiaotong An Empirical Study on the Impact of Pension Insurance Expenditure on Residents' Consumption in China: A Case Study of Urban Residents' Panel Data [J] World of Labor Security, 2016 (1Z): 2
- [7] Zhu Bo Research on the Impact of Social Pension Insurance on Consumption of Urban Residents in China [D] Shanxi University of Finance and Economics, 2015
- [8] Shi Jingyuan, Guo Zhaoli, He Guang'an Research on the impact of pension insurance expenditure on urban residents' consumption in China [J] Modern Business, 2013 (30): 4
- [9] Yu Bin, Yao Xiaolei the Impact of Pension Insurance on Residents' Consumption in China: An Empirical Study Based on Panel Data of Urban Residents [J] Monthly Journal of Finance and Economics, 2011
- [10] Zhu Bo Research on the Impact of Social Pension Insurance on Consumption of Urban Residents in China [D] Shanxi University of Finance and Economics
- [11] Li Jindong Research on the Impact of Endowment Insurance on Consumption Behavior of Urban Residents in China [J]
- [12] Cao Xingxing The Influence of Social Pension Insurance on Urban Residents' Consumption - Take Anhui Province as an Example two thousand and eighteen
- [13] Yang Jing Research on the influencing factors of urban and rural residents' social pension insurance participation decision-making [J] two thousand and twenty
- [14] Zhou Weitao Research on the influencing factors of urban and rural residents' social pension insurance participation [J] Human Resources Management, 2018, 000 (010): 533
- [15] Zhao Dong The historical changes in income, consumption structure, and consumption patterns of urban and rural residents in Xinjiang over the past 30 years of reform and opening [J] Theoretical Frontiers

Research on Developing Project Teaching Method in Computer Course Teaching

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Abstract: This article focuses on the research and analysis of project-based teaching methods in the teaching of computer courses. Based on the existing problems in traditional education of computer courses and the application methods of project-based teaching methods in computer course teaching, it conducts in-depth discussions and analysis from the following aspects: student-oriented teaching, building a complete teaching system, and building a complete evaluation mechanism. Its purpose is to strengthen the value of project-based teaching methods in computer course teaching. This article focuses on the research and analysis of project-based teaching methods in computer course teaching, combining the existing problems in traditional education of current computer courses and the application methods of project-based teaching methods in computer course teaching as the main basis, from student-oriented teaching to building a complete teaching system. The purpose of in-depth discussion and analysis on the construction of a complete evaluation mechanism is to strengthen the value of project based teaching methods in computer course teaching.

Keywords: Developing Project; Teaching Method ; Computer Course Teaching

1. INTRODUCTION

The 21st century is the era of information technology, in order to cultivate adaptation! "The talent required for the development of information technology in the 21st century, China has formulated a series of relevant policies in computer education, and computer education has also developed vigorously from scratch and from small to large. However, after years of working in computer teaching in vocational schools, I deeply feel the phenomenon of low efficiency in computer classroom teaching, and cultivate students who only use software mechanically without creativity. The first reason is that: Due to the limitations of the current enrollment system, the quality of vocational school students is generally not very high, and students' self-learning ability and self-control ability remain at a relatively low level.

Students learn mainly by accepting theoretical knowledge, which prevents them from improving their comprehensive abilities and qualities, which is not conducive to their development. In the new era, it is necessary to combine the rational use of teaching tools, timely change traditional teaching forms, stimulate students' interest in learning, and make students become talents needed by the future society. In this context, project based teaching methods are used in computer teaching to stimulate students' interest in learning, cultivate their basic skills, and make them useful talents in the future society. The first principle that project based teaching methods should adhere to is targeted teaching. Only by ensuring that project selection is targeted and can meet the needs of different groups of students can project based teaching methods play a guiding role and promote the development of autonomous abilities of the groups of students.

In this regard, educators should pay attention to the target audience and the degree of mastery required of the curriculum project when implementing project based teaching methods in computer course teaching. In teaching design, students must be placed in a dominant position, with teachers primarily playing an auxiliary role. In the classroom teaching process, teachers should provide a display platform for students to actively learn and strengthen the cultivation of students' innovative spirit. At the same time, teachers are the designers

and organizers of the entire project teaching, so it is also necessary to pay attention to the guidance role of teachers and participate appropriately in student discussions to achieve good teaching results.

The so-called project-based teaching method is one of the unique teaching methods that things has formed through long-term teaching practice. Its initial definition is: a project team composed of schools and enterprises that goes deep into practice, learns and applies existing knowledge while solving problems, and cultivates problem-solving skills in the forefront of practice. In this context, it refers to adopting the method of group discussion and collaborative learning, using the theme of "project engineering" to drive students' learning with practical tasks. By completing activities, applying existing knowledge and mastering new knowledge, the goal of cultivating problem-solving ability is achieved. Stimulate students' desire to learn, so that students can fully participate in teaching. Teachers should understand how to design project content based on students' interests, characteristics, and learning situations, and fully solve various problems and shortcomings in teaching through reasonable guidance from teachers, thereby fundamentally improving the timeliness of computer course teaching.

THE PROPOSED METHODOLOGY

1.1 The Necessary Conditions for Implementing Project Teaching Method in Vocational Schools

In terms of actual teaching objectives and content, teachers should combine teaching content that is close to students' actual lives. Developing project based teaching methods in computer course teaching is another key to the success of project based teaching methods, based on its purposefulness and interest. Even if it is rich and colorful, with clear objectives, and without practical operability, it cannot ensure that students meet project requirements based on project objectives. Therefore, in the application process of project design, it is also necessary to pay attention to teaching students in accordance with their aptitude. After completing the establishment of project tasks, teachers should group

according to the specific situation of the class they are teaching. When grouping, teachers should fully consider the characteristics and learning abilities of students, and have each group select a group leader, who is mainly responsible for supervising whether the work tasks of the members of the group are strictly implemented as required, and organizing various activities of the group, so as to ensure the smooth implementation of the project tasks of each group, Promote the learning initiative of team members.

In the project based teaching method, the entire process and all content of teaching should be implemented through projects. After the project is determined, the entire teaching process is also determined, so the selection of projects is the key. The selection of projects should be based on the teaching content, with realistic objects as the materials, and should not only include basic teaching knowledge points, but also mobilize the enthusiasm of students to solve problems. The selection of projects is an important part of pre class preparation. Teachers must go deep into students and propose one or more design methods that can allow students to fully utilize their intelligence and discuss with them.

In teaching, teachers should pay attention to cultivating students' autonomous learning ability, and also timely change teaching ideas and concepts based on the needs of the times. They should provide reasonable guidance to students, guide them to operate correctly, and assist students in completing unfamiliar parts of the content through hands-on work. After the project teaching method, which focuses on students' autonomous learning and supplemented by scientific guidance from teachers, how to ensure the scientific guidance of teachers, it is equally important in the teaching of computer courses.

Therefore, educators are strictly prohibited from revealing the answers directly and telling students how to do it when they encounter difficulties in self-learning, which violates the original intention of autonomous learning and also loses the value of the application of project-based teaching methods. The focus of the project teaching method is on the process rather than the results. The process assessment is mainly arranged when students complete each module project as planned. After each module is completed, a phased assessment will be conducted, and teachers can assess the module projects completed by students based on the key points of the experimental project.

1.2 Application of Project Teaching Method in Computer Course Teaching

Teachers should explain common problems found during the assessment process to the entire class and record them in their own teaching experiences to accumulate teaching experience. Creating learning resources and environments is a primary task for teachers. Teachers need to provide students with multiple opportunities to apply the knowledge they have learned in different contexts, making full use of modern educational technology to provide students with multiple learning resources. Before students complete projects independently, teachers need to provide appropriate guidance. Guidance mainly includes explaining new knowledge and explaining the specific implementation of the project.

The purpose of implementing the project based teaching method is to complete the teaching content through students' autonomous learning and research learning, thereby completing the computer teaching content in actual teaching, transforming the original passive learning form into active

learning form, and improving their own abilities. During the entire process, teachers should be good at thinking and analyzing the overall situation of students, conducting quantitative evaluation and assessment of the learning process of students, and actively encouraging students to self-evaluate, Be good at evaluating the learning process and results of others, as well as evaluating each other in groups.

Through diversified evaluation forms, students can master their own learning problems and better solve them. After completing the project, it is also necessary to do a good job in developmental evaluation. Developmental evaluation should mainly include two parts: one part is a summary of ideas, which evaluates students' completion of the project tasks, with the aim of cultivating students' best thinking methods for solving problems and identifying their shortcomings in theoretical application; The other part is a summary of the techniques. It mainly cultivates students' problem-solving abilities and fully absorbs the essence of the entire project activity. The steps to implement the project,

Teachers should explain clearly and provide relevant information in a timely manner. In addition to telling students what the upcoming project is, teachers should also appropriately remind students of what to do first and then. In this way, it can not only avoid students with poor acceptance from being helpless when facing projects, but also avoid students from taking unnecessary detours. The project completion process is a process of exploration and research by students themselves. In order to learn from others, it is also important to summarize the project after completion. It should include a summary of ideas and skills. Summary of ideas can help students clarify the best thinking methods for completing projects and find their theoretical shortcomings.

In the skill summary, the phrase "multiple solutions for one problem" should be highly recommended. Each method, regardless of its difficulty, should be presented to students, and the teacher and students should jointly evaluate the advantages, disadvantages, and scope of application of each method. Pay full attention to the teaching process and results. The computer learning process is not a static one, but a flexible process that requires teacher support and assistance to achieve the best results. During the implementation of the project-based teaching method, teachers should be aware of their own role, do a good job of guidance, conduct comprehensive observation of the learning process of students, and then make correct evaluation and analysis after the end, fundamentally improving the teaching quality of computer courses, laying a good foundation for students' future social development.

2. CONCLUSION

This article focuses on the research and analysis of project-based teaching methods in the teaching of computer courses. Based on the existing problems in traditional education of computer courses and the application methods of project-based teaching methods in computer course teaching. The novel ideas are presented and in the future, the applications will be studied.

3. REFERENCES

- [1] Li Xuayan Research on project based teaching method in the reform of computer course teaching mode [J] Science and Technology Information (Academic Research), 2007, 36 (No. 248): 512-512

- [2] Li Xiaodong Research on developing project based teaching methods in computer course teaching [J] two thousand and nineteen
- [3] Ji Cuizhu Analysis of the Research on Developing Project Based Teaching Method in Computer Course Teaching [J] education
- [4] Zhang Shuibo Research on the Practice of Project Teaching Method in Computer Course Teaching [J] Journal of Taiyuan City Vocational and Technical College, 2008 (11): 2
- [5] Deng Pei Research on the Practice of Project Teaching Method in Computer Course Teaching [J] Silicon Valley, 2009 (12): 1
- [6] Li Jing Practical Research on Developing Project Based Teaching Method in Computer Course Teaching [J] Market Research Information, 2019, 000 (012): P.1-1
- [7] Ruan Shuyuan Research and Analysis on Developing Project Teaching Method in Computer Course Teaching [J] Intelligence, 2020 (1): 1
- [8] Ye Qishuang Research on the Application of Project Teaching Method in Computer Teaching in Higher Vocational Education [J] Computer Products and Circulation, 2020, 000 (007): P.234-234
- [9] Liu Chun Research on the Application of "Case Project Driven Teaching Method" in Computer Basic Courses in Higher Vocational Education [J] Electronic World, 2017 (10): 1
- [10] Yuan Lixia Research on the Application of Project Teaching Method in the Computer Course "Photoshop Image Processing" in Secondary Vocational School [D] Anhui Normal University, 2014
- [11] Deng Qingchi Research on the Application of Project Teaching Method in the Teaching of Computer Application Technology in Higher Vocational Education [J] Literary Youth, 2020, 000 (004): P.1-1
- [12] Guifeng Research on the Practice of Project-based Teaching Method in the Teaching of Computer Major Courses in Colleges and Universities [J] Digital World, 2019
- [13] Qi Huijuan Research on the Application of Project Based Learning in Higher Vocational Computer Professional Courses [D] Hebei Normal University
- [14] Chen Yingxin Research on the Application of Project Based Learning in the Course "Fundamentals of Computer Application" in Higher Vocational Education [D] Central China Normal University
- [15] Yang Xi The Application of Project Teaching Method in the Basic Teaching of Computer Application in Secondary Vocational Schools [J] Oriental Education, 2016
- [16] Liang Ying On the Application of Project Teaching Method in the Basic Teaching of Computer Application in Secondary Vocational Schools [J] two thousand and sixteen

Research on the Role and Mechanism of Digital Economy Boosting Rural Revitalization Under the Background of Big Data

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Abstract: The digital economy is an important product of the information technology revolution. With the advent of the big data era, the digital economy is having an increasingly significant impact on traditional economies. Rural revitalization is an important strategy for the current economic development in China, and the digital economy can provide new development opportunities for rural revitalization. This paper reviews the relevant research on the digital economy and rural revitalization, analyzes the role and mechanism of the digital economy in promoting rural revitalization. The results show that the role of the digital economy in rural revitalization lies in promoting agricultural modernization, promoting rural industrial upgrading, improving rural infrastructure, and enhancing rural social services. The mechanism by which the digital economy promotes rural revitalization mainly includes policy support, technological innovation, capital investment, and talent cultivation. This paper aims to provide theoretical basis and practical guidance for the application of the digital economy in rural revitalization.

Keywords: Digital economy; rural revitalization; role; mechanism

1. INTRODUCTION

At present, the digital economy is becoming a new engine to promote economic development, and rural revitalization has also become an important strategy for China's current economic development. The digital economy can provide new development opportunities for rural revitalization, and is conducive to the modernization of the rural economy and the optimization and upgrading of the industrial structure. The purpose of this paper is to summarize the relevant research on digital economy and rural revitalization, analyze the role and mechanism of digital economy in promoting rural revitalization, and provide theoretical basis and practical guidance for the application of digital economy in rural revitalization.

The digital economy is an important product of the information technology revolution. It is based on information technology, takes data as the core, takes innovation as the driving force, is supported by the network, and is characterized by digitization. It is a representative of a new round of economic and social technological revolution and industrial transformation. The development of the digital economy has had a major impact on the traditional economy, promoting economic growth, improvement of labor productivity, industrial restructuring and social transformation. The digital economy covers a variety of technologies and application scenarios such as cloud computing, Internet of Things, artificial intelligence, big data, and blockchain, and is a concentrated expression of informatization, intelligence, and networking. Rural revitalization is an important strategy for China's current economic development.

It aims to achieve the goal of coordinated urban and rural development and comprehensively build a modern socialist country through various means such as promoting rural economic development, improving the rural ecological

environment, and increasing farmers' income. The background of rural revitalization is the imbalance between urban and rural development, low income of farmers, and deterioration of the ecological environment. The significance of rural revitalization lies in the realization of balanced development between urban and rural areas, the promotion of agricultural modernization, the increase of farmers' income, and the protection of the ecological environment.

2. THE PROPOSED METHODOLOGY

2.1 The role of the digital economy in boosting rural revitalization

Digital agriculture is the application of digital economy in the field of agriculture, mainly including intelligent agriculture, Internet of Things agriculture, cloud computing agriculture, big data agriculture, blockchain agriculture, etc. The development of digital agriculture can improve agricultural production efficiency and the quality of agricultural products, promote agricultural modernization, and promote rural economic development.

First, digital agriculture can improve agricultural production efficiency. Digital technology can help farmers automate planting, fertilization, irrigation, and pest control, thereby reducing manual labor and improving labor productivity. For example, through the use of drones, satellite remote sensing and other technologies, farmland can be accurately monitored, and information such as land quality, vegetation conditions, and weather changes can be grasped in a timely manner, so as to guide planting and management and improve crop yield and quality.

Digital rural tourism can promote the development of rural tourism. Digital technology can help the development and integration of rural tourism resources and expand the scale and scope of rural tourism. For example, by establishing a

digital rural tourism platform, it is possible to integrate rural tourism resources, provide diversified tourism products and services, and attract more tourists to travel.

2.2 The Mechanism of Digital Economy Boosting Rural Revitalization

Policy mechanism refers to the policies and measures formulated by the government to support the development of the digital economy. The policy mechanism is an important guarantee and support for the digital economy to boost rural revitalization. Policy mechanisms mainly include fiscal and taxation policies, financial policies, and technological policies.

First of all, fiscal and tax policies are an important policy support for the digital economy to boost rural revitalization. Fiscal and tax policies mainly include measures such as tax incentives and financial subsidies. For example, for the investment and development of digital economy enterprises in rural areas, support such as tax incentives and financial subsidies can be given to encourage digital economy enterprises to enter the rural market and promote the development of digital economy in rural areas.

Second, financial policy is an important policy guarantee for the digital economy to boost rural revitalization. Financial policies mainly include measures such as financial innovation and financial support. For example, it is possible to increase support for rural financial institutions, promote rural financial innovation, improve the quality and efficiency of financial services, reduce financial service costs, and further promote the development of digital rural finance.

In addition, science and technology policy is also an important policy support for the digital economy to boost rural revitalization. The science and technology policy mainly includes measures such as technological research and development and personnel training. For example, it is possible to increase support for digital technology application research and personnel training in rural areas, improve the application level and popularization of digital technology in rural areas, and provide a more solid foundation and support for the development of digital rural economy.

3. CONCLUSION

The digital economy is an important trend in the current global economic development, and it is also an important opportunity for my country to realize rural revitalization. Research on the role and mechanism of digital economy in boosting rural revitalization has important guiding significance and practical value for realizing rural revitalization. This paper takes the role and mechanism of the digital economy in promoting rural revitalization under the background of big data as the research object, analyzes the role and mechanism of the digital economy in promoting rural revitalization, and puts forward corresponding policy suggestions.

4. REFERENCES

- [1] Tang Hongtao, Li Shengnan Research on the effective connection mechanism and path between poverty alleviation and rural revitalization promoted by digital economy [J] Economic Research Reference, 2021, 000 (021): 14-26128
- [2] Zhao Lifang, Long Navy Research on the impact of digital economy on rural revitalization -- based on the analysis of panel data of provinces and cities in China from 2015 to 2019 [J] Contemporary Rural Finance, 2021, 000 (010): P.2-9
- [3] Wang Wensheng Promote rural revitalization and development with digital economy [J] Democracy and Science, 2019 (4): 2
- [4] Zhang Xuejing Vigorously develop digital economy to promote rural revitalization and development [J] Economics, 2021, 4 (3): 28-29
- [5] Wang Dong Thinking on village planning in the context of "two dimensions" [C]//2019 (14th) Urban Development and Planning Conference 0
- [6] Wei Xiaoqing, Wu Xinying, Yang Shumei, etc Research on the promotion of rural revitalization by the upgrading of residents' consumption in the context of digital economy -- taking Hunan Province as an example [J] National circulation economy, 2022 (5): 4
- [7] Li Hong Research on the problems and countermeasures of rural digital economy development in the context of rural revitalization
- [8] Zhao Bing, Wang Wei, Li Hongwei Research on the mechanism and path of new e-commerce to promote rural revitalization in the digital economy [J] Journal of Shijiazhuang University, 2022, 24 (5): 5
- [9] Wang Lanqi Research on the development dilemma and countermeasures of rural digital economy in the context of rural revitalization [J] Shanxi Agricultural Economics, 2022 (17): 3
- [10] Yuan Lai Research on the path of rural e-commerce to boost rural revitalization in the context of digital economy [J] Heilongjiang Grain, 2022 (7): 3
- [11] Peng Jiyun Research on the path of digital economy boosting rural revitalization -- take Huanan County, Jiamusi City as an example [J] Shanxi Agricultural Economics, 2022 (10): 163-165
- [12] Xie Yunhui Research on the path of digital economy driving the transformation and upgrading of traditional industries in the context of rural revitalization -- take the jujube industry as an example [J] Rural economy and technology
- [13] Jia Yang Research on the internal mechanism and implementation path of digital economy enabling rural revitalization -- taking Shaoxing City as an example [J] Business Information, 2022 (15): 0065-0067
- [14] Song Xiaoqing, Hu Zhibo, Zhang Yaping, etc Methods and suggestions for digital economy to boost rural revitalization [J] SME Management and Technology, 2022, 6 (19): 3

AHP Evaluation Software for Intelligent Reform of Computer Majors in Colleges Based on Interactive Intelligent Testing Algorithm

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Abstract: Mathematics and other cross-composition, its content is very abstract, theoretically strong, students have great difficulty in the learning process. In the new era, in order to further improve the teaching quality of data structure courses for computer majors in colleges and universities, when generating test cases, the one-test-at-a-time strategy is used to generate test cases that cover more total gains through sequential optimization ant colony algorithm. The pheromone update adopts a phased approach. The AHP method is used to evaluate the importance of each influencing factor, and then according to the weight of each influencing factor, the curriculum setting of computer majors in higher vocational colleges is modularized and refined, and a computer curriculum setting plan suitable for the characteristics of higher vocational colleges is formulated accordingly.

Keywords: AHP Evaluation Software, Intelligent Reform, Computer Majors, Interactive Intelligent Testing

1. INTRODUCTION

"Data structure" is an important professional basic course in the computer professional course. The algorithm design and implementation of storage structure, logic structure and core operation are the main content of this course [1], and it is the basic theory and technology of computer program design. Although there are many projects management software at home and abroad with relatively strong functions, it is far from enough in network planning optimization and resource allocation [2]. The main reason for this situation is that the current theory of network planning optimization and resource allocation lags behind the actual demand [3].

There are three innovation points in this paper, including two theoretical innovations. Enterprises are the main body of innovation [4]. The key to implementing the innovation-driven development strategy is to stimulate the vitality of enterprises. However, at present, all circles of society have relatively limited cognition on the definition of enterprise innovation ability, and the original innovation ability evaluation system is not fully functional [5]. Therefore, many computer majors in higher vocational colleges are conducting courses to evaluate innovative enterprises based on the theory of intelligent specialization. When set up, it is often cobbled together with popular courses.

Such a curriculum lacks not only a systematic grasp of training objectives, a systematic analysis of majors, but also an analysis of the talent market [6], which will inevitably lead to dissatisfaction among students. However, the truly mature application of voice interaction technology still needs to overcome many difficulties, especially on speech recognition. For example, there is usually a huge difference between the practical and training environments, resulting in a low speech recognition rate in the actual use process. Software testing is an important means of detecting software defects and an important link in the software life cycle. If all the data are used as software testing samples, although theoretically more comprehensive testing requirements are met [7], the Analytic Hierarchy Process (AHP, Analytic Hierarchy Process) is a

well-known American operations researcher T. L. A multi-criteria decision-making method combining qualitative and quantitative analysis proposed by Sashay et al. is also one of the widely used evaluation methods in modern times [8].

The basic principle of network planning technology is to use network diagrams to express the schedule of projects (for example: national defense and construction projects, product production of enterprises, equipment maintenance, etc. [9]), calculating the relevant time parameters of each process. The learning effect of the "Data Structure" course has a great impact on the learning of subsequent professional courses. At the same time, it is also related to the improvement of software design level and professional quality talents. cultivation, etc. [10] Look at an algorithm innovation according to the current learning situation; the two theoretical innovations are the innovation of the group section method and the innovation of resource balance in the network planning optimization, and an algorithm innovation is the efficient use of the cross-linked list in the network graph [11].

Two theoretical innovations are discussed below, and an algorithmic innovation is discussed in Section III. Further improve the innovation evaluation theory; Jinn Dawei and Chen Chunming (2006) believe that innovative enterprises should usually have their own innovation culture and policies [12], put R&D first and maintain sensitivity to R&D and technology, and constantly strengthen the quality of R&D input and output, actively promote the transformation of research and development results [13]. The teaching content formulated by some higher vocational colleges is mainly based on the basic theory of computer, and the courses are divided into software direction and hardware direction according to different directions. Taking the software direction as an example, it is mainly based on various languages and application software. The software direction is usually divided into three parts: programming, application software and network technology. This leads to a large speech recognition error [14]. Therefore, how to use a suitable speech interaction algorithm to accurately recognize human language

in the actual environment is the key to improving the speech recognition rate [15].

Studies have found that many program errors are caused by the interaction of a few parameters. The combination test has a high error detection rate. The literature [16] found that 70% of the errors can be found through the combination of pairs. In today's rapid development of information technology, the realization of the evaluation cannot be separated from the participation of the computer. The development of general-purpose evaluation software for AHP will save a lot of complicated and tedious calculation and processing links in evaluation work and bring great help to evaluation decision-makers [17].

2. THE PROPOSED METHODOLOGY

2.1 The Interactive Intelligence Testing

Algorithms

It is difficult to accurately estimate the maneuvering time and cost rate of the process and when using the group cross-section method to find the decision-making scheme, the degree of influence of the compression of each process on the quality and safety is not distinguished, and only the maneuvering time and cost of the process in each decision-making plan are considered. The voice input of the fee rate mainly collects the original voice signal through the microphone, extracts the characteristics of the voice through the voice signal processing, and then uses the acoustics and language models for further modeling processing, probability calculation and result output. Instead, test critical test cases first until limited resources are exhausted.

Critical test cases have higher overall gain, so during initial testing, researchers focus more on increasing overall gain. For network diagrams, the platform software does not provide a representation for it. This means that you have to do it yourself to represent the network graph. By consulting a large amount of data and carefully studying the network diagram, the author of this doctoral thesis found that the cross-linked list is the best way to represent the network diagram. When the group cross-section method seeks the decision-making scheme, only the maneuver time of the process in each decision-making scheme is considered. There is no separate consideration for the resources required for the construction of the project and the cost rate, so it is impossible to give priority to compressing the construction period of key processes with sufficient resource

2.2 The Intelligent Reform of Computer Major in Colleges and Universities

The previous research on intelligence specialization was based on qualitative analysis. It only analyzed the theoretical logic and the meaning behind it and lacked the necessary quantitative analysis as a support to provide visual evidence for enterprise development. It is not directly convincing. Text analysis has a certain degree of subjectivity. To sum up, higher vocational colleges should fully reflect four characteristics in curriculum setting: basic, practical, feasible and developmental. And the measurement factors of basic, practical, feasible and developmental can be refined.

It has typical dynamic programming characteristics and can search and analyze the optimal state sequence of the observation sequence (length is T). Find. The intelligent interactive mode is an optimization method proposed to analyze the main and sub-critical routes of the network according to the current situation after the implementation of

the current network plan and the proposed target construction period. This method can simultaneously display the main and sub-critical routes through the user interface route. The process of selecting compression should be located on the main key route. Make a pairwise comparison of the importance of each element at the same level with respect to a criterion in the previous level and construct a pairwise comparison judgment matrix. The meaning of the scale of the judgment matrix is as follows: when two elements have the same importance, the scale is 1; compared with two elements, the former is slightly more important than the latter, and the scale is 3.

The characteristics of the "data structure" course are that the course content is large, and the description of data types is complex. Some complex topics have more codes, which will give students a headache when they see it. Therefore, according to the specific characteristics of students, teachers should make appropriate adjustments to the teaching content, including linear tables, queues, stacks, graphs, trees, and recursion. Due to the real-time nature, information can be presented quickly, so that enterprises can understand and update information at any time. Only when enterprises have timely and accurate information can they grasp the needs, concepts and trends of customers or consumers. The combination of real-time, interactivity and cross-domain enables enterprises and customers to communicate in a timely and sufficient manner in transactions, eliminating the cost waste caused by unnecessary errors in transactions

2.3 The AHP Evaluation Software for Intelligent Reform of Computer Specialty

Let students learn to analyze and study computer processing objects, that is, data characteristics, which is the main goal of the "Data Structure" course. The realization of this goal is convenient to select the corresponding storage structure, logical structure and algorithm through the designed computer data. If the network used is relatively simple, and the number of resources to be balanced is small, then the graphical method and the formula judgment method can be used. in use. Because even if the resource calendar is determined, it is easier to modify it.

There are many ways to convert "network tree" to "standard tree". You can re-analyze and define indicators with multiple parent nodes or combine indicators or separate unique subordinate new indicators from cross indicators; you can also Dependent parent indicators are re-analyzed and defined, or new indicators are merged or separated. The cross-linked list is one of the most complex data structures today and its application fields are also very wide, such as network diagrams in project management, control diagrams in power grids, processing of graphics and images, and control in transportation. Figure etc. In order to understand the meaning of the objects described by the cross-linked list, this doctoral dissertation takes the network diagram in project management as an example to introduce the network diagram.

3. CONCLUSIONS

In computer majors in colleges and universities, the data structure course plays a very important role, which will have a direct impact on the students' program development ability. Although the data structure course is difficult to learn, it can still be learned well after a series of adjustments and reforms. In this course, the computer professional courses of higher vocational colleges are designed into the following modules: professional basic courses, professional core courses, professional designated elective courses, cultural quality

elective courses, professional practice, cognition practice and graduation design. These modules are embodied as: software process module, software design module, Linux and system software module, information system engineering module.

4. REFERENCES

- [1] Li Yanping. Practical Interpretation of Teaching Reform of "Data Structure" Course for Computer Majors in Colleges and Universities [J]. 2020.
- [2] Wang Ting, Feng Yuru. The reform of the training mode of computer professionals in local colleges and universities in the era of artificial intelligence [J]. Science and Technology Achievements, 2020, 29(1):1.
- [3] Zhou Yan, Fan Lei. Research on the Teaching Effectiveness of Computer Aided Design Courses Based on AHP Method—Taking the Landscape Major of Yanbian University as an Example [J]. University Education, 2020(8):4.
- [4] Pan Ping, Yan Ruixia, Deng Peiyun, et al. Research on the "Internet + Smart Medical" model based on the combination of medical care and healthcare in Shanghai [J]. Intelligent Computer and Application, 2020, 10(2):5.
- [5] Zhang F, Zhang X , Tang Z , et al. Evaluation and Prognostics of the Higher Education Based on Neural Network and AHP-PLS Structural Equations[J]. Proceedings of the International Conference on Frontiers in Computing, 2021.
- [6] Song Dong, Zhang Lei, Su Majing. Leaked data value evaluation model based on AHP-fuzzy comprehensive evaluation method [J]. Information Technology and Network Security, 2020, 39(9):5.
- [7] Wang Yanzhong. Analysis of the Reform Path of Hierarchical Modular Teaching of Computer Application in Colleges and Universities [J]. 2021.
- [8] Gao Bo. Research on the risk of foreign direct investment in the construction of "One Belt, One Road". Jilin University, 2020.
- [9] Li Shuxian. Exploration on the teaching reform of computer software technology specialty under the ideological and political concept of curriculum [J]. Educational Research, 2020, 3(8):187-188.
- [10] Wang Zhongyi, Zhang Taihang, Duan Lingling, et al. Research on innovative teaching strategies for computer majors in colleges and universities under the background of big data [J]. Education Modernization, 2020, v.7(19):92-93+104.
- [11] Zhu Xiaoling. Factors and reforms affecting the quality of school-enterprise cooperation for computer software majors in colleges and universities under the background of educational informatization [J]. Education Informatization Forum, 2020, 4(7):2.
- [12] Zheng Zhong, Li Hongliang. Evaluation of international port intelligence based on KPI and AHP [J]. Journal of Wuhan University of Technology: Social Science Edition, 2022, 35(1):8.
- [13] Sun Wenqing, Han Qiang, Zhang Xudong. Intelligent Construction and Management of Computer Experiment Teaching Centers in Applied Universities [J]. Journal of Jilin Engineering Technology Teachers College, 2022, 38(4):4.
- [14] Yang Yi. Research on the teaching reform of computer majors in colleges and universities in the new era: Comment on "Research on the Teaching Reform of Computer Majors" [J]. Educational Development Research, 2020, 40(1):1.
- [15] Li Yanjie, Yang Shengwu. Research on Fuzzy Comprehensive Evaluation of Teacher Performance in Shenyang Universities Based on AHP and Entropy Weight Method [J]. Advances in Applied Mathematics, 2021, 10(11):9.
- [16] Sun Guihong, Zhu Kai. Reform of the training mode of applied talents for computer science and technology majors in private colleges and universities under the background of new engineering [J]. Software, 2021.
- [17] Zhi Xiaohui, Chen Yulan, Zhang Lunning. Benefit evaluation of the application of Yaahp software based on AHP on autonomous driving agricultural machinery projects [J]. Nanfang Agricultural Machinery, 2021, 52(14):4.

Intelligent Type Platform Design for Leisure Sports Tourism Resource Development Based on Complex Speech Recognition Algorithm

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Abstract: This paper proposes a fixed-length sequential forgetting coding (Ordinally Forgetting Encoding, FOFE) method for language model modeling. FOFE models the word positions in the sequence through a simple sequential forgetting mechanism to provide tourists with personalized service functions required for tourism and improve the quality of Chongzuo tourism services. The platform focuses on promoting tourist attractions, recommending tourist routes, and booking tickets. Through the integration of the resources of various tourist attractions in Chongzuo, information such as tickets, tourist routes, tourist services, etc. will be pushed on the platform. Strengthen the development of industrial integration, improve the security system, pay attention to the government's regulatory function, and give full play to the advantages of media publicity. Rural leisure sports tourism resources development strategy.

Keywords: Intelligent Type Platform Design, Leisure Sports Tourism, Tourism Resource Development, Complex Speech Recognition

1. INTRODUCTION

Speech recognition technology (Automatic Speech Recognition, ASR), also known as automatic speech recognition. Its goal is to convert the lexical content of human speech into computer-readable input [1]. That is, the language that the computer understands. It is an important research direction of speech signal processing. In line with the trend of the "Internet +" era, the connection between the tourism market and the Internet is getting closer and closer. Tourism official accounts have been established in many regions [2]. They combine with WeChat public platform to fully integrate and tap local tourism resources. Sports tourism refers to tourism that tourists take part in or watch various fitness entertainment, sports competitions, sports exchanges, etc. as the main purpose. Although sports tourism only accounts for around #M's share of tourism [3].

Since there is no comprehensive well-off without the health of the whole people, it has made high and far-reaching requirements for building a well-off society [4] in an all-round way and a strong physique and contributed to the realization of socialist modernization with Chinese characteristics. Control the operation and work of a machine or robot [5]. For example, the commonly used mobile phones have already implemented voice dialing. It is also possible in the future to use voice to control the driving of cars and other equipment [6].

Speech recognition refers to the process that machines convert speech signals into corresponding text files or commands through recognition and understanding [7]. The two main aspects of pattern recognition are feature extraction and pattern classification. Online travel provides travel consumers with numerous travel products and services [8], and it is a challenging task for travelers to read through all this information to plan their travel, leisure time [9]. In the era of

pursuing tourism quality, tourists are paying more and more attention to the quality of tourism products and services. How to make it easier for tourism consumers to filter out the tourism information they need and push relevant tourism service information to potential consumers [10]. Human voice signals the generation and perception of speech is an extremely complex process, which can be divided into three stages: speech generation, speech transmission and speech perception. In the production stage of speech, the different vocal organs of human beings, including the lungs, trachea, larynx, pharynx, nose, and mouth, together form a complex pronunciation system. The part of the larynx is called the glottis, and the expiratory passage from the glottis to the lips is called the vocal tract. In recent years, Recommender Systems (RSs) have become more and more popular with the widespread adaptation to deal with the problem of information overload in various application fields such as e-commerce, entertainment, and e-tourism [11].

The recommender system can purposefully push tourists' potentially favorite tourist information services to facilitate users to obtain the required tourist information resources [12]. The Hadoop Distributed File System (HDFS) [13] is used to store massive Using the Spark [14] cloud computing platform based on memory operation, the algorithm implementation can parallelize the tourism big data and improve the efficiency of the algorithm. The concept of deep learning comes from artificial neural networks [15]. The early artificial neural network was proposed mainly to simulate the working mechanism of the brain. It abstracts the neuron network of the human brain from the perspective of information processing, so as to achieve the purpose of simulating the cognitive and learning ability of the human brain. Its ultimate goal is to achieve natural language communication between humans and machines [16].

In recent years, with the rapid development of speech recognition technology, it has moved from laboratory research to marketization [17] and has been widely used in high-tech fields such as communications, home appliances, and medical care. In order to solve this problem, we learn from and study the relevant WeChat public platforms of tourist cities inside and outside the district and build a Chongzuo smart tourism service platform based on WeChat official accounts. integration of tourism resources [18].

Due to the obvious advantages and disadvantages of a single traditional tourism recommendation algorithm, the research based on combined tourism recommendation algorithm is gradually increasing. Logesh et al. [19] proposed a travel recommendation model based on combinatorial technology, which combined clustering algorithm, contextual information and opinion mining technology and collaborative filtering algorithm.

Compared with the traditional GMM-HMM system, more than 20% performance improvement can be obtained. Since then, researchers at Big M have devoted themselves to the study of acoustic modeling based on deep neural networks, and a lot of work has emerged. In this section, we mainly introduce the research status of speech recognition based on deep neural network in two points, namely, the network structure of acoustic model and the optimization of acoustic model training efficiency.

2. THE PROPOSED METHODOLOGY

2.1 The Complex Speech Recognition Algorithms

Some consonants are unvoiced, and some are voiced. Therefore, the beginning and end of a Chinese character are usually unvoiced, and the middle part is vowel. Vowels and unvoiced sounds have the following properties: Compared with FNN, RNN has a depth in time, so it can effectively capture the long-term correlation in the sequence. But unfortunately, the high computational complexity makes it difficult to generalize RNN or LSTM to some large tasks, such as acoustic modeling tasks involving tens of thousands of hours of speech recognition. The time-varying voice signal determines that it cannot be processed in the entire time domain, which is also a difficulty in voice signal processing. However, after a large number of experiments, it can be considered that its characteristics are basically unchanged within a short time (female 11: 10 ~ 30 mms), which is the short-term stable characteristics of speech signals. The whole word unit modeling is to model the speech signal corresponding to the whole word, and one word corresponds to one model.

The accuracy of modeling in this way is better, and the pronunciation changes caused by the contextual influence of the phonemes in the word can be ignored. As in the experiment of isolated word recognition in this paper, the whole word is modeled. The difficulty of mixed programming of c10 and MATLAB resides in the connection settings and parameter transmission of Mallaby Visual c++. There is no way to use the MATLAB function. All need to properly load Malcom in VC and set up the Visual C++ integrated editor environment. By adding explicit orthogonal constraints to the feature extraction layer, we will show that the HOPE method is very effective for learning both supervised and unsupervised DNNs. In unsupervised learning tasks, our research shows that the MLE-based HOPE learning algorithm

can be used as an efficient method for unsupervised DNN learning from unlabeled data.

2.2 The Development of Leisure Sports Tourism Resources

Common window functions include rectangular window, Hamming window, and Hanning window. The Hamming window is designed to divide the speech signal into frames. The reason. The shape of the window function is very important in the time-domain analysis of speech signals. The rectangular window function has the advantage of good spectral smoothness. Order information such as special food and specialty sales in Chongzuo region can be easily obtained and inquired by tourists through smart phones. travel information.

The WeChat official account platform provides tourists with the opportunity to save travel expenses, so that tourists can arrange travel plans more reasonably Tourism development plan. According to the resource characteristics of coastal areas and the needs of sports tourism development, the goal of the extended development model is the integrated development of leisure sports and tourism. The main body of operation is leisure sports enterprises, and sometimes the two operate jointly. At present, my country's sports tourism has no shortage of tourist attractions, tourism markets, and tourism consumption entities, and the government's macro-control has the advantage of policy support. After using the web crawler code written in Python to crawl information data such as user ratings and comment texts of various tourist attractions, it is necessary to the crawled raw data is further sorted, because there are some messy and disturbing data information in the crawled data.

Secondly, the WeChat official account is used as the control terminal of the Chongzuo smart tourism service platform. Users only need to pay attention to the official account to enjoy the service without installing other software, which saves the memory of the mobile phone and can provide users with tourism services quickly. The method is easily accepted by the majority of users to develop coastal sports tourism; the central part develops wetland tourism with the two national nature reserves in Yancheng as the center and can also develop sports eco-tourism products featuring coastal forest belts, coastal grasslands and tidal flats through the industry. Infiltrate, extend, and expand to promote the development of related industries, and realize rural ecological protection, resource utilization, and sustainable economic development through the integrated utilization of funds, technological innovation, and management.

2.3 The Intelligent Type Platform Design for Tourism Resource Development

After successfully logging in, the administrator enters the personal center background of the official account and can manage users in the background of the official account. The administrator can sort the users who have followed the official account. The newly followed users will be ranked at the top of the list. In terms of tourist attractions recommendation, the recommendation system often only uses the user's rating or comment text information and does not well integrate the user. The combination of review text and rating information leads to the lack of accuracy and validity of tourist attractions recommendation. Text information for ratings and reviews.

The development of sports tourism should become a new idea for developing the economy of coastal areas. Doing a good job in the cake of sports tourism is not only the needs of

tourists, but also the needs of the development of the tourism market. This paper proposes two improved algorithm models for the recommendation of tourist attractions. The algorithm model of LDA topic weighting of user ratings and review text information and the algorithm model of LDA topic weighting based on scenic spot ratings and review text information. Both of these algorithm models mine the user's potential preference information through the user's rating and comment text information and carry out personalized attraction push for the target object.

3. CONCLUSIONS

An optimization scheme of tourist attractions recommendation algorithm based on Spark cloud computing platform technology is proposed, which aims to provide users with good tourist attractions recommendation information services by using big data related technologies and related recommendation algorithms. The composition of a continuous speech recognition system is introduced, and the functions of each part are analyzed. Including signal preprocessing and feature extraction, dictionary, task grammar, language model, recognition network, embedded training algorithm and recognition algorithm. The smart tourism service platform can find problems in time through the tourist feedback module, so that the scenic spot can improve and improve the service quality, so as to promote the healthy development of tourism industry.

4. REFERENCES

[1] Lu Xiuren. Design and Implementation of Speech Recognition Algorithm Based on Improved DTW [D]. Southeast University, 2017.

[2] Tang Yao. Research and implementation of speech recognition algorithm based on DSP platform [D]. Nanjing University of Aeronautics and Astronautics.

[3] Zhang Wenjie, Zhang Honggang, Yan Yuee. Design and implementation of command interaction system based on speech recognition and text segmentation algorithm [J]. 2013.

[4] Li Zhihui, Zhang Lei. A smart development platform and control method of sports tourism resources based on big data: CN110989414A[P]. 2020.

[5] Zhang Xiaoming. Design of Error Correction Module for Speech Recognition in Examination Room Based on Error Information Extraction [J]. Modern Industrial Economy and Informatization, 2022, 12(6):3.

[6] Wei Jian, Liu Zhiqin. Design of intelligent speech recognition robot teaching platform based on ARM11 [J]. Software Guide, 2013, 12(5):2.

[7] Xiong Yang. Research and Implementation of Internet of Vehicles Mobile Terminal Based on Small Vocabulary Speech Recognition Algorithm and TTS System [D]. Beijing Jiaotong University, 2013.

[8] Mei Shu. Algorithm design and research of multi-constraint assignment problem in smart education cloud platform [D]. Nanchang University, 2016.

[9] Yang Qiongfang. Design and implementation of APP for tea tree germplasm resources based on Android speech recognition [J]. Fujian Computer, 2018, 34(2):4.

[10] Du Jingyi, Li Ani. Design of speech recognition system based on LabVIEW platform [C]// 2009 National Virtual Instrument Conference. 0.

[11] Cui Kai, Zhou Tiejun, Li Hai. Speech recognition method based on STO array and dynamic time programming algorithm:

[12] Zhao Kaijie, Zhu Yongqiang, Zheng Yan, et al. Voice Confidential Information Supervision Algorithm Based on Speech Recognition [J]. Network Security Technology and Application, 2022(6):3.

[13] Zou Wei. Design of reconfigurable speech recognition system-on-chip [D]. University of Electronic Science and Technology of China.

[14] Zhu Ping, Li Ruixue, Zhu Yacheng. Research on the development strategy of coastal leisure sports tourism in my country based on RMP theory.

[15] Tang Huaikun, Shi Yifei. Reconstruction of top-level design of smart city based on digital twin concept [J]. Smart Building and Urban Information, 2020, 000(010):15-16.

[16] Li Junjiang. Design and implementation of machine learning cloud platform based on Kubernetes [D]. Nanjing University of Posts and Telecommunications.

[17] Xue Lei, Jiang Chaohui. Design and implementation of ESB-based smart city sharing platform [J]. Computer Technology and Development, 2013, 23(3):5.

[18] Bao Shiliang. Research on key technologies of smart tourism platform based on "cloud + terminal" model [D]. Strategic Support Force Information Engineering University.

[19] Wang Xiangyu. Operation system design of F company's smart tourism platform based on big data.

Intelligent Modeling of Practical Teaching Quality Evaluation Based on Distributed Scoring Terminal Data Classification Algorithm

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Abstract: Research the data flow classification and mining algorithm based on decision tree, the research idea is to first describe the general decision tree; then focus on the implementation of the data flow decision tree VFDT algorithm, using the parallel computing of Twitter Storm distributed streaming computing framework and Yahoo SAMOA scoring Platform. Encouraging the design and development of smart courses has gradually become the focus of teaching work in major universities, and the construction of a teaching evaluation system for smart courses is the top priority of the work. Convert half of ordinary colleges and universities to vocational education. As an important link to ensure the teaching results of vocational education, practical teaching has become an important research field of teaching reform. How to improve the teaching quality of practical teaching.

Keywords: Intelligent Modeling, Practical Teaching Quality Evaluation, Distributed Scoring Terminal, Data Classification Algorithm

1. INTRODUCTION

Agriculture is the primary industry and plays an important role in national economic development and social stability. The development of modern agriculture is inseparable from the important support of scientific and technological talents [1]. It is cultivated in the development direction of agricultural modernization, rural revitalization, ecological environment governance and protection, etc. Talents in the new era are the tasks and responsibilities of agricultural colleges and universities in my country, and the reform of college education is always closely related to the change of social background. Since 1999, with the expansion of college enrollment, the employment of undergraduates has become the focus of college work [2].

In order to seek higher employment rate, the training structure of talents in colleges and universities is constantly adjusted to meet the needs of society [3]. The reform direction of the Ministry of Education in 2015 has made it clear that the term "smart education" is derived from "smart earth", which refers to promoting the sharing of high-quality educational information resources and improving the quality and level of education through the application of new-generation information technology [4].

"Smart Education" is an important means to enhance teachers' teaching ability and students' learning ability. (Jin Jiangjun, 2012) The author believes that smart education must meet the following characteristics in order to implement education: educate connotative development [5]. "As a half of higher education, the quality of talent training will be a major focus for improving the connotation of higher vocational education. In promoting the cultivation of high-quality technical and skilled talents, with the development of Internet applications, a large amount of streaming data is generated (Hereinafter, the general term "data stream" is used), which is different from traditional data at rest [6].

Data flow is massive, high-speed, and real-time. It contains a lot of information and can be used as the basis for intelligent decision-making [7]. Clustering algorithm will classify similar

objects into the same group according to the similarity between objects, it is an unsupervised machine learning algorithm [8]. In streaming data, data items flow continuously into the system in an ordered sequence. Clustering streaming data requires continuous analysis of the input streaming data and generating and maintaining the generated clustering groups in real time [9].

The concept of big data was first proposed in the 1980s, from the big data special issue of "Nature" in 2008. Its strong application requirements make it the focus of research and application in recent years [10]. In particular, the potential application prospects of big data have been concerned by the governments of many countries. Cultivating and mastering solid basic theories, possessing strong agricultural practice and operation capabilities, and having certain professional innovation capabilities are the main talents for talent cultivation in most agricultural colleges and universities. Goals and Criteria [11]. In 2015, the national "Overall Plan for Promoting the Construction of World-Class Universities and First-Class Disciplines" was issued [12]. Among the country's 1,200 general institutions of higher learning, more than 600 will turn to vocational education, accounting for 50% of the transition. To a certain extent, this reflects the changes in the demand for talents brought about by the transformation of the social industrial structure, and ultimately leads to changes in the structure of talent training. As the frontier of university reform, applied technology universities have become the focus of research on talent training [13].

Hardware and software to create a smarter teaching environment for teaching [14]. Hardware refers to the provision of corresponding equipment and technical support, while software refers to the formation of scientific wisdom teaching guiding ideology. For teachers' course teaching quality evaluation, the main body of evaluation is often secondary colleges, school academic affairs offices and quality office inspectors, and more is to check teachers' documents or students' achievements [15].

The evaluation indicators are mainly the teaching methods adopted by teachers. Traditional data mining methods are not

well suited for data stream mining [16]. Data stream classification poses many new challenges to traditional classification techniques. Since classification theory and methods are widely used in different fields, how to use limited computing resources to process real-time data flow information when mining a large number of data streams. [17]

2. THE PROPOSED METHODOLOGY

2.1 The Distributed Scoring Terminal Data Classification Algorithm

In the above model, "five-body" represents the following five aspects. First, the object of evaluation should pay attention to the whole process of practical teaching activities, centering on service and the progress and development of students in terms of knowledge, skills, and qualities. Whenever the algorithm receives a local-result content event, it will retrieve from the splitting leaves correct leaf l , then update the current optimal (X_a) and suboptimal (X_b) attributes. When all the local results are fed back to Model-aggregator PI, the flow clustering algorithm can be mainly divided into one-stage and two-stage.

In order to solve the problem that the CLU stream algorithm needs to know the number of cluster structures in advance, literature [9] proposed a density-based streaming data clustering algorithm. The advantage of this method is that it can deal with outliers and is suitable for changes in clusters; however, this method requires frequent offline processing in order to detect changes in outliers. Big data mining is also a cost-accuracy balance optimization problem, where in Improving the accuracy of distributed mining at a reasonable communication cost is one of the key scientific issues. The main strategy to reduce communication cost is to share statistics between nodes.

2.2 The Practical Teaching Quality Evaluation

The high-quality agricultural planting area is 26hm², the forest fruit seedling planting area is 4.43hm², the ecological pasture and field planting area is 225hm², and 15 electromechanical wells can be used. The road network in the park has begun to take shape. The south inner ring road and the north inner ring road, as well as the three main roads leading to various functional areas from south to north, have all been built as gravel roads. At present, the major in teaching evaluation is mainly summative evaluation. The evaluation takes the form of in-class tests, final works at the end of the semester, essays, etc.

This evaluation method is unable to mobilize the subjective initiative of students' learning. Required tasks: Each group needs to complete the translation skills summary of business letters within 2 weeks during the study of this module and analyze them with examples. Group members will evaluate each member's contribution to completing the task. Fourth, the participation of diverse subjects. During the internship, students complete their learning tasks and engineering practice on the outside construction site. Therefore, the students themselves, relevant on-campus instructors, students' parents, and corporate instructors are directly involved in and familiar with the whole process. These four parties have different perspectives and even interests as the same.

2.3 The Intelligent Modeling of Practical Teaching Quality Evaluation

The monitoring information should be standardized and processed to form decision-making instructions for the distribution of incoming water and the initiation of sprinkler

irrigation, and to provide basic data for research and experiments on water-saving irrigation. In the above model, "five-body" represents the following five aspects. First, the evaluation object should pay attention to the whole process of practical teaching activities, centering on the progress and development of service and students in terms of knowledge, skills, and quality. The running time is used to compare the execution speed of the algorithm. Since the nodes are all locally virtualized, it is ignored here. Storm node communication is time-consuming, ignoring events where different nodes execute duplicate data.

In the experiment, the number of Storm platform nodes is set to 3. The goal of this paper is to apply the distributed clustering algorithm to create and maintain a global clustering structure and make the global clustering structure similar to the clustering structure obtained by the centralized clustering algorithm. This paper achieves the above goals through serialization technology and local micro-clustering algorithm. Given the training data set T and the class identification set C , classification learning is to learn a classifier from T , and the classification algorithm is the description of the process of constructing this classifier.

However, the training data set of classification learning in streaming big data is collected dynamically over time. The evaluation system of smarter teaching is divided into three aspects: (1) Evaluate students' autonomous learning to obtain teaching feedback and arrange for adjustment of follow-up Teaching content. The evaluation system of smart teaching is divided into three aspects: (1) Evaluate students' autonomous learning situation, obtain teaching feedback, arrange, and adjust subsequent teaching content, parents of students and corporate instructors. These four parties have their own perspectives and even interests. The same, but jointly serve the students' overall growth in the post-internship stage. Therefore, their comprehensive evaluation is the most scientific and reasonable.

3. CONCLUSIONS

This paper proposes a two-stage distributed stream data clustering algorithm with high communication efficiency and analyzes the communication complexity and computational complexity of the algorithm. Due to the use of local micro-clustering, learning materials suitable for independent individuals are screened out in the era of information explosion. The teaching evaluation system can ensure the dominant position of teachers, ensure the effective progress of the teaching process, stimulate students' interest, ensure the development of learning activities, and at the same time play a role in monitoring and regulating the teaching process. This paper starts with the application requirements of big data and analyzes the application scope and potential application value of big data with distributed and fluid technical characteristics.

4. REFERENCES

- [1] Tan Danfeng. Research on the construction and application of the teaching quality evaluation system for the intelligent practice course of accounting major in higher vocational colleges [J]. *Economist*, 2021(10):3.
- [2] Zhang Cunli, Wang Xulan, Zhang Jianluo. Effect evaluation of TCM nursing practice in smart nursing homes in the teaching of "Geriatric Nursing" and its impact on teaching quality [J]. *Western Chinese Medicine*, 2019, 32(2):4.
- [3] Peng Xin, Shen Yicai, Lu Ping, et al. Research and practice of smart teaching reform in Henan University of

Traditional Chinese Medicine based on the concept of TCM informatization teaching [J]. 2020.

[4] Jin Xian, Qi Hua. Construction of a practical teaching quality evaluation index system based on a three-dimensional quality model--Taking post-practice as an example [J]. Journal of Nanjing Radio and Television University, 2019(2):4.

[5] Wang Xueqin, Ding Huanxiang, Zhang Hongpin. Construction and practical research on the quality evaluation system of information-based teaching—Taking the theoretical course of physical education in Linyi University as an example [J]. Journal of Harbin Institute of Physical Education, 2019, 37(3):6.

[6] Feng Rongrong. Research on the teaching practice of chemistry smart classroom in junior middle school under the background of "artificial intelligence + education". Kashgar University, 2020.

[7] Zhang Lishan, Feng Shuo, Li Tingting. Formal modeling and intelligent computing for classroom teaching evaluation [J]. Modern Distance Education Research, 2021.

[8] Wang Xudong. Common Models and Practical Application of Teaching Quality Value-Added Evaluation [J]. Examination Research, 2020(5):11-16.

[9] Wu Xiaoxuan, Li Zhengmao, Guo Changjian. Research on the design and application of smart classroom teaching based on "Learning Pass" [J]. Software Guide, 2020, 19(12):4.

[10] Xu Huifang. Research on the teaching practice of "communication principle" based on smart classroom [J]. Journal of Changzhou Institute of Technology, 2022, 35(3):4.

[11] Zhou Xinran. Arrangement and quality assurance of practical teaching of liberal arts majors in higher vocational colleges under the background of informatization [J]. Journal of Changsha Civil Affairs Vocational and Technical College, 2021, 28(2):4.

[12] Zhang Liping, He Shengwen, Teng Wenjie, et al. Demonstration of teacher teaching quality evaluation index system optimization and model design [J]. Medical Education Research and Practice, 2019, 27(4):4.

[13] Wei Anfang, Yuan Huifen, Wang Xu, et al. Design of practical teaching wisdom platform for nonwoven materials and engineering specialty under the background of new engineering [J]. Guangdong Chemical Industry, 2021, 048(010):266-267.

[14] Hou Shuhui, Zhou Wenye. Evaluation of Teachers' Practical Wisdom in Educational Situations: Why and What [J]. Jiangsu Education, 2021(91):11-14.

[15] Sui Jiongming, Zheng Chunhua, Zhu Hong, et al. Research on the teaching reform of genetics course under the background of new agricultural science [J]. Smart Agriculture Guide, 2021, 1(4):56-58.

[16] Ren Siru, Chen Yong. Research on the construction of smart teaching evaluation index system in primary and secondary schools [J]. Journal of Jiamusi Vocational College, 2022, 38(7):3.

[17] Shen Kaizhong, Zhao Chunyang, Ye Guoying, et al. Design and practice of surgical nursing classroom teaching based on cloud classroom wisdom vocational education [J]. Health Vocational Education, 2021, 039(021):72-73.

[18] Wang Haina. Online teaching practice and reflection of drug analysis course [J]. Pharmacy Education, 2021, 037(006):44-46.

Violin Music Timeliness and Aesthetics Evaluation System Based on Melody Signal Cyclic Fluctuation Matching Algorithm

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Abstract: On the basis of the original spectrum allocation scheme based on the cyclostationary characteristics of the signal, a new spectrum allocation scheme is proposed. And take three kinds of digital signals widely used in real life as an example. From the perspective of modern art, this paper discusses and analyzes the aesthetic characteristics of Chinese violin music, taking the concerto "Liang Zhu" as an example. It is proposed that "unfinished" stimulates "re-creation", symbolic meaning evokes emotional resonance, contextual expression stimulates artistic conception association, and abstract lines lead to essential thinking. Starting with the demonstration strategy of violin performance and the innovation strategy of violin performance, it expounds the strategies of cultivating students' musical aesthetic awareness in violin performance.

Keywords: Violin Music Timeliness, Aesthetics Evaluation, Melody Signal, Cyclic Fluctuation Matching Algorithm

1. INTRODUCTION

Up to now, the violin has been introduced to my country for more than 100 years. Due to the lifting of the "hundred-year sea ban" in the late Ming and early Qing dynasties [1], Western missionaries began to visit this thin land of our country, making the violin take root in our country, and gradually the formation of a musical art spread, deeply loved by the people [2]. Because all the existence of beauty is inseparable from the viewer, the beauty has the attributes of idealism and spirit. From this point of view, beauty is a positive and healthy psychological phenomenon that can make people feel satisfied and happy [3]. Some people say that "like is beautiful". Although this statement is not very academic, it is concise and comprehensive, and it reveals the essence of aesthetics in one sentence [4]. Cultivating students' musical aesthetic awareness is one of the basic functions of violin performance teaching [5].

Combined with the current situation of violin performance teaching, the violin has a long history as a bowed stringed instrument, and its history has a long history [6]. Violin musical instruments began to appear in the 16th century. Due to the influence of unreasonable teaching concepts and outdated teaching strategies [7], violin performance teaching did not play the function of cultivating aesthetic awareness. Therefore, it has certain practical significance to analyze the strategies of cultivating music aesthetic awareness in violin performance. In addition [8], Ma Sicong is also a violin artist with remarkable achievements in this period. His "Homesickness Song" is based on the Chinese folk song "Horse on the Wall" as the creative material, and uses the superb violin playing skills [9] at that time to express the homesickness in the hearts of wanderers who have left their hometowns. The affection of relatives is vividly performed, the style of the song is simple, and the tune is moving [10].

The continuous development of the existing mobile communication technology provides people with strong and convenient means of communication [11], and its appearance has changed our production and life style. At present, many

countries have entered the commercial stage of the second generation mobile communication system [12]. Therefore, the rapid development of wireless technology and the increasing abundance of wireless services make the existing spectrum resources increasingly tight. Current wireless networks usually employ a static spectrum allocation strategy [13]. In the cognitive radio system, "Primary User" refers to the user who is authorized to use the corresponding frequency band, and the user who is not authorized to use the corresponding frequency band is called "Cognitive User" [14]. Enjoy higher priority than cognitive users. In order to avoid cognitive users from interfering with primary users. It has irreplaceable advantages such as electrogram and ultrasound [15].

It is mainly reflected in the following aspects: First, before some diseases develop to clinical symptoms, certain abnormalities often appear in the voice [16], and early diagnosis of certain diseases may be achieved by analyzing these abnormalities. Second, the equipment for auscultation or phonogram examination is simple [17], almost all primary medical units are equipped with it, and the penetration rate is high. During this period, the first violin composition in my country, Difficulty Traveling [18], was born. It was composed by the famous geological Although it is an amateur's creation, it not only fills the blank of my country's violin music works, but also was selected as the prelude to the commemorative meeting of the 80th anniversary of the May 4th Movement of Peking University. Some people say that [19] "like is beautiful". Although this statement is not very academic, it is concise and comprehensive, and it reveals the essence of aesthetics in one sentence [20]. The so-called taste is the state that attracts people and can make people interested and willing to pay attention. The so-called aesthetic taste is the psychological process of the subject accepting and appreciating the aesthetic taste of the object [21]. Basic music knowledge is the main content of the aesthetic awareness of violin playing music. In the teaching process, students should master the rhythm and style of violin music. With the continuous [22] increase of students' mastery of basic music knowledge. After the Italian school, the Fabian school, the

German-Austrian school, and the modern Russian school were developed. After a long period of development, the violin music we know today is formed [23]. After the founding of New China, with the changes of the times and the progress of society, the development of my country's violin music art also has two outstanding progresses [24], one is my country's violin music education work, and the other is violin music creation. During this period, a group of mature violin artists have been formed in our country.

2. THE PROPOSED METHODOLOGY

2.1 The Melody Signal Cyclic Fluctuation Matching Algorithm

After the founding of New China, along with the changes of the times and the progress of society, the development of our country's violin music art has also made outstanding progress in two aspects, one is our country's violin music education, and the other is violin music creation. During this period, a group of mature violin artists have been formed in my country. "Cyclostationary signal" is defined as a signal whose statistical characteristic parameters of a certain order change periodically with time. These signals are used in systems such as communication, telemetry, radar and sonar. frequently encountered. For example, the analog communication system stops the sine wave amplitude, phase and frequency keyed signals, the amplitude, phase and frequency keyed signals in the digital communication system, and the signals generated by various periodic scanning processes in the television and radar systems.

The advantage of the cyclic spectrum detection algorithm is that it extends the traditional one-dimensional power spectral density-based signal detection method to a two-dimensional plane with two coordinate axes of frequency and cyclic frequency, and the noise and signal may be coincident in the power spectrum. , and is discrete in the cyclic spectrum, which improves the ability to distinguish and select the signal. Use the characteristic that the modulated signal has a large non-zero cyclic spectral function value when the cyclic frequency is not zero. Stationary random processes generally have time ergodic characteristics, so the numerical statistics of various orders describing the stationary process, such as mean value, correlation function, etc., are all The time-averaged (also called sample-averaged) value can be used instead of the statistical average; the general non-stationary process cannot calculate its time-varying correlation function from a single sample. The signal has multiple order statistical parameters, such as first-order, second-order, and higher-order statistics parameter.

Generally, the first-order statistical parameters are represented by the mean value, the last-order statistical parameters are represented by the correlation function, and the higher-order statistical parameters are represented by the high-order cumulant. A cyclostationary signal is defined as a signal whose first-order and second-order statistical characteristics change with time and show a certain periodicity.

2.2 The Timeliness and Aesthetics of Violin Music

The so-called "unfinished" refers to the unfinished part of the work of art. It is the blanks reserved by the artist intentionally or unintentionally in the works. These blanks have huge uncertainties and reserve a lot of imagination space for the viewers. The mysteries generated by the uncertainty of these imagined spaces will attract And stimulate the curiosity of some viewers. From the perspective of the composition of

music aesthetic awareness, compared with basic music knowledge and music appreciation ability, it is relatively difficult to cultivate students' ability to understand music culture. This ability directly affects students' appreciation of various violin works. In order to help students develop the ability to understand music culture, teachers should follow the principle of step-by-step and gradually use the violin to play. The violin was brought into China by a large number of Western missionaries in the late Ming and early Qing dynasties. According to verifiable historical records, missionary Nan Guangguo and others Emperor Kangxi on his southern tour played western music.

But at that time, it was only limited to the limited musical activities of missionaries in the court, that is, in the middle and late Baroque, the violin bowed and stringed instruments had been introduced into China, but they had not developed. This not only cultivates a new generation of talents for the development of my country's violin music art, but also gradually forms a Chinese-style development path for violin music art. In addition, a large number of violin music works with Chinese characteristics have also been released in the creation of violin music. The representative is the violin concerto "Liang Zhu" co-created by He Zhanhao and Chen Gang in 1958, which has a far-reaching influence. `After using this spectrum hole, it is still necessary to use spectrum detection technology to monitor the status of authorized users in real time. Once authorized users appear, cognitive users should exit the frequency band and continue to detect other available frequency bands to avoid interference to authorized users, such as picture.

2.3 The Timeliness and Aesthetics Evaluation System of Violin Music

Since its inception, the violin concerto "Liang Zhu" has been deeply loved by people. It has touched the hearts of countless audiences with its strong artistic appeal, beautiful and tactful musical melody, and strong and profound national style. , has become a model in the history of Chinese violin music art. The environment provides some information to the learning part of the system, the learning part uses this information to modify the knowledge base to improve the efficiency of the system to perform tasks, the execution part completes the task according to the knowledge base, and feeds back the obtained information to the learning part. In the specific application, the environment, knowledge base and execution part determine the specific content of the work, and the problem to be solved in the learning part is completely determined by the above two parts.

Since its inception, the violin concerto "Liang Zhu" has been deeply loved by people. It has touched the hearts of countless audiences with its strong artistic appeal, beautiful and tactful musical melody, and strong and profound national style. , has become a model in the history of Chinese violin music art. The quasi-periodicity of the hop is one of the physiological bases of the cyclostationary characteristic of the hop signal. From the point of view of the production system of Yeyin, Yeyin is a series of mechanical vibrations generated by the action of the blood flow of the visceral blood on the blood vessels of the melon.

3. CONCLUSIONS

Firstly, the spectrum detection technology in cognitive wireless wire is introduced, and several common detection techniques are introduced. Then, the cyclo-spectrum theory is studied in detail according to the cyclostationary characteristics of the signal. Through the above analysis, it can be seen that the cultivation of music aesthetic awareness is of great significance to the improvement of students' violin performance skills and the improvement of performance appeal. Therefore, teachers, as communicators and teachers of musical beauty, are in the process of actual violin performance.

4. REFERENCES

- [1] Wang Yiran. The Musical Aesthetics of Mozart's Violin Concerto No. 3 in G major [J]. Drama Home, 2020(21):1.
- [2] Zheng Haoyang. Musical Aesthetics in Tchaikovsky's Violin Concerto in D major [J]. Art Review, 2021.
- [3] Qing Yanyan. Research on the aesthetic taste of Bach's violin music and Serafini's illustrations [J]. Art Review, 2019(22):2.
- [4] Qing Yanyan. Research on the aesthetic taste of Bach's violin music and Serafini's illustrations [J]. 2022(22).
- [5] Hu Yuanchen. A brief analysis of the aesthetic differences between Chinese and Western violin music [J]. Art Review, 2018(4):2.
- [6] Jia Xiaocheng. A Look at the Aesthetic Trend of Chinese Violin Music Creation [J]. Music Creation, 2019(4):6.
- [7] Han Yanling. Cultivation of musical aesthetic awareness in violin performance [J]. Art Science and Technology, 2018, 31(2):1.
- [8] Zhu Ziqi. A Tribute to Nature: An Analysis of Qin Wenchen's Violin Concerto "The Line of Mountains" [D]. China Conservatory of Music, 2020.
- [9] Hu Yuanchen. A brief analysis of the aesthetic differences between Chinese and Western violin music [J]. Music Time and Space, 2018, 000(004):60-61.
- [10] Chen Haoxuan. A Brief Talk on Beethoven's Artistic Aesthetic Thought from the "Pastoral" [J]. Youth Times, 2019.
- [11] Liang Hanyan. On the Stage Psychological Construction and Aesthetic Value Remodeling of Violin Performance Art [J]. Gehai, 2018(3):3.
- [12] Yin Yilong, Liu Xiangfei, Nie Xiushan. A joint classification method and system for image aesthetic quality assessment and semantic recognition: CN112668638A[P]. 2021.
- [13] Qin Feng, Wang Xiaojun, Zeng Ang, et al. Surgical classification and aesthetic design of developmental asymmetric breasts [J]. Chinese Journal of Medical Aesthetics, 2022, 28(01):26-29.
- [14] Wu Shifeng, Han Zhengxue. Long-term aesthetic and functional evaluation of mandibular defects repaired by fibula [C]// 2019 The First National Academic Conference on Oral and Maxillofacial-Head and Neck Tumors - Convergence Leading, Collaborative Development. 2019.
- [15] Wu Biao, Xu Yanping. The Aesthetic Significance of Nationalization of Violin Music [J]. 2022(1).
- [16] Hu Yuanchen. A brief analysis of the aesthetic differences between Chinese and Western violin music [J]. 2022(4).
- [17] Wan Fengxian. On the Occurrence of Aesthetic Experience in the Process of Appreciation of Music Works—Taking the Violin Concerto "Liang Zhu" as an Example [J]. Scenic Spots, 2019(9):1.
- [18] Zhang Yifeng. Research on the connection between violin art and music aesthetics: Taking Chinese and Western violin works as an example since the 20th century [J]. Art Research: Art Journal of Harbin Normal University, 2020(5):4.
- [19] Yang Bo. Aesthetic structure and subject emotion of the bronze statue of Nie Er playing the violin [J]. 2022(7).
- [20] Huang Mengdie. An Analysis of the Creation of Ao Changqun's Violin Concerto in D minor "Motherland" [J]. Music Creation, 2020(4):5.
- [21] Wang Zhijiong. Style and Aesthetics in Baroque Music Recording—Taking Bach's Sonatas and Suites for A Cappella as an Example [J]. Journal of Tianjin Conservatory of Music, 2018(3):7.
- [22] Zhou You. Research on bowing skills in Mozart's violin music works [J]. Beauty and Times: Aesthetics (Part 2), 2020(9):4.
- [23] Niu Lin. The emotional theme and aesthetic ideal of Jiang Wenye's violin sonata "Song of Spring" [J]. Symphony: Journal of Xi'an Conservatory of Music, 2018(1):7.
- [24] Hu Hong. The aesthetic shaping of Chinese tea culture thoughts on the mood of violin players [J]. Fujian Tea, 2018(8):1.

The Restrictive Factors and Practical Paths of the Development of China's Minority Sports Tourism Economy

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Abstract: With the rapid development of tourism, minority sports tourism has become an important part of China's tourism industry. However, the development of minority sports tourism still faces many constraints, such as imperfect infrastructure, lack of public awareness, lack of funds and lack of professional talents. The purpose of this paper is to explore the restrictive factors and practical paths for the economic development of China's ethnic minority sports tourism, including measures to strengthen infrastructure construction, improve public awareness, introduce external investment, cultivate professional talents, and protect the cultural heritage of ethnic minorities, so as to promote the sustainable development of China's ethnic minority sports tourism.

Keywords: Restrictive Factors; Practical Paths; China's Minority; Sports Tourism Economy

1. INTRODUCTION

In recent years, the development of China's sports tourism industry has been attracting increasing attention. The sports tourism industry has become a vital part of China's tourism industry, and it is expected to continue growing in the coming years. However, despite the industry's growth, there are still challenges and restrictive factors that hinder the development of minority sports tourism in China. This paper aims to explore the restrictive factors and practical paths of the development of China's minority sports tourism economy.

China is a vast country with a diverse population, and its sports culture is as varied as its ethnic groups. The country's sports tourism industry has been growing in recent years, and the government has been promoting it as part of its efforts to stimulate economic growth. The sports tourism industry includes various forms of sports, such as skiing, rock climbing, rafting, and other outdoor activities. However, the development of minority sports tourism, such as traditional ethnic sports, has been slow.

Minority sports tourism refers to the tourism industry that focuses on traditional sports and recreational activities of ethnic minorities. China is home to 56 ethnic groups, and each group has its own unique sports culture. Minority sports tourism has great potential in China, and it can play a significant role in promoting the development of ethnic minority regions and preserving the country's cultural heritage.

The lack of infrastructure is one of the most significant factors that restrict the development of minority sports tourism in China. Many ethnic minority regions lack the necessary infrastructure, such as transportation, accommodation, and communication facilities. This makes it difficult for tourists to access these areas, and it also limits the availability of sports facilities.=

2. =THE PROPOSED METHODOLOGY

2.1 Restrictive factors of the development of minority sports tourism economy

The lack of professionalism is another factor that restricts the development of minority sports tourism in China. The development of sports tourism requires professional expertise in areas such as event planning, marketing, and management. However, many ethnic minority regions lack professionals with these skills, and this limits their ability to develop and promote sports tourism.

The insufficient investment is another significant factor that restricts the development of minority sports tourism in China. The development of sports tourism requires significant investment in facilities, marketing, and promotion. However, many ethnic minority regions have limited resources, and they may not have the necessary funding to invest in the development of sports tourism.

China's minority sports tourism economy is characterized by its unique cultural features and strong local flavor. Minority sports refer to sports that are deeply rooted in ethnic minorities' culture and tradition and have a long history of development. They include sports such as horse racing, archery, wrestling, and folk dancing. These sports have their own distinctive cultural connotations, aesthetic features, and technical characteristics, which can attract tourists from all over the world.

Insufficient policy support: China's sports tourism policies mainly focus on mainstream sports such as football, basketball, and volleyball, and there is a lack of policy support for minority sports. As a result, minority sports tourism has not received enough attention and resources from the government.

Inadequate infrastructure: The development of minority sports tourism requires the construction of related facilities, such as stadiums, training centers, and tourist reception centers. However, in many areas, the infrastructure for minority sports tourism is still insufficient, which has become a bottleneck for its development.

2.2 Effective measures for the development of minority sports tourism economy

Despite the restrictive factors, there are practical paths that China can take to promote the development of minority sports tourism. The following are some practical paths that can be taken:

(1) Investment in infrastructure is crucial for the development of minority sports tourism in China. The government can invest in the construction of transportation, accommodation, and communication facilities to improve accessibility to ethnic minority regions. Additionally, the government can invest in the development of sports facilities to provide tourists with a variety of activities.

(2) Professional training can be used to develop expertise in the sports tourism industry in ethnic minority regions. The government can offer training programs to local professionals in areas such as event planning, marketing, and management. This can help build the capacity of ethnic minority regions to develop and promote sports tourism.

(3) Cultural preservation is essential for the development of minority sports tourism in China. The government can work to preserve the cultural heritage of ethnic minorities and promote their traditional sports as a unique selling point for tourism. This can help attract tourists who are interested in experiencing the cultural richness of China's ethnic minority regions.

Lack of talent: The development of minority sports tourism requires professionals with knowledge of both sports and tourism. However, in China, there is a shortage of such professionals, which has hindered the development of minority sports tourism.

The public's limited awareness of minority sports is another factor that restricts the development of minority sports tourism. Many people in China are not familiar with traditional ethnic sports, and they may not see them as desirable tourist activities. This lack of awareness limits the demand for minority sports tourism and the resources invested in its development.

China's minority sports tourism economy is affected by cultural factors. Many minority sports are deeply rooted in local cultures and traditions, and they have a long history of development. However, with the development of modern society, these traditional sports have gradually declined, and the younger generation has lost interest in them. The lack of interest in traditional sports has led to a decline in the number of people who participate in these sports, which has become a bottleneck for the development of minority sports tourism.

Additionally, the culture of ethnic minorities is different from that of the Han majority. This cultural difference has become a barrier to the promotion and dissemination of minority sports tourism. The lack of cultural awareness and understanding has led to a lack of interest in minority sports tourism, which has made it difficult to attract tourists.

3. CONCLUSION

The development of China's minority sports tourism economy has great potential for growth, but there are also challenges and restrictive factors that need to be addressed. The lack of infrastructure, limited public awareness, insufficient investment, and lack of professionalism are some of the restrictive factors that hinder the development of minority sports tourism in China. However, practical paths such as investment in infrastructure, education and awareness campaigns, public-private partnerships, professional training, and cultural preservation can be taken to promote the development of minority sports tourism in China. By addressing these restrictive factors and taking practical paths, China can unlock the full potential of its minority sports tourism economy and promote economic growth in ethnic minority regions while preserving the country's cultural heritage.

4. REFERENCES

- [1] Du Lei Research on the current situation and influencing factors of minority sports tourism in alpine regions [D] two thousand and seventeen
- [2] Chen Yuquan The restrictive factors and realization path of China's current sports economic development [J] Economic Research Guide, 2017 (19): 2
- [3] Chen Xiaochun The restrictive factors and realization path of China's current sports economic development [J] Exploration of Economic Issues, 2005 (2): 3
- [4] Zhou Ning A brief talk on the restrictive factors and realization path choice of the current development of China's sports economy [J] Public Investment Guide, 2020 (10): 2
- [5] Wu Min Research on the prospect and path of sports tourism internationalization in Yunnan Province in the context of the "the Belt and Road" [J] Good Day, 2020, 000 (001): P.1-1
- [6] Yue Fang The restrictive factors and realization path of China's sports economic development [J] Business Economics Research, 2016 (17): 2
- [7] Wang Yaqiong, Luo Jianxin The current situation and development countermeasures of Guizhou ethnic sports tourism industry [J] 2021(2011-4):136-140.
- [8] Wang Baosheng Research on the current situation of sports industry in Qinghai Province [D] Beijing Sports University
- [9] Du Wenkai, Li Xiaohui, Zhang Yu Research on the inheritance and development of Kongtong School Wushu from the perspective of "Intangible Cultural Heritage"
- [10] Yang Ying Research on the current situation and development of traditional sports tourism of ethnic minorities in Hubei [D] Central China Normal University
- [11] Rao Yuan, Wang Lijing Deep thinking on the development of sports tourism resources of ethnic minorities in China [C]//China Sports Science Association China Sports Science Association, 2010
- [12] Wei Liaohua, Chen Zhiyue Research on the integrated development of minority sports and tourism in the context of rural revitalization [J] Port Economy, 2020, 000 (014): 99-100

[13] Zhang Yuyun, Zhang Yunan, Gao Liuhong Analysis and construction of the management model of sports tourism for ethnic minorities in Yunnan [C]//National Sports Management Science Conference China Sports Science Association, 2008

[14] Lin Jing Discussion on several key issues restricting tourism development in minority areas [J] Contemporary Tourism, 2018, 000 (003): 24

A Review of the Origin and Evolution of Uyghur Musical Instruments

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Abstract: The Uyghur people of Central Asia have a rich musical tradition that spans centuries. This paper aims to provide a comprehensive review of the origin and evolution of Uyghur musical instruments, tracing their development from ancient times to the present day. The paper will explore the various types of instruments used in Uyghur music, including wind, string, and percussion instruments, and will analyze the cultural, historical, and religious significance of each. Through this review, we hope to gain a deeper understanding of the musical traditions of the Uyghur people and their unique cultural heritage.

Keywords: Basic Medicine Teaching ; Medical and Education; Coordination Models; Trend analysis

1. INTRODUCTION

Music has played an essential role in the lives of the Uyghur people of Central Asia for centuries. This musical tradition has been passed down through generations, providing a rich and diverse cultural heritage. The Uyghur musical instruments are a crucial part of this tradition, and their origin and evolution offer valuable insight into the history and culture of the region.

In this paper, we will review the origin and evolution of Uyghur musical instruments, exploring the various types of instruments used in Uyghur music, their cultural and historical significance, and how they have evolved over time. The paper will also examine the religious context of Uyghur music, particularly how Islamic influence has shaped the development of musical instruments in the region.

The Uyghur people are a Turkic ethnic group that predominantly inhabits the Xinjiang Uyghur Autonomous Region in China. The region has been a crossroads of various cultures and civilizations, including Indian, Persian, and Chinese, which has influenced the development of Uyghur music. Uyghur music has evolved over thousands of years and has been passed down through generations of musicians. The music has also been influenced by the Islamic religion, which is prevalent in the region, resulting in the use of certain instruments and musical structures.

Uyghur musical instruments can be broadly categorized into four categories: stringed, percussion, wind, and plucked. Each instrument has unique characteristics and serves a specific function in Uyghur music.

2. THE PROPOSED METHODOLOGY

2.1 Discussion on the Types of Uyghur Musical Instruments

The rawap is a pear-shaped stringed instrument that has been used in Uyghur music for centuries. It has three strings and a long neck that extends from the body of the instrument. The rawap is played with a bow and is used primarily for solo performances or as an accompaniment to vocal music.

(1) Stringed Instruments:

The dutar is a long-necked lute that has two strings and is a popular instrument in Uyghur music. The dutar is played with a plectrum and can be used in solo performances or as an accompaniment to vocal or instrumental music.

The ghijek is a bowed stringed instrument that is similar to the violin. It has two strings and is played with a bow. The ghijek is used primarily in instrumental music and can be played as a solo instrument or as part of an ensemble.

The dap is a large, round drum that is played with both hands. The drum is made of wood and is covered with animal hide. The dap is used primarily in dance music and is often played in ensembles with other percussion instruments.

The nagara is a pair of kettle drums that are played with sticks. The drums are made of brass or copper and are used in festive and celebratory music.

(2) Wind Instruments:

The satar is a long, wooden flute that is played vertically. The instrument has six finger holes and is used in both solo and ensemble performances.

The nay is a type of flute that is made of bamboo or reed. It has six finger holes and is used primarily in solo performances or as an accompaniment to vocal or instrumental music.

(3) Plucked Instruments:

The rubab is a plucked instrument that is similar to the lute. It has three strings and is played with a plectrum. The rubab is used primarily in solo performances or as an accompaniment to vocal or instrumental music.

The tanbur is a long-necked lute that has four strings and is played with a plectrum. The instrument is used primarily in instrumental music and can be played as a solo instrument or as part of an ensemble.

2.2 Cultural Significance of Uyghur Musical Instruments

Uyghur musical instruments play a vital role in the cultural identity of the Uyghur people. The instruments are often used to express emotions, tell stories, and convey the unique

cultural heritage of the region. Many Uyghur instruments are also associated with specific events and occasions, such as weddings, funerals, and religious festivals. For example, the dap drum is often used in traditional Uyghur dance performances, while the ghijek is typically played during festive events.

Moreover, Uyghur musical instruments have also played a role in the development of the region's literature and poetry. Many Uyghur poems and songs are based on the sounds and rhythms of Uyghur musical instruments, and the instruments themselves often feature prominently in Uyghur literature.

Uyghur musical instruments have evolved over time, reflecting the cultural and historical changes that have occurred in the region. The earliest Uyghur instruments were likely simple percussion instruments, such as drums and cymbals, which were used in traditional dances and rituals.

Over time, Uyghur music was influenced by the cultures of neighboring regions, such as Persia and India, resulting in the introduction of new instruments, such as the rawap and dutar. These instruments were adapted to fit the unique musical styles of the region, resulting in the development of new playing techniques and musical structures.

During the 20th century, Uyghur music underwent significant changes, influenced by the introduction of Western musical styles and instruments. Many Uyghur musicians began incorporating Western instruments, such as the guitar and piano, into their music, resulting in a fusion of Western and traditional Uyghur music.

3. CONCLUSION

In conclusion, Uyghur musical instruments are an essential component of Uyghur culture and have played a significant role in the region's history and development. The instruments are diverse and unique, reflecting the various cultures and civilizations that have influenced the region over time. Moreover, Uyghur musical instruments are deeply intertwined with Uyghur literature, poetry, and cultural traditions. As Uyghur music continues to evolve, it is essential to preserve the traditional instruments and techniques that have been passed down through generations of musicians.

4. REFERENCES

- [1] "The Musical Culture of the Uyghurs in Xinjiang" by Yasin Muhammad, published in the Journal of Social Sciences and Humanities Research in 2014.
- [2] "The History and Classification of Uyghur Musical Instruments" by Gulizhati Reyimu, published in the International Journal of Social Sciences and Humanities Research in 2016.
- [3] "Traditional Uyghur Music in a Time of Change" by Rachel Harris, published in the Journal of the International Association for the Study of Popular Music in 2001.
- [4] "Uyghur Musical Instruments and Their Role in Traditional Music" by Akbar Turdi, published in the International Journal of Humanities and Social Science Research in 2016.
- [5] "The Uyghur Dotar: An Introduction to Its History and Development" by Nathan Light, published in the journal Asian Music in 2011.
- [6] "The Uyghur Rawap and Its Role in the Muqam Ensemble" by Arzugul Tursun, published in the International Journal of Humanities and Social Science Research in 2017.
- [7] "Uyghur Music in the Cultural Context of Xinjiang" by Rian Thum, published in the Journal of the International Association for the Study of Popular Music in 2007.
- [8] "The Structure and Performance Techniques of the Uyghur Muqam" by Jariq Arkin, published in the International Journal of Humanities and Social Science Research in 2016.
- [9] "The Uyghur Ghijak: A Study of Its Origins and Development" by Dolkun Kamberi, published in the journal Asian Music in 2014.
- [10] "The Unique Features and Characteristics of Uyghur Music" by Ablimit Alimujiang, published in the International Journal of Social Sciences and Humanities Research in 2015.
- [11] "The Uyghur Dutar: Its Historical Development and Contemporary Use" by Abdurahim Mehmet, published in the journal Asian Music in 2013.
- [12] "The Uyghur Satar: An Introduction to Its History and Development" by Dilshat Tursun, published in the journal Asian Music in 2012.
- [13] "The Uyghur Tanbur: Its Origin, Development, and Current Use" by Munawwar Abdulla, published in the International Journal of Humanities and Social Science Research in 2016.

Development of a Bipolar Marx Pulse Generator Using Buck-Boost Converter

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Abstract: A new structure of the Marx pulse generator for generating bipolar high-voltage pulses is introduced. This structure is composed of a buck-boost converter and connected to a low DC voltage source and several parallel diode-capacitor units. In the first stage, the inductor energy is supplied through the voltage source and in the next stage, the inductor energy is transferred to capacitors. For generating the pulses, voltage polarities of the capacitors are changed by a small inductor which is in resonant with the capacitors. Then, using a fast switch, the capacitors are connected in series to generate desirable high-level pulses. To have bipolar pulses, polarity of capacitors is inverted, alternatively. Modularity of the proposed structure enables us to increase number of the units for generating higher voltage level, straightforwardly.

Keywords: pulse generator; electric polarization; Marx pulse generator; bipolar high-voltage pulses; negative buck-boost converter; resonant circuit.

NOMENCLATURE

T	Period of switching
T_{C+}	Charging time of capacitors
T_{C-}	Required time for resonance
V_{in}	Magnitude of input voltage
L_1	Inductance of the main inductor
$L_1 - L_n$	Inductance of the resonant inductor
C_S	Equivalent capacitance of the capacitors in series connection
C	Equivalent capacitance of the capacitors in parallel connection
R	load resistor
I_L	Maximum current of inductor L_1
ΔT	Duration of charging L_1
V_{on}	On-state voltage of the semiconductor components (switches or diodes)
I_{SW}	Current of the semiconductors
R_{on}	On-state resistance of the Semiconductors
$I_{SW,avg}$	Average current of the semiconductor
$I_{SW,rms}$	Effective current of the semiconductor
$V_{SW,on}$	Semiconductors' voltage before turning on
$I_{SW,on}$	Semiconductors' current after turning on
$V_{SW,off}$	Semiconductors' voltage after turning off
$I_{SW,off}$	Semiconductors' current before turning off
L_C	DC line inductance
$T_{on,SW}$	Semiconductors' turning-on duration
$T_{off,SW}$	Semiconductors' turning-off duration

1. INTRODUCTION

High-voltage pulse generators are used in different applications such as plasma, lasers feeding, minerals corrosion, food

industries, water and wastewater treatment, military and medical industries [1]–[4]. The generated pulses by the mentioned equipment are either unipolar or bipolar types. Bipolar high-voltage pulses are more efficient in industrial processes like processing and sterilizing foodstuffs, purification of water, and air pollution. Using a pulsating electric field with high enough power, one can penetrate cell membrane to kill microbes, called electric polarization [5]. In recent decades, this method has been introduced as an alternative approach for sterilizing foodstuffs and liquid materials instead of the old conventional methods. This approach needs bipolar pulse generators [6], [7] as the main core of the method.

The pulse generators can be classified into two main groups including classic and modern pulse generators. In the classic pulse generators, like multilevel Marx pulse generator, spark gap switches are utilized for the switching. Such switches make them big, inefficient, and expensive.

Modern pulse generators are based on semiconductor switches. The main advantages of these switches can be mentioned as low volume, high efficiency, high reliability, long lifespan, low cost, and high switching frequency which, enables them to generate pulses with high repetition.

Basic structure of the Marx generators has some challenges such as low reliability, bulky dimensions, high cost, low repetition rate, and short lifespan and the capacitors used in this structure can be charged maximum to the DC voltage source level [8], [9]. In new types of Marx generators, in which solid state switches are used instead of the resistors and spark gap switches, the capacitors can be charged up simultaneously to V_{in} , twice of V_{in} , or even several times of V_{in} . Solid-state switches-based pulse generators are suitable options for tackling the mentioned challenges. Although Marx generators with solid-state switches have acceptable performance, new structures can be presented to promote the performance of these pulse generators.

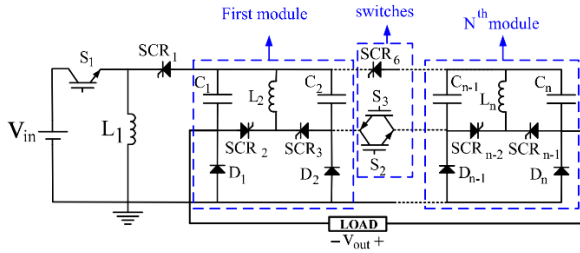


Fig.1. N-stage circuit of the proposed bipolar MG.

Marx topology as a suitable structure for generating several kilovolts pulses, can also be divided into unipolar and bipolar. In [9-20], some unipolar pulse generators have been presented. In the structures presented in [10]–[13], the capacitors are charged up to DC voltage source. Therefore, a high-level DC source or many capacitor stages are needed for generating higher output voltages.

In order to reduce switching losses in power electronics, zero voltage switching (ZVS) and zero current switching (ZCS) are provided. In pulse generators, this target has been followed up, as well. In [14], [15], using an inductor in series with the capacitors and DC source, the capacitors can be charged up to twice of source voltage, as a result, the number of units required capacitive or DC supply voltage level is reduced. Another merit of this structure is realizing ZCS.

In recent years, many researches have been dedicated to the pulse generators in which dc-dc converters are utilized to improve their performance [16]. In the structures presented in [17]–[20], the capacitor units are charged up to several times of the source voltage using a buck-boost converter. It should be mentioned that the voltage of the circuit components arises in this condition, so the number of capacitor stages is determined considering this over voltage. In [16] and [17], a positive buck-boost converter has been used for this purpose. In [16], an inductor unit has been utilized for charging all of the capacitor units. Output of this pulse generator is a unipolar high-voltage needle pulse which has a great deal of flexibility and generation in high frequency. In [17], less elements have been employed in the proposed structure in respect with the other Marx generators. However, it has more operation modes, which results in reduction of the repetition frequency. In [18], renewable energy sources are connected through an interlinking converter with considering reduction in leakage current issue. These low cost, high efficiency converters have very useful applications in microgrids[18].

In [19],[20], two modular structures have been suggested in which negative buck-boost converter was exploited. In [19], for charging the inductor, one source with H type switching has been used. In each cycle of the pulse generation, inductor is charged two times, one for the odd capacitors and the other for the even capacitors. In [20], the capacitors are charged simultaneously through the inductor unit and it includes three operation modes that make it capable of generating pulses with higher frequency in comparison with the other structures. In the pulse generators in which buck-boost converter is utilized, switching losses of the generators can be reduced by operation of the converters in discontinues conduction mode.

In [21], [22], some bipolar Marx generators have been presented. The proposed structure in [21] is a development of structure of [10], in this structure, there are six switches per capacitor unit. In [22] a two level converter is considered for grounding aspects. In [23], the number of switches has reduced to five and four switches for each capacitor unit, respectively.

In [24], two DC sources have been employed in order to reduce the number of the switches. One of the DC sources charges the odd capacitors and the other one charges even capacitors, which results considerable reduction in the number of switches. However, during discharging of the capacitor units, always one of them could not be discharged. During pulse generation, voltage on the DC source can be reached $(n-1)V_c$. Therefore, an inductor-resistor unit is located in the path of source and the capacitor units to prevent the over voltage on the source. In higher voltages, value of inductor-resistor unit should be increased, which results in slowing down the charging processes and decreasing repetition frequency of the circuit. Capacitor units in the structures of [21], [23]–[25], can be charged up to DC source value. Therefore, they have the same problems like unipolar generators. In [26], a unipolar/bipolar structure has been introduced, in which a buck-boost converter is utilized for charging the capacitors up to several times of the DC source voltage. Also, different power quality issues like voltage sag can be reduced by the method proposed in [25]. This structure exploits two inductors as energy storage, one for positive pulses generation and another one for negative pulses generation [27]. Although in this structure, the number of elements was reduced considerably, it is able to generate only a bipolar pulse for one capacitor unit and does not have modular capability.

Considering the mentioned limitations in bipolar pulse generators, a novel structure of these generators is presented in this paper. In the proposed structure, a negative buck-boost converter is used for charging the capacitor units. The structure is modular based and each module includes two capacitors, one inductor, two thyristors and two diodes. The polarity of capacitors changes in a resonant condition. Both capacitors are connected to the inductor through the switches [28]. After charging the capacitors, polarity of the odd capacitors is changed through a resonant circuit for generating positive pulses. In case of generating negative pulse, polarity of even capacitors is changed. Circuit operation, design requirements and efficiency of the proposed topology are addressed in details. Performance of the proposed pulse generator is investigated by some simulations at Matlab/Simulink. Also, a comparison between the performance of the reported bipolar structures in the literature and the proposed structure is presented.

2. THE PROPOSED BIPOLAR PULSE GENERATOR

The proposed n-level bipolar pulse generator structure is shown in Fig. 1. Procedure of the bipolar pulse generation is divided into two stages: common and non-common operation stages. The common stage is carried out twice per operation cycle, while the non-common is performed once per cycle. In the following, the procedure of the bipolar pulse generation is discussed in details:

2.1 Common Operation Stage

Pulse generation is realized in two stages as follows:
 First stage (Charging the inductor during ΔT): In the first stage, shown in Fig. 2 (a), the main inductor, located at the input of the converter, is connected to the DC source through S_{-1} and charged for duration ΔT . The charged inductor plays the role of a current source. According to Equation (1), maximum inductor current in ΔT will reach $I_{L_}$. In this time interval, the diodes and thyristor 1 prevent current to pass through the capacitor units. All semiconductor devices, such as IGBTs, SCRs, and diodes are assumed to be ideal. So, voltage drop on each of these components is zero during conduction.

$$V_{dc} = L \frac{dI}{dt} \rightarrow I_L = \frac{V_{dc} \Delta T}{L} \quad (1)$$

Second Stage (The energy is transferred from the inductor to the capacitors): According to Fig. 2 (b), in the beginning of this stage, thyristors 1 and 6 and the diodes are turned on. According to Equations (2), during Tc^+ , the stored energy in the inductor is transferred to capacitors C_i , and all four capacitors are charged to $V_{C,max}$. Upon the inductor current reaches zero (at the end of Tc^+), all the diodes and thyristors 1 and 6 are turned off simultaneously and the capacitors remain at voltage $V_{C,max}$. By assuming $C1=C2=C3=C4=C$, we have:

$$i_L(t) = I_L \times \cos\left(\frac{t}{\sqrt{L \times 4C}}\right) \xrightarrow{i_L(t)=0} T_{c^+} + t = \frac{\pi}{2} \sqrt{L \times 4C}$$

$$V_C(t) = I_L \sqrt{\frac{L}{4C}} \times \sin\left(\frac{t}{\sqrt{L \times 4C}}\right) \xrightarrow{V_C(T_{c^+})} V_{C,max} = I_L \sqrt{\frac{L}{4C}} \quad (2)$$

While thyristor 1 is off, the inductor unit is separated from the capacitor unit. Thus, the inductor can be recharged again.

2.2 Uncommon Operation Stage

First Stage (Altering polarity of the odd capacitors): When the inductor current reaches zero and whole the energy is transferred from the inductor to the capacitors, as shown in Fig. 2(c), polarities of the capacitors 1 and 3 are changed to generate positive pulse. To do so, thyristors 2 and 4 are turned on simultaneously to create a loop between the inductors and capacitors. In this condition, energy of the capacitors transfers to the inductors. Then, the inductors discharge their stored energy to the initial charging current direction. In this condition, the capacitors will be charged from top to bottom direction of the circuit, again. Now, voltage of each capacitor is $V_{C,max}$, but with the opposite polarities. After charging the capacitors, current of the inductors reaches zero and thyristors 2 and 4 will be turned off. In this state, current Equations of

inductors L_2 and L_3 as well as capacitors C_1 and C_3 are:

$$i_{L_r(2,3)}(t) = V_{C,max} \times \sqrt{\frac{C}{L_r}} \sin\left(\frac{t}{\sqrt{L_r \times C}}\right) \xrightarrow{i_{L_r}^{(t)=0}} t = T_{c^-} = \pi \sqrt{L_r \times C} \quad (3)$$

$$v_{C_{1,3}}(t) = V_{C,max} \cos\left(\frac{t}{\sqrt{L_r \times C}}\right) \xrightarrow{t=T_{c^-}} v_{C_{1,3}}(t) = -v_{C,max} \quad (4)$$

According to Equation (3), current of inductors L_2 and L_3 reaches zero after T_{c^-} . At this time, the capacitors voltages reach maximum negative value.

Second Stage (Generation of positive pulse): In this stage, according to Fig. 2 (d), polarities of the odd capacitors are changed and the voltage across each of the four capacitors is $V_{C,max}$. Also, the polarity of all capacitors is desirable for connecting in series. Upon, S_2 is turned on, the capacitors are connected in series and the summation of all the capacitors voltages is applied to the output. In this stage all the diodes are turned off under reverse bias of the capacitors' voltages. Thus, the output voltage is equal to:

$$V_{out}(t) = v_{C_1} + v_{C_2} + v_{C_3} + v_{C_4} = 4 \times v_{C,max} = 4IL \sqrt{\frac{L}{4C}} \quad (5)$$

The capacitors are discharged by time constant $T=5RC_S$. **Third Stage** (Changing polarity of the even capacitors): at the beginning of this stage, the common operation stage should be performed once again. The capacitors are charged and when the inductor current reaches zero, according to Fig. 2 (e), thyristors 1 and 5 are turned on at the same time to change the polarity of capacitors C_2 and C_4 and generate negative pulse. The same as the procedure mentioned in the first stage, current Equations of inductors L_2 and L_3 , and capacitors C_2 and C_4 are the same as Equations (3) and (4). Also, thyristors 1 and 5 are automatically turned off when inductors current reaches zero.

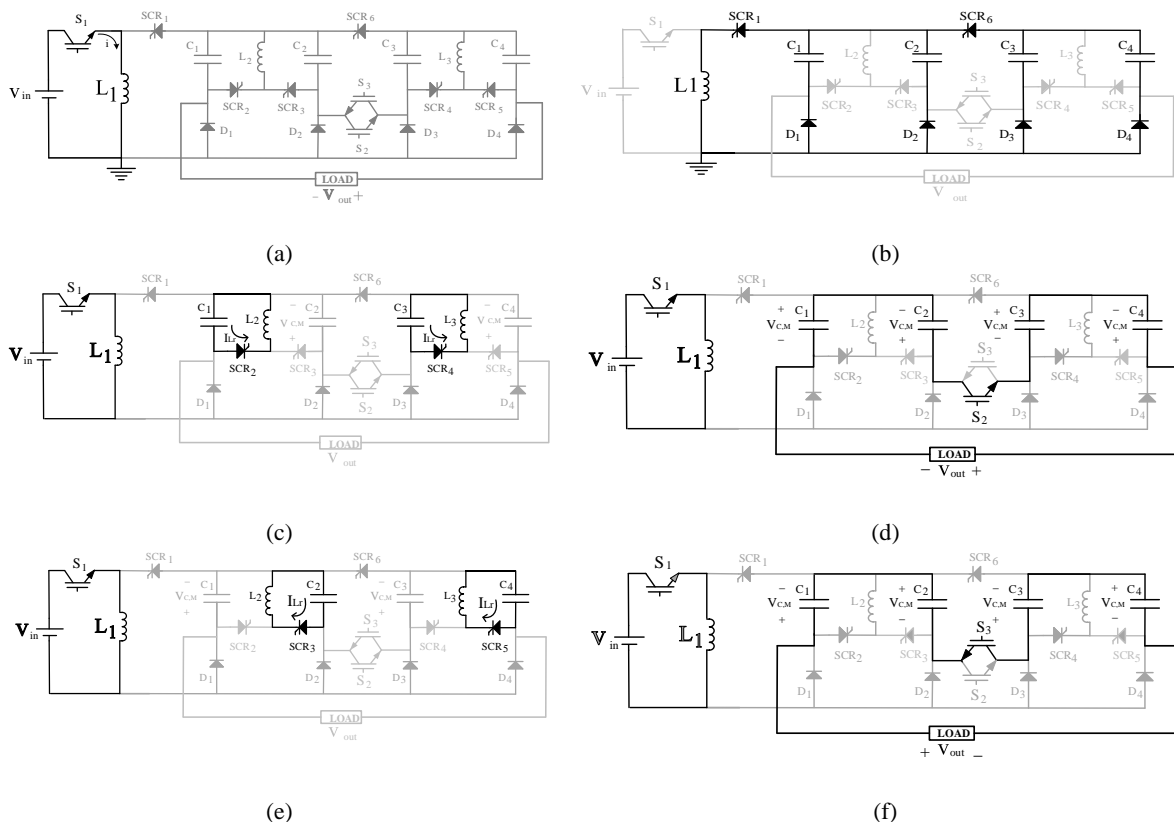


Fig. 2. Switching modes for bipolar pulse generator .a) The main inductor charging b) Capacitor units charging and the main inductor discharging c) Polarity changing of odd capacitors d) positive pulse generation e) Polarity changing of even capacitors f) negative pulse generation.

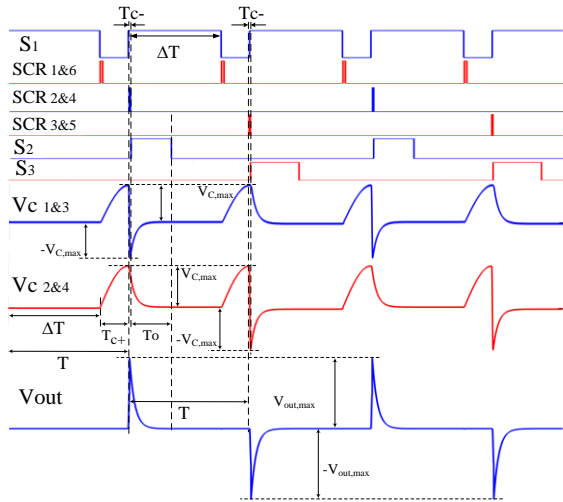


Fig. 3. Switching control strategy, voltages of capacitor and output.

Fourth Stage (Generation of negative pulse): In this stage, according to Fig. 2 (f), polarities of the even capacitors are changed, while voltage across each of the four capacitors is $V_{C,max}$. By turning on switch S_3 , the output voltage will be equal to the sum of series capacitors ($4V_{C,max}$). Therefore, the output voltage is the same as Equation (5). Also, all the diodes are turned off due to reverse-biased of the capacitors' voltages and the capacitors are discharged by time constant T_0 .

2.3 Switches Control Strategy

According to Fig. 3, during ΔT , S_1 is turned on and the inductor current reaches I_L by voltage $+V_{in}$. After ΔT , S_1 is turned off and SCR_1 is turned on simultaneously. All the capacitors are charged by turning on SCR_1 (energy is transferred from the inductor to the capacitors). In this topology, the switching is designed in a way that all the capacitors are charged at the same time. After T_{c+} , SCR_1 is automatically turned off when its current reaches zero. When thyristor 1 is turned off, all the diodes are reverse-biased due to the capacitors' voltages. In this condition, the inductor unit is separated from the capacitors' units. So, the inductor charging gets started simultaneous with switching of the capacitor unit. In order to generate positive pulse, SCR_1 and SCR_2 are turned on and by forming a resonant circuit, polarities of the capacitors' voltages change. After changing the capacitors polarities, the inductors and thyristors current reaches zero. Therefore, these thyristors are turned off automatically. Now, polarities of the capacitors are suitable for connecting in series by turning on S_2 to generate voltage with positive polarity. Then, in order to generate negative voltage, polarities of capacitors C_2 and C_4 are changed by turning on SCR_3 and SCR_5 and connecting the capacitors in series by S_3 .

2.4 Switches Control Strategy

As mentioned, after changing the polarity, two capacitors are located at both side of switches S_2 and S_3 , which are connected in series. As a result, in both generating positive and negative pulses, a voltage equal to $4V_{C,max}$ is applied across these switches. Therefore, in order to reduce this voltage, according to Fig. 5, by adding a parallel thyristor to thyristor 6, this voltage is reduced to $2V_{C,max}$.

In generating positive pulse state, thyristor 2, 4, and 7 are turned on at the same time. According to Fig 6. (a),

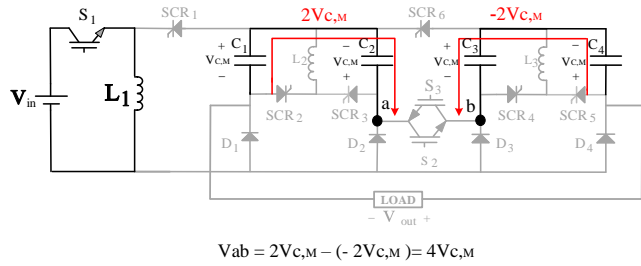


Fig. 4. Voltage of switches S_2 and S_3 during positive pulse generation.

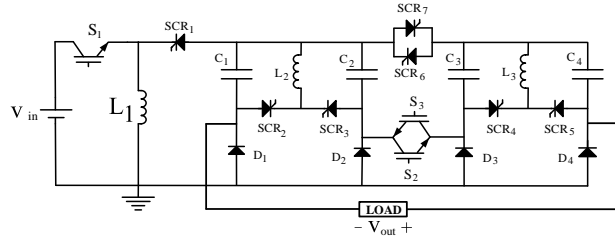


Fig. 5. The proposed structure for decreasing the voltage of S_2 and S_3 .

simultaneous with changing polarity of the odd capacitors, summation of C_1 and C_4 voltages are applied across the load. So, voltage across switches S_2 and S_3 will be reduced. In generating negative pulse as shown in Fig 6. (b), simultaneous with turning thyristors 3 and 5 on, thyristor 6 is also turned on. Therefore, according to the prior state, voltage across switches S_2 and S_3 is reduced, as shown in Fig. 7.

3. COMPARISON OF THE PROPOSED STRUCTURE WITH THE OTHER SIMILAR STRUCTURES

In this part, number of the employed components, capacitors voltages, and output voltage of the proposed structure are compared with three structures that are capable of generating both unipolar and bipolar pulses, as shown in Table 1.

In the proposed structures in [10,13], capacitor units could only be charged to DC source, so in order to generate higher voltage, number of capacitor levels should be increased or a bigger DC source should be used. Both these remedies result in increment in cost and volume of the generator. In these structures, voltage of the capacitor cannot be used for increasing the output

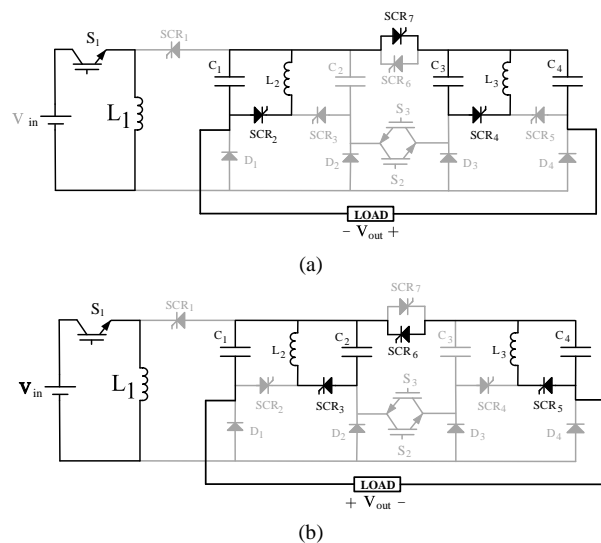


Fig. 6. The polarity changing of odd and even capacitors, and increasing the output voltage to $2V_{C,max}$.

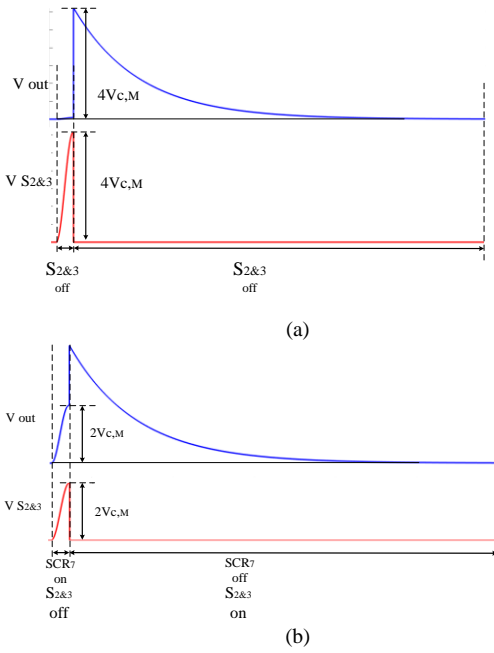


Fig. 7. The effect of the switch added to the circuit on the output voltage and voltage of switches S_2 and S_3 .

voltage. From number of the used switches point of view, structure of [10] has more switches than the proposed structure. The structure of [13] has a smaller number of switches than the proposed structure, but in this structure two DC sources have been used to reduce the number of the switches which is a drawback. Also, there is no switch to charge the capacitors unit, so charging control could not be carried out appropriately. In [14], the problem of low stored energy in the capacitor units has been solved by using a buck-boost converter, but adding the converter increases switching frequency of the structure. In this structure like the proposed structure, voltage of all the capacitors can be exploited for generating high output voltage. Power electronics components could tolerate a permissible voltage. Maximum voltage of the components in the proposed structure in off state are tabulated in Table 2. It can be observed that in this structure, maximum voltage is applied across the diodes at the end and beginning of the circuit, which can be alleviated by connecting some diodes in series. Among the switches, maximum voltage is applied across SCR_1 .

4. ANALYZING EFFICIENCY AND LOSSES OF THE PROPOSED STRUCTURE

Losses of the proposed structure includes switching and conduction losses. Equations for input power (P_{in}), conduction losses (P_C), and switching losses (P_{sw}) are presented in (6-8).

$$P_{in} = \frac{1}{T} \int_T V_{in} I_L (dt) = \frac{1}{T} V_{in} I_L \Delta T \quad (6)$$

$$P_C = \frac{1}{T} \int_T (V_{on} I_{sw} + R_{on} I_{sw}^2) (dt) = V_{on} I_{sw,avg} + R_{on} I_{sw,rms}^2 \quad (7)$$

$$P_{sw} = \frac{1}{T} \int_T (V_{sw,on} I_{sw,on} + V_{sw,off} I_{sw,off}) (dt) \quad (8)$$

SCR_1 and SCR_6 are turned on in the stage of transferring energy from inductor L_1 to the capacitor units and at zero voltage. S_2 and S_3 are also turned on at zero voltage and when the capacitors are fully discharged (after 5τ). At zero current, these two switches are turned off. Thus, switching losses for SCR_1 ,

Table 1. Comparing the Number of the Proposed Structure Devices with Three other References.

	PROPOSED GENERATOR		[10]	[13]	[14]
	First state	Second state			
Number of Switches			17	8	20
	9	10			
Number of Diodes	4		8	5	12
Number of Inductor	3		0	2	2
Number of Capacitor	4		4	4	4
Number of DC Source	1		1	2	1
V_C	$I_L \sqrt{\frac{L}{4C}}$		V_{dc}	V_{dc}	$LI_0 e^{\alpha t} (\frac{\alpha^2 + \beta^2}{\beta} \sin \beta t)$
V_{out}	$4I_L \sqrt{\frac{L}{4C}}$		$4V_{dc}$	$4V_{dc}$	$v_{out} = nv_{cn}$

SCR_6 , S_2 and S_3 are negligible. Switching losses for all the diodes are about zero due to zero voltage and zero current switching.

Efficiency of the proposed structure depends on input voltage magnitude and output resistor, which is calculated in different conditions as shown in Fig. 8.

The efficiency is calculated considering the specifications presented in Table 3 by assuming that voltage drop and resistance of all the switches in conduction mode are 2.5 volts and 5 mΩ. Switching losses of S_1 is calculated assuming that turning on and off duration of this switch are 50 ns and 150 ns, respectively. Power losses for a period of operation is obtained from Equation (9).

$$P_L = 2P_{C_{S1}} + 2P_{C_{SCR1}} + 2P_{C_{SCR6}} + 2P_{C_{S2}} + 4P_{C_{SCR2}} + 8P_D + 2P_{sw_{S1}} \quad (9)$$

The efficiency can be improved by increasing output resistor, but increasing the resistor also raises T_o . Increasing T_o causes switches S_2 and S_3 not to be disconnected at zero current anymore.

5. SIMULATION RESULTS

In order to compare the simulation results, all parameters are considered according to table 4. The structure is simulated in MATLAB-SIMULINK. The DC source has a constant voltage 10 volts. Duration for charging inductor L_1 is 30 us and the inductor current at the end of this duration is equal to 0.15 A.

Table 2. Maximum Voltage and Current for Switching Devices in the Proposed Structure.

Structure elements	First State	Second State
S_1	$V_{dc} + V_{C,max}$	
S_2, S_3	$4V_{C,max}$	$2V_{C,max}$
SCR_1	$3V_{C,max} - V_{in}$	
SCR_{2-5}	$2V_{C,max}$	
$SCR_{6,7}$	$2V_{C,max}$	
$D_1 \& D_4$	$4V_{C,max}$	
$D_2 \& D_3$	$2V_{C,max}$	

Table 3. The Equations of Switching and Conduction Losses in the Proposed Structure.

Structure elements	SWITCHING LOSSES (P_{sw})	Conduction losses (P_C)
S_1	$\frac{I_L V_{on,sw} \Delta T}{2T} + \frac{I_L^2 R_{on,sw} \Delta T}{3T}$	$\frac{I_L V_{in} t_{on,sw}^2}{2T \Delta T} + \frac{I_L V_{in} t_{off,sw}}{2T}$
S_2, S_3	0 (Soft Switching)	$\frac{V_{out} V_{on,sw} C_{eq,ser}}{T} (1-e^{-5}) + \frac{V_{out}^2 R_{on,sw} C_{eq,ser}}{2RT} (1-e^{-10})$
SCR_1	0 (Soft Switching)	$\frac{2I_L V_{on,sw} T_{C+}}{\pi T} + \frac{I_L^2 R_{on,sw} T_{C+}}{2T}$
SCR_6	0 (Soft Switching)	$\frac{I_L V_{on,sw} T_{C+}}{\pi T} + \frac{I_L^2 R_{on,sw} T_{C+}}{4T}$
$SCR_2 - SCR_5$	0 (Soft Switching)	$\frac{I_L V_{on,sw} \sqrt{L.C}}{T} + \frac{R_{on,sw} \sqrt{L_r.C}}{2T}$
$D_1 - D_4$	It is considered Zero	$\frac{2I_L V_{on,D} T_{C+}}{1.4 \sqrt{2} T} + \frac{I_L^2 R_{on,D} T_{C+}}{1.4 \sqrt{2} T}$
		$\frac{1}{n} a + \left(\frac{1}{n}\right)^2 b$

According to the values of inductor and capacitors, time constant for fully charging of the capacitors is 5 μ s. After $T_{C+} = 5\mu$ s, the maximum voltage of the capacitors will reach 50 volts. For generating positive pulse, polarities of the odd capacitors are changed. Thus, voltage of the odd capacitors will be -50 volts. When S_2 is turned on, 200 volts (voltage summation of the four capacitors) will be generated. By the same way, polarities of the even capacitors are changed to have the same voltage with negative polarity. According to the value of load resistor and C_s , the generated pulse reaches zero after time constant T_o . The simulation results, including current of inductor L_1 , voltages of the capacitors, current of the resonant inductor are shown in Fig. 9 and output voltage, and voltage

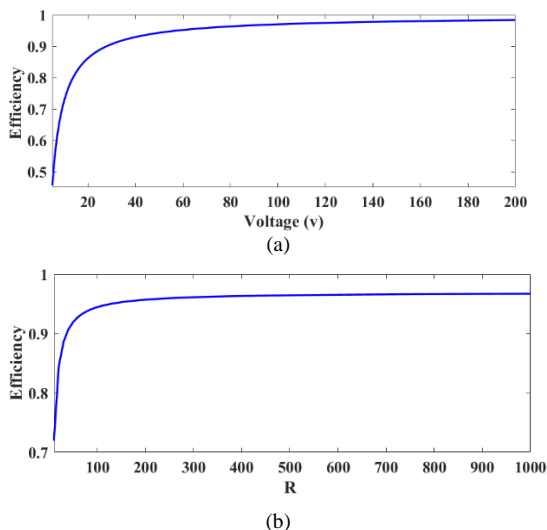


Fig. 8. The efficiency of the proposed structure a) the efficiency versus input voltage (v) b) the efficiency versus output resistor (Ω).

Table 4. Value of Proposed Structure Parameters in Simulation mode.

$V_{in}(v)$	$L_1(mH)$	$L_{2,3}(mH)$	$C_i(nF)$	$R_{load}(\Omega)$	$\Delta T(\mu s)$
10	2	100	4.7	680	30

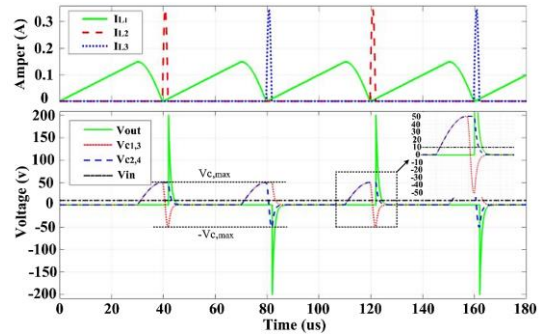


Fig. 9. The Inductors current, input voltage, output voltage and voltage of capacitors.

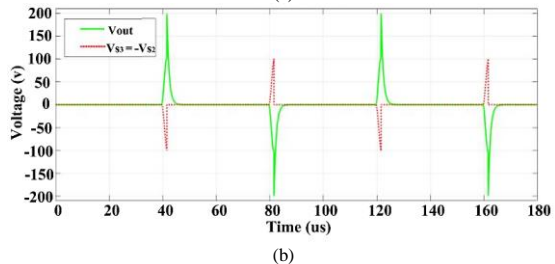
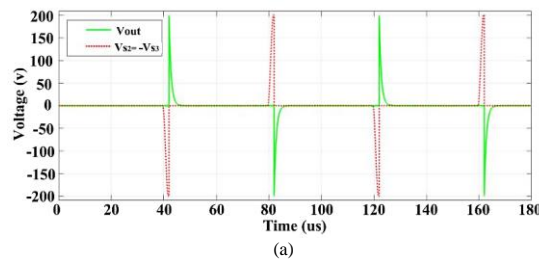


Fig. 10. The output voltage and the voltage generated on the switch S_2 and S_3 a) before adding SCR_7 b) after adding SCR_7 .

across S_2 and S_3 , in both the explained states are illustrated in Fig. 10.

6. CONCLUSION

In this paper, a new bipolar Marx generator was proposed, in which a buck-boost converter for improving the performance is employed. This converter can charge the capacitors up to several times of the conventional Marx generators. In the proposed structure, all the capacitors are charged at the same time. Then, with a small inductor through a resonant circuit, polarities of the even and odd capacitors are changed, respectively. After that, using two switches S_2 and S_3 , voltage summation of the capacitors is applied to the output terminals. The applied voltage is reduced to half using an anti-parallel thyristor with SCR_6 . Modular capability of the proposed structure provides higher voltages without changing the voltage rating of the switches. The performance of the proposed structure was assessed using some simulations. All the corresponding simulation results comply with each other and prove the good performance of the proposed bipolar pulse generator.

7. REFERENCES

- [1] T. Namihira, D. Wang, and H. Akiyama, "Pulsed power technology for pollution control," *Acta Phys. Pol. A*, vol. 115, no. 6, pp. 953-955, 2009.
- [2] E. Gomez, D. A. Rani, C. R. Cheeseman, D. Deegan, M. Wise, and A. R. Boccacini, "Thermal plasma technology for the

- treatment of wastes: A critical review," *J. Hazard. Mater.*, vol. 161, no. 2, pp. 614–626, Jan. 2009.
- [3] M. Naghizadeh, E. Farjah, T. Ghanbari, H. Pourgharibshahi, and M. T. Andani, "Efficient Grounding Method for DC Microgrid with Multiple Grounding Points," in *2018 Clemson University Power Systems Conference (PSC)*, Sep. 2018, pp. 1–6.
- [4] M. Reberšek and D. Miklavčič, "Advantages and Disadvantages of Different Concepts of Electroporation Pulse Generation," *Automatika*, vol. 52, no. 1, pp. 12–19, Jan. 2011.
- [5] J. C. Weaver and Yu. A. Chizmadzhev, "Theory of electroporation: A review," *Bioelectrochem. Bioenerg.*, vol. 41, no. 2, pp. 135–160, Dec. 1996.
- [6] O. Yun, X.-A. Zeng, C. S. Brennan, and Z. Han, "Effect of Pulsed Electric Field on Membrane Lipids and Oxidative Injury of *Salmonella typhimurium*," *Int. J. Mol. Sci.*, vol. 17, no. 8, Art. no. 8, Aug. 2016.
- [7] M. Naghizadeh, E. Farjah, and T. Ghanbari, "DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition," *IEEE Trans. Ind. Electron.*, vol. 67, no. 5, pp. 4120–4132, May 2020.
- [8] M. Naghizadeh, E. Farjah, H. Samet, and T. Ghanbari, "Fault Tolerability of Power Electronic Interfaces, Impact of Grounding Architecture," in *2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe)*, Jun. 2018, pp. 1–6.
- [9] O. Mirzapour, F. Mohammadi, and M. Sahraei-Ardakani, "Multidimensional Scenario Selection for Power Systems with Line and Generation Outages," in *2022 North American Power Symposium (NAPS)*, Oct. 2022, pp. 1–5.
- [10] J. Lehr and P. Ron, *Foundations of Pulsed Power Technology*. John Wiley & Sons, 2017.
- [11] L. M. Redondo, J. F. Silva, P. Tavares, and E. Margato, "High-voltage high-frequency Marx-bank type pulse generator using integrated power semiconductor half-bridges," in *2005 European Conference on Power Electronics and Applications*, Sep. 2005.
- [12] L. M. Redondo, A. Kandratsyev, and M. J. Barnes, "Marx Generator Prototype for Kicker Magnets Based on SiC MOSFETs," *IEEE Trans. Plasma Sci.*, vol. 46, no. 10, pp. 3334–3339, Oct. 2018.
- [13] L. Lamy Rocha, H. Canacsinh, J. F. Silva, L. M. Redondo, and T. Luciano, "Modeling Marx generators for maximum pulse repetition rate estimation," in *2017 IEEE 21st International Conference on Pulsed Power (PPC)*, Jun. 2017, pp. 1–4.
- [14] V. V. Tatur, "Modification of Marx generator with a doubling of output voltage," *Int. J. Circuit Theory Appl.*, vol. 43, no. 4, pp. 415–420, 2015.
- [15] S. Zabihi, Z. Zabihi, and F. Zare, "A Solid-State Marx Generator With a Novel Configuration," *IEEE Trans. Plasma Sci.*, vol. 39, no. 8, pp. 1721–1728, Aug. 2011.
- [16] H. Akiyama, T. Sakugawa, T. Namihira, K. Takaki, Y. Minamitani, and N. Shimomura, "Industrial Applications of Pulsed Power Technology," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 14, no. 5, pp. 1051–1064, Oct. 2007.
- [17] S. Zabihi, F. Zare, G. Ledwich, A. Ghosh, and H. Akiyama, "A new pulsed power supply topology based on positive buck-boost converters concept," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 17, no. 6, pp. 1901–1911, Dec. 2010.
- [18] M. Naghizadeh, H. S. Gohari, H. Hojabri, and E. Muljadi, "New Single-Phase Three-Wire Interlinking Converter and Hybrid AC/LVDC Microgrid," *IEEE Trans. Power Electron.*, vol. 38, no. 4, pp. 4451–4463, Apr. 2023.
- [19] A. Elserougi, S. Ahmed, and A. Massoud, "A boost converter-based ringing circuit with high-voltage gain for unipolar pulse generation," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 23, no. 4, pp. 2088–2094, Aug. 2016.
- [20] M. Taherian, M. Allahbakhshi, E. Farjah, and H. Givi, "An Efficient Structure of Marx Generator Using Buck-Boost Converter," *IEEE Trans. Plasma Sci.*, vol. 46, no. 1, pp. 117–126, Jan. 2018.
- [21] L. M. Redondo, H. Canacsinh, and J. F. Silva, "Generalized solid-state marx modulator topology," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 16, no. 4, pp. 1037–1042, Aug. 2009.
- [22] Mohadeseh Naghizadeh, Ebrahim Farjah, Teymooor Ghanbari, Eduard Muljadi, "Effect of Grounding Conditions on DC Microgrid Power Electronics Interfaces," 2023 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 2023, pp. 1-6.
- [23] H. Canacsinh, L. M. Redondo, and J. F. Silva, "Marx-Type Solid-State Bipolar Modulator Topologies: Performance Comparison," *IEEE Trans. Plasma Sci.*, vol. 40, no. 10, pp. 2603–2610, Oct. 2012.
- [24] C. Yao, S. Dong, Y. Zhao, Y. Mi, and C. Li, "A Novel Configuration of Modular Bipolar Pulse Generator Topology Based on Marx Generator With Double Power Charging," *IEEE Trans. Plasma Sci.*, vol. 44, no. 10, pp. 1872–1878, Oct. 2016.
- [25] S. Shakeri, M. Naghizadeh, and S. Esmaeili, "Identifying the Voltage Sags Vulnerability Area with Considering FACTS Devices," in *2020 28th Iranian Conference on Electrical Engineering (ICEE)*, Aug. 2020, pp. 1–5.
- [26] A. A. Elserougi, A. M. Massoud, and S. Ahmed, "A Unipolar/Bipolar High-Voltage Pulse Generator Based on Positive and Negative Buck-Boost DC-DC Converters Operating in Discontinuous Conduction Mode," *IEEE Trans. Ind. Electron.*, vol. 64, no. 7, pp. 5368–5379, Jul. 2017.
- [27] S. Ameli, M. J. Morshed, and A. Fekih, "Baseline Control Strategy for Maximum Power Tracking for a 5MW Offshore Wind Turbine," in *2019 IEEE Green Technologies Conference (GreenTech)*, Apr. 2019, pp. 1–6.
- [28] A. Kazemtarghi, S. Dey, A. Mallik, and N. G. Johnson, "Asymmetric Half-Frequency Modulation in DAB to Optimize the Conduction and Switching Losses in EV Charging Applications," *IEEE Trans. Transp. Electrification*, pp. 1–1, 2023.

Analysis on the Current Situation and Teaching Strategies of Psychological Health Education for College Students

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Abstract: In recent years, there have been frequent and increasing cases of college students harming themselves and others due to psychological problems and other reasons, which has sparked the increasing attention of the Party Central Committee and education departments at all levels to the mental health education of college students. Education experts have also included mental health education in the work of moral education in colleges and universities, and their expectations for mental health education in colleges and universities are constantly increasing. Currently, students' mental health issues have attracted great attention from all sectors of society, and universities have begun to reflect on the problems existing in the process of mental health education. Based on an in-depth analysis of the current situation of mental health education for college students, this article proposes effective solutions to promote the healthy development of mental health education in colleges and universities.

Keywords: Current Situation; Teaching Strategies; Psychological Health Education

1. INTRODUCTION

Colleges and universities shoulder the heavy responsibility of cultivating talents in the new century, and the physical and mental health of college students is directly related to the rise and fall of the nation, the strength of the country, and personal success. However, in recent years, the psychological health problems of students in universities have directly affected the improvement of students' comprehensive abilities and the overall quality of college students. The author has been engaged in daily management and psychological education for college students for many years. Based on in-depth observation in daily work, the author shares his thoughts on the current situation and corresponding strategies of psychological education for college students with everyone. According to relevant surveys, there has been an imbalance in mental health education among universities in China.

Individual colleges and universities have not correctly recognized the importance of mental health education, and the curriculum arrangement emphasizes specialized courses while ignoring basic courses, resulting in few class hours for mental health education courses; Some schools have not effectively implemented their teaching hours, and there are situations where special lectures have been used instead of classroom teaching, resulting in many problems in mental health education. Although all universities have set up mental health counseling centers, there are still problems with outdated hardware equipment and insufficient office space. Traditional methods of mental health education for college students include offering general courses and lectures on mental health education for college students, popularizing mental health knowledge, establishing campus psychological counseling rooms, regularly holding psychological counseling activities, organizing students to participate in social practice activities, and conducting questionnaire surveys on college students' mental health, Establish college students' mental health files, cultivate self-education ability, etc. Of course, a good campus

atmosphere (or campus network culture construction) is also indispensable.

The most obvious effect now is to offer mental health education courses and supplement them with psychological counseling. Universities should systematically carry out mental health education and counseling and establish standardized psychological teaching courses for college students. At present, some universities only provide psychological health education for first-year students, and the teaching format is also very simple, presented in the form of large-scale lectures. This teaching method cannot effectively guide students psychologically and can only provide them with a simple disciplinary understanding of psychology. Emphasizing the training and qualification certification of mental health educators to ensure the scientificity and seriousness of mental health education work, thereby improving the quality and authority of mental health education work, is highly emphasized in foreign mental health education work. The work of mental health education in China started relatively late and is still being explored.

Most mental health educators only undergo short-term training before taking up their positions, learning while working while improving, which is in line with the current national conditions. However, at the same time, it is necessary to strengthen quality awareness, emphasize scientificity, and gradually improve the training, assessment, and qualification certification system for mental health educators. This is the symbol of the maturity of China's mental health education work. In the current era of rapid economic and social development, the demand for talents is also increasing day by day. College students will face significant pressure in their studies and employment, often feeling at a loss and disoriented, leading to varying degrees of psychological problems, which will have a certain impact on their own learning and life. According to incomplete statistics, the probability of depression among college students is gradually

increasing, and it has become the main reason for their dropout, suspension, and suicide.

2. THE PROPOSED METHODOLOGY

2.1 Current Situation of Mental Health Education for College Students

In online video courses, online teacher-student interaction also solves the problem of not being able to provide face-to-face and timely feedback. The above forms are all aimed at better serving college students and making psychological education easier. In short, the emergence of the Internet has brought people closer in time and space, provided convenience for communication, and made more and more psychological resources available online. The channels for obtaining psychological knowledge have also become more flexible and diverse.

For example, the electronic libraries of colleges and universities and websites of some psychological institutions are also open to the public, and the official account of psychology has also been developed sufficiently in recent years. Colleges and universities should establish disciplinary psychological teaching courses and provide specialized psychological health counseling to help students shake off negative and negative psychological influences. Colleges and universities also carry out optional courses in psychological education, which can cover topics that students are more interested in, such as love psychology, behavioral psychology, and interpersonal communication psychology. Students are encouraged to face learning and life with a positive and healthy attitude.

During the period of college students, they should organize their basic information and establish mental health records for them. This includes students' family situation (such as specific member structure, educational background, and economic status), school performance (such as academic performance, ideological and moral character, hobbies, social abilities, etc.), personality characteristics and existing problems (such as temperament and personality characteristics), analysis of mental health status, and so on. And timely grasp the changes of college students as they grow and develop as needed and fill in necessary information on their mental health files. As a teacher, in teaching activities, we should always pay attention to the dynamics of students' mental health, identify, and promptly handle problems, and provide correct guidance to students.

2.2 Strategies for Improving Psychological Health Education for College Students

The rapid development of the internet and people's dependence on it enable people to have more exposure to psychology, to achieve the effect of popularizing psychology. It can easily and quickly collect effective psychological data for timely feedback, and better serve the public. In addition to regular mental health education courses, various mental health education activities, such as lectures on mental health education, should also be carried out using both internal and external resources. The content of the lecture can cover campus life, outlook on life, and outlook on love. For students who are about to graduate, psychological counseling can be provided with topics such as employment, career, and marriage. Psychological counseling activities between students can also be carried out, such as class meetings and collective cultural and entertainment activities to increase students' opportunities for participation and expression,

actively promote communication between students, and express their thoughts and emotions.

Choose students with good psychological qualities and a willingness to help others as "one to one" psychological counselor and provide them with assistance and training in basic counseling knowledge, and regularly supervise their work. The reason why peers are chosen as mentors is because there is a small age gap, the same identity background, and a small defensive mentality between the mentor and the coached, making it easier to accept and communicate with each other, achieving mutual trust and mutual influence. Due to the complex factors that cause college students' mental health problems, mental health problems are diverse. Universities should strengthen the pace of mental health education construction and improve the effectiveness of work. For example, through individual and group forms of psychological counseling, conducting mental health surveys for students, conducting lectures on mental health education, organizing psychological research activities, and so on.

At the same time, with the help of online platforms, radio, blackboard newspapers, and other promotional channels within the school, as well as the way of conducting second class activities, regular activities are held to effectively implement the "weekly lectures, monthly consultations" principle, that is, a weekly special lecture is held, experts are invited to provide psychological counseling to students every month, and a monthly publication of psychology related popular science knowledge is published. Utilizing the network platform to optimize resources and save production costs (traditional textbook printing, offline publicity, etc.), college students can freely choose their own curriculum teachers online (to achieve the goal of problem solving). Meanwhile, feedback from big data can better develop psychology. Using the image and novelty of the network to enrich the methods and means of mental health education for college students.

The Internet provides a variety of options for college students' mental health education, making full use of words, pictures, sounds, and other information to better convey mental health knowledge to college students and make them more acceptable. In addition to traditional mental health teaching methods, various modern information technologies can also be used as auxiliary tools. Teachers can use internet platforms to conduct online psychological counseling and set corresponding permissions to ensure students' privacy and enable them to actively engage in psychological counseling or emotional counseling. Teachers can also push articles, videos, and excellent movies and TV dramas related to psychology to students, enabling them to enhance their ideological awareness and self-guidance abilities while engaging in daily entertainment. In recent years, with the increasing maturity and development of network technology, the network coverage of universities has become increasingly broad. Using the network to conduct mental health education for college students has become a new channel, bringing vitality to changing the traditional mental health education. Network mental health education refers to the use of advanced campus network technology as a professional educational tool and measure to cultivate college students' psychological quality, solve psychological problems, and improve their mental health level.

3. CONCLUSION

Universities should adhere to the principle of "student-centered", attach importance to mental health education, and vigorously promote knowledge of mental health education.

Colleges and universities should also establish psychological archives for each student in school, do a good job of preventing and tracking students' mental health, and promote the sustainable development of mental health education. Students' ideological and political educators should often go deep into the students, understand their confusion, solve their existing problems, and help them conduct counseling. Teachers of mental health education should fully implement the concept of establishing morality and cultivating people in their teaching, maintain an optimistic attitude among students, and help them form a sound personality. Scientifically and reasonably operating this educational method, we strive to explore new models of online mental health education in the new era, making it easier for most college students to learn, further optimizing their psychological quality, thereby improving the effectiveness and effectiveness of college mental health education work, and promoting the vigorous development of college mental health education work.

4. REFERENCES

- [1] He Quan Analysis of the current situation and strategy research of mental health education for college students in the Internet environment [J] Wencun Reading Journal, 2021, 000 (015): 105104.
- [2] Zhang Yuantao, Tong Li an Analysis of the Current Situation and Strategies of Mental Health Education for College Students [J] Science and Education Literature and Literature (Second Edition), 2008 (36 issues): 22-23
- [3] Huang Hui Analysis of the Current Situation and Strategies of Psychological Health Education for College Students [J] China Off School Education, 2008 (8): 1
- [4] Sing high Analysis of the Current Situation and Teaching Strategies of Psychological Health Education for College Students [J] Heilongjiang Science, 2021,12 (9): 2.
- [5] Wang Dong Investigation and Countermeasure Analysis on the Current Situation of Psychological Health Education Courses for College Students in Xi'an City [D] Shaanxi Normal University
- [6] Zhou Wan finished Analysis of the Current Situation of Psychological Health Education for College Students and Research on Countermeasures [J] Journal of Guangxi Youth Cadre College, 2008 (1): 4
- [7] Chen Xinxing Research on College Counselors Carrying out Psychological Health Education for College Students Fujian Normal University, 2016
- [8] Li Min The current situation and promotion strategies of mental health education for college students in ethnic universities [J] Campus Psychology, 2017, 15 (2): 2
- [9] Liu Cunqin The current situation, problems, and strategies of mental health education for college students [J] Infoweek, 2020 (1): 1
- [10] Wang Qinqin The current situation and strategies of research on mental health education for college students in China
- [11] Li Shaohua Teaching strategies for college students' mental health education based on the network environment [J] Western Quality Education, 2017, 3 (3): 1.
- [12] Zhou Xiaojing A Study on College Students' truancy Behavior Based on Psychological Internalization Theory [D] Three Gorges University, 2015
- [13] Wang Dong Investigation and Countermeasure Analysis on the Current Situation of Mental Health Education Courses for College Students in Xi'an City [D] Shaanxi Normal University
- [14] Xie Yanli Analysis of the Main Strategies for Psychological Health Education for College Students [J] Contemporary Education Practice and Teaching Research: Electronic Edition, 2015 (8): 1
- [15] Luo Shuang Research on the Reform Strategy of Psychological Health Teaching for College Students in the Context of the Internet [J] International Education Forum, 2020, 2 (5): 205

Research on the Ways to Improve the Service Quality of Tourism Enterprises in the Background of Digital Transformation

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Abstract: In the context of the digital economy, with the continuous integration of digital resources and network organizations, it is an inevitable trend for enterprises to implement digital transformation of the network. The digital transformation of enterprise networks should be realized under the condition that each node enterprise is connected through resource sharing and complementary advantages. However, the connection of node enterprises under the background and characteristics of digital cooperation can generate various transformation methods, and it is necessary to explore the most effective transformation path through empirical research. In the field of value theory, the article attempts to apply "people-oriented" as an idea and a path to specific industries such as tourism. Aiming at the problems existing in tourism services, based on the concept of "tourism practitioners oriented", this paper proposes corresponding countermeasures to improve the quality of tourism services.

Keywords: Service Quality; Tourism Enterprises ; Digital Transformation

1. INTRODUCTION

At present, the risks and complexity of China's economic development environment continue to increase, especially the emergence of emerging technologies such as big data, the Internet of Things, cloud computing, and artificial intelligence, which have brought China's economy into the digital era. In 2017, the "digital economy" was first proposed in our government's work report. In 2019, the second session of the 13th National People's Congress mentioned the "digital economy" and requested that the construction of the "digital economy" be strengthened, indicating that the "digital economy" has risen to the strategic position of China's economic development.

In the context of the digital economy, enterprises are required to carry out digital transformation of the network, and it is necessary to find favorable resources outside the enterprise to promote the digital transformation of the enterprise network. However, at present, the digital transformation of the enterprise network in China is still in the initial stage. The cultural quality of personnel is low. From a worldwide perspective, tourism education has experienced a process from being ignored to catching up; From the perspective of China, the national education foundation in China is relatively backward, coupled with the late start of specialized education in tourism as an emerging industry, resulting in the overall cultural quality of tourism practitioners being low, unable to adapt to the rapidly developing modern tourism industry's demand for the number and level of tourism practitioners, affecting the improvement of tourism service quality, and even affecting the image and further development of China's tourism industry.

Backend support systems typically include three components, namely, awareness systems, technical support systems, and information resource databases. These three contents provide a multifaceted and powerful service foundation for front-end

application systems. Among them, the sensing system provides sensing functions for smart tourism through the current stage of the Internet. Information resource databases organically connect multiple information resources and establish strict information standards to meet the information sharing requirements.

Currently, there is a lack of research on the digital transformation of enterprise networks. Using QCA can reasonably explore complex causal relationships and can be used to analyze the laws and characteristics of the digital transformation of enterprise networks. The QCA analysis method was proposed by Ragin in 1987. This method can be divided into three types: csQCA, mvQCA, and fsQCA. Compared to the other two analysis methods, csQCA can display continuous changes in data, and has both qualitative and quantitative attributes. Therefore, this method is used for analysis in this article.

Chinese people always believe that service work is inferior and have a sense of inferiority and dislike it. The second is the factor of national character. Due to historical and geographical reasons, Chinese people have formed an introverted national character, characterized by steadiness, seriousness, patience, and self-respect. This personality characteristic conflicts with the enthusiasm and initiative of service personnel required in tourism service work, and the need for an extroverted personality, which is another reason for service weakness. The quality of tourism experience is closely related to tourism expectations. Smart tourism utilizes a series of intelligent technological means and many achievements in the field of science and technology in the tourism industry, which is very novel for tourists. The tourism experience provided to tourists shows that it exceeds their expectations. The meaning of tourism experience refers to the change in the psychological

level of tourists after contact with the outside world, which is the adjustment process of their psychological structure.

2. THE PROPOSED METHODOLOGY

2.1 Problems in tourism services

This process is formed through the interaction between tourists' psychology and tourism objects. The key content of tourism experience mainly includes emotional experience, knowledge experience, practical experience, and transformation experience. Among them, the meaning of emotional experience is the impact of landscapes on tourists in their tourism experience, while tourism landscapes bring different spiritual experiences to tourists. Emotional experience is the most common among tourism experiences. The meaning of knowledge experience is that in tourism experience, tourists meet things they have not experienced before, and these things give them a different perspective on life.

According to the information released by the National Industrial Information Security Development Research Center, there are significant differences in the performance of enterprises in intelligent collaboration, integrated interconnection, and digitization due to their different development scales. When node enterprises conduct digital transformation, there is a close correlation between their degree of digitalization and their development scale. Therefore, this study also lists the organizational size of node enterprises as an antecedent factor. The indicators used to measure the organizational size of a node enterprise include the registered capital, number of employees, market value, equity, and total assets of the node enterprise. China's tourism industry developed from the initial foreign affairs and public welfare type of reception. In the early days of the founding of the People's Republic of China, the reception service for tour guides was a political task and foreign affairs work. At that time, tour guides were national cadres engaged in foreign affairs work.

Although the tourism industry has long been transformed into an economic industry, the models, and mechanisms under the planned economic system in the past still affect the current operation of the tourism industry, specifically manifested as: many tourism enterprises, especially hotels, have a management philosophy that places the superior first, and the superior and subordinate often have a "supervisory and supervised" relationship. This "rigid" hierarchical relationship is of course not conducive to the potential development of employees, it is also impossible for employees to achieve "leadership and non-leadership", leading to disharmony in customer service.

Therefore, to effectively improve the tourism experience of tourists, it is particularly important to strengthen the construction of the government's public service system for smart tourism. It is necessary to achieve the construction of a public service system for smart tourism, change the promotion methods of the tourism industry, effectively improve the level of tourism services, provide strong support for establishing the city's image and strengthening the supervision of the tourism market, so that tourists can be faster, more accurate. More comprehensive access to different tourism information services. Cultural tourism products are not only an inheritance of culture, but also an important way to promote the development of tourism.

2.2 Effective Ways to Improve Tourism Service Quality under the Background of Digital Transformation

The content of the tourism experience design process is to choose a cultural theme, but before doing this work, it is necessary to understand the historical development and cultural background of the tourism destination from multiple aspects. Complex solutions are obtained without expanding logical remainder operations, which are the remaining configurations that are not supported by the case. Based on the analysis of complex solutions in this study, it is concluded that strong and weak coupling transformation behaviors are formed in the network of nuclear enterprises according to the antecedent variables of non-nuclear enterprises without simplifying through logical residuals. At the same time, the configuration of two transformation behaviors is obtained.

Tourism practitioners are the main body and providers of tourism services. Tourism practitioners are the foundation of the benefits of the tourism industry, and their quality is an important component of an enterprise's intangible assets. Among the factors such as human, financial, material, and information, human is the most fundamental, active, and critical element. The concept of "tourism practitioners" as the foundation precisely embodies the scientific allocation consciousness of "obtaining the country's needs, talents first". With the promotion and popularization of the Internet, an important way for tourists to obtain tourism information is through the Internet. Relevant data also indicate that the scale of the tourism e-commerce industry is increasing, and the services provided by tourism websites to tourists are not limited to simple information services. Modern humans have a high degree of dependence on the Internet, so it is necessary to seize this point and vigorously develop the construction of intelligent tourism websites to provide tourists with a better platform to obtain tourism services, thereby promoting the development of intelligent tourism and improving the tourism experience of tourists. Therefore, it is necessary to further accelerate the construction process of traffic signs leading to tourist destinations, provide convenience for tourists, and enable them to enjoy smooth transportation services.

To further enhance the cultural experience of tourists, tourist destinations can also use some electronic technologies and devices as experience facilities, such as using electronic display screens as sightseeing support cards. Finally, it is indispensable to build some simple leisure facilities, such as arbors, benches, and chairs under the shade of trees, for tourists to rest. The transformation mode is weak connection transformation; W4 configuration indicates that node enterprises have both SZH1 and SZH2 characteristics. When both ROefz and GMfz conditions are lacking, and RDfz and Hfz exist simultaneously, there is a weak connection relationship between node enterprises and nuclear enterprises. The business structure of such enterprises is characterized by diversification, small enterprise scale, high R&D investment, and small profit margin. The transformation method is a weak connection transformation. Tourism practitioners are the foundation of the image of the tourism industry.

Tourism practitioners are the creators of the image of the tourism industry and are at the forefront of tourism's external public relations, including dealing with tourists, intermediaries, retailers, and other members of the public. The skilled skills, excellent service, and solid work of every tourism practitioner are the guarantee of a company's image. Therefore, only through effective management of "people"

and comprehensive improvement of their quality can an enterprise maintain a good image and remain invincible in competition. Affected by various factors, there may be situations that undermine and threaten the rights and interests of tourists in tourism activities. Therefore, there is a need for a sound tourism regulatory mechanism to achieve the protection of tourists. The government management department should establish a platform to achieve complaint supervision and information feedback, improve the tourism experience of tourists, and enhance the revisit rate of tourists. Tourism enterprises should also actively cooperate with government management departments to improve the quality of tourism services.

3. CONCLUSION

To assist enterprises in the digital transformation of the network, in the process of digital transformation, enterprises should not only collect external resources, but also strengthen the construction of digital infrastructure. For listed companies, they can establish institutions and departments specialized in digital research and development, and carry out digital transformation research on enterprise consumption, production, exchange, and distribution, mainly focusing on digital technology. Therefore, smart tourism is bound to become the development trend of the future tourism industry. We should conduct in-depth research on this issue and optimize the smart tourism system in accordance with the characteristics and actual situation of the tourism industry, to further improve the tourist experience and promote the development of the tourism industry.

4. Acknowledgement

Topic: 2022 Shandong Tourism Vocational College Project: Research on the Ways to Improve the Service Quality of Tourism Enterprises under the Background of Digital Transformation - Service Quality Improvement for Tourism Practitioners along the Yellow River Basin, Taking Dongying City Explainer Training as an Example (2022XYSJ28).

5. REFERENCES

- [1] Huang Dan Research on the Key Paths and Countermeasures to Improve the Quality of Tourism Service [J] Jiangsu Business Review, 2011 (8): 3.
- [2] Xia Hanjun Research on Evaluation and Optimization of Tourism Service Quality in Zhangjiajie World Natural Heritage Site [D] Yunnan University, 2015
- [3] Ma Yunchi, Zhu Zhaoling Problems and Countermeasures of Tourism Service Quality in Jiamusi

City: Analysis of Tourism Complaints [J] Frontier Economy and Culture, 2012, 000 (011): 10-11

- [4] Wu Han Discussion on the Ways to Improve Tourism Experience through Smart Tourism [J] Tourism Overview (Second Half Month), 2014, 07:93-94.
- [5] Li Yongli Discussion on Improving Service Quality of Travel Agencies Based on Humanistic Management [J] China Foreign Investment, 2010, 000 (010): 203-203
- [6] Fan Zhuochi Research on Tourist Queue Management Based on Service Productivity [D] Shanghai Normal University, 2011
- [7] Wang Xiaofeng, He Huimei, Fan Shuang, etc Research on the Path to Improve the Service Quality of Tourist Attractions: A Case Study of Baligou Scenic Area in Xinxiang City [J] Tourism overview: second half of the month, 2017 (7): 3.
- [8] Wang Tianyi Research on Service Level Improvement Strategy of Beijing Tourism Industry Based on Customer Satisfaction [D] Tianjin University
- [9] Li Yuanhang Research on the Improvement of Professional Ability of Tourism Management Teachers in Higher Vocational Colleges [D] Zhejiang Normal University, 2016
- [10] Yan Huiying Research on the Difficulties of Tourism Standardization in Yanqing, Beijing [C]//Market Practice Standardization - Proceedings of the 11th China Standardization Forum two thousand and fourteen
- [11] Yu Tingyi Research on Strategies for Improving Service Quality of Online Tourism Websites [J] Youth, 2018
- [12] References "Exploration and Analysis of the Cultivation of Inclusive Tourist Guide Professionals in Higher Vocational College of Tourism, Paper on Tourism Management [J]." Free paper
- [13] Hu Zixuan Building a knowledge generation headquarters in China [J] two thousand and fourteen.
- [14] Anonymous Zhejiang Tourism Innovation and Development Seminar was held in the Taihu Lake Lake Villa [J]
- [15] Research on the Industrial Guidance Mechanism for the Construction of "Two oriented Society" in Wuhan Urban Circle [J].

Research on Urban Domestic Sewage Treatment Technology and Development Trends under the Background of Rural Tourism Development

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Abstract: The diversified lifestyle of people not only increases the amount of domestic sewage discharged, but also tends to complicate the nature and composition of sewage, making the environmental water bodies that are already under great pressure continue to deteriorate. This article analyzes the current situation and development trend of urban domestic sewage treatment technology and explores feasible solutions. However, the resulting sewage can be discharged arbitrarily without proper treatment, which can easily cause secondary water pollution and serious environmental pollution, seriously damaging the urban environment and people's health. This article mainly analyzes the current situation and main problems of urban domestic sewage treatment technology, and studies the development trend of urban domestic sewage treatment.

Keywords: Urban Domestic Sewage ; Sewage Treatment; Development Trend; Rural Tourism Development

1. INTRODUCTION

With the improvement of people's living standards, the amount of urban sewage discharge continues to increase. Currently, the main channels of urban sewage are domestic sewage and wastewater generated by industrial production. Domestic sewage is generated in people's daily life, such as sewage from laundry and cooking, and sewage discharged from public places with organic substances such as oil, protein, and ammonia nitrogen. The composition of this type of water quality is very complex, with many pathogenic microorganisms and parasitic eggs. If not treated properly, it will cause secondary pollution and worsen the environment. In urban sewage treatment, whether the design of sewage pipe network is reasonable or not is related to the effectiveness of sewage treatment.

From the perspective of the constructed urban sewage pipe network, the common problems are mainly reflected in three aspects: First, there are many municipal water supply and drainage systems in cities, and when designing sewage pipe networks, their pipes are not separated from rainwater pipes, resulting in mixing of rainwater and sewage, increasing the amount of sewage and workload, which to some extent affect the quality of sewage. In the development of urbanization economy, different industries have developed rapidly, the content of the products produced is also constantly enriched, and the domestic sewage used and produced by people in actual life also contains a variety of different impurities, pollutants, or chemicals.

By analyzing the source of urban domestic sewage, changes in the use of household products have led to changes in the types of impurities and pollution loads in domestic sewage. The treatment of urban domestic sewage mainly involves filtering and removing impurities or particles and using chemical and physical treatment methods to remove some of the pollutants. Many domestic sewage treatment processes are summarized based on many experiments, but the current specific operation process is greatly affected by the external environment. Moreover, the level of regional socio-economic development

and human factors will also have a certain impact on wastewater treatment processes. In addition to the continuous changes in the natural environment, it is difficult for sewage treatment technology to achieve its due effect. The drainage system in sewage treatment is relatively simple, with certain limitations in terms of treatment.

In cities, control and utilization of water resources and runoff sources are seriously neglected. Direct drainage and diversion of rainwater can be fully utilized to discharge water outside the city. If rainwater is not treated in a timely manner, it can directly cause pollution of water resources in the city. There is also a lack of scientific and technical means for treating sewage, and the drainage system is too simple. In this case, there is a significant lack of effective methods for sorting out sewage. Biological treatment technology is the main technology for treating urban domestic sewage, and it is also the most widely used technology form at present. Overall, the sewage treatment effect is good, which is conducive to protecting the environment. Through biological reaction, the sewage is effectively treated. During treatment, the organic matter and bacteria in the sewage are combined to produce colloids to ensure solid separation, and then comprehensive filtration and sedimentation are conducted for the relevant sewage. The remaining bacteria that do not form decomposition are effectively degraded using oxidation technology, to reduce the sewage and achieve the fundamental goal of reuse.

2. THE PROPOSED METHODOLOGY

2.1 Analysis of Urban Domestic Sewage Treatment Technology

The main reason why biological treatment technology can be widely used is that it is relatively simple to treat. Its principle is to conduct microbial metabolism treatment of organic pollutants in sewage, and through metabolism, conduct material transformation. The use of chemical treatment technology for domestic sewage means that a certain number of chemical substances are put into the sewage, dissolved, and

then a chemical reaction occurs. At the same time, corresponding mass transfer actions can occur to remove pollutants. Chemical treatment technology is used to fully utilize new flocculants when treating oils and fats. New flocculants mainly include two types, namely organic flocculants, and inorganic flocculants. Nowadays, inorganic flocculants are used in the treatment of sewage in relatively large oil and fat processing plants.

Using this method in the treatment of urban domestic sewage can effectively remove grease from it. To treat urban domestic sewage, on the one hand, it is to prevent toxic substances in domestic sewage from flowing into farmland, ponds, or ditches, expanding the pollution range of water resources, and damaging environmental quality. On the other hand, it is necessary to conduct secondary treatment of urban domestic sewage to enable it to achieve the recycling and reuse of water resources after reaching the treatment standards, and improve the utilization rate of water resources. However, since urban domestic sewage treatment belongs to a high energy consumption industry, sludge anaerobic digestion is used in the application of urban domestic sewage treatment technology to achieve partial energy recovery and utilization of urban domestic sewage. However, there are significant limitations in the treatment technology, leading to the inability to reduce energy consumption in a short time. Moreover, in the research of this technology, China does not focus on nitrogen and phosphorus recovery. The reuse of reclaimed water and the utilization of wastewater biomass energy have an impact on the technical efficiency of urban domestic sewage treatment and are not obvious enough to play a role in the recycling and reuse of water resources.

In China, delayed aeration processes are mostly used in wastewater treatment, which is greatly different from international mainstream technologies, leading to restrictions on water resource reuse, mainly manifested in the fact that China's recycled water usually requires long-distance transportation to achieve its utilization value. At present, the research on wastewater treatment technology in developed countries in Europe and the United States mainly focuses on renewable water reuse, nitrogen and phosphorus recovery, and wastewater biomass energy utilization, which are issues that have not been considered in the development and utilization of wastewater treatment technology in China. To improve the level of sewage treatment, promote the reuse of reclaimed water from urban sewage treatment to meet the demand, widely use treatment technologies that are not harmful to residents in cities, introduce advanced discharge technologies into cities, and utilize efficient and low consumption in treatment technology, to achieve safe standards for sewage regeneration. Reduce the emission rate in cities, timely solve the serious problem of polluting water in cities, and thereby improve the urban environment in China.

2.2 Future Development Trend of Urban Domestic Sewage Treatment

Membrane treatment methods are mainly used in sewage where there are many sludge substances. Membrane treatment technology is the preferred method in the treatment of urban domestic sewage and activated sludge. In practical applications, many enterprises use this method. Sewage and microorganisms adhere to the biofilm on the surface layer of the media filter material, and through certain touch, the dissolved organic pollutants in the sewage can be rapidly degraded, which has a significant effect on sewage treatment. Sewage treatment plants are the infrastructure of a city. With

the rapid development of the city, sewage treatment plants also have better development space.

Nowadays, the upgrading speed of sewage treatment technology is accelerating, but with the increase of people's actual demand, it is not enough for sewage treatment plants to still adopt the traditional operation mode. For a better future development of sewage treatment plants, it is necessary to achieve integration of supply and discharge, and adopt a managed operation mode, thereby improving the technical level of domestic sewage treatment and optimizing the operation mode of sewage treatment plants. The use of primary treatment processes in urban domestic sewage treatment mainly includes mechanical treatment sections, such as the treatment of sewage from structures such as grids, grit tanks, and primary sedimentation tanks. The main purpose is to remove impurities of coarse particles, which can not only meet the effluent requirements, but also reduce the costs and related expenses in urban domestic sewage treatment, with high investment benefits, and can reduce the load of urban domestic sewage treatment, with the development of modern urban life, the types and quantities of impurities contained in urban domestic sewage continue to increase. The application of primary treatment processes in urban domestic sewage treatment has the advantages of stability, reliability, and simple operation.

According to the participation of oxygen in the treatment process and the growth status of microorganisms in the bioreactor, sewage biological treatment technologies can be classified into aerobic treatment processes and anaerobic treatment processes, as well as suspension growth processes represented by activated sludge and attachment growth processes represented by biofilm method. The most used treatment methods are anaerobic treatment processes and biofilm methods. If this arrangement is still used, it is still necessary to improve the efficiency of wastewater recycling and utilization. After wastewater treatment in the city, pipelines are re-laid inside the city, and a hierarchical approach is adopted to improve the transportation of reclaimed water from wastewater treatment to the daily lives of people in the city. In this way, the overall cost of constructing urban wastewater treatment plants can be maximized, and land resources can also be wasted, increase the cost of operation.

The direction of technical research can be closely promoted around this goal. Currently, the most widely used technology is biotechnology. This type of technology is a technical method with better environmental protection effects. Sewage is classified according to anaerobic and aerobic impurities in sewage, and comprehensive treatment of urban sewage is conducted through microbial reactions. This is a relatively widely recognized method, which is also widely used in sewage treatment enterprises. It is necessary to continuously innovate on this basis. Currently, Photosynthetic bacteria have emerged, which are rich in different types of vitamins and proteins, and do not exist in sludge disposal. They have been widely used in Japan, the United States, and European countries.

3. CONCLUSION

With the rapid development of cities, only by comprehensively innovating technological forms and improving management capabilities can urban domestic sewage be effectively treated. Technical innovation should be carried out under the guidance of sustainable development and environmental protection concepts, so that urban domestic

sewage can be reasonably converted into usable renewable water, ensuring the quality of urban domestic sewage treatment, and creating a better urban ecological environment for people. From the current situation of urban domestic sewage treatment, there are still shortcomings. It is necessary to conduct in-depth analysis and actively introduce high-tech achievements to better play the role of this technology, ensure the quality of water resource recycling and meet the needs of urban development. In addition, wastewater treatment plants also need to adopt diversified treatment modes, expand their scale, constantly update wastewater treatment technologies, and promote the development of green and energy-saving sewage treatment work.

4. REFERENCES

- [1] Zhang Jian Research on the current situation and development trend of urban domestic sewage treatment technology [J] Theoretical Research on Urban Construction (Electronic Version), 2015
- [2] Cheng Juntao Research on the current situation and development trend of urban domestic sewage treatment technology [J] China Equipment Engineering, 2018 (4): 2
- [3] Ran Fei Research on the current situation and development trend of urban domestic sewage treatment technology [J] Commodity and Quality, 2017, 000 (020): 292.
- [4] Li Lei Research on the current situation and development trend of urban domestic sewage treatment technology [J] Building Engineering Technology and Design, 2017, 000 (022): 4147-4147
- [5] Yang Yongming Research on the current situation and development trend of urban domestic sewage treatment technology [J] Henan Building Materials, 2016 (5): 2.
- [6] Sun Jianing, Wang Zizhou, Gao Yan, et al Key Points and Case Study of Rural Domestic Sewage Treatment under the Development of Rural Tourism Economy: A Case Study of Zhejiang Province [J] Shanxi Agricultural Economics, 2021 (11): 4
- [7] Zou Xiuqing, Xie Meihui, Xiao Zegan, Wu Ting, Yan Yin Yulin Rural development evaluation and obstacle factor diagnosis based on entropy weight TOPSIS method [J] China Agricultural Resources and Regionalization, 2021, 42 (10): 10.
- [8] Li Zhizhi, Zhao Dan A sewage treatment device for ecotourism areas: CN217025596U [P] two thousand and twenty-two
- [9] Qiu Jin Research on the Existing Problems and Development Countermeasures of Rural Community Construction in Gangang Village, Dongtai City [D] Yangzhou University, 2018
- [10] Wang Tong Research on the current situation and development trend of urban domestic sewage treatment technology [J] Theoretical Research on Urban Construction (Electronic Version), 2015 (024): 005
- [11] Wang Ze Brief Discussion on the Research Status and Development Trend of Urban Sewage Treatment Technology [J] Operator, 2019, 33 (002): 160-161
- [12] Ji Jia, Wang Xu A Study on Public Participation Models in Urban and Rural Tourism Based on the "Non formal" Phenomenon [C]//Urban and Rural Governance and Planning Reform - 2014 China Urban Planning Annual Conference 0
- [13] Lu Yang Research on the current situation and development trend of urban domestic sewage treatment technology [J] Theoretical Research on Urban Construction (Electronic Version), 2015, 000 (001): 712-712
- [14] Chen Zhiyong Research on the current situation and development trend of urban domestic sewage treatment technology [J] two thousand and fifteen
- [15] Geng Yingjie, Yuan Yajie, Xing Meilan, et al Research on the current situation and development trend of urban domestic sewage treatment technology [J] Science and Technology Information, 2014 (3): 2

Research on Innovation of College Korean Teaching Methods from the Perspective of Intercultural Communication

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Abstract: Basic Korean language courses are both a process of language learning and a process of experiencing Korean culture for beginners of Korean language from a zero-starting point in universities. The introduction of culture into Korean language teaching is crucial for stimulating students' interest in learning, innovating learning methods, improving learning effectiveness, and cultivating students' cross-cultural communication skills. This article explores a new approach to the reform of Korean language teaching based on the introduction of culture into junior Korean language teaching in universities. The Korean song introduction method, task driven method, and speech lab Korean speech chat method have good innovative applications in Korean language teaching, which plays an important role in promoting the realization of Korean language teaching objectives in vocational colleges and achieving the optimization of Korean language teaching effects.

Keywords: College; Korean Teaching Methods; Intercultural Communication

1. INTRODUCTION

Language is the carrier of culture, and cultural transmission requires the power of language. Language and culture are interdependent and interact with each other. The cultural characteristics of a country and the culture and customs manifested in various aspects of social life must be reflected in its own language. Korean is the summary and summary of the social, political, historical, and cultural life experiences accumulated over generations in South Korea. In the process of Korean language teaching, integrating Korean related cultural background and content into language teaching is called cultural introduction. Russian writer Tolstoy once said, "What is needed for successful teaching is not coercion but stimulating the interests of students."

Interest teaching refers to teachers adopting flexible and changeable methods for teaching objects and content, utilizing students' curiosity, rebellious psychology, and innovative psychology to create a harmonious and warm learning atmosphere, stimulate students' thirst for knowledge, enable students to accept knowledge and grasp skills in emotional pleasure, and achieve the best teaching effect. At present, due to factors such as limited class hours, students' lack of foundation, and students' lack of learning motivation, Korean language teaching in vocational colleges serves as the center of the classroom. The teaching method is mainly teaching, and students only blindly listen to the teacher's lectures, lacking various sensory stimuli, and lack of participation in learning, resulting in nervous system fatigue, drowsiness, lack of spirit, and weariness of learning, thereby failing to achieve teaching objectives and teaching results.

First, the reform of Korean pronunciation teaching. First, compared to Chinese pronunciation, Korean pronunciation has no tone, but it has a tone, and can distinguish between Korean Putonghua and dialects based on the pitch. Secondly, Korean does not have "F, R, V" sounds, which can pose significant obstacles when speaking some foreign words.

Pronunciation is a fundamental part of language learning, and accurate pronunciation is the basic condition for learning a language well. Therefore, teachers should often listen to the recorded pronunciation of some authentic textbooks for students in the actual teaching process. In college basic Korean language teaching, the content of cultural introduction mainly involves cross-cultural communication, but it should be noted that in the process of classroom organization and teaching, the language classroom cannot be turned into an art classroom. It is possible to properly explain Korean music, history, politics, etc. based on language, but it is not allowed to introduce too much to avoid deviating from the theme and affecting the quality of Korean language teaching.

The introduction of Korean culture into Korean language teaching in junior college students serves to improve the quality of Korean language teaching and is an auxiliary part of language teaching. Cultural introduction is an effective supplement to language teaching. Therefore, it is necessary to follow appropriate principles in the process of cultural introduction. During the preparation process, it is necessary to select cultural content that helps improve students' ability to learn and apply Korean language, avoid transforming the language classroom into a single Korean culture explanation and dissemination classroom.

2. THE PROPOSED METHODOLOGY

2.1 Principles of cultural introduction in Korean language teaching under cross-cultural communication

Nowadays, many related majors in many vocational colleges have opened basic and specialized Korean courses due to their international integration and Sino Korean friendly communication activities. In addition, specialized Korean courses have been added to majors, increasing the intensity of Korean language teaching. However, in Korean language teaching, firstly, Korean courses are not considered as the

main direction for job hunting and employment, and the number of class hours is relatively small; The second is that most of the students have zero basic learning, and some students have questions about the significance of learning Korean, as well as lack of confidence in learning Korean well; The third reason is that teachers lack knowledge of professional real work tasks and cannot guide students to practice oral English in simulation tasks. Therefore, when teaching, teachers can only select important knowledge points, select content that students may use in their work and life, and practice it, deleting or weakening relevant cultural backgrounds, knowledge connotations, and expanded knowledge, leading to many problems in Korean teaching methods in vocational colleges.

Reform of Korean vocabulary teaching. In the current process of learning Korean vocabulary, Chinese characters can interfere with students' learning of Chinese characters and words in Korean. There will be words in Korean that have the same meaning as the same word in Chinese, words that have different meanings with the same word, and words that have different characters with the same word, all of which will have a certain impact on students. In addition, during the actual learning process, students may encounter idioms that cannot be found in the dictionary. Generally, the meanings of verbs, nouns, and adjectives in idioms may differ from those in the dictionary. Sometimes, when students read an article, they simply cannot recognize it as an idiom. Comparison of Chinese and Korean cultures. During the process of cultural introduction, teachers can guide students to compare similarities and differences between Chinese and Korean cultures, thereby deeply understanding the differences between Chinese and Korean cultures and improving the cultural sensitivity of cross-cultural communication.

For example, words with the same form in Chinese and Korean may also have different connotations. Teachers can choose typical new words to explain. The goal of Korean language teaching in vocational colleges requires students to be able to engage in smooth daily life conversations, and listening and speaking dialogue is the most difficult thing in Korean language teaching. How can we better cultivate students' autonomous training in listening and speaking ability? Teachers can use the Korean Language Teaching Phonics Room to allow students to independently chat in Korean language for 10 minutes per class. One is to provide students with a communication platform to speak Korean with open mouth; Second, teachers can guide and supervise students' practice; Third, students seek a sense of achievement in practice, thereby forming a good learning atmosphere; Fourth, the choice of different levels of Korean language proficiency through voice chat partners during the exercise affects students' entrepreneurial psychology and objectively cultivates students' awareness of autonomous learning. Reform of Korean grammar teaching. Korean language teaching itself has a certain degree of humanity and instrumentality, and teachers should pay attention to reforming and innovating Korean grammar teaching in the actual teaching process.

2.2 Research on Innovation of College Korean Teaching Methods

In Korean word order, the predicate follows the subject and object, so to distinguish between the subject and the object, auxiliary words are often used, while many Chinese students rarely use auxiliary words. Secondly, there is honorific language in Korean. Generally, in Korean communication, honorific language is used for people who are older and have

higher status than themselves, while non honorific language is used for those who are younger than themselves, which is also a difficulty for many Chinese students in the process of learning Korean grammar. The teacher organizes students to discuss a cross-cultural communication issue in real life, mobilizing the entire class to have an orderly discussion, and then answering specific communication topics to deepen their understanding of Korean culture. Students in cultural discussions should use their brains, actively participate in them, and express personal or group opinions.

Before a cultural discussion, teachers should determine the appropriate topic, control the progress of the discussion, and control the situation. They should not only promote cooperation between students, but also encourage introverted students to speak. In the design of teaching content, the teacher purposefully arranges students to combine Korean songs after class to find and collect information about their creative roots, cultural background, lyrics, singer information, lyrics, and composers, and share it in class. It is best to share it in Korean to expand the teaching content, which can be extended to Korean culture, including Korean history, Korean etiquette, Korean clothing, Korean food, Korean life, and other information, To enrich students' knowledge, enhance cultural heritage, help students love Korean culture, and strengthen their love for Korean language learning; Helping students find jobs for Korean funded enterprises smoothly; It is helpful to improve students' personal knowledge level. Before or during class, the teacher selects topics related to teaching progress or focuses on current hot issues, organizes students to hold small cultural lectures within the class, cultivates students' interest in culture, and enhances cultural sensitivity. Through lectures, students can have a comprehensive and systematic understanding of South Korea and its culture.

After the discussion, the teacher can encourage students to ask questions, discuss, debate, etc., and conduct in-depth communication and sharing learning on a certain language or cultural knowledge point. In teaching design, teachers should select typical work tasks, refine, and quantify typical work tasks to specific subproject work tasks, combine teaching objectives and teaching content, and use subproject tasks as effective tasks for classroom teaching. The completion of real tasks reflects the realization of teaching effects and stimulates and drives students to learn. The selection of sub project work tasks must be based on real tasks, which means that students will encounter tasks that need to be handled during internship and employment; Second, it is necessary to integrate the knowledge of listening and speaking, vocabulary, grammar, and other aspects of Korean language teaching, so that the knowledge points can be applied to specific real work and carry out second classroom learning.

Literary works are the essence of national culture and the accumulation and precipitation of traditional culture. Introducing culture into the language classroom can provide in-depth understanding of the historical and cultural background, customs, social communication, external relations, and other aspects of the target country's nation and country. In addition to the basic Korean language classroom, teachers can lead students to systematically guide them to read Korean literary works, newspapers, or browse related content online for online reading. At the same time, regular book sharing meetings can be held to stimulate students' enthusiasm for reading, thereby improving their language skills.

3. CONCLUSION

Culture is the soul of a country and a nation. In Korean language teaching, teachers need to teach not only superficial language knowledge, but also the culture behind the language. Language knowledge and cultural knowledge promote each other. Therefore, while imparting language knowledge, teachers should introduce culture and incorporate cultural content into language classroom teaching with the rapid development of China's social economy, more attention should be paid to the development of Korean language teaching in universities. Teachers should constantly reflect on teaching, actively combine various innovative theories to provide good development direction for the reform and innovation of Korean language teaching in universities, and better develop the comprehensive abilities of students.

4. REFERENCES

- [1] Ma Meiqi Research on Innovation of Korean Teaching Methods in Higher Vocational Colleges [J] Liaoning Economic Management Cadre College (Journal of Liaoning Vocational and Technical College of Economics), 2014
- [2] Liu Yu Explore how to innovate the teaching mode of Korean language education in universities [J] Journal of Higher Education, 2016 (19): 2.
- [3] Wu Chen How to innovate the teaching mode of Korean language education in universities [J] Introduction to Knowledge, 2018 (36): 2.
- [4] Li Yong Innovative Research on Korean Language Teaching in Higher Vocational Colleges under the Mu Ke Model [J] Exam Weekly, 2018 (33): 1
- [5] Li Chuang Innovative Research on Korean Teaching in Colleges and Universities [J] Home Education World, 2013 (11X): 1
- [6] Jin Hongzhou Research on Korean Language Teaching Methods in Chinese Universities [D] Harbin Normal University, 2013
- [7] Li Lingling Research on Teaching Methods of Korean Public Elective Courses in Vocational Colleges [J] Academic Weekly: Early October 2012
- [8] Guo Jingyi Research on Innovation and Practice of Korean Language Teaching in Secondary Vocational Schools from a Task Driven Perspective [J] In and out of the classroom (high school teaching and research), 2022 (1): 141-142
- [9] Quanjihua An Analysis of Korean Conversation Teaching in China [D] Yanbian University, 2014
- [10] Zhang Wenli Research on Teaching Methods of Korean Translation Course [J] Student (First Half Month), 2013 (Issue 12)
- [11] Wang Liqun Innovative Research on Korean Teaching in Colleges and Universities [J] Scientific Chinese, 2014 (8X): 1
- [12] Liang Yinhua A Comparative Study of Chinese and Korean Social Appellations [D] Shenyang Normal University
- [13] Wang Lei Exploration of the application of new media in Korean language teaching in universities [J] Modern Economic Information (24)
- [14] Tan Liyue, Yi Lin Culture Enriches People: A Study on the Path of Integrating Curriculum Ideology and Politics into Korean Courses in Universities [J] two thousand and twenty-one.
- [15] Wang Lei Exploration of the application of new media in Korean language teaching in universities [J] Modern Economic Information, 2018

Current Situation and Development Direction of Medical Image Processing Technology in the Background of Big Data

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Abstract: With the progress of society and the development of technology, digital technology has been widely used in current life practices. From the perspective of practical application effects, digital technology has not only greatly improved people's work efficiency, but also significantly improved the quality of work. From the perspective of the current application of digital technology, digital image processing is very common. This work benefits from the digital technology and computer foundation, so the quality of image processing is higher, and the use effect is higher. The emergence and development of the main content of image enhancement and restoration, image segmentation, and image analysis, and based on the latest progress in this field, this paper briefly describes the latest hotspots in five main research areas of digital image processing technology, and finally summarizes the main challenges and future development directions in the field of digital image processing technology.

Keywords: Development Direction ; Medical Image Processing; Big Data

1. INTRODUCTION

Judging from the current development of information technology, regardless of the means of communication, people are more willing to choose more intuitive and realistic images for expression. Therefore, in the future social development process, people's demand for the form of information transmission of images will become increasingly high. Timely, intuitive, or objective development conditions pose new challenges to the current processing of digital image technology. Specifically, to achieve digital image processing, it is necessary to have two aspects of technology: first, digital technology, and second, computer technology. Without the support of these two technologies, digital image processing cannot be carried out. Therefore, it is necessary to analyze the current situation and development direction of digital image processing technology based on these two aspects of technology, so that the discussion of digital image processing technology will be more valuable.

Since the mid-1970s, with the rapid development of computer technology, artificial intelligence, and thinking science, digital image processing has developed to a higher and deeper level. People have begun to study how to use computer systems to interpret images and achieve understanding of the external world like human visual systems. Many countries, especially developed countries, have invested more human and material resources in this research, and have achieved much important research results.

One of the representative achievements is the visual computing theory proposed by MIT's Marr in the late 1970s. After years of improvement and development, current electronic image processing technology mainly has the following characteristics: 1. Good reproducibility. Compared with traditional analog image processing techniques, digital image processing does not cause changes in image quality due to storage, transmission, and replication during image processing; 2. The occupied frequency band is relatively wide. The width of the frequency band is relative to the information language, and the information language of an image occupies

a frequency band that is many orders of magnitude larger than the language information. Therefore, the information of an image is more difficult in the actual operation process; Wide application range: We can obtain data resources from various ways, including digitizing images from microscopes or astronomy; Strong flexibility. Digital image processing technology not only has obvious characteristics, but also has significant advantages in the application process.

In terms of current practical behavior, digital image processing technology has shown four prominent advantages: first, strong reproducibility. The processing process of digital image processing technology does not cause degradation in image quality, so it can well reproduce the original image. The second is that the processing accuracy of digital image processing technology is relatively high, which can basically meet all the requirements of image processing at this stage. The third is that digital image processing technology has a wide range of applications. There are many sources of image information, and this technology can use image information collected through various information channels, so its utilization is highly universal. Fourth, strong flexibility. The strong flexibility effectively enhances its utilization value.

2. THE PROPOSED METHODOLOGY

2.1 Concept of digital image processing technology

Because an image is a two-dimensional projection of a three-dimensional scene, an image itself does not have the ability to reproduce all the geometric information of the three-dimensional scene, and it is obvious that some of the information behind the three-dimensional scene cannot be reflected on the two-dimensional image screen. Therefore, to analyze and understand the three-dimensional scene, it is necessary to make appropriate assumptions or add new measurements. Knowledge guidance is required when understanding the three-dimensional scene, this is also a knowledge engineering problem that is being addressed in artificial intelligence. As a guide, using X-ray computer interrupt layer photography technology devices, it is possible

to project the cross section of a person's head and reconstruct the image cross section after computer processing. Later, this technology of image reconstruction was widely used in whole-body CT devices, which made a significant contribution to human development. Later, digital imaging technology was widely used in various fields and industries, and its rapid development has made it a new discipline with wireless development prospects.

To improve the utilization effect of an image, certain standards need to be met, so necessary enhancement of the image can improve its quality. The fourth is image segmentation. An image is a continuous set, and for effective processing, it needs to be segmented, to achieve block processing optimization and achieve processing results. The fifth is to analyze the image. Image analysis is an important work in determining the value of images, so it needs to be taken seriously.

The fundamental difference between digital image processing and analog image processing is that it does not degrade image quality due to a series of transformation operations such as image storage, transmission, or copying. If the image accurately represents the original document during digitization, the digital image processing process can always maintain image reproduction. High processing accuracy. According to current technology, it is possible to digitize an analog image into a two-dimensional array of almost any size. Modern scanners can quantify the gray level of each pixel to 16 bits or higher, which means that the digitization accuracy of the image can meet any application needs. China has conducted research work on computer technology since the founding of New China, and with the reform and opening, China has also made significant progress in the development of computer image processing technology, especially in the research of certain theories, which has been able to catch up with the world's advanced level. First, the ability to collect imaging data. Through the successful development of a series of sensors and launched Earth observation satellites, it is possible to successfully obtain data on oceans, winds, clouds, environment, and resources, as well as environmental disaster reduction, while obtaining accurate and effective data and imaging effects. Moreover, digital image processing technology is most widely used in industries such as architecture, biomedicine, and transportation engineering, and its application in these industries can better reflect the actual situation of the development of digital image processing technology.

2.2 Future Development Direction of Medical Digital Image Processing

Image compression coding is also an important part of digital image processing technology. From the practical work of digital image processing, because image information is basically two-dimensional information, the amount of information is very large. Processing in such an information ocean will undoubtedly increase the difficulty of processing. To improve the efficiency of information processing, image information is actively encoded and processed, so that relevant content can be compressed to a unified range.

The development process of image extraction technology has undergone the following four stages of development: (1) The embryonic stage. The extraction conditions are achieved through the set during shooting (2) In the initial stage, independent sub disciplines were established based on quad pixels and digitization (3) Leap stage. Extraction based on the principles of probability and statistics (4) Differentiation stage.

Recognizing the correlation between frames in video, a specific scheme for video extraction was developed. However, due to the complexity of natural color distribution, there is no widely recognized model or systematic and unified evaluation criteria. The application of this technology in the construction industry can convert the height and density of proposed building clusters, as well as information that has an impact on building quality and the environment, into the form of images, this allows designers to make reasonable planning.

The application of this technology in the field of communication engineering, in which this technology, together with factors such as voice and text, constitutes the basic content of modern multimedia. When transmitting images, encoding technology can be used to compress the bit amount of information. However, the content currently developed by this technology mainly includes change coding, etc. In future development, it is possible to achieve image segmentation and compression coding using wavelet transform. The main application in biological engineering is book image technology, which can objectively present the mechanism of human activity to researchers in the form of images. This has brought irreplaceable effects on the development of medicine. The above is the actual situation of the development of book image processing technology in China. Image segmentation is an important content in digital image processing.

As mentioned in the above analysis, digital images are highly correlated, so they exist in a continuous set manner. This approach makes image processing more difficult, so it is necessary to segment the image during processing. In terms of current segmentation, there are mainly two methods: the first is region-based segmentation. This type of segmentation is mainly based on the region of the image, so it is relatively straightforward and relatively simple. The common methods are region growth method and split merge method.

During the process of image acquisition, transmission, and storage, due to various factors such as blurring, distortion, and noise, image quality can be degraded, which is called image degradation. There are many reasons for image degradation, such as in the process of image acquisition (digitization) and transmission, such as using a CCD camera to obtain images, The degree of illumination and sensor temperature are the main factors that cause image degradation. During the transmission process, images are mainly contaminated by noise due to the interference of the transmission channel used, which can also cause degradation in image quality. Image restoration technology aims to achieve a certain degree of improvement in visual quality. According to a specified image degradation model, degraded or degraded images under certain circumstances are restored to obtain the original original image without degradation.

3. CONCLUSION

Computer image processing technology is widely used in people's daily lives, reflecting the advantages of this technology. Whether it's watching movies or television, or surfing the Internet or mobile communication, each of us is closely related to this technology. Therefore, the development of digital image technology and the degree of people's enjoyment of life and material have a certain impact. Therefore, we must attach great importance to the research of this technology to improve people's quality of life and level. An analysis of its development status can help people better understand this technology and improve its application. Of course, the improvement of technology utilization needs to

explore the future development, so this article also introduces the future development direction of digital image processing technology.

4. REFERENCES

- [1] Liu Junmin, Huang Zhongquan, Wang Shigeng, et al Current situation and development direction of medical image processing technology [J] Medical and Health Equipment, 2005, 26 (12): 3
- [2] Huang Yue, Yang Siwei Current situation, and development direction of orthodontic image technology [J] Foreign Medicine (Dental Medicine Volume), 2005
- [3] Guo Yuliang, Fan Zizhe Exploration of the current situation and development mode of college students' physical fitness testing under the background of big data [J] New Sports, Sports, and Technology, 2022 (12): 3
- [4] Zhao Kai Research and application of key techniques for quantitative analysis of bone tissue in medical imaging [D] Northeast University, 2012
- [5] Shen Jiani A Brief Talk on the Current Situation and Development Direction of Digital Image Processing Technology [J] Netizens World, 2014 (13): 1
- [6] Office of the National Coordination Group on Remote Sensing Geology Current situation and development direction of digital image comprehensive processing technology for multi-source geoscience information [J] Remote Sensing of Land and Resources, 1991 (03): 3-10
- [7] Guo Xiaoying Discussion on the Reform of Digital Image Processing Teaching Mode in the Context of New Engineering [J] two thousand and twenty
- [8] Tang Yin A monitoring system and method for container bag production based on big data: CN113870370A [P] two thousand and twenty-one.
- [9] Shen Hailong, Wu Minjie, Zheng Qi Opportunities, and challenges of AI based medical imaging technology.
- [10] Song Jianhong Research on medical image processing methods based on level sets and convolutional neural networks [D] Yanshan University
- [11] Wu Dandan, Qian Dongning Analysis of image processing technology in video communication [J] Leisure, 2021, 000 (002): P.1-1
- [12] Huang Huijing Research on the Status Quo and Development Direction of Digital Image Processing Technology [J] Literary and Artistic Life: Late Issue, 2015
- [13] Qin Wenzhe Research progress and application of medical data mining in the context of big data [J] Chinese Journal of Clinical Thoracic Cardiovascular Surgery, Vol. 23, Issue 1, 2016, pp. 55-60, ISTIC CSCD, 2016
- [14] Weng Chunrong Analysis of the defects and countermeasures of computer information processing technology in the context of big data [J] Computer Products and Circulation, 2019 (9): 2
- [15] Wang Jun, Guo Li, Wu Jiansheng, et al Current status of bioinformatics research in the context of big data [J] Journal of Nanjing University of Posts and Telecommunications: Natural Science Edition, 2017, 37 (4): 6

Composite Ecological Wastewater Treatment Technology and Data Feedback System Based on Cloud Computer Background

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Abstract: This article briefly introduces the development and application of urban sewage treatment based on data feedback system, and introduces the background of cloud computing and the development history of composite ecological treatment technology for sewage treatment. By constructing a bacteria-algae-floating bed composite system, based on the study of its effect on water purification, its mechanism characteristics were discussed. Construct a bacteria-algae-floating-bed composite system to purify sewage with different concentrations, and explore the distribution characteristics of nitrogen cycle bacteria and the evolution process of phytoplankton community.

Keywords: Composite Ecological Wastewater, Wastewater Treatment, Data Feedback, Cloud Computer

1. INTRODUCTION

Most of the Nanning Railway Bureau's jurisdiction is located in Guangxi. The domestic sewage from the small and medium-sized stations along the Xianggui, Guizhou, Jiaoliu and other lines is basically discharged directly into agricultural irrigation ditches or streams without treatment, so as to dissolve in the receiving water body. The oxygen content drops, and even produces anaerobic degradation reactions, producing sulfide and skatole, which makes the water body smelly, which affects the local ecological environment and is also contrary to the national environmental protection policy. The composition of antibiotic production wastewater is complex, with high organic content, strong biological toxicity inhibition, and high content of refractory substances. Because antibiotic wastewater contains high-quality concentration of SO₄²⁻, it will have a strong primary inhibition of MPB (methanogenic bacteria). And secondary inhibition, which affects the normal operation of the anaerobic digestion system. Therefore, the existing antibiotic wastewater treatment projects are still based on aerobic biological treatment processes, but there are still problems such as high treatment costs and unstable treatment effects. To meet the emission standards, the aerobic process needs to be strengthened [1-6].

Compound green ecological system sewage treatment technology has been developed rapidly all over the world because of its ecological harmony and good landscape effect. At present, this technology is widely used in lake water body restoration and agricultural non-point source sewage treatment projects in China. The system has many advantages such as low carbon and energy saving, low operating cost, simple management and maintenance, stable and reliable operation, etc., regardless of its application prospects or Economic and social benefits are both the first choice for sewage treatment and are worthy of promotion and application. A large pharmaceutical factory in Northeast China is a key backbone enterprise in China's pharmaceutical industry and a key production base for antibiotic raw materials. In the production process of drugs, a large amount of antibiotic production wastewater, auxiliary workshop production wastewater, and

domestic sewage are discharged. The main components are fermentation residues, mycelium, organic solvents and various suspended solids and inorganic salts. To this end, the plant has built a large-scale antibiotic wastewater treatment project on the basis of a large number of experimental studies, and has successively built continuous flow and intermittent Two kinds of aerobic biological treatment projects, after comparative operation, the composite aerobic biological treatment technology shows the characteristics of high treatment efficiency and good water output effect. However, the infrastructure and operating costs of this method are expensive, among which the investment in sludge anaerobic digestion High, and the sludge digestion and treatment technology is more complicated. The sludge treatment cost accounts for about one of the total operating costs of the sewage treatment plant, and the investment accounts for the total investment of the sewage treatment plant [7-14].

With the commissioning of a large number of sewage treatment plants, the output of sludge will also increase substantially. Moreover, the current level of sludge treatment and disposal technology is not high. Among the only dozen sludge digestion tanks in our country, few can operate normally, and some are not operating at all. The direct discharge of sludge causes secondary pollution. Due to the lack of funds, the low technical level of operation and management personnel, etc., the conventional activated sludge treatment plants in many small and medium-sized cities cannot maintain normal operation. The low level of sludge treatment and utilization technology has become one of the biggest obstacles to the development of urban sewage technology in my country. Ecological water treatment technology is one of the effective ways to solve the above problems. Ecological water treatment technology has no chemical energy input and chemical consumption in the water purification process (Suetal., 2014), low operation and maintenance requirements, and reduced sewage treatment costs. It is important for the water environment in my country's cities and rural areas. The reduction and elimination of pollution is of great significance. Compared with aerobic biological treatment methods, anaerobic biological treatment technology has the advantages of high load, low energy

consumption, low capital construction and treatment costs. Generally, when treating the same sewage, the anaerobic method has a significant advantage compared with the aerobic biological treatment method. According to reports, in temperate regions, the cost of aerobic treatment of activated sludge or trickling filter for sewage treatment is one euro per equivalent resident per year [15-21].

2. THE PROPOSED METHODOLOGY

2.1 The Cloud Computer Background

Cloud computing and big data are hailed as the future "diamond mine and new oil", which is determined by its own characteristics and potential value. The emergence of cloud computing and big data technology has once again brought an all-round change to the IT industry with a higher technical level and a wider impact. Cloud computing uses distributed processing technology to provide computing resources, storage resources, and various generalized resources to users of resources in the form of services through the network, changing the mode of direct and exclusive use of physical resources in the traditional IT architecture.

As the core value carrier of this IT revolution, big data is mainly used for distributed storage and analysis of massive data with multiple data types to obtain valuable information and guide industries, enterprises, governments, education and other departments. Make predictive decisions about future development. Driven by the dual forces, the cloud computing and big data industries have developed rapidly. A well-known IDC research institute conducted a survey on the demand for cloud computing big data-related talents in the Asia-Pacific region, and found that the gap is huge, with an annual demand growth of more than 30%. Of course, the effective drive of this industry chain is inseparable from the construction of a talent team. As a higher vocational college with strong hands-on ability and clear career positioning, it should build a reasonable and scientific cloud computing and big data curriculum system to avoid blindly following the trend in professional settings. The order of courses is random, the learning content is out of order, and the position is not clear. The advent of the era of cloud computing big data has put forward new requirements and challenges for the training of IT talents. Recently, through searching the data of well-known domestic and foreign recruitment websites and many cloud computing and big data industry portals, many companies departments are posting a large number of jobs related to cloud computing and big data talents, which shows that there is a huge demand for job.

2.2 The Composite Ecological Wastewater Treatment Technology

At present, the applied ecological pollution control technologies mainly include: biological treatment technology with microorganisms as the processing core, ecological pond treatment technology with an animal-plant ecosystem, and wetland treatment technology with plants and microorganisms as the main processing function. A large amount of waste water is discharged during the production of antibiotics. Although in recent years, factories have implemented cleaner production and purified water recycling, which has greatly reduced the discharge of production waste water and pollutants, but in general, the concentration of pollutants in the waste water There is a tendency to increase.

The plant was divided into above-ground and underground parts. The fresh and dry weight were weighed and ground to analyze the nutrient element content in the plant. The nitrogen

and phosphorus in the plant Measure after digestion with concentrated sulfuric acid + hydrogen peroxide. Three replicates were performed for each plant sample to check for errors. In view of the fact that it is difficult to achieve the goal of a single form of green ecological pond technology for domestic sewage treatment in railway stations, the best technical solution for research should be to design a compound green ecological system with combined functions of oxidation ponds, biological ponds, and constructed wetland beds. On the basis of making full use of the advantages of various ecological technologies, we should achieve a reasonable design structure, select and cultivate wetland plant varieties with strong pollution resistance and purification capabilities, and make a reasonable combination to form a virtuous cycle of ecosystems, and give full play to all kinds of biological, the purification functions of plants and plant root microbes at various levels can achieve good treatment effects.

2.3 The Data Feedback System for Composite Ecological Wastewater Treatment

The treatment effect of the composite continuous flow aerobic treatment reactor on the comprehensive antibiotic wastewater. As can be seen from Figures 3 and 4, the treatment efficiency of COD and BOD₅ has been maintained at about 95%, and the COD mass concentration of the effluent reaches 200mg/L. The effluent BOD mass concentration has been lower than 50mg/L for a long time, which indicates that this kind of reactor has a good removal effect on refractory substances. During the summer test, the three plants can grow normally, with new leaves growing, leaves enlarged, and plants the plant's root system grows obviously, and white new roots grow out.

Compared with the conventional aerobic treatment reactor, the composite aerobic treatment The basic environment for the survival of microorganisms in the reactor has changed from the original gas and liquid phases to gas, liquid and solid three phases. This transformation creates a richer existence form for microorganisms and forms a more complex complex ecosystem. A complex ecosystem composed of bacteria, fungi, algae, protozoa, metazoa and other trophic levels.

3. CONCLUSIONS

Tests have proved that it is correct to set up a composite green ecological sewage treatment process in the Depot. The biochemical pond serves the purpose of pretreatment. The biological oxidation pond, constructed wetland module, and biological landscape pond in the composite green ecological sewage treatment system the combination is suitable for sewage purification treatment of small and medium-sized stations and points in tested area.

4. REFERENCES

- [1]Chen Xudong, Wang Shuai. Application of composite ecosystem in urban sewage treatment technology[J]. Petroleum and Petrochemical Materials Procurement, 2019(35):1.
- [2] Zhu Sha. Talking about big data processing technology under the background of cloud computing[J]. Electronic Testing, 2020(22): 2.
- [3] Che Jiazhu, Bao Zhengde, Tang Yawen. "Big Data Campus" based on cloud computing technology[J]. Computer System Network and Telecommunications, 2019, 001(002): P.24-27.

- [4] Ye Qing, Liu Changhua. Research on "Big Data and Cloud Computing Technology" Course Construction under the Background of New Engineering Courses[J]. 2021(2020-11):149-151.
- [5] Ye Qing, Liu Changhua. Research on "Big Data and Cloud Computing Technology" Course Construction under the Background of New Engineering Courses[J]. Journal of Hubei University of Economics (Humanities and Social Sciences Edition), 2020, v.17; No.197(11):151-153.
- [6] Sun Hongfang. Design and implementation of file management system under the background of cloud computing[J]. 2021(2018-1):42-43.
- [7] Shi Hongyue, Ren Xuanlei. Data processing system, method and computer storage medium based on cloud platform:, CN108876372A[P]. 2018.
- [8] Yang Dong. Discussion on the application of cloud computing technology in computer data processing[J]. Information and Computers: Theory Edition, 2019, 426(08):17-18+21.
- [9] Han Lanlan. A composite ecological filter bed based on the decentralized domestic sewage treatment of new rural construction:, CN213112721U[P]. 2021.
- [10] Jia Jinlan. Construction of a data information security system based on computer cloud services[J]. Computer Fan, 2018, 01:50-50.
- [11] Wang Weiya, Jiang Tao, Wu Ke, etc. A composite ecological decentralized sewage treatment device:, CN212269590U[P]. 2021.
- [12] Xu Song. Research on the treatment of rural sewage by enhanced anaerobic-composite media ecological filter bed[D]. Beijing Jianzhu University, 2020.
- [13] Wu Yongming, Deng Mi, Tu Wenqing, et al. A method for removing trace heavy metals and trace amounts of F-53B from electroplating wastewater treatment effluent:, CN108675464A[P]. 2018.
- [14] Xu Lili, Wang Kunpeng, Li Kuiling, et al. Research progress on the preparation of conductive separation membrane and its application in water treatment[J]. Membrane Science and Technology, 2019.
- [15] Cai Jianhua, Hu Wenxin, Zhang Lingli. Design and practice of computer experiment teaching cloud platform based on SPOC[J]. Experimental Technology and Management, 2019, 36(12): 4.
- [16] Zhang Xingjia. Exploration and research on the construction of Zhangye ecological industry system based on the complex ecosystem [J]. New Silk Road: Late, 2018(24): 2.
- [17] Tian Baojun, Du Xiaojuan, Yang Huyun, et al. Research on hybrid collaborative filtering optimization technology in cloud computing environment[J]. Application Research of Computers, 2018, 35(7): 5.
- [18] Kong Haibin. Research on big data processing technology under cloud computing mode [J]. Communication World, 2019, 26(12): 2.
- [19] Feng Kai. Design of metallurgical control system based on cloud computing technology and intelligent water drop algorithm[J]. Industrial Heating, 2020, 49(1):3.
- [20] Xiao Xiao, Feng Jun, Wei Haiyan, et al. A composite ecological chain sewage treatment system:, CN209428359U[P]. 2019.
- [21] Lin Qi, Fan Xinrui, Zou Lirong. Research progress of sulfur-containing wastewater treatment technology[J]. Oil and Gas Field Environmental Protection, 2020, v.30; No.138(05):31-34+43+81.
- [22] Wang Quanlong, Li Jian, Deng Guozhi. Experimental Research on Advanced Treatment of Urban Wastewater by Composite Ecological Floating Bed[J]. Water Treatment Technology, 2019, v.45; No.326(03):122-125+130.
- [23] Wang Wei, Bai Jieqiong, Wei Dongyang, et al. Research progress on the synergistic enhancement of sewage treatment with sponge iron composite system[J]. Environmental Protection and Circular Economy, 2019, 39(6): 5.
- [24] Lu Yixin, Zhao Li, Jiang Lu, et al. A composite ecological filter bed for decentralized domestic sewage treatment in rural areas:, CN207347250U[P]. 2018.
- [25] Ma Yucheng. Analysis of sewage treatment technology and methods in environmental protection projects [J]. Architectural Engineering Technology and Design, 2018, 000(017): 4839.
- Li Haiying. A composite ecological chain sewage treatment system:, CN212222523U[P]. 2020.

Practice of Intelligent Platform for Mental Health Education in Colleges Based on Automatic Identification and Retrieval Algorithm of Philosophical Texts

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Abstract: Image retrieval based on semantic correlation analysis of philosophical texts and extended retrieval of similar images based on SIFT features. According to the analysis of natural language processing technology, the keywords and their semantic associations in the user's text requirements are obtained. The dynamic transmission and transformation of text value under the influence of multi-system factors outside the text is the premise and basic feature of system reconstruction. The author tries to use psychological sitcoms to explore a participatory, experiential, and situational mental health education method, and guide students to discover, analyze and solve psychological problems by themselves, so as to know themselves, understand others, gain self-growth, and promote health. For the development of body and mind, use genetic algorithm to design paragraph retrieval algorithm, use the search algorithm of philosophical text to query the feature extraction of mental health of college students, and then use the index algorithm to carry out text modeling and philosophical development.

Keywords: Mental Health Education, Automatic Identification and Retrieval Algorithm, Philosophical Texts

1. INTRODUCTION

It is necessary for us to re-examine in what sense it is a "revolutionary" philosophy and how it produces a "philosophical revolution" from both the classical context and the contemporary context [1]. Mental health is a necessary condition for the good development of students, and mental health education and services are an important way to promote students' mental health. Information retrieval (Information Retrieval, IR) is the study of how to find information subsets that meet the needs of users from massive information resources, which involves information acquisition, representation, organization storage and access [2].

With the development of information technology, it has become an inevitable trend to carry out online mental health education [3]. Relying on the Internet to carry out mental health education is a powerful supplement and expansion of traditional mental health education. As the backbone of the future development of society, college students should adapt to the current social development situation as soon as possible, constantly enrich their theoretical knowledge, improve their comprehensive quality, and enhance their own psychological Quality [4].

In this process, the psychological counselor guides and adjusts the psychological confusion of the seeker based on the development of the plot and guides him to establish a healthy psychology [5]. Campus psychological sitcom is a branch based on psychological sitcom. Students create and compile various stage performances based on various psychological phenomena in campus life [6]. Under the pressure of future job hunting and other multiple difficulties, it is easy to lose themselves and go astray. It is a great challenge both for society and for individuals [7]. In recent years, the frequent occurrence of negative events among students in vocational colleges is not only shocking, but also arouses people's deep thinking about the psychological status and influence of students in vocational colleges [8].

Under multiple difficulties such as the pressure of job hunting in the future, it is easy to lose yourself and go astray, which is a great challenge for society and individuals [9]. In recent years, the frequent occurrence of negative events among students in vocational colleges is not only shocking [10], but also arouses people's deep thinking about the psychological status and influence of students in vocational colleges. In order to solve the contradiction between the protection and utilization of ancient books [11], Inner Mongolia University has implemented the digitization project of the Mongolian Ganyur Jing. The goal is to convert the Mongolian Ganyur Jing into digital images for long-term preservation. At the same time, these digital images can provide a quick way to browse through the Internet [12].

Document images are different from general natural images. They are mainly text-based and include a small number of images and tables. Document image retrieval is an operation of retrieving the images required by users in the document image library [13]. Since the 1990s, image retrieval technology has gradually become a relatively active research field. The retrieval technology used in the early days is the text-based image retrieval technology [14]. The bottleneck restricting its system performance is mainly layout analysis, that is, the identification of page objects. The documents to be processed in daily life are not only plain text documents, but more like insurance policies and contracts, medical case list and other documents with complex page layouts [15].

Many philosophies born in that radical age were expressions of the zeitgeist of the revolutionary age and theoretical responses to the changing social history at that time, so they were all "revolutionary philosophies" [16]. In fact, the party and the government attach great importance to the construction of online mental health education and its online platform. In 2005, the Central Committee of the Communist Youth League proposed to play the role of the "Online Mental Health Education for Chinese University and Middle School Students" platform in practice [17] and encouraged the

development of online psychological forums and other columns to provide students with online mental health education services. When users retrieve text information, they usually express the information they need in the form of query words, and the retrieval system returns possible relevant documents according to the query words [18]. But with the continuous increase of information on the Internet, while providing users with massive information.

Due to the lack of a complete mental health education mechanism in some colleges and universities, the division of powers and responsibilities among different departments is unclear, and effective exchanges and cooperation cannot be carried out [19]. Carrying out campus psychological sitcoms can give full play to students' subject status. By analyzing various psychological phenomena that appear in students' study and life on campus, they can write them into scripts for performance by themselves [20].

2. THE PROPOSED METHODOLOGY

2.1 The Automatic Recognition of Philosophical Texts

This statement is also confirmed by Marx and Engels, who have repeatedly acknowledged in their writings that both classical German philosophy and the philosophy they themselves created are revolutionary philosophies. For example, Marx called Kant's philosophy "the German theory of the French Revolution" to establish a demonstration application of medical document retrieval [10]. The typical domestic researches include: the Institute of Computing Technology, Chinese Academy of Sciences uses co-occurrence analysis and hopfield network to generate concept space, thus realizing the extended retrieval based on concept space. Paper documents are still widely used, such as the issuance of documents and the transfer of materials. If the number of paper documents is relatively large, it will bring great difficulties to the preservation, management and search of documents.

At this time, the advantages of electronic documents appear, which makes documents easy to manage and search. Image feature extraction is the focus of document image retrieval. There are many features in an image, and extracting correct and appropriate features can help improve the accuracy of image retrieval. An image often contains various features such as color features, texture features, and spatial features. Image feature extraction is the focus of document image retrieval. There are many features in an image, and extracting correct and appropriate features can help improve the accuracy of image retrieval. An image often contains various features such as color features, texture features, and spatial features. Here we operate directly on the pixels of the image. The algorithm uses a template for filling, as shown in Figure 4-1. The step interpolation method is described in detail as follows.

The line block of the document image obtained through the previous operation may appear step jump phenomenon in four directions (as shown in Figure 4-2). In a broad sense, that is, in its essence, revolution refers to a sober and critical understanding of irrational reality. This understanding is anachronistic, because its task is not to disguise reality and make it appear reasonable or mysterious in philosophy, but to confront the social contradictions of the times. The purpose of the latent semantic model validity experiment is to verify the accuracy of the LSI retrieval algorithm and high efficiency; the purpose of the non-related query text judgment experiment

is to preliminarily screen out the text most relevant to the query text from the large volume of text.

2.2 The Intellectualization of Mental Health Education in Colleges and Universities

Texture features contain important information about the structure and arrangement of the surface of the object and their connection with the surrounding environment, reflecting the properties of the image or the object itself. These images are similar to the images to be retrieved. If the image exists in the image database, the retrieved image will definitely contain the image. If there is no such image, similar images will be retrieved, and the image may not be retrieved. If the image cannot be retrieved, the image in the image database All of the images are quite different from the images to be retrieved. Table removal and stamp removal must first be completed in various document object areas. The table area will recognize table lines and fill the lines recognized by Hough transform with the document background color. However, some texts may be mistakenly detected as straight lines, so the text will become blurred and affect the recognition result. Layout analysis in a general sense refers to the process of dividing pictures, tables, charts and text areas contained in an image into different areas according to their attributes, and then connecting them to each other and annotating and identifying them.

Layout analysis in a general sense refers to the process of dividing pictures, tables, charts and text areas contained in an image into different areas according to their attributes, and then connecting them to each other and annotating and identifying them. For the convenience of storage, the reduction of paper resources and the rapid transmission of updates, more and more documents are converted into document images and stored in the form of electronic versions. With the rapid growth of the number of document images, how to retrieve the required documents quickly and accurately from so many documents has become more and more concerned. The above is to think about the revolutionary nature of Marxist philosophy in both classical and contemporary contexts. In addition, another important basis for judging that Marxism is a revolutionary philosophy is that it has brought an unprecedented great revolution to the history of philosophy.

2.3 The Practice of Intelligent Platform for Mental Health Education in Colleges and Universities

Latent semantic model validity experiments, non-related query text judgment experiments, and text retrieval experiments. The purpose of the latent semantic model validity experiment is to verify the accuracy and efficiency of the LSI retrieval algorithm. On the one hand, it can effectively play the propaganda role of various media. For example, with the help of campus newspapers, campus radio, new media platforms, etc., actively promote mental health knowledge to college students. In a sense, it is more harmful to "post modernize" Marxism than to "enlightener" it.

Because the revolutionary nature of Marxist philosophy is that it maintains a vigilant and critical attitude towards major social problems and a radical position to solve the problem fundamentally as a whole. By gradually merging the small, connected areas of the image into larger areas with the same properties, until the purpose of covering the entire text image is achieved. The bottom-up method requires processing the

part first and then the whole, so that the layout information can be completely obtained. In this way, under the circumstance that the overall layout information is not obvious but the local layout information features are more obvious, it can be handled relatively.

On the one hand, adhering to the concept of education and educating people, colleges and universities should encourage teachers to participate in mental health education and improve the awareness of full participation, so as to establish full-time and part-time teachers as the backbone, counselors and student cadres as the main body. Environmental factors cause drivers Prevention of behavioral errors. There are also external factors, such as education and training and the surrounding environment, that cause driver behavior errors. In this regard, relevant departments should strengthen strict monitoring of driving education institutions. In the information network era, online platforms are an important channel for implementing mental health education, and are also important for students to understand mental health knowledge, participate in mental health activities, and make appointments for psychological services such as psychological counseling. way. At present, 63.87% of colleges and universities in Sichuan Province have established mental health education web pages. The reason is that the vector space model is based on the feature item index. This mode of simple matching through vocabulary does not consider the semantically related information between words in the text.

3. CONCLUSIONS

This paper first studies the basic principles of force/tactile feedback technology, gives the framework of the force/tactile feedback virtual assembly system, and defines the basic functions of each module of the system. The improvement of ideological and political teaching literacy and ability of teachers of English majors plays a crucial role in the teaching of English majors. If teachers in private colleges lack ideological and political teaching awareness, ideological and political literacy, and ideological and political teaching ability, the ecological foreign language teaching model provides a more innovative development thinking for the development of college English teaching, which enriches the theory of foreign language teaching, and is also an effective teaching method and the process is more natural and harmonious.

4. REFERENCES

[1] Zhao Xiang. Research on the improvement path of English major teachers' general education literacy under the background of new liberal arts [J]. Think Tank Times, 2019(45):2.

[2] Zhang Lin. Research on the professional quality improvement path of college English teachers under the ecological foreign language teaching model [J]. Journal of Hubei Open Vocational College, 2020, 33(14):2.

[3] Yi Hongying. Research on the professional quality improvement path of English teachers in private colleges and universities under the network environment [J]. Campus English, 2019.

[4] Luo Tingting. Analysis of the development path of artificial intelligence to help future teachers' information

literacy: an empirical study based on online teaching questionnaires [J]. Gansu Normal University Journal, 2021, 26(5):5.

[5] Wu Qi. Research on SLAM algorithm optimized based on closed-loop detection technology in complex indoor environment [D]. Beijing University of Posts and Telecommunications, 2019.

[6] Hua Hanjing, Geng Dianlei. The Improvement Path of College English Teachers' Information Literacy from the Perspective of Educational Ecology [J]. English Square: Academic Research, 2022(10):3.

[7] Han Zibin, Zhou Xiuli. Application of fuzzy control in coal slime water treatment system [J]. China Mining Industry, 2022, 31(S01):5.

[8] Hu Tairan, Zhou Tianyang, Zang Yichao, et al. A dynamic feedback-based penetration path planning algorithm and system: CN109873826A[P]. 2019.

[9] Gong Shihua, Zhou Diyi, Wang Ziyue, et al. Research on calibration algorithm of chip high-precision positioning system based on visual feedback [J]. Semiconductor Optoelectronics, 2019(1):5.

[10] Cai Jia, Cai Gong. Research on the path of improving the quality of online teaching teachers under the background of "Internet +" era [J]. 2020.

[11] Xu Dan. Research on three-dimensional teaching of foreign trade English in higher vocational colleges based on cloud platform [J]. Liaoning Higher Vocational Journal, 2019, 21(1):4.

[12] He Anping. Research on the improvement path of corpus literacy of English teachers in primary and secondary schools [J]. Digital Teaching in Primary and Secondary Schools, 2022(6):5.

[13] Liu Yumin. Research on the improvement path of higher vocational teachers' informatization teaching ability based on professional teaching resource database [J]. Journal of Wuhan Vocational College of Transportation, 2022, 24(1):4.

[14] Wang Xiaoquan. The professional quality of excellent primary school English teachers and their improvement paths [J]. Famous Teachers Online, 2022(2):3.

[15] Wei Shangyun, Ma Jing, Hu Xiaobing, et al. Research on PID parameters optimization of heat sealing knife temperature control system based on improved SA-WOA algorithm [J]. Journal of Sichuan University: Natural Science Edition, 2022, 59(4):7.

[16] Yu Liang, Wu Chen, Shi Xiaoye, et al. Classroom teaching practice of "algorithm analysis and design" based on learning feedback system [J]. Computer Age, 2019(8):3.

[17] Yuan Jingxin. Research on intelligent vehicle path tracking control algorithm based on CarSim [D]. Jilin University, 2019.

[18] Ju Jincheng, Han Zeting, Zhang Qiuju. Research on the Path of Professional Quality Improvement of College English Teachers under the Ecological Foreign Language Teaching Model [J]. Knowledge Economy, 2020(3):2.

Phonetic Feature Extraction and Recognition Model in Korean Pronunciation Practice Based on AdaBoost

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Abstract: This paper proposes a phonetic feature extraction and recognition model in Korean pronunciation exercises based on AdaBoost moments. Feature extraction algorithms have a great influence on speech emotion recognition algorithms, among which Mel-frequency Cepstral Coefficients (MFCC) is the most commonly used feature in speech emotion recognition. The feature extraction method and the influence of SVM kernel function and parameter selection on the recognition result are studied, and the existing speech feature extraction algorithms and their respective advantages and disadvantages are analyzed, as well as the influence of different kernel functions, kernel parameters and penalty parameters on the recognition performance. An improved grid optimization method is used to further improve the recognition time of voice information.

Keywords: Phonetic Feature Extraction, Recognition Model, Korean Pronunciation, AdaBoost

1. INTRODUCTION

Korean language teaching in higher vocational colleges is an important part of higher vocational education and teaching in our country. The Korean language major in higher vocational education in my country was generally established in 2005. After 10 years of construction and development, a Korean language teaching team of a certain scale has been formed, and a large number of high-quality skilled talents who understand Korean and know skills have been trained and delivered for social development. The training goal of Korean language professionals in higher vocational colleges focuses on the cultivation of students' practical skills in listening, speaking, reading, writing, and translation of the Korean language and the cultivation of their communicative skills. Vocational Korean majors are mainly engaged in Korean language communication or elementary Korean training after graduation, such as Korean tour guides, foreign secretaries, international business assistants, and Korean language training teachers, etc., where oral communication and language coordination are required. These positions require students to meet the phonetic standards and fluency in Korean pronunciation. The Korean pronunciation level directly affects the employment situation of Korean majors in higher vocational colleges [1-6].

Voice is one of the most important natural attributes of human beings. Due to the physiological differences of the vocal organs and acquired behavior differences between different people, the voice of each speaker has strong personal characteristics. This allows people to analyze the voice signal to identify the speaker. In the beginning, people used their ears to identify the identity of the speaker to whom the voice belongs, the so-called "knowing people by hearing". With the rapid development of computer technology, people use computers to automatically recognize the identity of the speaker to which the voice belongs. This is speaker recognition. Recently, with the extensive development of electronic technology, various electronic terminals have penetrated into people's daily lives, playing an increasingly important role, making humans and electronic terminals need more humane interaction methods. At present, the human-computer interaction mode has undergone major changes, and

users are no longer satisfied with the cold interaction mode that only uses keyboards, mice, switches and other machinery. Although the recent rapid development of touch screen technology has made human-computer interaction more convenient and more diverse, people generally hope that the human-computer interaction process will be more humane and intelligent, and the human-computer interaction interface will be more friendly and vivid. It is inevitable that computers have the ability to perceive thinking similar to that of humans. Obviously, enabling computers to understand human emotions is a very important step in accomplishing the above tasks. And the online movies we usually watch, as well as some computer application tutorials [7-16].

In addition, with the continuous update and development of educational diversification, distance education has formed a new situation of online learning between students and teachers. Then, with the addition of voice emotion recognition, students can better conduct contextual learning, and computers can also provide real-time feedback based on "calculated" emotions, thereby improving learning efficiency. In the past 40 years, domestic and foreign researchers have conducted a lot of exploration and research in the field of speech emotion recognition, and they have also been used in education, medicine, traffic safety, criminal investigation, service industry, entertainment industry and other fields. However, speech emotion recognition is still in the initial stage of development, so there are still problems that need to be solved. Although Korean teachers in higher vocational colleges have realized the importance of developing good phonetic skills and have carried out a series of reforms in phonetic classroom teaching methods, judging from the overall current situation of the implementation of teaching method reforms, there are still many problems. The main manifestations are: there are more studies on teaching methods, but few real implementations; experienced old teachers have formed a fixed teaching model in the teaching process for many years, and they have less focus on improving teaching methods. Teachers lack education and teaching theory and practical experience, and it is difficult for teachers to enter the role W in the reform of teaching methods in a short period of time. How to further promote the reform

of Korean phonetics teaching methods in higher vocational colleges, choose suitable teaching methods under the guidance of scientific theory, and standardize classroom teaching method management, is an important topic that Korean teachers in higher vocational schools must study and think about. The complexity of the human voice system. Different people have different speaking habits [17-24].

2. THE PROPOSED METHODOLOGY

2.1 The AdaBoost

The AdaBoost algorithm is an ensemble learning algorithm. The idea is to first train multiple different classifiers against the same training set. These classifiers are called weak classifiers; then, the trained weak classifiers are combined and integrated. As a result of classification, a classifier with better performance is established. This classifier is called a strong classifier; finally, the classification result is given by the strong classifier. In the training process, each training data has an initial weight. After each weak classifier is trained, the weight of all training data is adjusted according to the classification result of this weak classifier, and each weak classification is given by calculation. The weight of the device. The new training set whose weight has been adjusted in this training is handed over to the next weak classifier for training. Finally, the weighted sum of all weak classifiers is the decision result of the strong classifier.

This paper proposes the AdaBoost-CRC algorithm, which sends the voice features into the base classifier CRC to train the model and test. The test results of each round will affect the weight distribution of the next round of data. Based on the correct classification of data, the weight is low, and the misclassified data is weighted high. In order to focus on the misclassified data in the next study. The experiment enhances the heterogeneity of the integrated detection model from the feature layer and the base classifier layer respectively. In the feature layer, the voiced frame threshold is randomly selected in the specified range to enhance the feature perturbation effect of the speech layer; the base classifier layer uses the number of generated base classifiers (weak classifiers), and the above multiple different base classifiers are integrated together to form the final output result. This method effectively improves the traditional CRC problem in the case of small samples; at the same time, for the problem of class imbalance, this paper uses the random generation of the number of meta-samples of dictionary atoms to keep the two types of samples selected in a consistent manner and the number of selections is random, which enhances the diversity of base classifiers.

2.2 The Korean Pronunciation Practice

Korean phonetics teaching is the foundation of Korean teaching and the key to the entrance of Korean spoken language. Since all Korean majors in higher vocational education in our country are taught from scratch, students have little understanding of Korean language knowledge before they start their professional studies. This course in higher vocational colleges is called "Korean Intensive Reading"). In the first two to H weeks of the course, special oral speech teaching will be conducted. The content of Korean phonetics teaching in higher vocational colleges includes: Korean pronunciation (consonants, vowels and radio), Korean phonetic rules, word spelling and sentence expression.

In the learning process of higher vocational students, most of them have insufficient learning motivation, poor self-control ability, and have not formed good learning habits and learning

methods. In particular, students majoring in Korean in higher vocational colleges learn Korean from scratch. The language learning starts late, with tight schedules, and heavy tasks. It is very easy to be afraid of difficulties and tired of learning. Phonetics is the foundation of foreign language learning. Korean teachers in higher vocational schools must grasp the principles of the following aspects in the phonetic teaching stage to design teaching methods to help students complete the phonetic learning tasks as smoothly as possible. In this paper, the number of atomic element samples of the base classifier CRC dictionary is generated in a random range to meet the integration diversity requirements.

2.3 The Korean Speech Feature Extraction and Recognition Modeling

The Mel frequency cepstrum coefficient is a characteristic parameter that combines the human ear's auditory perception characteristics and speech production. In fact, the level of the sound heard by the human ear is not linearly proportional to the frequency of the sound. Experiments show that Mel has a linear relationship with frequency when the frequency is below 1kHz, and Mel has a logarithmic relationship with frequency when it is above 1kHz. Therefore, the frequency scale division that conforms to the human auditory system should have a higher frequency resolution in the low frequency part and a lower frequency resolution in the high frequency part.

This chapter will use two experimental strategies to test HuWSF: speaker independent (SI) and speaker dependent (SD). In a speaker-independent experiment, all sentences of one speaker are used as test data for each crossover, all sentences of other speakers are used as training data, and sentences of each speaker are used as test sentences once. In the speaker dependence experiment, all sentences in the database are equally divided into 5 parts, one part is used as test data, the other part is used as training data, and each part is used as test data once. The process lasts 10 times, and the average of the 10 results is used as the final result. MFCC, or Mel frequency cepstral coefficient, is a feature widely used in automatic speech and speaker recognition. Different from ordinary cepstrum analysis, the analysis of Mel frequency cepstrum coefficients (or perceived frequency domain cepstrum coefficients, MFCC) focuses on the hearing mechanism of the human ear, and analyzes the frequency spectrum of speech based on the results of auditory experiments. High recognition rate and good noise robustness.

We humans cannot recognize frequencies above 1Khz, so the proposal of MFCC is based on the frequency difference that human ears can distinguish. So far, Mel frequency cepstral coefficients have shown better results in speech recognition and the subjective tone and frequency modeling of audio signals, and they have become the most basic and indispensable feature extraction in the field of speech emotion recognition. Salient features. In the experiment, we used Matlab2016.r.a to extract MFCC. Cultivating students' good listening, distinguishing and pronunciation skills is the fundamental purpose of Korean phonetics teaching in higher vocational schools. In order to achieve the purpose of sending one, a lot of "imitation and practice" must be adopted. Listening is the fundamental method of Korean phonetic learning.

3. CONCLUSIONS

It is verified that the method of using MFCC + Δ MFCC + E feature combination in speech recognition can improve the comprehensive recognition performance of support vector

machine; the influence of the selection of kernel function and parameters in SVM on the recognition rate has been deeply studied. The simulation results show that the selection of RBF kernel function and appropriate relevant parameters can improve the accuracy of speech recognition; in addition, the improved grid optimization algorithm can effectively shorten the recognition time and improve the real-time performance.

4. REFERENCES

- [1] Zhang Yan. Feature parameter extraction and recognition algorithm research in speaker recognition [D]. Nanjing University of Science and Technology, 2018.
- [2] Chen Hongheng. Research on Speech Recognition Method Based on Deep Learning [D]. Harbin University of Science and Technology, 2019.
- [3] Xu Ji, Cheng Gaofeng, Pan Jielin, et al. A speech recognition system and method based on a hybrid acoustic model:, CN109754790A[P]. 2019.
- [4] Wang Jinhua, Ying Na, Zhu Chendu, et al. Speech emotion recognition algorithm based on spectrogram extraction of deep space attention features[J]. 2021(2019-7):100-108.
- [5] Wang Jinhua, Ying Na, Zhu Chendu, et al. Speech emotion recognition algorithm based on spectrogram extraction of deep spatial attention features[J]. Telecommunications Science, 2019, 35(7):9.
- [6] Chen Shu, Yu Haibo. Application of an improved feature extraction method in speech recognition [J]. Sensors and Microsystems, 2018, 037(005):154-157.
- [7] Zhang Xingming, Yang Kai. Research on speech feature parameter extraction in speaker recognition in deep learning [J]. Modern Computer, 2021(8):6.
- [8] Liu Zhengchen. Research on Speech Generation Method Combining Pronunciation Features and Deep Learning [D]. University of Science and Technology of China, 2018.
- [9] Wu Junqing, Ni Jiancheng, Wei Yuanyuan, et al. Rxx ensemble model for statistical features in speech emotion recognition[J]. Journal of Qufu Normal University: Natural Science Edition, 2020, 46(2):6.
- [10] You Yongbin. An acoustic recognition model, method and system for Chinese and English mixed speech:, CN110930980A[P]. 2020.
- [11] Zou Yuexian, Luo Danqing. A speech emotion recognition model and recognition method based on joint feature representation: CN108899051A[P]. 2018.
- [12] An Tongxun, Park Chiyan, Li Minming, etc. Methods and devices for updating language models and performing speech recognition:, CN106409284B[P]. 2019.
- [13] Li Wei, Qian Binghua, Jin Xingming, et al. A voiceprint recognition method and device:, CN106098068B[P]. 2019.
- [14] Pan Wenjiao. Comparison of Korean Chinese Phonetics and Research on Korean Phonetics Teaching Methods[J]. Shanxi Youth, 2018, 000(021): 26-27.
- [15] Li Yuqing, Xu Cheng. Application of intelligent speech analysis technology based on auditory attention model and BiLSTM and CNN [C]// China Computer Users Association Network Application Branch 2019 23rd Annual Conference on New Network Technologies and Applications Proceedings. 2019.
- [16] Ji Xuan, Yu Meng, Zhang Chunlei, etc. Target speech extraction method, device, equipment, medium and joint training method: CN111179911A[P]. 2020.
- [17] Zhang Hua, Dai Meixiang, Dai Guojun, et al. A speaker recognition method based on speech feature fusion and GMM: CN110415707A[P]. 2019.
- [18] Li Na, Wang Jun. A voice identity feature extractor, classifier training method and related equipment: CN109584884A[P]. 2019.
- [19] Wen Bing, Chen Zisang. The English-Chinese Phonetic Comparison Teaching Model and Its Feasibility Research——Take Vowel Comparison as an Example[J]. Journal of Shantou University (Humanities and Social Sciences Edition), 2019, 035(001): 46-55.
- [20] Li Na, Ge Wancheng. Model training and performance evaluation of speech keyword recognition system[J]. Information and Communication, 2020(3):3.
- [21] Feng Meng, Jia Yanming, Zhang Weiyu, et al. A method for evaluating advanced English pronunciation skills based on speech recognition: CN110858482A[P]. 2020.
- [22] Guo Weitong, Yang Hongwu, Gan Zhenye. A voice and facial feature extraction method and system for depression detection: CN109171769A[P]. 2019.
- [23] Xiong Huiyuan, Chen Caiting, Liu Sheng, et al. Argument recognition method based on audio analysis and deep learning:, CN110956953A[P]. 2020.
- [24] Xi Zexi, Zhao Lijun. A voice service quality detection method, model training method and device: CN111538809A[P]. 2020.

Disaster Recovery Backup and Privacy Protection Algorithm of Hotel HRM Information System

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Abstract: In this study, a high-star hotel is used as a case to study the impact of informatization on hotel human resource management. For the hotel human management system data with many types, large quantities and high security requirements, the data disaster recovery backup should have scalability and privacy protection. The results show that: First, from an overall point of view, the current human resource management in the hotel industry has fully entered the information age, and the overall trend will continue. Secondly, in terms of specific applications such as recruitment management, training management, personnel management, etc., combining it with cryptographic technologies such as AONT and threshold secret sharing, a new power data disaster recovery backup scheme is proposed, which is implemented on the open source blockchain platform.

Keywords: Disaster Recovery Backup, Privacy Protection, Hotel Human Resource, Management Information System

1. INTRODUCTION

The 21st century is the era of knowledge economy, enterprises are facing increasingly fierce market competition, and talent competition is the real key to competition [1]. Effective human resource management plays a decisive role in the healthy and smooth development of every enterprise. With the continuous improvement of enterprise management [2] and the continuous changes of external environment and external competition, it is an inevitable choice for enterprises to build a human resource management information system [3]. Enterprise informatization is an inevitable requirement for the development of social productive forces. With the continuous acceleration of the process of global economic integration [4], the Internet and electronic information technology have been widely used, and human beings have entered the era of knowledge economy [5] from the era of industrial economy. In order to adapt to the fundamental changes in the general environment and stand out in the fierce competition, enterprises have all carried out informatization construction.

As one of the key departments that determine the development of an enterprise [6], human resource management will inevitably make efforts in information construction. Therefore, the research on human resource management informatization [7] is of great significance. Human resource management is an important issue. In the context of the rapid development of information technology, the energy industry, especially the power industry [8], is increasingly integrated with information technology. A key component of the grid business [9]. The power industry is a national pillar industry, and its power supply level and safety status are directly related to the development of enterprises and people's daily life [10]. Electric power services are numerous and complex, with numerous types of data, huge amounts of data, and high requirements for data security. During the development of various business links [11], the system needs to constantly interact with historical data, and at the same time generate a large amount of new data and store it for reuse [12]. The reliable storage of these data is the basis for ensuring the stable operation of the system. Human

resource information management is a new type of modern management concept [13]. Compared with the traditional management methods of hotels, the information-based human resource management model can greatly improve the utilization efficiency of human resources. The realization of management information [14] is also inevitable for social development. Trend, the realization of human resources information management can effectively improve the core competitiveness of the hotel [15], but also a new innovation to the old traditional management model.

The hotel industry is a labor-intensive industry [16]. To develop better, the hotel must optimize the management of human resources. The location privacy protection technology has undergone a long development [17], from the early use of access control technology to protect user location information, to anonymization of a single precise location, and further to hide the sensitive location of users through anonymity algorithms [18]. Over the years, it mainly refers to the failures that occurred during the planned system upgrade, software installation, etc., such as delays in data transmission or unexpected system failures. Once the downtime occurs, it will cause data loss [19], or data unavailability caused by data corruption, which in turn will cause the interruption of the business system [20], which will seriously affect the normal operation of the business and cause huge economic losses. It is easy to cause the risk of social instability [21], the political risk of leaders and relevant responsible persons, etc. Location privacy protection technology has achieved a lot of results [22].

However, with the advent of the era of big data, even if the attacker cannot intuitively obtain the user's sensitive location data, he can obtain a large amount of location-related data of the mobile user [23], analyze the user's historical location data from other perspectives, and conduct the user's sensitive location analysis. speculate. Therefore, traditional privacy protection methods have been unable to effectively protect user privacy [24]. Hotel personnel information management system is mainly divided into the following parts, divided into user version and management version. As the name implies,

the user version is directly oriented to customers, and the user enters directly at the front desk; the management version is mainly for background management to ensure the normal operation of the personnel information management system. As the most typical labor-intensive industry in the hotel industry, human resource management plays a pivotal role in the resource allocation and productivity planning of the entire industry.

2. THE PROPOSED METHODOLOGY

2.1 The Hotel Human Resource Management Information System

The concept of "human resources" was proposed and clearly defined as early as 1954 by Peter Ferdinand Drucker in his book *The Practice of Management*. Human resources in a broad sense refer to people with normal intelligence, which is the total labor capacity possessed by the population in a certain field. Even though the concept of human resource information management has been widely used today, it does not have a clear definition. However, there are some tentative interpretations of e-HRM, which mainly emphasize human resource policies and activities supported by the Internet system.

Informatization of human resource management refers to providing a large amount of data for hotel management through the collection, arrangement and storage of human resource information. Hotel managers provide data support for hotel talent training through observation and analysis of data. Data support is based on internal connections. Various modules are formed on a shared information technology platform. Human resource management informatization is a brand-new hotel management model that comprehensively records, analyzes and integrates multiple pieces of information. An advanced human resource information management platform can realize a low-cost, high-efficiency humanized management model, so as to maximize the efficiency of human resource utilization and improve the efficiency of hotel managers in human resource management. However, the human resource management information system MIS uses the PowerBuilder database management system as the application development software. Users can design program codes, run programs, and debug program errors. The visual development method can greatly reduce the difficulty of application development. As a typical service industry in the hotel industry, the quality of human resource management directly determines its competitiveness. Therefore, the research on hotel human resources plays a very important role in the business field.

The incentive mechanism is the most important part in the field of human resource management. If there is a lack of a relatively complete and perfect incentive mechanism, it will lead to the inability to use reasonable methods to mobilize the enthusiasm and enthusiasm of the hotel staff in the daily management work. Features and needs Create a modern incentive system. First, it is recommended to create an incentive mechanism for talent promotion at work, and to comprehensively assess and evaluate each person's job ability, work attitude, and contribution to the development of the hotel in their daily work. Among them, employee satisfaction has attracted much attention as the focus of human resource management. Research shows that well-educated talents have low job satisfaction in the hotel industry.

2.2 The Disaster Recovery Backup of Hotel Human Resource Management Information System

As a typical service industry in the hotel industry, the quality of human resource management directly determines its competitiveness, so the research on hotel human resources has a very important influence in the business field [9]. Among them, employee satisfaction has attracted much attention as the focus of human resource management. Research shows that well-educated talents have low job satisfaction in the hotel industry, and low job remuneration is also an important factor leading to the loss of hotel human resources. By creating multiple data backups, the data disaster recovery technology provides data objects that can quickly read and restore the existing system when the system encounters a disaster.

Data disaster recovery backup should ensure the consistency, reliability and integrity of business data in the system. Further, for power data with numerous data types, huge data volume and high security requirements, data disaster recovery backup should be scalable and include data privacy protection mechanisms. In order to support users to control the release of location information more fine-grained, we should first calculate when, where and under what circumstances the user needs to suppress the release of location information. Aiming at this problem, early researches let users suppress the release of location information at designated sensitive locations, and publish location information normally at other locations. This algorithm protects the user's location privacy in an intuitive way, but in the era of big data, attackers can infer the user's sensitive information through historical data, resulting in a significantly weaker protection of this type of algorithm. First, informatization has broadened the channels for talent recruitment, making it more efficient and convenient. Star-rated hotel companies and job seekers can communicate on the online platform, allowing job seekers to understand star-rated hotel recruitment information faster, and at the same time allow hotel companies to obtain the talent information they need, and initially understand the personal conditions of job seekers. Regional restrictions, convenience and quickness also save a lot of recruitment costs.

However, while online recruitment brings convenience, it will also face huge challenges. In the blockchain system, all (transaction) data generated within a period of time will be packaged into a block, and all blocks will be They are arranged in chronological order to form a blockchain. All participants in the system (i.e. nodes) have the same copy of the blockchain and no node can modify it. Before each block is written into the blockchain, all nodes in the system need to jointly run the consensus algorithm [14-16], and according to the consensus result, decide which representative node belongs to the write permission of the block. In addition, other nodes need to verify the validity and correctness of new blocks submitted on behalf of the node.

2.3 The Privacy Protection Algorithm of Hotel Human Resource Management Information System

Hotel human resource management is a key issue affecting the smooth development of my country's hotel industry. There are many problems in human resource management, which is the most difficult problem for hotel managers. Faced with this series of problems, hotel managers must establish a systematic and comprehensive human resource management system, so

that hotel human resources can be fully and efficiently used. In the human resource management work under the new situation, the hotel's perfect authorization work system is to give employees the corresponding trust and rights, to provide the necessary resources for the employees, so that all the staff can independently complete their own tasks.

In essence, authorization has an important impact on the development of the hotel industry. The main reason is that the employees in the hotel will directly provide the corresponding services to the guests, which is directly related to the impression and satisfaction of the guests. Threshold secret sharing refers to dividing a secret into multiple copies for multiple users to keep, and the original secret can be restored only when the secret components that reach a certain threshold are obtained. In this paper, the threshold secret sharing scheme is used. On the one hand, the rights of nodes are dispersed, which can ensure the confidentiality of backup data, and on the other hand, the scheme can ensure the reliability of redundant backup and effectively save the storage cost of nodes. The location privacy protection mechanism based on heuristic measurement is prone to location inaccuracy to a certain extent, and many such privacy technologies do not consider the timing of location data; the second type of location privacy protection based on information retrieval, although to a certain extent It can ensure the security of sensitive locations of mobile users and ensure the accuracy of location data, but the algorithm is complex and expensive, and the current hardware environment cannot support the application of such technologies well.

However, the location privacy protection mechanism based on probabilistic prediction can better balance the relationship between privacy and execution efficiency in location privacy algorithms. The server writes the data to the primary storage, the primary storage synchronously writes the data written this time to the secondary storage, the secondary storage returns the updated status to the primary storage after the data is updated, and the primary storage then feeds back the updated status to the server, and then perform the next write operation. In synchronous disaster recovery, the data stored in the primary storage and the backup storage are updated synchronously, after both the primary storage and the backup storage have finished writing data.

3. CONCLUSIONS

The web-based human resource information management system for hotel-style apartments is mainly a system that uses information technology to manage human resources. Its main function is to ensure the scientific and efficient development and management of human resources. It is established by computer and records the function simulation information database of each employee of the enterprise. It can provide the required data analysis and statistical data for human resource managers and decision makers at any time. Compared with traditional disaster recovery backup technology and cloud storage-based disaster recovery backup technology, the scheme in this paper can reduce the cost of infrastructure construction, avoid the risk of single point failure, and enhance scalability.

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5. REFERENCES

- [1] Cai Jiaqi. Discussion on optimizing hotel human resource management methods [J]. Industry and Technology Forum, 2018, 17(10):2.
- [2] Qiu Zhengying. Research on Human Resource Management Courses in Higher Vocational Colleges [J]. Hubei Agricultural Mechanization, 2019(22):1.
- [3] Du Siyi. Analysis of new thinking on hotel human resource management in the information age [J]. Modern Economic Information, 2019(11):2.
- [4] Wang Wenyan. Optimization strategy of human resource management in economy hotels [J]. Journal of Jiangxi Electric Power Vocational and Technical College, 2020, 33(5):2.
- [5] Zhang Ying. Visual Analysis of Hotel Human Resource Management Research in my country——Based on CiteSpace Knowledge Graph [J]. Journal of Hubei University of Arts and Sciences, 2020, 41(8):6.
- [6] Xi Jianting. Research on problems and countermeasures in hotel human resource management [J]. Market Weekly Theory Edition, 2019(52):1.
- [7] Li Shanshan. On the New Path of Hotel Human Resource Management [J]. Chinese and Foreign Entrepreneurs, 2020(16):1.
- [8] Zheng Meidan. An information display box for hotel human resource management.: CN210429216U[P]. 2020.
- [9] Chen Xiaoying. Human resource management innovation of hotel enterprises under the knowledge economy [J]. Fortune Today (China Intellectual Property), 2020(05):113-114.
- [10] Gong Wei. An Exploratory Study on the Impact of Informatization on Human Resource Management in High-Star Hotels [J]. Marketing, 2019(29):2.
- [11] Liu Yi, Peng Yu, Zhang Chunyan. Measures to motivate employees in resort hotels: Taking the human resource management of a resort hotel in Sanya as an example [J]. Contemporary Tourism, 2018, 000(007):91-92.
- [12] Wu Changying. Research on Strategic Cost Management of Hanting Hotels [D]. Harbin University of Science and Technology, 2018.
- [13] Qin Hao. A flexible employment information platform and full-process delivery platform for the hotel industry: CN110414916A[P]. 2019.
- [14] Chen Qianmin, Zhai Xiangxu, Chen Siqiao, et al. Design and Implementation of Human Resource Information Management Promotion Platform [J]. Management Science and Engineering, 2021, 10(4):11.
- [15] Liu Hui. Challenges and responses of hotel human resources management under the new situation [J]. Enterprise Technology and Development, 2020(10):3.
- [16] Li Shuyi, Guo Yu. A Humble Opinion on Hotel Human Resource Management and Incentive Mechanism Construction [J]. Leisure, 2020(36):1.
- [17] Wang Li. Problems and solutions in hotel human resource management [J]. Enterprise Reform and Management, 2020(21):2.

[18] Zhang Yizhe. Research on new trends and countermeasures of hotel human resource management under the background of Internet + [J]. Knowledge Economy, 2020(23):2.

[19] Lin Wu, Bao Yanli. New Thinking of Hotel Human Resource Management in the Internet Era [J]. China Business Review, 2018(36):2.

[20] Wei Tingjie. New Thinking of Hotel Human Resource Management in the Internet Era [J]. Global Market, 2019, 000(016):33.

[21] Han Yaqian. The impact of informatization on human resource management of high-star hotels [J]. Science and Fortune, 2020.

[22] Liu Yanwei, Li Jing. Analysis and Countermeasures of Hotel Human Resource Management [J]. Small and Medium Enterprises Management and Technology, 2021(29):3.

[23] He Xiaoyi, Xu Haochun, Wu Xiaofang, et al. Research on the Impact of Artificial Intelligence on Hotel Human Resource Management [J]. Chinese Market, 2021.

[24] Ma Danfei. Application of artificial intelligence in human resource management of star-rated hotels [J]. Value Engineering, 2021, 40(16):2.

Research on Synchronous Cooperation between Computer Information Technology and Network Security Application

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Abstract: The development and application of computer information technology is based on the major premise of the network security environment. To achieve the sustainable development of computer information technology, it is necessary to establish a safe and stable network environment. The advancement and development of network security technology is driven by computers. Information technology is developed based on the problems presented in the development process. From this point of view, there is a complementary relationship between the development of computer information technology and network security. This article is a research on the synchronization and coordination between the development of computer information technology and network security, and aims to promote the development of computer information technology through the establishment of a network security environment.

Keywords: Computer Information Technology, Network Security, Synchronous Cooperation, Big Data

1. INTRODUCTION

Since the network is composed of many nodes with equal computing and communication capabilities and sizes, it belongs to a distributed structure. Computer technology refers to the use of computers to achieve fast and accurate calculation of large amounts of data and information, and the use of the network is becoming more and more extensive. The service provided to people by the network is open. Everyone can use the platform of the network, and everyone can perform the activities they want on this platform, but because of this, the security of the network is not necessary. To guarantee. Especially in recent years, network security accidents have continued to occur, and people's attention to network security has also increased year by year. The security department related to network technology has also issued a series of laws and regulations to prevent it, and computer information technology is used to ensure An important method of network security [1-6].

Because computers have strong information processing capabilities, computer technology is often used in network information processing and other fields. Virtual private network technology is an important technology that can protect network security. It is a private network based on a public network architecture, but due to the lag of network security technology, my country's network security facilities are not sound. The emergence of this phenomenon also hinders the development of computer information technology in our country. If you want to achieve the establishment and soundness of network security facilities, you need to analyze the specific It belongs to Remote access to information and data, through encryption technology, tunnel technology to securely connect different areas of the network. In this paper, the network security technology architecture is divided into three layers: core layer, aggregation layer and access layer. However, compared with developed countries, my country's network security prevention technology is still in its infancy, and the network continues to Development has brought new problems to its security. In response to these new problems,

we must continuously improve the level of computer information technology [7-14].

At the core layer of the network, encryption, device security enhancement, physical authentication and routing protocol authentication are used to encrypt and process the data at the computer core layer. However, with the popularization of the World Wide Web, the frequency of cybercrime is gradually increasing, so the application of computer technology in network security has also attracted people's attention. This paper discusses network information processing and security, and computer applications. Virtual private network technology has its own unique characteristics. According to the available data, it can be found that about half of the global enterprises have established the CIO mechanism in the early stage of the enterprise, and with the passage of time and the operation of the mechanism, people have generally recognized the operating mode of the mechanism. However, when collecting and analyzing the data of Chinese enterprises, it was found that nearly three-quarters of the listed companies have established relevant information management institutions, and nearly 70% of the companies with high-level institutions [15-21].

However, although three-quarters of enterprises have established information management institutions, from the perspective of management, the current information management mechanism of Chinese enterprises is still relatively traditional, and the information management mechanism lacks a certain degree of flexibility, and the traditional information management mechanism has been Unable to keep up with the pace of the times, unable to meet the actual development needs of the enterprise, and the coordination of work distribution among the internal departments of the enterprise is weak, and there are serious security loopholes in network information management. In some Western countries with rapid economic development, many countries attach great importance to the construction of national computer information security management [22-24].

2. THE PROPOSED METHODOLOGY

2.1 The Computer Information Technology

The physical security of network hardware requires users to place the network hardware in a safe place away from malicious attackers, and users will not place unknown network devices on the hardware. Technical characteristics of network information processing. Network information processing technology refers to the use of network technology to realize online processing of various information data, such as online collection of data information, real-time processing, network information dissemination and cloud storage of data information, which makes computer information technology impossible to start. In addition, factors that threaten the network security of colleges and universities may also have a certain impact on computer technology, which makes it impossible to guarantee the effectiveness of computer information technology network security maintenance.

In some Western countries with rapid economic development, many countries a The security of data and information is protected by tunnel encryption technology; virtual private network technology also has the characteristics of professionalism. However, compared with our country, many companies pay insufficient attention to the construction of network security management, and the state invests little in this aspect. Relevant organizations have conducted investigations on the construction of network security institutions in my country's enterprises, and found that the capital investment which is very different from traditional physical links, and uses different connection methods for different nodes. Network software security mainly includes two aspects: data and network login authentication. For this purpose, network authentication protocol and encryption network data technology are designed. Two reasons for mistakes have caused the network to be successfully attacked and destroyed.

2.2 The Network Security Application

The data and information in the facilities and computer network system, due to accidental reasons or malicious destruction, causes damage to the system's software and hardware facilities and data leakage or modification to ensure the stable and reliable operation of The advantages of network information processing technology. Compared with traditional information processing methods, network information processing technology not only has a significant improvement in data processing efficiency, but also can effectively improve the accuracy of data processing.

Broadly speaking, the research field of computer network security is very large. Generally, the system integrity, system authenticity and controllability of the entire network are all aspects of computer network security. At times, it is often because the user authority is set too large, unnecessary server ports are opened, or ordinary users lose account numbers and passwords due to negligence, resulting in unauthorized access and harm to network security.

2.3 The Synchronous Coordination of Computer Information Technology and Network Security

The primary method to improve computer information security management is to strengthen the security awareness which can make the transmission of information data become more accurate and reliable. Preparatory work for the

comparative experiment. First of all, network workers and related computer technicians should pay more attention to computer information security when working, and always guard against potential network security risks. At the same time, they should strengthen their own learning and improve their own knowledge and awareness of network security prevention.

For access to untrusted networks, firewall technology sets certain controls. The firewall is often set at the interface between the university network and the external network to prevent the intrusion of illegal data from the external network, thereby maintaining the security of the university network. In order to protect the transmitted files, methods such as data encryption, digital signatures, file integrity verification, and entity identification can be used. Mail can be encrypted when sent, and a secure PC card can also be used to protect its security.

3. CONCLUSIONS

Network security is to ensure that people cannot be disturbed by the outside world while using the network as a platform. The prevention of network security not only involves legal aspects, but also related to usual management and computer information technology. In order to build a safe network environment, we must coordinate the relationship between the three. In this way, the implementation of network security the preventive measures can be more effective. Although our country's research on using computer information technology to ensure network security.

4. REFERENCES

- [1]Wang Wentao. Research on the Application of Computer Information Technology and Network Security[J]. Science and Fortune, 2019, 000(031):138.
- [2] Yan Hui. On the relationship between the development of information technology and network security[J]. Information and Communication, 2019, No.202(10):144-145.
- [3] Dong Chuanyu. Research on the Application of Computer Information Technology in Internet Security[J]. Science and Technology Innovation, 2019(25):101-102.
- [4] Zhou Ni, Lian Xiaoliang. The application of computer information technology in network security in colleges and universities[J]. Information and Computer (Theoretical Edition), 2019(9):206-207.
- [5] Wang Zhaoyang. Research and understanding of computer network technology application[J]. 2021(2017-8):266-266.
- [6] Li Ailin. Research on the Application of Computer Text Information Mining Technology in Network Security[J]. Digital Communication World, 2020, 000(002):199.
- [7] Zhao Longbin, Zhao Kunchi, Hao Shengyan. The application of computer information technology in network security under the background of "big data"[J]. Information Technology and Informatization, 2019, 000(003): 89-90.
- [8] Meng Xin. Research on the Application of Computer Network Security Technology in E-commerce [J]. Global Market, 2019, 000(006): 388.
- [9] Liu Hao. Research on the effective use and development of network security technology and network information resource management[J]. Computer Fan, 2018, 000(012):71.

- [10] Guo Lei. Research on the Application of Computer Information Management Technology in Network Security[J]. Research on Architecture Technology, 2021, 3(10):19-20.
- [11] Guoyong Rao. Exploring the application of computer network security technology in network security maintenance[J]. Computer Products and Circulation, 2020(10):102-102.
- [12] Zhao Liang. Talking about the application of computer network security technology based on the era of big data[J]. Information Technology and Informatization, 2019, No.234(09):141-143.
- [13] Zhang Shuting. Research on Computer Network Information Security Risks[J]. Digital Technology and Application, 2019.
- [14] Jiang Deyao. Research on the development and application of computer software in an information security environment [J]. Computer Fan, 2018, 000(032):50-51.
- [15] Meng Chunyan. Exploration of practical application of computer network security technology based on network security maintenance[J]. 2020.
- [16] Zhang Xiaoyan. Research on Computer Network Information Security and Protection Countermeasures[J]. Journal of Electronic Engineering Institute, 2019, 008(012): P.94-94.
- [17] Sun Jingchao, Zhou Rui, Li Peiyue, et al. Research on network public opinion trend prediction based on recurrent neural network[J]. 2021(2018-8):118-122.
- [18] He Ding. Research on the application of artificial intelligence in library computer network security[J]. Volume, 2019, 009(031):173.
- [19] Wang Teng, Liang Yanan. Research on the Application of Computer Management in Network Information Security[J]. Science and Information Technology, 2019, 000(008):46-46.
- [20] Cui Yidong. Computer applications in network information processing and security[J]. Science and Wealth, 2018, 000(036): 33.
- [21] Ma Binzhe. Research on the Application of Computer Information Management Technology in Network Security[J]. Computer Fan, 2018, 000(022):256.
- [22] Wu Hongjiao. Research on Computer Network Information Security Protection Countermeasures Based on Artificial Intelligence Era[J]. Electronic Components & Information Technology, 2019, 000(004):71-74.
- [23] Li Weijia. Research on the Security and Protection Strategy of Computer Network Information Technology[J]. Wireless Internet Technology, 2020, v.17; No.183(11):19-20.
- [24] Gai Junlong. Research on the Application of Computer Network Security Technology in Network Security Maintenance[J]. China Strategic Emerging Industries, 2019, 000(004):115.

Research and Practice of Artistic Creation Based on Regional Culture and Folk Art Elements

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Abstract: From the perspective of modern design, this article explains the historical origin and inheritance of characteristic elements of regional culture and Fujian and Taiwan folk art in environmental art design. Using the characteristic elements of Fujian and Taiwan folk art in environmental art design, it focuses on borrowing some symbolic element symbols for innovation, infiltrating the design language with regional characteristics into modern design works, and solving the problem with the current development of design globalization. In particular, the growing loss of regional culture and its manifestations has created a high-quality living environment with more regional characteristics and cultural heritage. Respectively from building a teaching reform platform to create an artistic design innovation base for regional culture; Strengthen the organic combination of production and learning and build a practical teaching system of art design that serves the local society; Promoting regional cultural research and establishing unique artistic design research brands will elaborate on the research and practice of artistic design teaching reform based on regional culture in three aspects.

Keywords: Artistic Creation , Regional Culture, Folk Art Elements

1. INTRODUCTION

Contemporary artistic creation, with the continuous development of society, the prosperity of cultural exchanges at home and abroad, and the development of people's thoughts, feelings, and aesthetic concepts, "regional culture" has received renewed attention. Due to a strong awareness of the inheritance of cultural characteristics of different ethnic regions, a variety of aesthetic levels have also emerged in the field of art. People gradually realize that only regional culture seems to retain the essence of culture and embody the cultural significance brought about by cultural differences. They feel that foreign Western culture cannot meet deeper and spiritual cultural needs, while the diversity of regional culture and the distinctiveness of cultural characteristics precisely possess these characteristics, and thus feel the diversity of regional cultural forms, it is precisely the best embodiment of the value of today's Chinese cultural form.

In my opinion, in today's art and painting creation, how to respect regional cultural differences and attach importance to the value of culture is worth pondering and exploring. As the environmental space art design industry of life, it faces higher requirements. Design must be rooted in the local and ethnic soil. Therefore, relying on regional culture and starting from the perspective of modern design, we should reexamine various elements such as Fujian and Taiwan regional culture and art, and analyze their role in modern environmental art design, to create a high-quality living environment space with more national characteristics and cultural heritage.

The exploration and practice of reexamining and studying the application of regional folk art elements not only provides a living space for Fujian and Taiwan folk art, but also promotes Fujian and Taiwan folk art and regional culture. The first is the combination of content. As mentioned above, Yongzhou regional culture has been constantly enriched and developed in the vicissitudes of the past dynasties for thousands of years. Each part of it has its distinctive historical background and cultural characteristics. When it is combined with art design and education, it must summarize and refine the cultural

content. It is a proper attitude and method to take its essence and discard its dross. As a traditional culture with a long history and unique characteristics, it has great inheritance and promotion value in the context of modern society and is a favorable factor to remember and continue historical civilization, enhance national cultural self-confidence, and activate the vitality of national innovation and creativity.

Integrating and applying regional cultural elements into cultural and creative products can present regional culture in novel forms and promote the inheritance and promotion of regional culture in a way that is more easily accepted by the audience. Especially in the current era of vigorous development of the cultural tourism market, the application of regional cultural elements in the design of cultural and creative products can highlight and effectively expand the scope of dissemination of regional culture, providing important support for the corresponding cultural inheritance and promotion. Looking back at the Chinese art community in the 1990s, in the exploration of creative themes and painting language, great attention has been paid to social and cultural contexts. The personal living environment and events in social life are very important for artists to choose which painting style to recreate and refine. Through Luo Zhongli's hometown group paintings "Hiding from the Rain" and "Crossing the River", and Wang Yidong's paintings "Auspicious Smoke" and "Bride", contemporary painters from the north and south have representative regional styles, and they strongly feel that the regional culture and style, as well as the background of the production of the works, are inseparable from the environment in which the painter lives.

2. THE PROPOSED METHODOLOGY

2.1 The Application Value of Regional Cultural Elements in Art Design

What we can see from our works is our love for the spirit of traditional folk culture. The characteristics of the regional culture of Fujian and Taiwan are diverse and rich. It relies on the precipitation of regional culture for people's daily life and

communication in various places. The legal norms of society and customs formed over thousands of years are based on the compliance with regional culture. People's value orientation and aesthetic formation come from the understanding of regional culture. Environmental space is an activity place that carries people's daily life, so the concept of environmental art design is inevitably influenced by social laws, local customs, and people's aesthetic values. The environmental space used for people's life, study, work, entertainment, and commerce is inseparable from regional culture.

In the teaching practice of art design, students' innovative activities mainly include using various types of innovative platforms for college students at all levels, such as provincial and university level research learning and innovative experimental projects for college students. Most projects focus on highlighting the regional cultural characteristics of Yongzhou and serving the local economy of Yongzhou. For example, for many years, we have been guiding students to use the bamboo resources and culture of Yongzhou for innovative design and research; At the same time, it also includes using various competitions at home and abroad to carry out design innovation and practice. Cultural and creative products are both cultural products and consumer goods, so it is necessary to consider the market when designing and producing them. It is necessary to be market oriented as much as possible, with the premise of meeting consumer needs, and comprehensively consider the overall market feedback and specific consumer needs. For example, the cultural and creative ice cream, which has been popular in the market in recent years, is precisely a product that meets market orientation and consumer demand.

The Summer Palace began selling lotus shaped ice cream in the summer of 2019, as shown in Figure 2. Integrating the characteristics of Yuanmingyuan with ice cream can not only relieve heat and relieve heat in summer, but also echo the lotus flowers in Yuanmingyuan through lotus shaped ice cream, fully experiencing the lotus beauty of Yuanmingyuan. Art is a creative labor. As the main body of artistic creation, artists' creative personality plays a decisive role in the creation of artistic works. However, the subjective factors of every artist are always very different. Everyone's social status and material conditions are very different, and everyone has their own different life experiences, cultural upbringing, and artistic personality. All these factors will inevitably affect and determine their position and artistic perspective to observe, recognize, evaluate, and express objective real life, it also inevitably affects and determines how they choose materials, how to create ideas, and how to use various artistic expressions to create images and express their feelings.

2.2 Art Creation is Influenced by Regional Culture, and it also Creates and Enriches Regional Culture

Today, folk art has received much attention because it inherits the roots of the traditional culture of the Chinese nation, is the fusion of primitive cultural symbols and traditional artistic language and reflects the most primitive artistic ideas in human labor and life. The application of traditional folk art in modern environmental art design can also be said to be the greatest source of all artistic creation. The more traditional and national art is, the more cosmopolitan it becomes. As a plastic art, folk art has ever-changing shapes, colorful styles, novel and unique ways of thinking, and a pure and simple aesthetic consciousness.

In recent years, the scientific research and teaching innovation of the teachers of the Academy of Fine Arts and Art Design has closely focused on "serving the local economy and highlighting local characteristics". By promoting the artistic perspective research of Yongzhou regional culture, they have established a unique brand of art and design research. The culture of female calligraphy is a beautiful business card of Yongzhou's regional culture. Using female calligraphy culture for artistic innovation, design, and research is one of our key tasks. The college has established two Ministry of Education and four provincial scientific research projects with the unique historical and cultural resources of Yongzhou, "Jiangyong Female Calligraphy", as the research object. Visual symbols are the most direct and basic cultural symbols, and often the main factor that activates people's understanding and feelings of regional culture.

The rational use of visual symbols in regional culture in the design of cultural and creative products can directly endow cultural and creative products with cultural connotations from the visual level, as well as stimulate and attract audiences through intuitive visual senses. The visual symbols in regional culture include three categories: graphics, colors, and text, which need to be reasonably used according to actual situations. Regional culture is a cultural form of ethnic minorities, which includes both material and spiritual culture and permeates all aspects of life. From daily living, customs, and life rituals, I can feel a nation's "humanistic atmosphere". Its philosophy, wisdom, consciousness, and realm have a subtle impact on human thought, and inspire countless artists to explore, discover, and promote the essence of the nation. As a social ideology, the art of painting is the product of the reflection of objective social and cultural life in the minds of artists. This reflection is not a completely negative, passive, and purely objective reflection, but a positive and dynamic reflection.

China has a unique national culture, and regional culture and its expressive forms of folk art are an important component of the unique culture. It is precisely because of these unique cultures that Chinese architecture is different from Western architecture, and Chinese architecture fully reflects the characteristics of our nation. In environmental design, introducing regional culture and its manifestation into Fujian and Taiwan folk art is not only the inheritance of China's excellent concepts, but also a dynamic development process. Each traditional art and skill reflect the characteristics of the times and is also a fashion full of tradition and realistic personality.

Her design "Women's Book · Impression" was successfully selected for the 12th National Fine Arts Exhibition, which is the first art design work selected for this exhibition in Yongzhou City to date. In addition, she also actively conducts design research on women's book jewelry, and many design works have been published in core journals such as Packaging Engineering. In addition, to cooperate with the policy of establishing a "historical and cultural city" in Yongzhou and vigorously developing the tourism industry, a new "Yongzhou Tourism Souvenir Innovation Design Laboratory" was established based on professional characteristics, and efforts were made to design, develop, and promote cultural and creative products with Yongzhou's historical and cultural characteristics.

3. CONCLUSION

Regional culture can provide an important source of inspiration for the design of cultural and creative products and

can also comprehensively enhance the added value of cultural and creative products. When designing cultural and creative products using regional culture, it is necessary to fully grasp the cultural connotation and characteristics, combine market orientation, user needs, product positioning, attributes, and other factors, and reasonably design high-quality cultural and creative products, considering economic, social, and cultural benefits.

4. REFERENCES

- [1] Li Hui The Application of Folk Decorative Elements in Modern Interior Design [D] Wuhan University of Technology, 2010
- [2] Fu Rui Discussion on the Application and Innovation of Regional Cultural Elements in Art Design [J] Art Education Research, 2022 (24): 3
- [3] Xu Zheng Teaching Exploration of Art Design Specialty Based on Regional Culture [J] Art Education Research, 2018 (17): 1.
- [4] Qi He Regional Characteristics of Folk Art Elements and Contemporary Ceramic Art Creation [J] Oriental Collection, 2017 (1): 2
- [5] Li Jinling A Study on the Ecology of Folk Craft Culture Based on Cultural Space [J] Ecological Economy, 2010 (10): 3.
- [6] Zhong Dan, Xu Hehui, Chen Shiguang, et al The Expression and Practice of Fujian and Taiwan Cultural and Artistic Elements in Course Teaching -- Taking the Major of Environmental Art Design as an Example [J] Yihai, 2016 (6): 3.
- [7] Mo Yajun Understanding the Creative Expression of Folk Custom: A Study on the Development and Practice of Garden Based Art Creative Festival Based on Regional Folk Culture [J] Curriculum Education Research: Research on Learning and Teaching Methods, 2016 (6): 3.
- [8] Li Jun an Analysis of Art Creation and Research in Colleges and Universities in Ethnic Regions in the New Era [J] Fine Arts, 2018 (11): 2
- [9] Sun Jingrong, Lei Yafang, Chen Yonggui Research, and practice of landscape sketch design based on Shaanxi folk art elements [J] Journal of Northwest Forestry University, 2013, 28 (3): 5.
- [10] Liu Tangu A Cognitive Study of Northeast Regional Culture Based on Folk Art [J] Yalu River, 2020, 000 (009): 114.
- [11] Daizhen Research on the Application of Chinese Folk Art Elements in Animation Character Design [D] Northeast Normal University
- [12] Liu Yang Research on the excavation and design of regional cultural symbols in Yiyang [J] Art and Technology, 2020, 33 (3): 3
- [13] Sun Xia Research on Qingdao Folk Art under the Cultural Ecology [D] Qingdao University of Science and Technology, 2010
- [14] Xuan Ying Shuang Research on Folk Art from the Perspective of Cultural Heritage [D] Zhejiang Normal University

Algorithm for Automatic Generation of Oil Painting Guidance in Colleges and Art Culture Video Based on Intelligent Brush

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Abstract: This paper proposes a computer-generated algorithm for college oil painting style guidance and art culture video automatic generation with intelligent brushes. This paper proposes to use the tensor eigenvector value of the smart brush as the brush direction to draw multiple layers of input video frames to effectively simulate the fluid feel of Van Gogh's oil paintings. At the same time, an improved local illumination model is proposed. Mapping technology to enhance the paint layering of drawn video frames. Firstly, the multispectral PCA spectral reconstruction algorithm is used to reconstruct the spectral reflectance of the oil painting surface, and then the image information and color information of the oil painting are reproduced; secondly, the combination of physical BRDF and multispectral images is used to reproduce the spatial information and color information of oil painting samples.

Keywords: Oil Painting Guidance, Art Culture Video, Automatic Generation, Intelligent Brush

1. INTRODUCTION

Traditional oil painting creation expresses the creator's creativity by observing reality. With the acceleration of the process of world cultural integration [1], computer graphics art is rapidly integrated into the lives of ordinary people, bringing a new aesthetic experience to the audience [2]. Today's computer technology has developed into a technical means of oil painting creation. Many artists use digital cameras to capture photos and use computers as tools for creation and image processing [3], and the new generation of oil painters has begun to make useful explorations of this. The use of computer technology to assist in oil painting creation, the integration of traditional art and modern technology, diversifies the concept of creation [4], the release of the film "Love Van Gogh" has attracted the attention of the industry.

The film is a hand-painted oil painting feature film. In order to achieve a special animation effect [5], 125 painters from 15 countries made more than 1,000 oil paintings by freehand based on 120 original works of Van Gogh and 853 scenes shot by actors. 65000 frames of pictures [6]. In order to keep the style coherent, the painters made great efforts to change the tone according to Van Gogh's painting style, turning day into night [7], winter into summer, and finally brought a "stunning visual feast". While marveling at the animation special effects of "Love Van Gogh", we also reflect on the complexity and hardships of using traditional freehand drawing methods to design animation special effects [8]. The creative thinking is more open, and it has developed into a new form of digital art media. When the application environment changes from paper media to electronic media, text, as an important visual presentation element [9], requires more and more variability, and the variable range is also changed from the early circular dynamic interpretation to the control of variables with greater degrees of freedom [10].

As early as the mid-1980s, the MIT Visual Programming Languages Research Group (VLW) [11], founded by graphic designer and educator Muriel Cooper, began to explore the potential of computer programming techniques in the field of

graphic design and created the Computer-generated cascading and morphing typeface designs [12]. Nowadays, in order to improve the screen reading performance, the technology of variable font (Variable Font)[13] design has developed rapidly. Xun Meng, its practical application is getting more and more people's attention. The usual NPR methods are roughly divided into 2 categories [14]: one is to use physical methods to simulate the raw materials of painting. Nowadays, the protection and restoration of cultural heritage left by ancestors are more and more important in countries around the world. Some cultural relics or artworks are unique and Precious, the conditions for storage and exhibition are very strict [15].

With the development of digital image technology, digital libraries and digital museums have emerged as the times require [16]. Digital images are beginning to be used not only in advanced scientific fields, but also in people's daily lives. With the rapid development of my country's economy and the continuous improvement of people's living standards [17], the investment in children's education is also increasing. In order to stimulate children's interest in learning and improve their initiative, parents often send their children to various early education training courses [18]. Art and calligraphy are a focus of early childhood education training. However, due to the limitation of venues, the limited level of teachers, and the time it takes for parents to send children to study [19], the cost of early childhood education has increased significantly. The time for children to study has also been shortened, and after the children go home from school [20], parents cannot give their children book and painting guidance due to lack of professional knowledge; some parents let their children watch some early-teaching books and painting videos at home [21], but the children will not be able to watch the electronic screen for a long time. It affects children's vision development, destroys the normal function of the nervous system, and then causes a series of problems such as [22] as memory loss, headache, and poor sleep. Create with existing professional image processing software [23].

The most widely used ones are Adobe's Photoshop series and Corel's Painter series. Using the above software can quickly realize the rapid conversion of real photos to oil painting style. With the support of interactive technology, elements with variable data, such as wind, temperature, distance, etc., can participate in the transformation of text graphic design, thereby increasing third-party factors, and the connection between human interaction and Chinese characters is the key to transformation Results provide strong evidence beyond cultural roots while adding randomness to results.

2. THE PROPOSED METHODOLOGY

2.1 The Intelligent Brush

With the deepening of the research, the current research focus has shifted from the stylized rendering of a single still image to the direction of how to perform stylized rendering of oil paintings on the input video in real time. The traditional non-real-time video oil painting rendering algorithm mainly renders video frames frame by frame according to the time series, but due to the certain spatial and temporal correlation between adjacent video frames, such processing methods will produce serious frame discontinuities. Chinese characters Graphical design is a return to the figurative form of modern Chinese characters. It transmits information more comprehensively and displays the emotional expression of Chinese characters under the subjective consciousness of people through the creative combination of Chinese characters and graphics; it is necessary to change the font structure, focus, literal, Zihuai, Zhonggong, Yin-Yang line, serif and sans-serif and other attributes to complete the visual communication, personality style, recognition and form beauty of the text and other needs.

In computer language, no matter English or Chinese characters, it has no special form, meaning or other complex emotional expression. The classic algorithm of oil painting stylized drawing based on strokes was first proposed by Hertzmann. The main idea is to build a Gaussian pyramid from a static input image. The multi-layer reference image is obtained, and then the gradient information of the image is obtained by using filter functions such as Sobel in each layer, thereby establishing the starting point and direction of the brush, and then gradually realizing the drawing of the canvas from coarse to fine; multispectral imaging technology is a This kind of "atlas integration" technology can more accurately obtain the spectral information and image information on the surface of the painting artwork, and the collected artwork image also contains more and richer information, and the richer information assists the appropriate algorithm. More accurate reproduction of the colors of the artwork. The color reproduction technology based on BRDF is able to obtain the spatial texture information and lighting information of the surface of the painting artwork. These information can truly replicate the texture and texture of the painting artwork through the corresponding BRDF model, providing more information for the digital collection of artworks with the better, better foundation

2.2 The Oil Painting Guidance

To realize the automatic and rapid generation of Van Gogh-style oil paintings, it is necessary to define and simulate the brush model and streamline model. At the same time, it is necessary to generate the special paint layering sense that oil paintings have, and it is also necessary to make the generated videos highly correlated and consistent with Van Gogh's oil paintings in terms of color characteristics. This section will introduce the design and implementation principles of the

algorithm in detail. After completing the test of program logic, the second step is the creative combination of visual linkage in ideograms, paying attention to the ingenious connection between real-time changes and vision in the process of people's behavior and participation in font design, and the richer perception behind the text. Allegorical expression; cleverly interpret the common physical phenomena in real life through the literal meaning of the text and its dynamic feedback, so that the experienter can quickly understand the work and feel the interest of creating text with interactive actions.

The software uses H5's permanent local storage: localStorage and the lightweight database sqLite to store all kinds of user information, and uses the storage space of the mobile device itself to cache the pictures obtained from the network locally to ensure that users are not in the network environment. In good cases, browsing and selection can still be done. Brush models can be extracted from various oil paintings or post-production and processing by artists using image processing software such as Photoshop. A brush object contains the following properties: length, width, opacity, color, center point, and brush direction. The center point of the brush is the coordinate position of the random pen drop point in the current frame of the rendered video; the color of the brush is the color value of the brush drop point; the brush direction is composed of the direction of the feature vector of the structure tensor of the rendered video frame.

2.3 The Art and Culture Video Automatic Generation Algorithm

The Gaussian filter kernel function is used to process the reference image sequence, so as to obtain the reference layer sequence consistent with the original image size; for the starting point of the stroke, first establish a grid corresponding to the stroke radius, and then count the corresponding area in each grid. The sum of the pixel error between the reference image and the current canvas. If its value is greater than a threshold value given by the user, a stroke starting point needs to be established in the grid area. The center of the stroke starting point is the pixel value with the largest error in the grid area. Pixel Point. The style transfer algorithm based on artificial intelligence uses Caffe as the network platform and uses mainstream models to design special effects for style transfer animations.

Caffe is a deep learning framework, the full name of which is "Convolutional Architecture for Fast Feature Embedding". It is a clear, readable, fast and open source artificial intelligence network. Different from traditional style transfer algorithms such as texture synthesis, SVM (Support Vector Machine), histogram matching, and automatic sample collection, the style transfer algorithm used in this paper is based on deep learning theory. The intelligent plotter uses RaspberryPi as the computing control core, deploys Apache+PHP to monitor network requests, processes signals from the mobile terminal, and then calls the Python script file to schedule the L293D driver board through the GBIO port to control the stepper motor for painting teaching. The relationship between the figure and the bottom, the point, line and surface, and the relationship between the virtual and the real of Chinese characters belong to the attributes of graphics, while the strokes, structure, and ideographic properties of Chinese characters belong to the attributes of the characters. inheritance.

The early creative realization established the core structure of "behavior interaction + text data + graphic vision". After the

interaction process is basically perfected, combined with the attributes of Chinese characters, graphics and text, the visual expressiveness of the work needs to be continuously tested and adjusted in the later stage. Such as adding sound effects, improving dynamic fluency, improving material iteration of particle system, etc.

3. CONCLUSIONS

The automatic generation algorithm of art culture video based on intelligent brush can quickly and effectively generate a variety of picture styles, while creating unique and novel animation effects, it can greatly improve efficiency, save manpower and material resources, and provide strong technical support for animation creation from an artistic perspective. Expand the breadth and depth of animation special effects design. The algorithm model and parameters of the automatic generation of art and culture videos need to be optimized. The study found that the automatic generation of animation effects for art and culture videos is closely related to the conversion rate of style/content and model selection.

4. REFERENCES

- [1] Cai Yan. Research on the Graphical Design of Chinese Characters Based on Interactive Generation Algorithms [J]. Journal of Fine Arts, 2021(5):5.
- [2] Zhong Jinghua, Liu Zhangqian. Design and implementation of college art painting resource storage and retrieval system based on Hadoop framework [J]. Automation Technology and Application, 2020, 39(7):3.
- [3] Wu Jing. An intelligent auxiliary creation system based on painting teaching: CN110154625A[P]. 2019.
- [4] Dong Sun, Ding Youdong, Qian Yun. Application of artificial intelligence-based style transfer algorithm in animation special effects design [J]. Decoration, 2018(1):4.
- [5] Su Xuewei. Research on authenticity identification technology of oil painting based on intelligent vision [J]. Modern Electronic Technology, 2020, 43(5):4.
- [6] Liu Kainan, Zhang Bucheng. Research on video content analysis method based on artificial intelligence technology [J]. Film Review, 2018(2):4.
- [7] Lin Lifang. Design of an intelligent painting robot based on steering gear [J]. Modern State-owned Enterprise Research, 2018(4):1.
- [8] Cao Jianshou, Chen Guangxi, Ren Xiali, et al. Oil painting classification network model based on deep learning [J]. Journal of Guilin University of Electronic Science and Technology, 2018, 38(1):4.
- [9] Li Jianghao. An auxiliary painting intelligent device and brush cutting device: CN109572307A[P]. 2019.
- [10] Zhao Yang, Yang Jianlan. Computer-generated video processing algorithm for Van Gogh oil painting style [J]. Electronic Technology and Software Engineering, 2017(15):3.
- [11] Wang Haiming. Image artwork generation system based on parallel computing [D]. Sun Yat-Sen University.
- [12] Zhao Yang, Xu Dan. Oil painting generation method using fluid simulation [J]. Journal of Software, 2006, 17(7):9.
- [13] Tang Wenzheng. Research on image-based line rendering algorithm of ink landscape painting [D]. Shandong Normal University, 2014.
- [14] Duan Aiyuan. A New Smart Brush: CN109808414A[P]. 2019.
- [15] Li Zhiyong. The application of commercial hand-painting in the practical teaching of oil painting in colleges and universities [J]. Tomorrow's Fashion, 2018(19):1.
- [16] Zhang Ge, Zhang Xinrong. A method for generating painting effects of color landscape photos based on clustering [J]. Computer Engineering, 2003, 29(19):2.
- [17] Tang Wenzheng. Research on image-based line rendering algorithm of ink landscape painting [D]. Shandong Normal University, 2014.
- [18] Zeng Weijie. Research and implementation of image-based pencil drawing automatic generation algorithm [D]. South China University of Technology.
- [19] Xu Ming. Design and implementation of oil painting resource appreciation system based on mobile platform [D]. Beijing University of Technology.
- [20] Yao Chengsi. Research on image production algorithm based on generative adversarial network.
- [21] Wen Minliang. Computer art graphic design teaching under the background of the digital age.
- [22] Song Liming. Research and implementation of art animation system based on video stream [D]. Zhejiang University.
- [23] Lu Shaoping, Zhang Songhai. Stylized rendering algorithm for image oil painting based on visual importance [J]. Journal of Computer Aided Design and Graphics, 2010(7):6..

Legal Risk and Prevention of Sharing Economy under the Internet

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Abstract: The vigorous development of the sharing economy has helped China's market economy to make steady progress. The sharing of social idle resources has greatly improved the utilization rate of resources. However, the imperfection of the corresponding legal system makes the legal status of the sharing economy unclear, and the lack of regulatory measures leads to its disorderly development and the waste of a large number of resources, which also brings considerable legal risks to the supply and demand sides of the sharing economy. As a new economic model, the sharing economy still lacks corresponding laws and regulations in terms of laws, so it is prone to legal risks. Therefore, it is necessary to analyze the legal risks existing in the sharing economy and put forward reasonable prevention suggestions in order to promote the development and growth of the sharing economy model.

Keywords: Legal Risk; Legal Prevention; Sharing Economy

1. INTRODUCTION

The China Sharing Economy Development Report 2017 defines the sharing economy, that is, the sharing economy, as the sum of the economies that utilize modern information technologies such as the Internet and share the right of use as the main feature, integrate massive and decentralized resources, and meet diverse needs. It mainly has the following characteristics: First, it relies on modern Internet technology to connect operators and consumers; The second is the essence of sharing the right to use; Third, take the rapid allocation of idle resources as a means. The legal essence of the sharing economy is to build a temporary leasing relationship between operators and consumers. With the advent of the information age, people's privacy security has also become the focus. Nowadays, people are even exchanging information and privacy of both parties all the time, and the information has been leaked out unconsciously, so it is difficult to take corresponding protection measures.

The sharing economy, a new economic model, was originally developed by relying on information. From the initial platform to the selection of customers, every step is inseparable from data and information. Therefore, the new model of sharing economy can be said to greatly increase the risk of personal information disclosure. If the owner has different opinions and wants to change the civil property into commercial property, it must be changed strictly according to the change procedure. However, if civilian property is changed to commercial property, it will be associated with more people. At this time, in order to ensure the public interest and property safety of everyone, it is necessary to implement a more comprehensive administrative regulation system for commercial property, especially commercial property involving the nature of business. However, Codagnone and Martens (2016) provide a good conceptual framework to map the collaborative economy (Figure 1).

It is precisely because this sharing economy has changed this in some sense. Compared with online shopping, the sharing economy model has more prominent uniqueness. In the process of online shopping, the online platform only provides trading opportunities for both parties, and will not affect the

trading process, and the online shopping transaction sells the ownership of goods; Under the sharing economy model, the sharing platform will formulate transaction rules, which will affect the transaction process. Moreover, the sharing economy model sells the right to use the goods After the transaction is completed, the intermediary fee will be drawn from it. First of all, Article 424 of the Contract Law stipulates that an intermediary contract is a contract in which the intermediary reports to the client the opportunity to conclude the contract or provides the media services for concluding the contract, and the client pays the remuneration.

2. THE PROPOSED METHODOLOGY

2.1 Development of sharing economy and regulatory challenges

According to the traditional civil law theory, the broker can obtain remuneration after providing the client with the opportunity to conclude the contract, and there is no requirement to conclude the contract or ensure the effectiveness of the contract. For the existing network platform, its rules specify that the platform can obtain remuneration after the contract is concluded by both parties and supervise the performance process of the contract. The sharing economy model is based on network informatization. Its emergence has indeed made great contributions to China's economic development, but also brought great challenges to China's regulatory authorities. The new model of sharing economy has its unique sharing and diversity, which conflicts with the conventional regulatory methods. Therefore, as the era of data informatization, the regulatory authorities need to change the traditional concepts and innovate the regulatory methods.

The regulatory and law enforcement departments need to update the traditional concepts, break the original framework, and explore effective regulatory means according to the actual situation of China's current sharing economy enterprises. It is also worth mentioning that the challenge of sharing economy to administrative law regulation is far more than that. Because the labor relations under the sharing economy are based on simply participating and getting corresponding rewards. This kind of labor relations under the non-traditional administrative

law management system is difficult to copy mechanically with the traditional management regulations. This will pose a huge challenge to the output of labor and the compensation system of workers. The sharing economy model puts more emphasis on one-time service. Unlike online shopping, demanders do not actually occupy idle resources.

If there are problems in product quality or default behaviors such as delayed delivery during online shopping, consumers can use the return and refund function to protect their legitimate rights and interests. However, under the sharing economy model, if the idle resources of the provider have quality problems, or the information displayed on the sharing platform does not match the goods or services, the demander can only solve this problem in the following two ways: for the development of the sharing economy, the principle of caution should also be adopted. No matter how complex the business model of the sharing economy is, the shared goods and services cannot break through the boundaries of legitimacy, when formulating policies, we should adhere to the bottom line thinking. For new business forms involving personal safety, personal privacy, and market monopoly, we should focus on formulating rules to avoid risks rather than denying new business forms.

2.2 Improve the rationalization of laws related to the sharing economy model.

The sharing economy model initially suffered multiple obstacles in China. Due to the imperfection of laws and regulations, the emergence of the new model of the sharing economy has faced various constraints. However, China is also constantly adjusting in the face of the new economic model, and finally gives an attitude of encouragement and support. However, it is also an indisputable fact that the relevant legislation on the sharing economy in China is imperfect and unsound. The new model of sharing economy is significantly different from the traditional enterprise model. It no longer requires a business license or valid certificate, which has a great adverse impact on the supervision of relevant departments. As a newly emerging economic form, the divided economy is not really free from the restriction and control of laws and regulations, but just breaks through the traditional department administrative regulations. No specific detailed laws and regulations have been issued temporarily. The sharing economy is not divorced from the relevant provisions of civil law and administrative law.

There are only no detailed laws and regulations to restrict it. Therefore, as long as there are new regulations in relevant laws and regulations that specifically restrict and restrict the sharing economy, set the right boundary for the sharing economy, and enable the sharing economy to develop smoothly on the normal "track", it is the only challenge and response strategy analysis and solution for the current administrative laws and regulations. In essence, the sharing economy model is to temporarily transfer the use right of idle resources to maximize the use of resources. However, if the provider is not the owner of the resource, but the legal owner of the resource, whether it has the right to share this resource through the sharing platform needs further confirmation.

According to the provisions of China's Contract Law on house sublease, the lessee can sublease the house for a second time. When a new model of the sharing economy emerges, the government departments should take the initiative to guide the healthy development of the new business model. The price war, subsidy war and other unfair competition behaviors that are prone to occur in the sharing economy should be

prevented in advance. The fusion gene of the sharing economy itself does not need to be suppressed. It is only necessary to prevent the behaviors that may infringe the interests of consumers due to monopoly in advance and establish a dynamic supervision mechanism and establish a price supervision mechanism for the new type of business in a multi-pronged way. Therefore, only the operation mechanism that meets the legitimacy and legitimacy can find the soil for sustainable profit in the current legal society. As a new model, the sharing economy is facing various situations such as imperfect laws and inadequate supervision. Therefore, the self-discipline requirements for its industry are more important.

3. CONCLUSION

The emergence of new things will inevitably produce certain contradictions and conflicts with the old ones, and so will the sharing economy. The new model of sharing economy is extremely prone to certain legal risks due to inadequate laws and regulations. However, it is not difficult to solve the risks of the sharing economy. It only requires the cooperation of the government and enterprises, and the joint construction of appropriate regulatory methods to improve self-discipline and strengthen supervision, and jointly promote the growth and development of the new model of the sharing economy. The legal status of providers and demanders, and then the corresponding market access system, tax system, insurance system, information registration system, information inquiry system, and security review system should be formulated to achieve legislative perfection. In addition, this paper puts forward some opinions on relevant legal issues under the sharing economy model, hoping to provide reference for relevant research.

4. REFERENCES

- [1] Li Ke Research on legal issues of Internet take-out food safety risk from the perspective of sharing economy [J] Legal and Economic, 2019 (11): 2
- [2] Chen Yuhao Legal risks and prevention suggestions of the sharing economy model [J] Economic Research Guide, 2019 (31): 2
- [3] Wang Jichun, Shi Wei Research on the legal issues of "sharing economy" in the context of mobile internet -- take the "Kuqi" bicycle platform in Shenyang as an example [J] Introduction to Knowledge, 2017, 000 (017): 75-76
- [4] Zhang Qingfeng Research on legal issues related to the sharing economy model in the Internet era [J] Journal of Jilin Radio and Television University, 2017 (12): 3.
- [5] Ma Hui Analysis of the challenges and countermeasures of the Internet sharing economy to administrative regulations [J] Legal system and society: Ten-day, 2018 (19): 2
- [6] Wang Shimeng Research on the profit model and optimization of Internet enterprises under the background of sharing economy [D] Hangzhou University of Electronic Science and Technology, 2019
- [7] Liu Ximei Research on legal issues related to the sharing economy model in the mobile internet era [J] Charming China, 2018
- [8] Duan Feixiang On legal risks and countermeasures under the sharing economy model [C]//Summary of the 2017 annual meeting of the Law and Economics

Research Institute of the Hubei Provincial Law Society
two thousand and seventeen

- [9] Hou Xiangrong Research on the legal risk under the sharing economy -- taking the shared bicycle as an example [J] Hebei Enterprises, 2019 (6): 2.
- [10] Huo Yuxuan Legal risk and regulation of sharing economy [J] China, 2019 (10): 2
- [11] Chen Nigeng Analysis of legal risks and regulations of sharing economy [J] Consumer Guide, 2019
- [12] Zhu Fangqiang Legal exploration and collaborative governance of bike sharing from the perspective of sharing economy [J] Economic Forum, 2018 (9): 5.
- [13] China Internal Audit Association The so-called network audit refers to the development process of the audited entity's network accounting information system and its own compliance, reliability, and effectiveness, as well as the network-based accounting information [J] by auditors based on the Internet, with the help of modern information technology, using special methods and through human-computer integration.

Research on the Development Model of Intelligent Rural Tourism under the Background of Digitalization

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Abstract: This paper summarizes the types and development models of rural tourism products, discusses the pedigree of rural tourism products, and summarizes them into nine products: farmhouse, rural catering, rural science popularization, rural scenic spots, rural communities, rural sports, health care, rural vacations, and country clubs, divided the corresponding dimensions of rural tourism products from the level of consumption, and proposed a "trinity" research method of three product development models: dependent, independent, and pioneering. Under this new consumption demand of life, rural tourism has become a new industry that stimulates the growth of rural economy. However, due to the late start of the rural tourism industry, there are still some imperfections, which need to explore the driving mechanism and development model of rural tourism to make the sustainable development of rural tourism.

Keywords: Development Model ; Intelligent Rural Tourism; Digitalization

1. INTRODUCTION

Rural tourism has developed rapidly in recent years. At present, China receives about 300 million rural tourists each year, accounting for about 21.4% of the total number of tourists in the country. The comprehensive economic income of rural tourism is about 40 billion, accounting for about 7.6% of the country's total domestic tourism income [1]. Even so, many regions are flocking to develop rural tourism, and the stereotyped rural tourism projects are limited to the development characteristics of the surrounding urban markets, which makes the future development of this tourism industry face a huge test.

Under this consumer demand, various tourism markets have been spawned. As people are more and more eager to get in touch with and get close to nature, and to pursue the enhancement of the original ecological life concept of returning to nature, rural tourism as the new rural economic industry began to develop. This kind of rural economic situation did not exist in the past society, and there is no model to follow. This makes rural tourism inevitably have many problems in the process of development. If it is not solved in time, it will kill this rural area. New economic industries are bound to be detrimental to the improvement of farmers' living standards.

Tourism activities are a huge system composed of different subsystems. There are many divisions of the tourism system from different angles, among which the "three-body theory" divides the tourism system into three parts: the tourism subject, the tourism object, and the tourism media. From the perspective of dynamic system, the tourism system is mainly composed of four parts: tourism subject, tourism object, tourism media and tourism support body, while urban residents, rural residents, tourism industry, and government are the four subsystems that constitute my country's rural cultural tourism system. The driving mechanism and

development of rural tourism involves six theories including push-pull theory, sustainable development theory, economic theory, ecology theory, tourist destination life cycle theory and tourist destination image planning theory.

The general introduction is as follows: From the perspective of tourism motivation, the drive theory and the expected value theory are the sources of the push-pull theory. In the drive theory, it is proposed that people's non-selective behavior is caused by the lack of body, which refers to drive. Produced by the needs of human physiological functions. The degree of lack directly affects the strength of the drive. Behavior is caused by drives, which must be satisfied to reduce them. It mainly includes rural tourism products with sightseeing and experience as the main content, such as ecological agriculture, high-tech agriculture, and new rural industry.

2. THE PROPOSED METHODOLOGY

2.1 Research on Rural Tourism Product Development Model

These products are often based on emerging ecological agriculture bases around large and medium-sized cities. They are the development of traditional farmhouse products. They mainly integrate agricultural mechanization, science, industrialization, and ecological production methods, based on the display of technological agriculture and ecological agriculture. The content, the subsidiary agricultural product picking, sales, processing, and other activities, mainly attracts urban citizens and family groups.

From the analysis of the reasons why the current rural tourism industry is developing more rapidly than the urban tourism industry, it is that rural tourism meets the popular needs of tourism consumers. Compared with urban tourism, rural tourism has a lower level of consumption, greater choice, and the original scenery, no pollution of the environment, and the rich local characteristics of the culture are just incomparable

to the urban tourism industry with its large population, high density, inconvenient transportation, and lack of individuality in urban construction. High requirements for sexual and ecological consumption.

The development of rural cultural tourism is inseparable from production practice and subjective awareness activities. As a special spiritual culture, it mainly includes ways of thinking, moral sentiments, aesthetic tastes, and values. Integrating diverse ethnic groups, natural environments and vast rural areas can better create a rural cultural tourism brand. The main problems in the development of rural cultural tourism are concentrated in the rough form and single content, and some folk landscapes and performances are generalized. The development of rural tourism should ensure that farmers' income sources and employment opportunities can be increased to reduce brain drain. The development of rural tourism should ensure that the rural industrial structure can be effectively adjusted and optimized, and tourism development can drive production development, so that rural economic development can conform to the concept of sustainable development; improving traffic quality and ensuring smooth information flow are also important goals of rural tourism development one.

In the process of developing tourism, tourism resources should be fully protected, excellent national culture and spirit should be carried forward, and harmonious development between man and nature should be achieved; the development of rural tourism should also effectively improve rural hardware facilities; in addition, it should also be improved during the development process the humanistic quality and comprehensive quality of rural residents. With the good rural ecological environment as the background, develop rural health products such as diet therapy, drug health care, ecological health care, natural oxygen bar, etc. This kind of product overlaps with rural community products to a certain extent. The main difference is that rural community focuses on the experience of the whole rural life, and it is a completely open leisure and vacation product.

Operation and service are not the main features. On the one hand, health care products have relatively high requirements on the ecological environment and are often located in mountain villages with beautiful scenery and surrounded by mountains and rivers. The driving mechanism of rural tourism is based on the characteristics of rural tourism itself and is intended to provide rural the organic combination of various systems that provide motivation for the development of tourism industry is mainly composed of power system, demand subsystem, supply subsystem, support system and media system.

The power system of rural tourism in our country is analyzed. The demand system, supply system, support system and media system constitute the power system of rural tourism. These four systems are a unified whole and cannot be viewed separately. develop. The development process of rural cultural tourism includes many links, which requires it to reflect the characteristic mark of its products in every link --- "rural character". The population density, land use, mode of production, and settlement form of the countryside are all attractions for urbanites to go to the countryside.

2.2 Innovate the development model of rural cultural tourism with Chinese characteristics.

Fully integrating the three elements of "country, soil, and agriculture" into the clothing, food, housing, transportation, shopping, and entertainment of rural cultural tourism is the key to realizing rurality. The characteristic advantages of cultural tourism drive the further development of rural cultural tourism. The village collective is the development mode of the main body of development and operation. This mode is characterized by community village collectives investing in tourism destinations and developing and operating activities, in which villagers are directly engaged in tourism service management, and the decision-making of business plans and the distribution of benefits are dominated by participating villagers.

This mode can also be divided into the development mode of the village collective economy and the development mode of the village collective organization and the participation of the whole people, mainly based on the economic strength of the village collective and the general situation of the specific development organization. Dependent development mode means that the development of rural tourism products must be attached to some core resource or functional subject, that is, the developed rural tourism products are not independent in function, which results in the development status and functional attribute cluster being subordinate to a certain core resource. Functional subjects, such as scenic spots, development zones, tourist routes, central cities, etc. Dependent rural tourism products often have relatively single functions, are supplementary or supplementary products, and are often small in scale at the beginning of development. The driving factors are generally profit-driven, and the business model is generally family farmers and private investment. , collective cooperation or shareholding cooperation.

Of course, with the expansion of the scale or the strengthening of the main function, the dependent rural tourism products may also develop towards the independent direction. The development of rural tourism is not carried out blindly, but always follows certain principles: adhere to the principle of government policy guidance and measures to support, local governments should carry out local tourism development in an orderly, rational and restrained manner; the principle of active participation of residents The key to the effective advancement of local tourism projects lies in the cooperation of local residents; the principle of fair interest distribution, rural tourism resources are the common resources of the majority of farmers, it involves the common interests of the majority of farmers, and all parties must be considered in the distribution of interests To achieve a fair and reasonable distribution of tourism benefits.

3. CONCLUSION

The development of the rural tourism industry has given birth to a new growth point of rural economic development, transformed the rural production mode, optimized the rural industrial structure, prospered the rural economy to a certain extent, improved the quality of life of farmers, and improved the happiness of farmers' index. As it is an emerging rural industry, there are still imperfections. Therefore, we need to deepen the research on the driving mechanism and development model of rural tourism to ensure that the rural economy continues to advance steadily. On the other hand, in temple fair cultural tourism, the most folk art and rural cultural items should be actively disseminated, such as stilts,

social fire, gongs and drums, dragon lanterns, etc.; the third and most important aspect is to combine participation with The organic combination of ornamental features increases the wonderful experience of tourists, such as circus, juggling, dance and other forms that tourists join in the performance. The increase of labor positions has a certain role in promoting the adjustment of rural industrial structure. We should increase the research on the driving mechanism and development model of rural tourism to promote the rapid development of my country's socialist new countryside construction.

4. REFERENCES

- [1] Xu Qing. Research on Rural Tourism Product Pedigree and Development Model [J]. Zhejiang Forestry Science and Technology, 2009.
- [2] Li Jie, Liu Jun, Li Mingming. Research on Rural Tourism Development Model [J]. Shopping Mall Modernization, 2007(02X):1.
- [3] Pan Shunan. Research on the Driving Mechanism and Development Model of Rural Tourism in China (Library of Young and Middle-aged Economists) [M]. Economic Science Press, 2009.
- [4] Pan Shunan. Research on China's Rural Tourism Driving Mechanism and Development Model [D]. Northeast Normal University.
- [5] Pan Shunan. Research on China's Rural Tourism Driving Mechanism and Development Model [M]. Economic Science Press, 2009.
- [6] Lu Liang. Problems and countermeasures in the development of rural tourism in Hangzhou [D]. Guangxi Normal University, 2014.
- [7] Li Xiao. Research on the transformation and development of rural tourism from the perspective of digitalization [J]. Economic Forum, 2021(9):6.
- [8] Ren Lujiang, Ban Xixia. Research on the Innovation Path of Rural Tourism Business Model under the Background of Digital Economy [J]. Industry Innovation Research, 2022(14):37-39.
- [9] Niu Zicheng. Research on the Development Model of Rural Tourism Poverty Alleviation under the Background of Building a Well-off Society in an All-round Way—Based on the Empirical Analysis of Xuancheng City[J]. Contemporary Tourism: Later Journal, 2019(4):3.
- [10] Liang Qin. Research on Rural Tourism Development Model under the Background of Tourism Poverty Alleviation [J]. 2020.
- [11] Xu Qing. Research on Rural Tourism Product Pedigree and Development Model [J]. Zhejiang Forestry Science and Technology, 2009, 29(2):68-72.
- [12] Cheng Cheng. Research on rural tourism development from the perspective of tourism experience [D]. Central China Normal University, 2013.
- [13] Zhang Xingfa, Xu Hong. Review and prospect of domestic rural tourism research (2005-2020)—Visual analysis based on VOSviewer [J]. Forestry Economics (202101).
- [14] Yang Yuting, He Jianjia, Liu Jusheng. Research on the Evolution of Rural Tourism Resources Development Path under the Background of "Rural Revitalization Strategy"—Based on the Perspective of Evolutionary Game [J]. Enterprise Economics, 2018(1):7.

Research on Multiple Strategies of Martial Art Teaching in Colleges and Universities under the Background of "Internet+"

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Abstract: Universities are an important base for the Party and the country to cultivate talents, and the primary choice for the dissemination of martial arts. In the current situation of rapid development of martial arts in universities, some problems have emerged in the development of martial arts teaching, such as a shortage of teachers, single teaching methods, insufficient space for student progress, and the need to further optimize the outdated examination methods. With the rapid development of modern Internet technology, college martial arts teaching should also follow the trend of the times, introduce the incomparable advantages of college martial arts teaching under the support of "Internet plus" technology, rich network resources and diverse learning platforms provide great potential for innovative teaching. Therefore, it is imperative to use the Internet to carry out martial arts teaching reform and propose specific reform paths to achieve a qualitative leap in the output of martial arts education and teaching in universities, and Chinese martial arts will shine brightly on university campuses.

Keywords: Multiple Strategies; Martial Arts Teaching; Internet+

1. INTRODUCTION

As a new teaching model, "Internet plus Wushu" fully integrates the Internet for Wushu teaching, which is of great significance to the development of college Wushu courses. However, in actual teaching, due to the insufficient integration of the Internet and martial arts courses, there are corresponding limitations in martial arts teaching courses in universities. From the perspective of schools, universities attach great importance to theoretical knowledge and neglect sports construction, resulting in insufficient infrastructure of martial arts training venues in universities. At the same time, the development of the Internet makes teachers need to have professional information quality. College Wushu teaching teachers are slightly weak, which may lead to a single teaching form and content. Generation after generation of young people are gradually entering the internet age.

As a place to cultivate a new generation of young people in the era, universities shoulder the heavy responsibility of cultivating socialist successors in the new era. Their teaching models and methods must also keep up with the trend of the times and continuously improve and refine. People enjoy the convenience brought by the internet age, which brings many disadvantages as well. On this basis, this article explores the traditional teaching methods of martial arts in universities under the Internet era through research methods such as questionnaire survey, literature review, expert interviews, and data analysis. It also puts forward some suggestions for innovation and reform of the teaching mode of martial arts in universities in the new era. Martial arts are often simply treated as a physical education course in universities, and teachers lack in-depth teaching of theoretical knowledge and connotations of martial arts in the classroom.

Martial arts are rooted in the fertile soil of traditional culture, and the spirit of patriotism and self-improvement that it contains should be instilled in students in teaching, achieving the same direction of teaching martial arts skills and inheriting traditional culture. Some teachers in universities not only need

to balance the teaching of martial arts courses but also the teaching of elective courses in different projects. High quality teaching can only present a professional level, and excessive teaching tasks also lead to teachers having no time to reflect on teaching and improve their professional level. Secondly, the professional abilities of martial arts teachers in universities are insufficient. A qualified martial arts teacher should not only have a rich theoretical foundation, but also possess strong professional skills and high-level teaching abilities. They should be able to actively provide positive feedback to students in class, rather than just ignoring them by making exemplary actions in class. Finally, the reform of martial arts courses can also form a school's characteristic chemistry subject, create a high-quality curriculum construction, fully utilize new technologies such as the Internet and cloud computing, and build a martial arts intelligent platform to provide teaching and consulting services for martial arts enthusiasts. At the same time, students who perform well in school martial arts classes can be selected to participate in relevant martial arts competitions, performances, etc.

The introduction of the form of "Internet plus martial arts" in colleges and universities will help promote the development of the martial arts industry and promote the reform of martial arts teaching. Why can martial arts teaching prevail in colleges and universities; In the new era, young people are excessively addicted to online information and multimedia, thus neglecting their own physical health. An emerging term called "sub health" has emerged in people's sight. At present, the country vigorously advocates "national fitness" and requires all people to participate in fitness activities. It attaches great importance to physical exercise activities. As a place to cultivate young people in the new era, universities emphasize the comprehensive development of morality, intelligence, physical fitness, and labor, and attach great importance to physical exercise activities and physical education teaching activities. As an excellent traditional sports event, martial arts have received strong promotion in physical

education teaching in universities due to its unique performance and impact on the human body.

2. THE PROPOSED METHODOLOGY

2.1 The Significance of the Background of "Internet Plus" for College Martial Arts Courses

There is a vast amount of literature, images, videos, and other resources related to martial arts teaching on the internet, as well as the sharing of micro lessons and MOOCs teaching videos. This creates conditions for martial arts enthusiasts to achieve lifelong learning through the internet. For martial arts teachers, they can easily and efficiently obtain first-hand information about martial arts teaching on the internet, classify and organize the rich information they have obtained, and apply it reasonably to university martial arts teaching classrooms, which can better compensate for the insufficient teaching content in traditional martial arts classrooms and improve the quality of classroom teaching. Appreciate the charm of traditional Chinese culture in learning and enhance students' interest in learning martial arts. Secondly, through offline teachers providing professional explanations and teaching on martial arts technical movements, we systematically learn martial arts technical movements and answer students' difficulties and doubts encountered during the learning process.

Finally, the teacher assigns homework after class based on the students' learning situation and uploads martial arts homework videos using software such as Ding Talk. When the teacher corrects the homework, they grasp the students' learning situation, and develop corresponding teaching methods and progress based on the overall learning situation of the students, to enhance their enthusiasm for self-directed learning. On the one hand, schools have time constraints on the application and management of martial arts training venues, and the application process for using venues is relatively complex, resulting in students having no venue to learn martial arts and hindering the development of martial arts teaching.

On the other hand, the school has professional martial arts equipment, but it has not been fully utilized. Usually, schools introduce conventional martial arts equipment such as knives, swords, sticks, protective gear, and sandbags for students to practice in class. However, outside of the classroom, students have limited access to equipment and do not have corresponding martial arts equipment for their own practice, resulting in low usage of equipment. The teaching level of physical education teachers is not up to par, and the teaching level of the necessary subject, the teacher, cannot meet the needs of students in the teaching process.

This leads to a generally low level of students, thereby reducing the overall technical content. The teacher's limited teaching level also leads to students not being able to learn more knowledge, which limits the dissemination of martial arts. The essence of information literacy is a basic ability to adapt to the information society, including cultural literacy, information awareness and information skills. It is required to be able to judge when information is needed, how to obtain and integrate information, and correctly evaluate and effectively use information. The growth process of today's college students cannot be separated from the influence and influence of the Internet and intelligent electronic products. They are the most loyal beneficiaries of convenient network technology. As teachers, they should progress with their

students and the times, and actively embrace new technologies.

2.2 The Reform Path of College Martial Arts Teaching Based on "Internet+ Education."

The widespread popularity of the Internet has put forward a severe test for college teachers' ability to integrate and use information, that is, information literacy. The higher the information literacy of martial arts teachers, the better they are at mobilizing students' learning enthusiasm, developing students' innovative learning potential, and effectively ensuring teaching quality and effectiveness. The assessment of martial arts courses in universities is mostly based on students' attendance and mastery of martial arts techniques. This assessment method is one-sided. The goal of martial arts teaching should be to make students understand and love the excellent traditional Chinese culture, and on this basis stimulate students' interest in martial arts learning, so that students can change from passive learning to active learning. Therefore, martial arts teachers should establish a diversified assessment mechanism to evaluate students and oppose only technical action theory comprehensively and objectively.

Offline martial arts teaching can comprehensively assess students' mastery of technical movements, spiritual connotations, and participation in martial arts courses. The integration of the Internet and martial arts education needs high-quality information talents. However, the school's current teaching staff of martial arts is relatively weak, and cannot effectively record online martial arts videos, which hinders the development of the "Internet + martial arts" curriculum. The main reason for the shortage of teachers is that schools usually attach importance to the face-to-face teaching ability and knowledge assessment of teachers' professional courses when recruiting teachers, and do not pay attention to teachers' internet application ability, resulting in teachers lacking information technology operation ability and being unable to adapt to online martial arts teaching work.

The activities for promoting martial arts teaching in schools are relatively limited. When students learn new martial arts movement knowledge, they only rely on physical education time for practice. Classroom teachers assign extracurricular exercises, and students generally do not practice in their spare time. At this time, some teaching activities are needed to maintain the content learned in class. Most universities mainly use sports meetings and competitions to urge students to exercise, this type of activity is relatively single, and the supervision effect on students is not significant. Timely organize experts and scholars to answer common and key questions faced by teachers in martial arts teaching, providing high-quality teaching guidance services for teachers to better understand professional knowledge. Advocate more experts, renowned teachers, frontline martial arts workers, and network technology service personnel in the martial arts field to work together, gather the strengths of a hundred schools, and maximize the function and role of this national martial arts exchange platform, providing solid support for teachers to carry out curriculum innovation and teaching reform.

Firstly, schools should not only attach importance to the training and learning of martial arts teachers' skills, but also strengthen their understanding of the cultural spirit of Chinese martial arts, thereby improving the core literacy of martial arts teachers. Secondly, in the era of rapid development of the Internet, people have gradually become inseparable from electronic products such as mobile phones. Modern college

students have been surrounded by electronic products for a long time, and as martial arts teachers in universities, they should keep up with the times, improve their literacy in using online teaching, use their leisure time to understand the latest developments in martial arts teaching, research, and competitions at home and abroad, and constantly improve their teaching concepts, combining the actual situation of students with martial arts teaching, develop teaching methods that conform to the physical and mental characteristics of contemporary students, in order to improve the quality of online and offline classroom teaching. At the same time, on-the-job training is also mainly the cultivation of professional domain knowledge. Internet information courses have not been properly carried out to promote the improvement of teachers' information quality. Therefore, in the face of the problem of weak online teaching faculty, schools should actively carry out talent team construction through methods such as external recruitment and internal training.

3. CONCLUSION

"Internet+ education" is not a simple superposition of the Internet and education, but a deep integration of modern information technology and education and teaching. The rapid development of the Internet has built a more three-dimensional information platform for the spread of Chinese martial arts, provided a powerful tool and carrier for the full introduction of Chinese martial arts into universities, and provided a solid and powerful scientific and technological support for the development of college education. "Internet plus education" can solve many problems existing in the process of traditional martial arts teaching, and martial arts teaching and Internet integration have complementary advantages, strengthen, and consolidate martial arts techniques through offline course exercises. Stimulate students' interest and love for martial arts learning through a series of vivid and interesting teaching resources. This has improved the learning effectiveness and efficiency of students to a certain extent, thereby promoting the further development of martial arts teaching in universities.

4. REFERENCES

- [1] Du Shougao, Wang Mingjun, Li Jiajing, et al. Research on College Wushu Teaching Reform under the Background of "Internet plus."
- [2] Xue Wangfeng Exploring the reform of college Wushu teaching in the context of "Internet plus" [J] two thousand and twenty.
- [3] Zhang Hong Exploring the reform of college Wushu teaching in the context of "Internet plus" [J] Martial Arts Research, 2020, 5 (6): 4.
- [4] Qiao Beiyun Research on Wushu Teaching Reform in Colleges and Universities under the Background of "Internet plus" [J] Shanxi Youth, 2019 (15): 2.
- [5] Zhao Caiyu, Zhao Xin Research on the Reform of College Martial Arts Teaching from the Perspective of "Internet+Education" [J] Sports Culture Guide, 2018 (5): 5
- [6] Cao Chenxi Research on the Teaching Strategies of Martial Arts in Universities under the Background of Sports Modernization [J] Xueyuan Education, 2016 (19): 1
- [7] Xiong Dongjin, Xu Dong Research on College Wushu Teaching Reform from the Perspective of "Internet plus Education" [J] Leisure, 2019 (9): 2.
- [8] Kailin Analysis of Teaching Strategies for Martial Arts in Universities under the Background of Sports Modernization [J] Rural Economy and Technology, 2016, 27 (24): 2
- [9] Ren Peng The Value Research and Reform Strategy of Martial Arts Teaching in Universities under the New Situation [J] China Science and Technology Investment, 2019, 000 (010): 261263
- [10] Gong Huiping, Li Huabin, GONGHuiping, et al Thoughts on Wushu education reform from the perspective of "Internet plus" [J] Journal of Shaoguan University, 2016, 37 (6): 5
- [11] He Jianlong, Li Guangquan, Cui Yanhua Research on the Teaching and Promotion Strategies of Martial Arts in Universities [J] Fighting: Martial Arts Science, 2014, 11 (12): 2
- [12] Zhang Dawei, Shan Jingyi Research on the Reform of Martial Arts Teaching in Universities under the Background of the New Media Era [J] Feng Hui, 2019 (12): 1
- [13] Wang Wenyan Research on College Wushu Teaching from the Perspective of "Internet plus Education"
- [14] Tian Hongtao, Zhang Lu Research on the strategy of college Wushu education reform from the perspective of "Internet plus" [J] Science and Education Guide: Electronic Edition, 2018 (3): 2

Sports Intelligence Training Framework Based on Image Processing Chip Fusion Multimedia

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Abstract: On the basis of analyzing and studying the relevant theories of image fusion, this paper introduces a variety of fusion methods that can be run on the platform, as well as the method of constructing the fusion algorithm function chip. The decline in physical fitness is getting more and more serious, which has gradually attracted the attention of schoolteachers and parents. All sectors of society are paying close attention to the school's actions. A healthy body is the foundation of students' learning and the driving force for students' development. The way to generate the teaching wisdom of physical education teachers is to first get rid of the constraints of traditional physical education teaching concepts on teaching, improve the professional quality of physical education teachers, secondly strengthen the practical reflection of physical education, strive to improve the management system of the campus, and finally strive to improve the professional skills of physical education teachers. Ability to integrate with Internet technology.

Keywords: Sports Intelligence Training, Image Processing Chip, Multimedia Fusion

1. INTRODUCTION

Combined with the current situation of physical education in colleges and universities, it is not difficult to find that there are some problems and defects in most of the physical training links in colleges and universities [1]. The physical education teaching in most colleges and universities still stays in the traditional teaching mode, and the teaching concept is deeply influenced by the backward concepts in the past, especially the lack of clear teaching and training goals in the process of physical training. With the introduction of science and technology into people's lives, students gradually Addicted to the Internet and lack of exercise in daily life, students often fail in physical fitness tests such as long-distance running and long jump [2].

Schools should gradually change the teaching status of lack of physical training, create activity space for students, allow students to do indoor and outdoor activities, and help students improve their physical fitness [3]. In recent years, with the rapid development of drone technology, the airborne photoelectric imaging system is used as a means of obtaining an important means of aerial imagery, more and more people's attention. The airborne photoelectric imaging platform is an optoelectronic reconnaissance device that integrates [4] high-precision sensor equipment such as visible light cameras, infrared thermal imagers, and laser rangefinders. "Image fusion" is a popular word in the field of image processing, so what is it? Image fusion? [5]

In short, image fusion is an information processing technology that processes multi-source image information to obtain improved new information. With the help of computer-aided design tools designers can build chip-level systems based on a variety of proven solutions [6]. The advantage of this design method is that the internal structure that the designer does not need to consider only needs to know how to use it, so as to focus more on the system-level design, which can be verified and reused to reduce the workload of the design. Increase design efficiency. The built-in high-performance dual-core ARM Mail400 3D GPU processes video, integrates a large number of video interfaces [7].

The audio interface supports multiple formats of audio and video input and output and integrates a high-speed peripheral interface MAC to complete the interaction with off-chip data [8] and supports a 32-bit wide DDR3 off-chip memory interface with a rate of 532MHz. Cultivating students with excellent professional ability and rapid thinking ability not only requires subject professional knowledge, but also needs to form their own physical education wisdom through continuous accumulation on the basis of theory and practice [9].

Physical education teachers should promote their transformation from traditional teaching to intelligent teachers in order to serve and teach better [10]. The content of training is single and poor, which directly affects the teaching quality and level of physical training in colleges and universities. However, through physical training innovation, we can get rid of the constraints and influence of traditional teaching methods, abandon some of the problems left by traditional teaching methods, and further improve the quality of training by innovating and changing training methods and content [11]. At present, the physical education courses in some schools tend to be more formal It is just that the reputation of physical education class is empty, but there is no trace of physical education class [12].

Most of the physical education classes are recruited by teachers of other subjects. Physical education classes can take Chinese classes and math classes, but not physical education classes. In some schools, there is only one physical education class per week [13]. When the airborne photoelectric imaging platform acquires the target image, it is affected by the design and adjustment of the photoelectric platform itself, the jitter of the drone, the refraction of the atmosphere and other factors, resulting in the performance of the target in the image [14]. The output position, direction, size, shape, etc. will be different, and these spatial differences will have a greater impact on the effect of image fusion [15].

Pixel-level image fusion is the most basic image fusion method and the basis of other high-level image fusion. According to the nature of the designed system, the integrated circuit design process can be divided into digital integrated circuit design process and analog integrated circuit design

process. Of course, in an actual system, it usually contains both digital and analog parts [16].

In 2018, NXP launched its latest integrated i.MX 6Dual/6Quad series of multimedia application processor SoCs. [3] The i.MX 6Dual/6Quad series of SoC processors address the growing needs of the automotive infotainment [17], telematics, HMI, and display-based cluster markets, providing high-performance processing capabilities with a high degree of functional integration.[18]

2. THE PROPOSED METHODOLOGY

2.1 The Image Processing Chip Fusion Multimedia

Aiming at the problems of poor contrast, low fusion accuracy, and noise interference of infrared and visible light fusion images of airborne optoelectronic platforms, this paper proposes a new dual-tree complex wavelet (DTCWT) domain combining visible and infrared image fusion methods with region segmentation. Before image fusion, the target original image needs to be pre-processed before fusion. This paper mainly focuses on the image fusion algorithm of infrared and visible light and needs to perform effective and fast operations such as excavation, denoising, and enhancement of infrared and visible light images respectively. In this section, the median filter of the image is implemented using.

The geometric raster unit mainly completes the following tasks: Clipping, cutting out vertices and polygons outside the view area, and back-face culling. Gridding. According to the project requirements, the SoC system circuit studied and designed in this paper, on the one hand, is mainly used for video image processing, and transmits inter-chip, inter-board, and remote data into the chip through a variety of high-speed peripheral interfaces. After the data is internally compressed, encoded and decoded inside the chip, the images captured by the visible light camera and the infrared imager are preprocessed and then transferred to the image fusion hardware platform. The link is transmitted to the ground station for scientific research personnel to perform target identification, landform observation and other work.

2.2 The Sports Wisdom Training Framework

In the process of innovation and development of college sports training, it is necessary to adhere to the principle of scientificity. In short, it is to ensure that the elements of innovation, such as content, methods, and goals, can adhere to the principle of science, in line with the development trend of contemporary physical education teaching and the needs of students' physical training. Demand. Good physical fitness is the foundation to support students' development. Students often need to sit for a long time when studying indoors.

This will have an impact on the physical health of students. Physical education class is the best time for students to relax and exercise. Sitting for a long time will cause a great burden on the cervical spine of students. In physical education class, teachers can help students stretch their bodies. "Internet + education" is different from the early education informatization. By grafting Internet channels in traditional education, education informatization is only a transfer of knowledge, and the form of education has not changed. Adhering to the principle of scientific is helpful for better development of innovation, ensuring the rationality and correctness of physical training innovation, and can demonstrate the significance and role of physical training

innovation, so that the validity and reliability of training can be better improved., is fundamentally different from "Internet + education".

2.3 The Sports Intelligence Framework Based on Image Processing Chip Fusion Multimedia

Sports intelligence framework based on image processing chips and multimedia The innovation of sports training in colleges and universities is a systematic and complicated task, and it is difficult to achieve the expected results if it is carried out blindly. Physical teaching, like other subject teaching, also needs certain teaching aids to help Teachers improve the overall effectiveness of teaching. Therefore, the teaching resources of the school should be rich and diverse and should not be too single. For the physical education courses in the school, the school needs to introduce some modern auxiliary exercise equipment to provide students with a variety of choices. Therefore, it is necessary to build a systematic and sound management mechanism to ensure the effectiveness and rationality of innovation. The systematic principle requires that innovators be able to realize the design of sports training. In the process, the cores used can carry out strict timing control on each functional module of the algorithm to ensure the effective operation of the algorithm.

The operation of the fusion algorithm is performed using parallel processing and a large amount of logic resources. Effectively combine the above multiple system modules. The company is the industry's top embedded processor supplier and has a market share above embedded processor. Its business model is also a typical model in the industry, that is, it does not produce and sell chips, but only sells the authorization of chip technology. This thesis participates in the project design of a highly integrated SoC application processing chip based on ARM core. The SoC circuit requires both it can be used as a video codec controller or a traditional application processor, so it needs to integrate multimedia-related IP such as audio and video codec to complete the corresponding audio and video processing functions.

"Internet +" has brought great changes to the development of education. Not only is the teaching medium becoming more and more intelligent, but more importantly, education has become more humanistic. As the center, take the initiative to understand the personality differences of students, and advocate differentiated teaching and teaching students in accordance with their aptitude in terms of teaching methods and content. In the innovation process, problems must be discovered and solved in a timely manner. In the later evaluation stage, the fairness and justice of the evaluation must be ensured. In the final optimization process, the problems encountered, and the evaluation results must be combined to make up and optimize to ensure that the innovation results can meet expectations.

3. CONCLUSIONS

Through the analysis of the hardware fusion system, this paper does some research on the fusion preprocessing of the system, including infrared and visible light image preprocessing and image registration. The image preprocessing adopts the development and design method of the university. Education has always been widely concerned and valued by the society. Physical education, as one of the important links in quality teaching, deserves corresponding attention. Physical training plays an important role in cultivating college students' awareness and habit of exercising

and enhancing their physical quality, and innovation in the mode and content of physical training will help to further improve the overall level of physical training.

4. REFERENCES

- [1] Zheng Zhonghu, Zhang Qian, Shi Jia, et al. Research on the path of integrating information technology in physical education and training in primary and secondary schools in my country under the concept of "smart sports" [J]. *Anhui Sports Science and Technology*, 2021, 42(6):5.
- [2] Zhang Lihue, Zhang Peixuan, Lin Ye, et al. A smart sports auxiliary training system and training method based on video analysis: CN111680608A[P]. 2020.
- [3] He Raiman, Zheng Kefeng, Yu Inyang, et al. Recognition and counting of silkworms in factory silkworm breeding based on improved Mask R-CNN model [J]. *Smart Agriculture (Chinese and English)*, 2022, 4(2):11.
- [4] Xian Lihong, Long Zulian. Research and Design of Smart Aquaculture System Based on Internet of Things Technology [J]. *Internet of Things Technology*, 2022, 12(2):65-68.
- [5] Zhang Li. Research on the Application of Multimedia in Physical Education Teaching in Primary Schools [J]. *Love, Marriage, and Family: Life Documentary Edition*, 2021, 000(003) :P.1-1.
- [6] Jing Haifeng. Research on the effect of multimedia technology on physical education and training [J]. *Electronic Testing*, 2014(3X):2.
- [7] Cao Da. Research on the design of a smart training integrated management application system [J]. *Modern Information Technology*, 2022, 6(10):4.
- [8] Li Xiaogang, Pan Xiaofei. The knowledge map of physical training research in China since the reform and opening up— Visual analysis based on CiteSpace [C]// The 11th National Sports Science Conference. 0.
- [9] Li Xiaogang, Pan Xiaofei. The knowledge map of physical training research in China since the reform and opening up— Visual analysis based on CiteSpace [C]// The 11th National Sports Science Conference. 0.
- [10] Yu Wuyang. Research on the Application of Multimedia Technology in College Track and Field Training [J]. 2021.
- [11] Zhang Jie. Research on multimedia physical education teaching based on information platform [J]. *Journal of Hunan Vocational and Technical College of Posts and Telecommunications*, 2016, 15(003):88-89.
- [12] Liu Yang. Research on key technologies of content-based multimedia information retrieval [J]. 2011.
- [13] Wei Mengjia. Research on the construction of smart sports training platform for sports dance majors [J]. *Sports Excellence*, 2022, 41(1):3.
- [14] Dou Li, Chen Huawei, Qian Cheng. Research on the Value and Model of "Smart Sports Classroom" in Colleges and Universities [J]. *Sports Culture Guide*, 2018, 000(011):136-140,146.
- [15] Gao Donghai, Li Wensheng, Zhang Haitao. Research and implementation of offline video processing technology based on Hadoop [J]. *Software*, 2013, 000(011):5-9.
- [16] Tan Luming. Talking about the enlightenment of smart sports concept to college sports training [J]. *Sports-Leisure: Popular Sports*, 2022(3):3.
- [17] Liu Xin, Li Yunyi, Wang Miao. A lightweight identity authentication protocol for federated learning nodes based on confidential computing [J]. *Information Network Security*, 2022(7):9.

Development and Data Storage of Sports Teaching Live Broadcast Platform Based on Mobile Device Edge Computing

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Abstract: Aiming at the problems of low computing power and limited storage capacity of mobile terminals, a lightweight identity authentication protocol suitable for mobile edge computing environment is proposed. This protocol combines cryptography with the security protection technology of the physical layer. The system is a web software system based on the Internet network, which provides both teachers and students with the necessary network teaching environment and related tools for online teaching. To integrate the text, graphics, voice and video document systems required for the course, relying on Yu Classroom, Xuetangyun, Chuangao APP, WeChat group and other platforms to create "theoretical learning + live teaching + MOOC video + online Q&A" four the integrated teaching mode has achieved teachers' teaching, students' independent learning and multi-channel interaction between teachers and students.

Keywords: Data Storage, Sports Teaching, Live Broadcast Platform, Mobile Device Edge Computing

1. INTRODUCTION

In recent years, as mobile devices (smartphones, laptops, and tablets, etc.) play an increasingly important role in people's daily life, such as learning, entertainment, and socializing [1], mobile users are increasingly concerned about data transmission rates and services. The demand for quality is also increasing. Although new mobile devices have more and more powerful computing power. In this context, many IoT applications emerge as the times require, such as crowd sensing, intelligent monitoring, and Internet of vehicles applications [2].

In this type of application, the IoT device will periodically collect the specified data, process it locally or upload it to the cloud server for analysis [3]. At present, there are only 20 physical education teachers on the front line of teaching, so there is a serious shortage of physical education teachers, which causes the number of people in physical education classes is large and the quality of teaching is poor [4]. If online teaching is adopted, it is possible to set up sub-points and focus on online teaching, which ensures that students receive the teaching of the best teachers. In order to save the school's educational space and optimize the teaching staff, a curriculum education platform using Internet technology is used as the times require. Health [5].

In the traditional physical education teaching work, the physical education knowledge is taught by the physical education teachers, and the students can only passively accept the teaching content, and the effect is low. Secondly, traditional physical education relies on the single explanation and demonstration of physical education teachers, and the level of different physical education teachers is uneven, and the teaching effect is usually limited to their own physical education level [6]. Emphasizing sports is one of the school-running characteristics of Nankai School. The construction of the "Nankai Model" for online teaching during the epidemic period and the exploration of the implementation strategies of online teaching of physical education in colleges and universities will provide important reference and reference for

the successful completion of online teaching in colleges and universities across the country [7].

The rapid development of "5G" technology provides technical support for MEC, and the large-scale application of IoT in various industries provides MEC with broad application scenarios [8]. MEC is speeding up the development of various industries with its security, speed, scalability, versatility, reliability. But even these new devices may not be able to handle computationally intensive applications (such as virtual reality, augmented reality, face recognition, etc.) [9]. In addition, the power consumption caused by running applications with high computing power requirements is still a major obstacle that restricts mobile users from fully enjoying such applications [10].

At present, the combination of IoT devices and the cloud is the main mode of IoT applications. However, the long-distance communication between IoT devices and remote cloud platforms has the problem of unstable network transmission delay, which will lead to excessively long delays in IoT applications and cannot meet applications with specific delay requirements [11]. According to the "Internet +" education, the construction of smart classrooms has become a new direction for future education development, and it will also have a revolutionary impact on the teaching of traditional sports technology courses. Network teaching puts forward higher requirements for teachers' teaching methods and basic quality [12].

First of all, teachers must master certain information technology knowledge, namely computer technology, multimedia technology and network technology. Only by mastering the teaching tool and means of information technology can they be skillfully used in teaching [13]. As for distance physical education teaching, domestic Scholars and experts have little research. However, due to the need to provide larger venues for sports activities, and the complicated classification and borrowing of sports equipment, school human resources have not been used more reasonably [14].

The physical education platform uses the Internet to reintegrate the scattered multimedia teaching resources, accelerates the dissemination of resources, promotes the sharing of educational resources, and improves teaching efficiency [15]. The sixth is to vigorously promote educational informatization and support schools to make full use of information technology Carry out the reform of talent training models and teaching methods, carry out the optimization of educational governance capabilities under the support of big data, and promote the use of Internet and other information-based means to serve the entire process of education and teaching [16].

Traditional cloud computing needs to transmit information to the data center for processing, which will cause losses to delay-sensitive applications, such as smart vehicles and telemedicine. If all information is sent to the cloud center for processing, it will take too long. And mobile edge computing works by sinking the cloud data center to the network edge [17].

2. THE PROPOSED METHODOLOGY

2.1 The Edge Computing for Mobile Devices

The integration of the MEC platform in the mobile network environment brings many challenges related to service orchestration. Because the number of server nodes in the network increases, the system needs to effectively manage the resources (computing resources, storage resources) of each MEC server. At the same time, due to the mobility of users, the dynamic changes of radio network resources are induced.

In summary, the existing identity authentication schemes have been greatly improved in terms of feasibility and security, but the use of the above schemes in MEC scenarios is unreasonable to some extent. The concept of mobile edge computing is to extend cloud computing functions to the edge of the mobile network. The advancement of cloud computing technology has made it easier to deploy virtual machines on a large number of general-purpose servers such as base stations and gateways. In order to save the energy of IoT devices, while effectively In recent years, many researchers have carried out research on the joint scheduling problem of computing offloading and server resources in mobile edge computing.

The MEC network system is a three-level hierarchical structure, as shown in Figure 1, including different functional entities such as registration center (RA, registration authority), MEC server (MS, MEC server) and intelligent terminal equipment. The main idea of SDN is to separate the control plane and data plane of the network. Its advantages mainly include creating a network control plane on general-purpose hardware, exposing network functions through APIs, remotely controlling network devices, and logically decoupling and decoupling network intelligence into different networks. The software-based controller. This information can be used to estimate the execution time and energy consumption of the current task on each IoT device and edge server, which is crucial for the scheduling of the framework. COMED needs access to these configuration files for better offloading of tasks.

2.2 The Physical Education Live Broadcast Platform

This paper takes the analysis of the inherent risk factors of the school's outdoor sports field practice course as a logical

starting point and uses the risk management theory and system theory as the theoretical basis. By practicing the course risk management model, students can easily attend classes, check grades, select items, ask questions to teachers, and discuss with each other. The system provides complete user management, courseware content and other management functions; it has reliable security, and the permissions of users at all levels are strictly limited, and each user can only access the content he should access.

The detailed exploration of the implementation process aims to provide effective risk management guidance and reference for the implementation of field practice courses in colleges and universities, dispel the concerns of various schools on the development of outdoor sports courses, and promote the sustainable and healthy development of outdoor sports courses in schools in my country. In the development of the network platform, Windows 2000 server is used as the operating system of the website, IIS is used as the web server, and Dreamweaver canthus of Micromedia and ASP of Microsoft are selected as the web development tools.

2.3 The Development and Data Storage of Live Broadcast Platform for Physical Education

The intelligent terminal device can be a mobile device with communication and sensing functions. Because the intelligent terminal device is limited by computing resources and batteries, it cannot complete huge computing tasks in a short time, and some computing tasks need to be offloaded to the MS. Students can check the learning repeatedly to meet the learning requirements, and at the same time, the software background can record the data of the corresponding learning activities for the reference of teachers in the process evaluation. It also includes the standard action model of each technical action, so that students can obtain the intuitive cognition of correct action in repeated viewing. Take out the sports items in the item table as the drop-down list basket value.

The Academic Affairs Office completes all physical education courses and connects with the course selection information of Rain Classroom, Xuetao Cloud and Chuangao Platform. All teachers of the Ministry of Sports complete the identity binding and membership application of Rain Classroom, and "group announcements" through Rain Classroom. Users must register with RA to become legal users before accessing the services provided by MS. The user submits a registration request to the RA, and the RA generates a master key for the user. The user and the RA communicate through a secure channel. And provide action reference for self-learning. The function of the individual guidance module realizes that students can get one-on-one personalized guidance from teachers by uploading practice videos, find problems in the learning process, and teachers will guide, correct and guide corresponding learning strategies.

3. CONCLUSIONS

This paper proposes a mobile edge computing framework COMED based on ultra-dense networks. IoT devices can offload tasks to the mobile edge cloud server by associating with the most suitable base station. As an extension of school physical education classroom, sports network teaching plays a certain role in assisting students' autonomous physical education learning. The school uses the asynchronous teaching function of the sports network teaching platform to manage and guide the school's extracurricular physical

exercise, which has a lot of room for development. The distance physical education platform designed in this paper enriches the traditional physical education activities, optimizes the school's teaching resources, and has broad application prospects.

4. REFERENCES

- [1] Xu Meishan. Mobile terminal software development and optimization for edge computing services [D]. Guangdong University of Technology, 2019.
- [2] Yu Lei, Wang Wei, Gao Fangyu, et al. Design and Implementation of Edge IoT Agent Integration Device Based on Edge Computing [J]. China Science and Technology Investment, 2022(13):3.
- [3] Guo Feiyan, Tang Bing. Mobile edge server placement method based on user latency perception [J]. Computer Science, 2021, 048(001):103-110.
- [4] Liu Xingxing. Research on computing offloading and energy efficiency optimization based on mobile edge computing [D]. Lanzhou University of Technology, 2020.
- [5] Zheng Changsong, Ye Libin. A Mobile Police Data Processing Model Based on Element Perception and Fusion Computing [J]. China Security Certification, 2020, 000(004):52-55.
- [6] Wang Ziyuan, Du Ruizhong. Data Integrity Audit Scheme Based on Certificateless Public Key Cryptography in Edge Environment [J]. Journal of Communications, 2022.
- [7] Lin Yingjie, Tan Dongyu. System and method for dynamic mobile storage and shared data based on edge computing technology: CN112052102A[P]. 2020.
- [8] Yang Jingfeng, Wang Li, Lan Feiteng, et al. Mobile edge computing method, equipment, storage medium for autonomous driving based on roadside units: CN111615067A[P]. 2020.
- [9] Yang Jingfeng, Wang Li, Zhang Nanfeng, et al. Automatic driving warning method based on environmental perception and mobile edge computing, equipment, storage medium:, CN111833622A[P]. 2020.
- [10] Guan Guofei, Song Qingwu, Liu Hui, Xu Yan, Jiang Feng, Li Chunpeng. Research on distribution network management and operation and maintenance system based on edge computing [J]. Power Grid and Clean Energy, 2020, 36(10):7.
- [11] Jing Ran, Mu Chaoyu, Wei Jiali, et al. MEC network deployment and application based on mobile edge computing technology [J]. Telecommunications Technology, 2019(5):3.
- [12] Lin Wei, Wu Shuai, Wang Yapeng, et al. Smart City Video Networking Service Platform Based on Mobile Edge Computing [J]. Telecommunications Science, 2019(S02):5.
- [13] Liu Miao. Research on edge computing and pre-storage resource allocation technology based on social D2D network [D]. Nanjing University of Science and Technology, 2019.
- [14] Shao Sujie, Wu Lei, Zhong Cheng, et al. Container-based edge microservice selection mechanism for multi-workflow [J]. Journal of Electronics and Information, 2022, 44:1-9.
- [15] Li Yunhao. Design and implementation of real-time data processing application execution optimization system in edge computing mode [D]. Southeast University, 2019.
- [16] Luo Ming. Network information monitoring and caching service optimization based on mobile edge computing [D]. 2019.
- [17] Li Yuan. Research on online learning resource compression storage method based on edge computing [J]. Journal of Ningxia Normal University, 2022, 43(1):76-83.

A PHP Implementation of a Smart Tourism Management System under A Cloud Computing Platform

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Abstract: This paper collects and analyzes the use of cloud computing technology in the tourism industry at home and abroad, combines its advantages and disadvantages, uses PHP language for web design, service modeling and data modeling, and then proposes a tourism cloud service architecture. According to the characteristics of tourism business, the system construction of the tourism cloud platform is divided into three parts: private tourism cloud, tourism exclusive cloud, and tourism public cloud. In addition, specific and detailed planning and design of the tourism private cloud platform have been carried out, and the efficiency has increased by 7.12%. And in response to the rapid growth of tourism data, this article also proposes a recommendation algorithm based on tourist and scenic spot information.

Keywords: PHP, Smart Tourism, Management System, Cloud Computing

1. INTRODUCTION

In recent years, the state has attached great importance to the development of tourism in various regions and has continuously introduced new development measures. Combining regional advantages, a city actively advocates the development of smart tourism. After continuous development planning, the city has launched a rural tourism development with obvious regional characteristics. As a part of smart tourism, rural characteristic tourism has become an important part of supporting the economy. In order to do a better job of tourism, the city actively seeks development ideas, and launches township and even village-level characteristic tourism projects with counties as a unit, trying to promote the overall situation through the region and the characteristics of the economy to form a smart tourism industry chain. Continue to launch projects such as rural characteristic tourism, characteristic tourism one-stop and characteristic tourism rural culture [1-6].

Through the continuous development of tourism, some shortcomings in developing smart tourism in the countryside have also been reflected: foreign projects related to smart tourism started very early, such as: Korea's "mobile information service project"; Europe's "personalized mobile travel service" Projects; the radio frequency wristband system in the United States; the "i-mode" mobile service project in Japan, etc. Many countries in the world are currently developing telematics technology in an all-round way and establishing dedicated wireless data communication networks, focusing on travel digital information service systems and vehicle control systems. In recent years, the country has also initiated the creation of smart tourism. Since 2010, the National Tourism Administration has formulated pilot projects for "smart tourism cities", and Yangzhou, Beijing, Chongqing, Nanjing, Wenzhou, and Suzhou have successively formulated the construction of "smart tourism cities". "City" strategic goal. At the beginning of the 21st century, under the auspices of the European Union, two companies in the United Kingdom and Germany collaborated on the development of a new type of travel-related software, based on "virtual reality" technology, which allows passengers to walk through sound, light and images, and thus walk into a piece of history. middle. When a passenger arrives

at a scenic spot, he can use the camera of the smart terminal to aim at the specific historical relics in front of him, and then the GPS positioning system and related image identification software in the smart terminal can make a correct judgment. The prosperous scene of this historic site is displayed on the mobile terminal, and incomplete parts of the remains can be filled virtually [7-14].

For example, when a passenger arrives at the ancient Roman Arena, he can see a picture of a gladiator fighting through a mobile phone terminal. As the passenger walks around, the image on the mobile phone can be continuously updated, as if returning to ancient Rome. The software not only allows passengers to enter historical memories, but also has a route query function. Through this query function, passengers can customize their personal travel plans to help passengers avoid blocked roads. It also has a free mobile guide. For my country's smart tourism, many experts and scholars have put forward some of their own research results and constructive suggestions. Among them, Bao Yuhong believes through research on smart tourism that my country's smart tourism should be based on the Internet and cloud computing technology, combined with Internet-related technologies, so as to provide more travel information for tourists. Intelligent perception of tourist attractions and timely release of tourist information should be formed to make it more convenient for the people. The same scholar Jin Weidong also expressed the same view, and believed that this tour should use advanced high-tech technology to realize the tourism information service for the vast number of tourists, and at the same time, it should also provide management services for the tourism management department [15-21].

These systems can use computers and smart terminals. Make a visit. And with the continuous development of people-oriented tourism, some experts have also put forward personalized tourism services in response to the needs of tourists, creating research content that focuses on people's satisfaction with tourism services. The purpose is to rely on the continuous development of network technology and information technology. Realize personalized service to tourists and give full play to the maximum value of tourism resources. Also for smart tourism scholars Ding Fengqin and

Huang Yinong, etc., they also put forward their own research results [22-24].

2. THE PROPOSED METHODOLOGY

2.1 The Cloud Computing Platform

At present, the application of cloud services in my country has gradually expanded. For example, enterprises obtain cloud services through leasing and do not need to invest in building their own central computer room. Everyone knows that for the purchasing power of servers, it is a huge investment, and if it is not operated, the economic loss to the enterprise is obvious. At the same time, in terms of the maintenance of some software developed by the enterprise, the upgrade becomes more convenient. Since the server side used by the user is in the cloud, the rapid upgrade work can be completed only on the server side, thereby ensuring that all users can use it. To the latest software, reducing maintenance costs. In addition, for some large and expensive software, it can be installed on the cloud server to ensure that all employees of the user company can access and use it, and can also carry out flexible permission control when necessary. There is no need for enterprises to invest in data storage, and there is enough storage space in the cloud.

In general, the higher the price of cloud computing resources, the stronger its computing power, that is, the price of computing resources is positively correlated with its computing power. Cloud computing can be divided into three types according to operating modes, namely, public cloud, private cloud and hybrid cloud. Public clouds provide services directly to end users. Users obtain cloud resource services through Internet access, but they do not own cloud resources. At present, they have built public clouds and directly provide services to users through their own infrastructure. Private cloud companies build their own "cloud"-based data center infrastructure to provide cloud computing services to internal users or external customers. Enterprises have the autonomy of infrastructure, and can improve services and carry out independent innovation based on their own needs.

2.2 The Smart Tourism Management System

As early as the National Tourism Industry Management Conference held in April 2000, the development of tourism informatization was taken as a means to improve the international competitiveness of China's tourism industry. The 2015 National Tourism Conference put forward the "515 Strategy", that is, focusing on the five goals of "civilization, orderliness, safety, convenience, and enriching the people and strengthening the country", it launched 10 tourism activities and carried out 52 measures to accelerate the modernization, informatization, and development of the tourism industry. Internationalization process. On March 7, 2017, the National Tourism Administration issued the "Thirteenth Five-Year Plan for National Tourism Informationization", proposing to accelerate the application of a new generation of information technology in the tourism industry during the "Thirteenth Five-Year Plan" period.

Throughout the development history of human civilization, it is a process from understanding the real world to creating an information world, going through the initial understanding of the world in primitive society, to using information to assist human memory, and recording and inheriting in the form of information, and then to using language, Text, etc. to exchange and disseminate information. From Oracle to modern cloud computing and storage technologies, they

abstractly summarize the real world in the form of text, language and other data information, and then further promote communication and dissemination. For tourism big data, mining and storing data is the basis of tourism big data.

2.3 The PHP Implementation of Smart Tourism Management System

PHP is an open source language with abundant resources and free of charge. PHP embeds the program into an HTML document for execution, and its execution efficiency is much higher than that of CGI that completely generates HTML tags. PHP can execute the compiled code, and the compilation can achieve encryption and optimized code running, making the code run faster. PHP supports almost all popular databases and operating systems. The most important thing is that PHP can be extended with C and C++.

The intelligent terminal of the smart tourism system uses mobile communication technology, the Internet, the Internet of Things, big data, cloud computing, high-performance processors and other technologies to actively perceive tourism-related information through the characteristics of the smart terminal and arrange and adjust the travel plan in time to allow tourists to interact with Real-time interaction on the Internet allows travel to enter the era of touch, and allows tourism services to incorporate more high-tech means such as artificial intelligence and sensor technology, so that tourism services move towards a real sense of intelligence. As the unique identifier for login, there cannot be two identical user names in the system. Therefore, when the user registration is submitted, it is necessary to check whether the user name already exists in the database. If the user name has been registered, a prompt message will be returned to request the user Re-register; if the user name does not exist and other registration information is verified correctly, the user registration process is completed and the registration is successful.

The submission of data is to transfer data in the form of data collection using the Web Service method. The verification code defines a proofreading process. When the registration request is called, the system will verify the registration information one by one. If illegal content is found, it will automatically throw an error message. The design of information management services can be based on the perspective of the users of the service. The users of the service system include the users of the system and the administrators of the system. The users of the system are mainly tourists, travel companies, and peripheral manufacturers; the administrator of the system is the system administrator. In this service, tourists can inquire about the basic information of the scenic spot by registering an account on the client side and gaining authority: including: scenic spot introduction, tour group information, surrounding manufacturer information, etc.

3. CONCLUSIONS

This paper proposes and designs a smart tourism cloud solution, and implements a tourism smart navigation system based on the PHP platform on the basis of the tourism cloud. The thesis first studies the system planning of the tourism cloud platform, and analyzes the specific architecture of the tourism private cloud platform. Then, referring to the development guidelines of software engineering, a complete intelligent tourism system integrating information management service, tour guide service, tour strategy service, and statistical analysis service of information was designed and implemented.

4. REFERENCES

- [1] Ding Derong, Yang Jinghui, Wu Xiaowei, etc. Smart Tourism Planning System[J]. TANET2018 Taiwan Internet Seminar, 2018:1574-1579.
- [2] Jiang Wen, Xiao Wenjie, Tang Xiaotao, et al. The design and implementation of the college students' mutual aid travel APP[J]. Information and Computer: Theoretical Edition, 2018, 413(19): 106-108.
- [3] Yang Ding. A smart tourism system:, CN111178721A[P]. 2020.
- [4] Ding Yong. Architecture Design of Smart Tourism System[J]. Electronic Technology and Software Engineering, 2019, No.163(17):183-184.
- [5] Huang Fulan. Design and Implementation of Smart Tourism System in Meishan City [D]. Chengdu University of Technology, 2018.
- [6] Ma Qian. Development and design of smart tourism system based on B/S[J]. Automation and Instrumentation, 2018(10).
- [7] Wang Zihao. On the research and design of smart tourism system[J]. Computer Fan, 2018, 000(001):87.
- [8] Ge Xiaobin, Zhang Yigang. The technical framework of the smart tourism system and its main application technology analysis[J]. 2021(2014-2):32-35.
- [9] Lin Lijiang. Design and Implementation of Smart Tourism System in Scenic Spots Based on Mobile Internet. Nanjing University of Posts and Telecommunications, 2019.
- [10] Wu Hongbo. A smart tourism system:, CN107705223A[P]. 2018.
- [11] Xu Min, Fan Guohui, Zhou Yan, et al. A smart tourism system:, CN108831000A[P]. 2018.
- [12] Lin Lijiang. Design and Implementation of Smart Tourism System in Scenic Spots Based on Mobile Internet [D]. Nanjing University of Posts and Telecommunications, 2019.
- [13] Wang Bo. Design of Intelligent Scenic Guide System Based on Smart Tourism[J]. Journal of Huaiyin Institute of Technology, 2019.
- [14] Peng Yajun, Li Guoyang, Xu Qiheng, et al. Design and implementation of smart tourism 3D scenic spot display system[J]. Surveying and Spatial Geographic Information, 2019, 42(002):113-116.
- [15] Chen Chunyan. A smart tourism system:, CN110895842A[P]. 2020.
- [16] Lin Qing. A smart tourism system based on the Internet of Things:, CN110543599A[P]. 2019.
- [17] Wang Chunpeng. A global smart tourism system:, CN107657483A[P]. 2018.
- [18] Qin Peng. A smart tourism management system:, CN211577777U[P]. 2020.
- [19] Niu Xinwei, Niu Xinmin, Shi Qiang, et al. A smart tourism management system:, CN210038871U[P]. 2020.
- [20] Zhang Jiangcheng, Yu Yuanguo, Liu Benjun, et al. A smart tourism management system:, CN209132815U[P]. 2019.
- [21] Wang Zhihua. Research on the Construction and Development Strategy of Smart Tourism System [J]. Architecture Development, 2019, 003(002): P.111-112.
- [22] Yu Lu, Chen Yuan, Fang Zhixiang, et al. Smart tourism system based on ZigBee technology [J]. Computer Science and Applications, 2019, 009(006): P.1142-1148.
- [23] Wang Yuanqing, Luo Suzhen. Design and development of smart tourism system based on AR technology[J]. Electronic Commerce, 2019(8):10-11.
- [24] Zhang Jie, Lin Lijiang. A smart travel system based on mobile Internet of Things:, CN109995852A[P]. 2019.

Multiple Game and Computer-Aided Evaluation System Design of Computer Software Legal Protection Policy

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Abstract: This article has deeply studied the two kinds of computer software legal protection policies ISO17799 and ISO13355, and analyzed the conceptual model and relational model of the multiple game. On this basis, the concept of computer-aided evaluation based on computer law is proposed, and a computer-aided evaluation system is designed, which effectively realizes asset evaluation based on multiple games and threat and vulnerability evaluation based on probability statistics. And on the basis of referring to the risk assessment process and based on the actual needs of the system, a highly operable assessment process that is convenient for computer implementation is proposed.

Keywords: Multiple Game, Evaluation System, Computer Software Legal, Protection Policy

1. INTRODUCTION

Computer technology and its products have developed into the era of information engineering represented by multimedia computers and green computer networks. Compared with the fast-developing computer technology, the legislation and judicial work of computer law appears to be somewhat lagging, and software legal protection issues should also be dealt with appropriately. Sexual adjustment. As a result of human intellectual labor, computer software is expensive to develop and produce. However, it is extremely easy and low cost to illegally copy software developed by others. Currently, software piracy and fraudulent use worldwide cause software vendors to lose approximately US\$1.1 billion every year [1-6].

Software piracy and fraudulent use have become prominent obstacles restricting the development of the computer software industry. Studying the legal protection model of computer software has become an urgent problem that needs to be solved in the development of knowledge economy in all countries and regions. With the continuous advancement and popularization of global informatization, more and more organizations transfer or expand their business processes to the environment. Therefore, the importance of information system security, which is closely related to the organization's business, has attracted more and more attention. Openness and flexibility are the characteristics of rich applications. At the same time, intrusion methods and procedures are spread and spread everywhere, making any connected systems at risk of being attacked. As the scale continues to increase, especially the use of processing and transmission of sensitive data, there is a greater demand for security solutions, technologies and products. With the trend of economic globalization, especially after China's accession, software companies will face global competitors and global consumer markets whether they want to. More detailed laws and regulations have been promulgated to restrict the business behavior of enterprises. Business managers need to consider more and more complex constraints when making decisions. The process of global economic integration and the development of information technology have eliminated many barriers to circulation [7-14].

Enterprises are facing a more complicated living environment than ever before, and it is more difficult to form and maintain their barriers to competition. The pressure of competition places higher demands on the quality and speed of decision-making by enterprises. As an emerging information technology, decision support systems can provide companies with various decision-making information and solutions to many business problems, thereby reducing the burden on managers to engage in low-level information processing and analysis, allowing them to focus on the most needed decision-making wisdom. And experience work, thus improving the quality and efficiency of decision-making. In order to achieve this goal, EU legislation must coordinate the legal policies of member states to eliminate legal barriers between member states. Since the 1980s, the European Community (EU) has accelerated the pace of building a single market. In order to promote the free circulation of goods, manpower and services within the EU, the EU has prioritized intellectual property rights. As early as 1988, the European Commission's "Copyright and Technical Challenges" Blue Book had discussed the knowledge of the European Community. The goal of coordinated protection of property rights [15-21].

In 1991, the Council of the European Communities passed the "Directive on the Legal Protection of Software Programmes" (hereinafter referred to as the "Software Directive"). The blue book reiterated: "Computer software is a basic component of the information superhighway" 1 and "Most new products and services rely on databases." With the rapid development of information technology today, the application of computers in the field of education has quickly made computers the most important. There are promising teaching media and teaching management tools. Take the initiative. There are various types of openings in Chinese chess. Generally, the red side who moves first mostly adopts offensive openings, which are divided into rapid attack and slow attack, and the black side mostly adopts defensive openings, which are divided into active defense and passive defense. Computer Aided Design (CAD) is the most widely used computer tool in product development and collaborative design (CPD). But in CPD, the inadequacy of CAD technology has appeared. [22-24].

2. THE PROPOSED METHODOLOGY

2.1 The Computer Software Legal Protection Policy

Computer software is the soul of the computer. Regarding the concept of computer software, there is currently no unified definition. In principle, most countries and international organizations in the world have adopted the opinions of the World Intellectual Property Organization (and modified them based on actual conditions. "Model Law on the Protection of Computer Software" It is believed that computer software includes three contents: program, program description and program use guidance. On the international front, in 1974, following the recommendations of the WIPO Advisory Group of Governmental Experts on the Protection of Computer Programs, WIPO published the "Model Law on the Protection of Computer Software", which is a proposal of software legislation, the core of this proposal is that countries adopt independent software legislation to protect computer software

After the promulgation of the Model Law, the importance of software protection has become more important to all countries, and the requirements for the establishment of an international software protection system have become stronger. In June 1983, the Committee of Experts on the Legal Protection of Computer Software was held in Geneva. Any work that can be perceived, copied and disseminated by people with the help of a certain machine or equipment should be protected by copyright law. The jurisprudence included source programs, target programs, fixed programs in read-only memory, system programs, and application programs under copyright protection, and was clearly classified as a "computer program". The "Software Directive" clearly states that the protection of a confession under this Directive only applies to any form of expression of computer programs. Any thoughts and principles contained in a computer program, including those in its interfaces (Interfaces), should not be protected by copyright based on these instructions.

In judging whether the computer software has originality, only one standard is used, that is, the author's intellectual creation, and no quality or aesthetic standards are used. Obviously, the "Software Directive" negated the judgment of the US court and brought software protection back to the basic principles of copyright protection in the EU. The copyright protection of computer software has the following advantages: First, the convenience of copyright protection. Almost all software can meet the protection standards of copyright law. Second, the use of copyright law to protect computer software is more timely and effective.

2.2 The Multiple Game Model

First, in terms of the inherent nature of software systems, CAD is developed centered on a single designer. Computer Aided Design (CAD) is the most widely used computer tool in product development and collaborative design (CPD). But in CPD, the inadequacy of CAD technology has appeared. First, in terms of the inherent nature of software systems, CAD is developed centered on a single designer. The automatic generation of the opening library by the computer is a method of generating the opening library that has been researched by the chess system for a long time.

The principle is to regard all the positions as branches existing in the game tree. ", that is, the root node begins to expand downward. The above research is mainly devoted to establishing a good integrated interface between PDM system and CAD system. The author directly starts from the

intersection of PDM system and CAD system, that is, product structure and product data, and provides unified product structure and product data for both, so as to realize the seamless integration of CAD/PDM in the true sense. The above research is mainly devoted to establishing a good integrated interface between PDM system and CAD system.

The author directly starts from the intersection of PDM system and CAD system, that is, product structure and product data, and provides unified product structure and product data for both, so as to realize the seamless integration of CAD/PDM in the true sense. It is already known that all moves are connected to the nodes of the game tree. To generate a complete opening library, it is necessary to write the nodes on the satisfactory branches of the "tree" into the opening library. However, under a node, there will be many A child node. To expand the opening library, all you have to do is to determine which child node to select. The automatic transmission of these information not only ensures the consistency of data between the two systems, but also simplifies the input work of designers, enabling them to concentrate on CAD. By automatically drawing the title bar and the detailed table, the labor intensity of the designer is reduced and the work efficiency is improved.

2.3 The Computer Aided Judgment System for the Legal Protection of Computer Software

Computer software is a special intellectual property object with "works" and "tools". Although the current international protection of computer software seems to be based on the copyright law model, this does not mean that it is the best protection model in the era of knowledge economy. In fact, the United States has never explicitly listed pure software in non-patent protection. As early as 1991, the US High Court clearly stated that "all computer programs cannot be excluded from patent protection in general" and affirmed the "two-step review method" that is conducive to software patent protection. In 2010, the United States formulated a new draft of the patent examination standard for computer software, which made this work a new step forward.

Based on Linux/Windows, Python, Mysql, Django 1.8 and Nginx1.8 platforms and HTML5 + jQuery 1.11 +Bootstrap 3.5 front-end development technology, the online evaluation teaching aid system is based on the ACM/ICPC competition model and designed the program source code online evaluation, experimental teaching, competition, teaching resource management platform. The system can compile, run, evaluate and score the C/C++/Java source code submitted by the user in real time and give clear evaluation results. The system provides teachers with functions such as course management, scheduling management, question bank management, homework management, teaching assistant management, teaching resource management, etc. It is an integrated platform for daily teaching, examinations, and competitions.

With this platform, students can complete daily coursework, view user rankings, search on the site, download teaching resources, and more. The setting of the database in the DSS must meet the data requirements of the decision-making process of various levels, types, and different decision makers. The database management system in should be able to organize the relevant data for the decision-making process according to the needs of decision-making activities. Therefore, when designing a database system, the structure of the system, the function selection of the database management

system, etc., must be carried out around the decision support process.

3. CONCLUSIONS

As a new technology, computer software needs to be protected by various laws such as copyright law, patent law, trade secret law, trademark law, and even civil law and criminal law. Even if one of the legal protections is the mainstay, it cannot deny the necessity of other legal adjustments. At this stage, based on the characteristics of computer software, a more appropriate protection model for computer software should not only start from the legal protection object and the inherent attributes of the protection object, but also be based on the development of the country's software industry and the current legal system, as well as international considerations. The prevailing practice and future trends.

4. REFERENCES

- [1] Fanna Meng, Xiangdong Gu. Design and experiment of a computer-aided scoring system for short essay questions[J]. 2021(2010-1):37-41.
- [2] Wang Meixia, Wang Furong. Design of Computer Aided Teaching System Based on Virtual Reality[J]. Jiangsu Science and Technology Information, 2020, v.37; No.626(05):49-52.
- [3] Wang Fachen, Li Yan. Design of Computer Aided Classroom Evaluation System Based on Data Mining[J]. Digital User, 2019, 25(014):286-287.
- [4] Liu Hailong, Su Hongyi. Design and practice of control software based on computer-aided system[J]. Diet Science, 2018(20).
- [5] Yu Qing. Clinical operation skills and prosthetic evaluation of chairside computer-aided design and production system[J]. Chinese Journal of Stomatology, 2018, 53(004):226-229.
- [6] Zheng Jia. Design and implementation of computer-based English auxiliary learning system[J]. Microcomputer Applications, 2018, 34(12):99-101.
- [7] Si Xiaoqiong. Design and Research of Computer Aided Industrial Design System[J]. Shandong Industrial Technology, 2018(13): 2.
- [8] Zhang Yue. Computer-aided design analysis of control system based on MATLAB language[J]. Computer Products and Circulation, 2019, 000(010):P.156-156.
- [9] Xia Meixia. Research on Cooperative Game Assignment Problem Based on Matrix Method [D]. Shandong Normal University, 2020.
- [10] M-J-Gibbons, D-J-King, H-C-D-Matteson. Method and system for multi-view computer-aided design including the propagation of editing operations across views while ensuring constraint consistency :, CN110199280A[P]. 2019.
- [11] Wu Chengyi. Research and development of computer-aided product innovation design system[J]. Electronic Testing, 2018, No.387(06):132-132.
- [12] Feng Danying. Research on Computer Aided Design and Verification Method of Train Control Data[D]. Beijing Jiaotong University, 2018.
- [13] Xiao Qing, Wu Yan. Research on the Application Effect of Micro-class in the Teaching of Computer Software Courses for Design Majors——Taking Computer Aided Design Courses as an Example [J]. Journal of Changji University, 2018, 000(006): 110-113 .
- [14] Meng Jian, Zheng Bin, Sun Peng, et al. "Computer Aided Design" examination reform based on application-oriented senior professional personnel training [C]// 2018.
- [15] Xin Mingyuan, Wang Yong. Design of Computer Aided Innovation System Based on TRIZ[J]. 2021(2011-5):9-12.
- [16] Wang Jingyi, Xiong Jian. A distributed intelligent core structure and its system application[J]. Computer Aided Engineering, 2020, v.29; No.131(02):67-75.
- [17] Zhang Li. Design and implementation of C language computer-aided evaluation system[J]. 2021(2017-1):17-19.
- [18] Zou Yanhui, Sun Yan. Design of Computer Aided Tuning System and Improvement of Data Quality[J]. 2021(2014-5):78-79.
- [19] Liu Jia, Li Sheng. Research and practice on the teaching reform of computer-aided design course[J]. 2021(2011-2):138-140.
- [20] Li Yifeng. Discussion on the development and design of computer-aided software for hydraulic turbines[J]. 2021(2015-1):24-24.
- [21] Zhang Tiancheng. Design and Research of Computer Aided Industrial Design System[J]. 2021(2016-4):7-9.
- [22] Zhang Xianli. Talking about the development of project-driven integrated teaching materials——Taking the computer-aided design and manufacturing major of Liaoning Vocational and Technical College of Information as an example[J]. 2021(2011-4):54-54.
- [23] Zhu Xiaoling. Research on the Design and Application of Computer Aided Examination System [J]. Education: Higher Education Research, 2019, 000(012): P.173-174.
- [24] Li Zhouheng, Wei Qinqi. Research and design of computer-aided security management system based on BP[J]. Information System Engineering, 2018.

Rational Practice and Deep Reflection on Integrating Ideological and Political Theory Courses into College Physical Education Teaching

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Abstract: Based on the research on the practical teaching system of ideological and political theory courses in physical education institutions, combined with the practices and experiences accumulated in the practical teaching of ideological and political theory courses in Harbin Institute of Physical Education in recent years, this paper attempts to propose the basic composition, innovative expansion, and operational guarantee of the practical teaching system of ideological and political theory courses in physical education institutions. It is expected to provide valuable reference for the construction and reform of practical teaching of ideological and political theory courses in national universities. The discipline of physical education itself has inherent advantages in ideological and political education work. However, the various problems that have permeated the existing teaching process also require substantive adjustments in the future education process, especially the connection between the current development status of physical education teaching in universities and future education work, which is the core content of the current situation.

Keywords: Rational Practice, Deep Reflection, Ideological and Political Theory, Physical Education Teaching

1. INTRODUCTION

For a long time, the problem of integrating theory with practice has not been solved in ideological and political theory courses in universities. There is a lack of stable and effective practical links, a single form of practical teaching, a lack of funds, and a lack of management, resulting in poor teaching effectiveness and a widespread phenomenon of students' "knowledge and action disconnection". The practical teaching of ideological and political theory courses in physical education institutions not only faces common problems and difficulties in universities, but also has its own practical problems and favorable conditions for deepening reform. The breakthrough of reform lies precisely in the neglected practical teaching. Physical education and ideological and political education may seem completely unrelated, but they are complementary and interconnected.

The integration of ideological and political education into physical education teaching is not only a manifestation of the teaching objectives of physical education courses, but also a realization of the educational goals of schools. At the same time, it can also strengthen the body and prevent diseases. On the contrary, in physical education teaching, each teaching link contains ideological and political values, such as perseverance during practice and unity and cooperation during competitions. From this perspective, physical education, and ideological and political education present, interact, and influence each other. According to the basic labeling of talent in modern society, talent should possess corresponding skills and mental health levels, rather than simply having a knowledge reserve structure. Therefore, teachers need to cultivate talents with comprehensive development, make them a sustainable driving force for social development, achieve comprehensive coordination in their knowledge, abilities, and other aspects, promote healthy social development, and promote comprehensive social progress.

The characteristics of physical education teaching in universities determine that college students need to face both physiological and psychological loads and pressures. To fully develop students' personalities and promote their comprehensive improvement of psychological quality, it is first required that they have a certain level of sports psychological load bearing ability. In other words, college students need to bear the corresponding physiological and psychological loads of sports to truly reflect the value and role of physical education teaching in universities. It is not difficult to find that physical education teaching in universities has the unity of body and mind, and the two complement each other and have a very close connection. It undoubtedly has a huge impact on the coordination and unity of the physical and mental development of college students. Classroom teaching practice is different from teacher led classroom teaching, and its main characteristics are the interactivity, equality, and participation of teaching activities.

Teachers use case-based teaching, discussion-based teaching, simulated teaching, knowledge competitions, film and television watching, keynote speeches, and writing papers in classroom teaching based on students' actual thinking. Modern teaching methods such as multimedia and internet are used to transform passivity into initiative and passivity into positivity, greatly enhancing the effectiveness and pertinence of ideological and political theory classroom teaching. In the current era of comprehensive development of core competencies, the teaching concept of scientifically guiding applied university teachers is widely recognized, but the current situation of integrating physical education into ideological and political education in universities is not optimistic under the new situation. Firstly, physical education teachers do not fully implement the integration of ideological and political education in physical education teaching, and most of them only talk about it without truly integrating it into ideological and political education. Secondly, due to various factors, physical education courses are generally not valued,

and physical education teachers usually have a low status. As a general education course in universities, they believe that the difficulty coefficient is low, which affects teachers' teaching enthusiasm.

2. THE PROPOSED METHODOLOGY

2.1 The Basic Composition of Practical Teaching Activities for Ideological and Political Theory Courses in Physical Education Institutions

Provide multi-level and potential guidance in various teaching stages to enable students to have a proactive learning attitude and complete self-management and self-education. From the current trend of educational integration, the innovative characteristics of modern education can be brought into play through the construction of sports culture, achieving a management model of "ideological and political integration", effectively utilizing ideological and political education resources to integrate into physical education teaching, using sports culture as the main carrier, strengthening extensibility construction, and constructing a pattern of ideological and political education with full participation. Universities are vigorously expanding enrollment, and the number of students is increasing. From the perspective of physical education teaching, it is necessary to change ideological concepts and improve educational models in the process of carrying out ideological and political education work, to promote the smooth development of teaching work. However, as the contradiction between the level and scale of students becomes increasingly prominent, the individual differences in the development of ideological and moral character among students become increasingly prominent, and the targeted and purposeful nature of ideological and political education itself is lacking.

In addition, the infrastructure construction of physical education teaching in many universities is not in place, making it difficult to adapt to the development situation of modern education, such as incomplete sports facilities, insufficient venues, and inadequate construction of teaching staff. Obviously, these contradictions have reduced the effectiveness of ideological and political education in higher physical education teaching. Actively carrying out online practical education and relying on the internet to carry out practical teaching can not only make up for the shortcomings of traditional practical teaching, but also broaden the channels and content of practical teaching of ideological and political courses in universities. It is not only an effective method to improve teaching effectiveness, but also a relatively independent ideological education network practical teaching platform.

Fully tapping into physical education teaching resources and infiltrating ideological and political education, the integration of physical education into ideological and political education should be seamless from a theoretical perspective. However, many teachers are only enthusiastic about the integration of surface and formal aspects, without starting from internal emotional and motivational needs, and have not thoroughly studied how to carry out physical education and ideological and political education effectively and systematically. The content of higher physical education teaching in China is too rigid and rigid. We need to break the misconception that physical education teachers only focus on professional knowledge and neglect ideological and political education, solve the problem of disconnection between physical

education and ideological and political education, continuously enrich teaching latitude when designing course content, and attach importance to the application of ideological and political education functions. Regular physical education classroom teaching is a key element in integrating ideological and political education, and a basic way to strengthen moral education. It plays a significant role in the entire teaching process. For example, in physical education courses, students need to quickly form teams, which can cultivate their awareness of obeying orders and adhering to discipline. In teaching, it is necessary to utilize sports equipment, and through the management and organization of equipment, to make students aware of the role of caring for public property, which is also an educational content at the ideological level. Such educational information can effectively penetrate daily teaching practices.

2.2 Specific Strategies for Integrating Physical Education into Ideological and Political Education

According to the "Regulations on School Sports Work", under basic conditions, ordinary higher education institutions can establish sports management departments and arrange specialized management personnel and full-time cadres to be responsible for related work. However, relevant surveys show that most universities in major provinces and cities in China are currently in a blank stage in the construction of functional departments related to sports work. Only a very few universities are equipped with full-time sports management personnel, which is clearly not conducive to the development of ideological and political education in higher sports teaching. Effectively focusing on the ideological and practical issues that college students are concerned about, choosing social hotspots, and paying attention to social difficulties, we must not only meet the requirements of the main melody, amplify the sound, enhance positive energy, but also meet the needs of different student groups, and prevent a thousand articles from being the same. The second is to select educational resources in a timely manner. To reflect the modernity, be realistic and youthful, and fully reflect the latest research results and innovative theories of ideological and political courses.

For physical education teachers in universities, fixed teaching thinking and unchanged teaching models lead to stagnant teaching abilities and knowledge levels. Integrating physical education and ideological and political education is a new challenge to teachers' teaching abilities and knowledge system. Firstly, physical education teachers should clarify the importance of ideological and political education, start from themselves, actively learn ideological and political knowledge, and guide students to firmly stand firm while learning professional knowledge. Raise awareness. Secondly, integrate ideological and political education throughout the entire process of physical education teaching, fully utilize the main channel of the classroom, and integrate value shaping into the curriculum, adhering to the guidance of moral education.

College physical education textbooks have a rich and diverse content, which fully reflects the ideological and political education content in college physical education teaching based on practical needs. Taking long-distance running in physical education teaching as an example, the purpose of this sport is to cultivate students' tenacious and resilient willpower. For example, basketball is aimed at strengthening students' team spirit. Basketball technology teaching

emphasizes the development of individuality and requires students to possess brave and decisive spiritual qualities. However, the tactical teaching of basketball emphasizes overall coordination and cooperation, requiring students to obey orders and remain calm.

It is not difficult to find that these teaching activities are all implemented based on the content of the textbooks. Therefore, teachers must fully explore the content of the textbooks in the process of infiltrating ideological and political education, and organically combine the two together. Only in this way can the role and value of ideological and political education in college physical education be reflected. Professional internship practice accounts for a considerable proportion in various professional training plans and has a fixed schedule and corresponding practical funds. The internship practice locations are relatively concentrated, which brings great convenience to the widespread development of practical teaching in ideological and political courses and provides a ready-made platform that can be utilized. Internship includes educational internships for students majoring in teacher education, professional internships for students majoring in non-teacher education, and graduation internships for students majoring in various fields.

3. CONCLUSION

Ideological and political education work is a lengthy task, and physical education teaching is also a long-term systematic requirement. In the current physical education teaching in universities, ideological and political education has achieved certain results, but there are still shortcomings. In future education work, we should actively optimize the existing educational environment, while deeply developing and fully expanding the ideological and political elements in physical education courses, maximizing the educational value of physical education courses, stimulating the value attributes of physical education courses, achieving the same direction of "curriculum ideological and political" and "ideological and political courses," elevating curriculum ideological and political awareness to the institutional level, promoting institutional environment, and improving institutional design, Feedback the practical and research achievements of teachers into teaching, and achieve the "three comprehensive" education pattern.

4. REFERENCES

- [1] Wang Biao Dou Junlin Design of Physical Education Teaching Mode in Ordinary Universities ① [J] Contemporary Sports Technology, 2015
- [2] Zheng Shuai, Dai Lili Research on the Construction of Practical Teaching for Cultivating Ideological and Political Theory Courses in Physical Education Institutions [J] Speed reading (late), 2018, 000 (002): 140-141
- [3] Li Minghan, Yao Lei the Practical Dilemma and Desirable Pursuit of the Professional Development of Physical Education Teachers in China [C]//Compilation of Abstracts from the 11th National Sports Science Conference two thousand and nineteen
- [4] Qu Yanchao A rational examination of the integration of excellent traditional Chinese culture into the teaching of ideological and political theory courses in universities [J] Journal of Social Sciences of Shanxi Higher Education Institutions, 2017, 29 (11): 6
- [5] Yushiguo Theoretical Research on the Integration of Ideological and Political Education into Physical Education Teaching in Universities [J] Innovation and Practice of Teaching Methods, 2020, 3 (4): 233
- [6] Hong Yu The Practice of Integrating Ideological and Political Education into Physical Education Teaching in Universities [J] Reference for Middle School Political Teaching, 2021 (44): 1.
- [7] Jiang Chunxia Reflection on the Path of Integrating Clean Family Style into Ideological and Political Theory Courses in Universities [J] Heilongjiang Education: Theory and Practice, 2022 (11): 9-11
- [8] Song Zhiqiang Highlighting the Beijing flavor and enhancing the affinity and pertinence of ideological and political theory courses - Theoretical thinking and practical exploration of integrating Beijing educational resources into the teaching of ideological and political theory courses in universities [J] Beijing Education: Moral Education, 2020
- [9] Guan Jinling, Lu Xiaoli Practical Reflection on the Integration of Party History Education into Ideological and Political Theory Courses in Universities: Taking the Course "Introduction to Basic Principles of Marxism" as an Example [J] Taste · Classic, 2021 (19): 4.
- [10] Zhao Siyu Analysis of Practical Approaches to the Integration of College Physical Education Teaching and Curriculum Ideological and Political Education [J] Leisure, 2021, 000 (014): P.1-1
- [11] Chen Hui, Jiang Xiaojun the Construction and Operation of a Practical Teaching System for Ideological and Political Theory Courses in Physical Education Teaching in Colleges and Universities -- Also on the Construction of Practical Teaching for Ideological and Political Theory Courses in Colleges and Universities [J] two thousand and nineteen
- [12] Yang Xiaojun Practice and Reflection on Integrating Employment and Entrepreneurship Education into the Teaching of Ideological and Political Theory Courses in Universities in the New Era [J] Employment of Chinese College Students, 2020 (24): 5.
- [13] Zhang Heli Research on Online Teaching Reform of Public Physical Education in Universities Based on MOOC [J] Curriculum Education Research: Research on Learning and Teaching Methods, 2019 (22): 2.
- [14] Wang Xuefeng, Wang Sanbao Rational Thinking on the Teaching Evaluation Reform of Track and Field Specialized Courses in Sports Education Majors in Chinese Physical Education Institutions [J] Journal of Jingchu Institute of Technology, 2017, 32 (4): 6

Multivariate Synergy Analysis of the Development Efficiency of Green Finance in China

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Abstract: Based on the diversity of green finance, this paper analyzes the development of green finance in the stage of rapid economic growth and the stage of economic new normal development. Research shows that the overall level of green finance development in the new normal development stage of the economy is generally higher than that in the high-speed growth stage of the economy, but the development speed is relatively slow, even stagnant. The difference is that the development speed of the central region has broken through the bottleneck and is in a leading position. The development of green finance has significant structural and regional heterogeneity in improving economic resilience, and regions with fast industrial upgrading, strong technological innovation, and large development scale have stronger upgrading effects. The development of green finance has a strong impact on the economic resilience of eastern provinces, followed by central and western provinces. Through further analysis of transmission channels, it is found that green finance can affect macroeconomic resilience through technological innovation and industrial structure upgrading, that is, technological innovation and industrial structure upgrading play a partial intermediary role between green finance and macroeconomic resilience.

Keywords: Multivariate Synergy , Development Efficiency, Green Finance

1. INTRODUCTION

Over the past 40 years of reform and opening, China's economy has achieved rapid development and people's lives have improved. However, in recent years, the driving force of economic growth has become increasingly weak, resulting in a gradual decline in the growth rate, and the ecological environment has also been subjected to pollution that cannot be ignored. The continuous deterioration of the ecological environment has brought continuous adverse effects on the production and life of our people and left a heavy governance task for government agencies. At the same time, decades of high energy consumption and extensive development mode have led to excessive consumption of economic resources in China, and the development mode is in urgent need of transformation. At the beginning of the birth of green finance, it was precisely to solve environmental problems and promote the green transformation of economic development methods. Therefore, establishing a practical and feasible indicator system of green finance can help solve environmental problems and promote green development of the economy.

It is not difficult to find that the academic community mostly studies and evaluates the development level of green credit for financial institutions such as commercial banks, as a substitute for the development level of green finance. Even at the macro level, most discussions are conducted from the perspective of big finance. The evaluation content is relatively broad, and the evaluation indicators are mostly superficial. Few documents quantitatively evaluate the development level of green finance from the perspective of whether finance has a promoting effect on the economy, that is, financial function. Factors such as the degree of financialization, the level of economic development, and the level of living and education of residents are the main factors that affect the development of green finance.

Overall, the current development status of green finance efficiency in China is far from the national goal, and this issue needs to be addressed urgently. So how to improve the

efficiency of green finance in China? This article takes the green gold reform zone as a sample to study the development efficiency of green finance, clarify the factors that affect the efficiency of green finance in the green gold reform zone and their impact degree, to provide useful reference for comprehensively improving the development efficiency of green finance in China. Resilience refers to the process of maintaining the original state and being able to self-adjust and recover in a relatively short time under the influence of natural disasters or other factors. Yu et al. found that the economic resilience of most cities in China is relatively low, but it will gradually increase over time, and the economic resilience of different regions varies greatly.

In terms of influencing factors, Davies analyzed the impact of industrial organizations on the economic development of European countries from the perspective of industrial structure and found that regions dominated by the development of the financial industry have strong economic resilience, while regions dominated by manufacturing and construction industries have relatively weak economic resilience. Sun Jiuwen and Sun Xiangyu also confirmed that industrial structure, industrial policies, and cultural factors have an important impact on regional economic resilience by analyzing the reasons for the economic downturn in Northeast China. In terms of growth rate, until 2013, the growth rate on a month-on-month basis was in the eastern region (19.19), the western region (13.56), the national region (12.86), the northeast region (12.21), and the central region (9.79), which is related to the strategy of "taking the lead in developing the east, developing the west, rising the central region, and revitalizing the northeast".

2. THE PROPOSED METHODOLOGY

2.1 Measurement and Analysis of the Diversified Development Level of Green Finance

In the new normal development stage of the economy, the development trend of green finance is relatively flat. In terms of the development level of green finance, the average level of green finance in various regions and across the country from 2014 to 2016 was in the northeast (0.2491), the west (0.2073), the central (0.1997), the whole country (0.1895), and the east (0.1516), which is generally higher than the high-speed economic development stage, but the average growth rate is generally lower compared to the high-speed economic growth stage. The average growth rate in 2016 was in the middle (12.64), northeast (7.26), nationwide (-0.07), eastern (-2.05), and western (-5.71). The savings and investment conversion function refers to the financial system providing financing for fund demanders, mobilizing fund demanders to convert the obtained funds into effective green investment through means such as agreeing on the direction of loan investment and reducing transaction costs, providing capital elements for green production activities, and meeting the huge capital demand for activities such as energy conservation and emission reduction, resource conservation, and environmental protection.

To achieve lower transaction costs, the financial system can adopt differentiated credit policies, including differentiated interest rate floating levels, lower access thresholds, and appropriate capital investment preferences. Firstly, the average efficiency of green finance is ranked from high to low in Guangdong, Jiangxi, Zhejiang, Xinjiang, and Guizhou, with efficiency values of 1.08, 1.03, 1.02, 0.99, and 0.98. Further analysis shows that the number of effective units in Table 2 is greater than the number of ineffective units, and the effective units are Guangdong, Jiangxi, and Zhejiang, respectively. Moreover, there is no significant difference in the size of the average efficiency of the three provinces. The ineffective units are Xinjiang and Guizhou, with a difference of 0.1 between Guizhou, which has the lowest efficiency value, and Guangdong, which has the highest efficiency value. There is a significant gap between the development level of green finance in Guizhou and Xinjiang and the other three provinces and regions.

Currently, there are two main methods for measuring economic resilience in the literature: the first is to use the sensitivity index method to measure economic resilience, that is, the single index method; The second is to build a comprehensive indicator system to measure economic resilience. The single index method is more one-sided and cannot comprehensively reflect economic resilience. Economic resilience is not only reflected in the sensitivity to shocks, but also in the ability of the economic system to cope, adapt, and innovate after being hit. Therefore, this article intends to construct an economic resilience evaluation system from three perspectives: resilience to shocks, organizational coordination, and innovation and transformation capabilities, with reference to the method of Cui Genrui . Using the method of Zhu Jinhe and Sun Hongxue for reference, the entropy method is used to calculate economic resilience. However, the development speed of the central region has broken through the bottleneck. Therefore, to promote the development of green finance, China should appropriately extend the green finance development policies in the central region to other regions, in order to better promote the

development of green finance throughout the country. To this end, this article makes the following recommendations. Each indicator can achieve the best effect on the evaluation of green finance functions, and the degree of redundancy between them is minimized, without duplication, overlap, and conflict. The third is accessibility. Accessibility means that the required data must be easy to collect, and its source channel must be reliable and easy to obtain.

2.2 Policy Suggestions for the Diversified Development of Green Finance

Sustainability refers to the continuous and reliable collection of data involved. It shows that it is effective, and in the remaining years, it is less than 1, presenting an inefficient state. The main reason for this phenomenon is influenced by technological changes and changes in scale efficiency. From the mean value, the efficiency values of scale efficiency, pure technical efficiency, and technological efficiency changes are greater than 1, while only the efficiency value of technological change is less than 1, indicating that technological progress is an important factor impeding the improvement of green finance efficiency. The reasons for the above changes are on the one hand, with the strengthening of national support for the scale of green credit, the scale efficiency of each province has been improved; on the other hand, with the continuous strengthening of management, pure technical efficiency has been continuously improved, thereby improving technical efficiency.

First, green finance improves economic resilience by optimizing resource allocation. With global warming, the development of green finance has received widespread attention. Green finance promotes the implementation of energy conservation and emission reduction strategies by the country, inhibits the excessive expansion of energy intensive and high pollution industries through the development of financial tools, guides social funds to flow to the field of environmental protection, and provides financial support for green transformation. At the same time, the development of green finance can promote structural reform of the financial supply side, reduce capital costs, improve investment returns, and promote the establishment of a systematic risk prevention and early warning system, thereby effectively resolving risks, supporting economic recovery, and improving economic resilience. According to the principle of factor analysis and based on the principle that the cumulative variance contribution rate reaches 70% to 85% as the selection criteria, this paper extracts a total of three common factors, with a cumulative variance contribution rate of 84.59%. This indicates that the first three common factors provide sufficient information for the original data, which can well explain and explain the problem.

The proportion of the variance contribution rate of each factor to the total variance contribution rate of the three factors is used as a weight for weighted summary. Investment in environmental pollution control plays an important role in the development of green industry and economy. As countries and enterprises increase the amount of investment in environmental pollution control, the input cost in green financial efficiency increases, resulting in a decrease in green financial efficiency when the output remains unchanged. First, green finance promotes industrial upgrading and improves economic resilience. To comply with China's green development strategy, green finance uses credit policies and differential threshold constraints as means to provide funds for low-pollution and low-power consumption enterprises and projects, increase the financing costs of high-pollution and

high-energy consumption enterprises, reduce their financing levels, promote more capital investment in green industries, optimize the industrial structure, and enhance economic resilience.

In addition, the development of green finance will promote green enterprises to improve their management and promote industrial integration. At the same time, through the redistribution of production factors, the industrial structure is upgraded and optimized, improving the resilience of enterprises to shocks, and thus improving the resilience of the national economy. From a practical perspective, this is mainly caused by the difficulty of deleveraging and the short-term performance outlook of local governments. On the one hand, enterprises are caught in a dilemma of deleveraging: deleveraging means that enterprises need to shrink their business and reduce economic activity, which is undoubtedly "adding insult to injury" to already underperforming enterprises and accelerating the exposure of credit risks. However, if you do not actively deleverage, you will ultimately have to passively deleverage, often manifested as a crisis and deep recession, spreading credit risk. To slow down the process of credit risk exposure in the financial system, the exit process from polluting industries is also relatively slow.

3. CONCLUSION

Developing green finance is a necessary way to achieve coordinated economic, social, and environmental progress and achieve sustainable development. Therefore, exploring the efficiency changes and influencing factors of green finance in the green gold reform zone is of great significance for improving the efficiency of green finance and achieving sustainable economic development. Based on the construction of the green finance input-output index system, this article uses the super efficiency DEA and Malmquist index to analyze the green finance efficiency of the green gold reform zone from both static and dynamic aspects. It should focus on cultivating green finance talents, learning foreign leading technologies, and improving green finance innovation capabilities. At the same time, the government effectively solves the investment and financing problems of green enterprises and projects through guarantees for green enterprises, reduces the risks of financial institutions, promotes financial product innovation, promotes the development of green economy, and improves economic resilience.

4. REFERENCES

- [1] Ju Yuhong Research on the Mechanism and System of China's Green Economy Development [D] Wuhan University of Technology, 2010
- [2] Wang Yu, Li Jing Suggestions on Improving the Green Finance Policy Support System in Guizhou [C]//The Second Guizhou Academic Annual Meeting of Famous

Philosophical and Social Science Think Tanks two thousand and seventeen

- [3] Guo Chen Research on Green Finance Promoting the Transformation of China's Energy Economy [J] Inner Mongolia Financial Research, 2018, 000 (007): 46-50
- [4] Yang Chaoxing Ways for Agricultural Development Bank to Assist Forestry Development in the Central Plains Economic Zone [J] Agricultural Development and Finance, 2013 (11): 2.
- [5] Ye Xiu Legal Analysis of the Development of China's Green Financial Market [J] Economic Forum, 2016 (2): 4
- [6] Wang Hongtao, Cao Wencheng Analysis of spatiotemporal differences and influencing factors in the development of green finance in China [J] Journal of Shanghai Lixin Institute of Accounting and Finance, 2022,34 (2): 19.
- [7] Jiang Yi Research on Evaluation of Green Finance Development in China [J] Mass Business, 2021
- [8] Zhang Yaya Research on the impact of green finance development on ecological efficiency in China: based on panel data analysis from 30 provinces across the country [D] Qingdao University of Technology
- [9] Huang Xiangyao Analysis on the Mechanism of Developing Green Finance in the Greater Bay Area of Guangdong, Hong Kong, and Macao [J] Chinese Business Review, 2021, 000 (013): P.1-3
- [10] Zeng Xuewen, Liu Yongqiang, Man Mingjun, et al Measurement and Analysis of the Development Degree of Green Finance in China [J] Journal of China Yan'an Cadre College, 2014 (6): 11
- [11] Bi Weile Analysis on the development of green finance in China under the background of low-carbon economy [J] Technology Information, 2016, 14 (22): 2
- [12] Xie Tingting, Gao Lili, Zhang Xiaoli Research on the Development Efficiency and Influencing Factors of Green Finance in the Green Finance Reform and Innovation Pilot Zone: Analysis Based on DEA-Tobit Model [J] Xinjiang Agricultural Reclamation Economy, 2019 (12): 9.
- [13] Bai Yujie Analysis of Green Finance Development and Its Economic Environment Impact [D] Graduate School of the Chinese Academy of Social Sciences, 2020
- [14] Zhou Hong, Lu Minxin Research on the Efficiency of Green Finance Development in Central China [J] Journal of Hebei University of Science and Technology: Social Science Edition, 2020, 20 (3): 8

Quasi-static Power Flow and Fault Analysis of Photovoltaic Farm

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Abstract: This report first analysis quasi static power flow for photovoltaic power plant. Then, fault analysis for different symmetrical and asymmetrical fault is done. The system used is IEEE 39 bus New England system that a Photovoltaic farm with 500 MW power is connected to bus 24. Newton-Raphson Power flow method is used with Gauss-Jordan elimination method for matrix inversion in this power flow analysis. Different operation condition including faults are also considered for fault at bus 16. The results are validated with simulation in MATLAB software.

Keywords: Quasi static power flow, Gauss-Jordan elimination, IEEE 39 bus New England system, Photovoltaic Farm, Symmetrical and Asymmetrical fault.

1. INTRODUCTION

Renewable energies usages is increased widely in recent years due to their economic and environmental features. In addition, governments encouragements and laws help their increase. Some of renewable energy sources include: Solar Farms, Wind Turbines, Biomass, Geothermal, Fuel cell, and Ocean and tidal. But these sources highly depend to environmental conditions. Then, their different features should to be analysis [1-3].

The solar panel system is designed to receive solar energy and convert it into electricity that can be used for commercial and residential uses. Photovoltaic systems usually include a panel and solar panel modules, an inverter, and sometimes a battery or solar detector and wiring connections. Due to change of solar irradiation, output power of PV will change. It can also come from other factors like passing clouds and accumulative dust on Panels. Then, output power of PV farm will change with respect to time.

These renewable energy sources generations are not dispatchable because their produce energy is free and should be used. Then, a static load flow solution cannot produce a real picture of the system, especially when generations from renewables vary with time [5]. Therefore, a quasi-static or time series analysis is used for power flow analysis of these sources [5-10].

In this paper, first, principle of Photovoltaic (PV) panels is explained. Then, Matrix inversion and Gauss-Jordan elimination method for matrix inversion is explained and implemented. Then, quasi static power flow for a 500 MW panel in IEEE 39 bus New England system is done. Moreover, different type of fault analysis is done including symmetrical and asymmetrical fault. For asymmetrical fault, different line-to-line fault, line-to-ground fault, and double line-to-ground fault are studied.

2. PHOTOVOLTAIC PANEL

Photovoltaic (PV) panels include p-n silicon junctions that produce electrical current by absorbing photons. To show the operation conditions and effected factors on PV panels their models are explained. PV panels can be modeled with single

diode [11] or double diode model [12]. The single line model of PV panel that is shown in Fig.1 is:

$$I = I_{pv} - I_0 \left[\exp\left(\frac{V + R_s I}{V_t a}\right) - 1 \right] - \frac{V + R_s I}{R_p} \quad (1)$$

Also, double diode model of PV is shown in Fig.2. Its circuit relations is:

$$I = I_{pv} - I_{01} \left[\exp\left(\frac{V + R_s I}{V_{t1} a_1}\right) - 1 \right] - I_{02} \left[\exp\left(\frac{V + R_s I}{V_{t2} a_2}\right) - 1 \right] - \frac{V + R_s I}{R_p} \quad (2)$$

The output voltage and current of PV panels with respect to irradiation and temperature change are shown in Fig. 3 and 4. As it can be concluded in both of this PV models generated output power of PV panels is related to irradiation and temperature. However, effect of temperature is much less than irradiation[13]. Then main factor effecting PV panels output is irradiation that is also considered in this research.

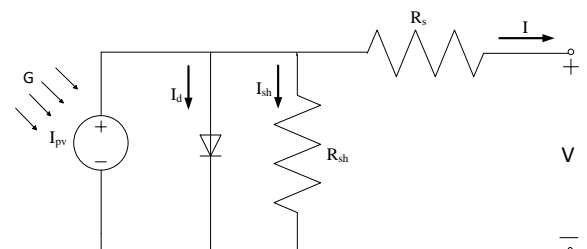


Fig. 1. Single diode model of PV panels.

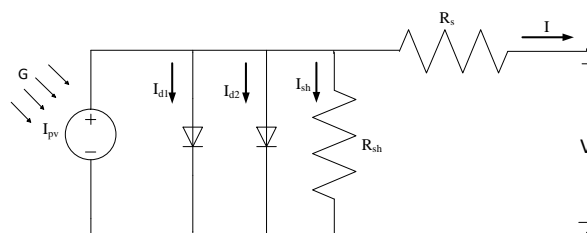


Fig. 2. Double diode model of PV panels

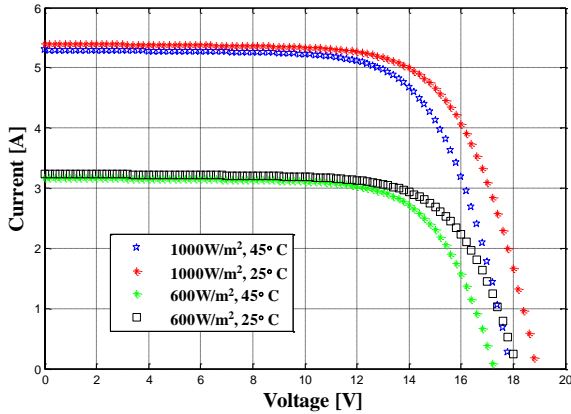


Fig. 3. PV panels charectirsits

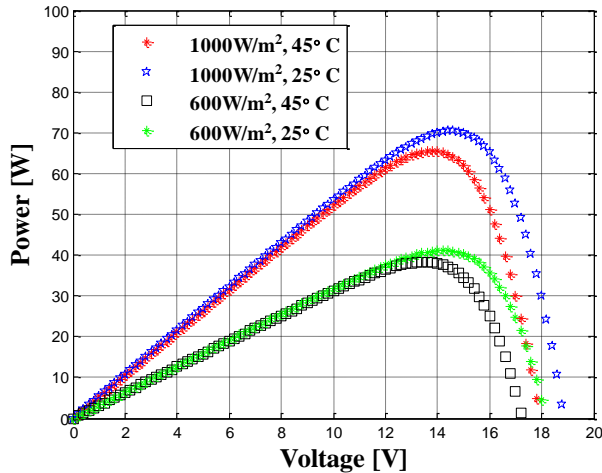


Fig. 4. PV panels charectirsits

Matrices cannot be divided. In fact, there is no concept as the division of a matrix, but we can multiply its matrix in its inverse. Matrix inversion can be difficult for matrix that their determinant is zero. Then the conventional methods cannot be used[14].

Matrix inversion is important for calculation in different problems include the obvious one that is linear equation solving and so many other fields. It is used at almost all mathematical and statistical software [15]. For example, with considering matrix equation, to find answer of an equation:

$$A.X = B \quad (2)$$

If matrix A has an inversion, A^{-1} then answer of this equation will be:

$$X = A^{-1}.B \quad (3)$$

Some methods of matrix inversion include Gauss-Jordan elimination, Gaussian elimination, LU decomposition, Strassen-Newton, Coppersmith and Winograd, Cholesky decomposition, QR decomposition, RRQR factorization and so on. These methods used for different applications with different features. In this research Gauss-Jordan elimination is used [15].

3.1 Gauss-Jordan elimination

Gauss-Jordan elimination is a method in linear algebra for calculating matrix inversion and solving linear equations. This

3. MATRIX INVERSION

method is also used to find the order of a matrix. To do inversion of matrix considering matrix A:

$$A = \begin{bmatrix} a_{11} & a_{12} & L & a_{1n} \\ a_{21} & a_{22} & L & a_{2n} \\ M & M & O & M \\ a_{n1} & a_{n2} & L & a_{nm} \end{bmatrix} \quad (5)$$

Then with considering identify matrix I:

$$I = \begin{bmatrix} 1 & 0 & L & 0 \\ 0 & 1 & L & 0 \\ M & M & O & M \\ 0 & 0 & L & 1 \end{bmatrix} \quad (6)$$

Then it can be written as:

$$[A I] = \begin{bmatrix} a_{11} & a_{12} & L & a_{1n} & 1 & 0 & L & 0 \\ a_{21} & a_{22} & L & a_{2n} & 0 & 1 & L & 0 \\ M & M & O & M & M & M & O & M \\ a_{n1} & a_{n2} & L & a_{nm} & 0 & 0 & L & 1 \end{bmatrix} \quad (7)$$

This method is performed continuously on matrices of coefficients. The name of this method is taken from the German mathematician Karl Friedrich Gauss. To perform surface-level operations in a matrix, a series of basic operations are used on matrix rows. To the maximum, the maximum possible size of the underlying matrix index is zero. There are three types of base operations on the matrix rows: 1- change of Two rows of Matrix 2-Multiplying a row of matrices in a non-zero number 3- adding a row with another multiple of another row. By doing this, the matrix becomes a diagonal matrix (stack form). When all effective coefficients (the leftmost data in each row) are equal to one, the rest of the columns in the columns are zero. The matrix becomes a reduced bridging matrix. This method can be used for inversion of a matrix or solving linear equations of a matrix. For computational reasons, it is sometimes preferred to stop operations on rows before conversion[14, 17].

And using operations to convert that to:

$$\begin{bmatrix} 1 & 0 & L & 0 & b_{11} & b_{12} & L & b_{1n} \\ 0 & 1 & L & 0 & b_{21} & b_{22} & L & b_{2n} \\ M & M & O & M & M & M & O & M \\ 0 & 0 & L & 1 & b_{n1} & b_{n2} & L & b_{nm} \end{bmatrix} \quad (8)$$

Then matrix:

$$B = \begin{bmatrix} b_{11} & b_{12} & L & b_{1n} \\ b_{21} & b_{22} & L & b_{2n} \\ M & M & O & M \\ b_{n1} & b_{n2} & L & b_{nm} \end{bmatrix} \quad (9)$$

is inversion of matrix A. In this report a simple code is used by adding each row by multiple of another row by their proportional coefficient.

4. Quasi-STATIC OR TIME SERIES POWER FLOW ANALYSIS

Use of renewable energy sources increase in modern power system grids. Then dynamic power flow is not applicable in these systems. So, static power flow based on time should be used. Then, a static load flow solution cannot produce a real picture of the system, especially when generations from renewables vary with time [4]. Therefore, a quasi-static or time series analysis is used for power flow analysis of these sources[5-10].

In conventional ICs, where there is no galvanic isolation between the DC and AC subgrids, the high-frequency common mode (CM) voltage across the parasitic capacitance produces a strong flow of ground leakage current [2] and [16].

Therefore, a quasi-static or time series analysis is used for power flow analysis of these sources like photovoltaic farms [5-10]. It depends to daily produced power of photovoltaic system and also load in different conditions by time. Then this power flow includes probability features of PV panel in power flow.

In this research, different irradiation conditions is considered with PV produced power. In the future work effect of temperature and other environmental factors and geographical effects can be considered. Moreover, load change specially for distributed loads can be considered in this method.

4.1 Power Flow Analysis

The studies of power flow analysis are the key to the analysis and design of power systems, and their implementation is essential for exploiting and scheduling economic times between electricity companies. Also, the analysis of the load distribution is a precondition for studies of the transient and eventual occurrence of network events.

In the study of power systems, the study of system analysis, which aims to determine the important parameters of the system in normal or emergency situations, are called load propagation. The studied parameters of load distribution include voltages, currents, active and reactive power, power losses, power exchange between different power systems, production and consumption balance in the system, transmission power, calculation of reactive power requirements of the system and other characteristics that can be used[17]. Since these power flow equations are non-linear, they must be solved with numerical and repetitive methods. Two common methods for solving these equations are Gaussian-Seidel and Newton-Raphson methods [17].

Newton Raphson Power flow is used in this research because of its good convergence [15]. With considering current:

$$I_i = \sum_{j=1}^n Y_{ij} V_j \quad (4)$$

And we have:

$$I_i = \sum_{j=1}^n |Y_{ij}| |V_j| \angle \theta_{ij} + \delta_j \quad (5)$$

Then complex power of bus i will be:

$$P_j - jQ_i = V_i^* I_i \quad (6)$$

That is expended to:

$$P_j - jQ_i = |V_i| \angle -\delta_j \sum_{j=1}^n |Y_{ij}| |V_j| \angle \theta_{ij} + \delta_j \quad (7)$$

Then finally we have these equations that should be solved with Newton-Raphson methods:

$$P_i = \sum_{j=1}^n |V_i| |V_j| |Y_{ij}| \cos(\theta_{ij} - \delta_i + \delta_j) \quad (8)$$

$$Q_i = -\sum_{j=1}^n |V_i| |V_j| |Y_{ij}| \sin(\theta_{ij} - \delta_i + \delta_j) \quad (9)$$

But in the power flow analysis conventional power plant are modeled as PV bus and loads as PQ bus in addition to one generator as slack bus. At these PV buses voltage is constant, but Photovoltaic is modeled as current source that its voltage is not constant. Then to model Photovoltaic Power plant in the system it should be modeled as a PV bus with variable voltage. Another method is to model Photovoltaic system as a PQ bus with negative produced power. Then its reactive power will be constant and its voltage can be changed.

5. IMPLEMENTED SYSTEM

In all the systems there are some benchmark systems to analysis proposed ideas and compare the results. Then, there will be standard results for comparison that enables the better conclusion. In power system also there are some benchmark systems that A. IEEE 39 bus New England system is one of the popular one.

5.1 IEEE 39 Bus New England System

The system used in this research for analyze is IEEE 39 bus New England system or the 10-machine New-England Power System [17]. IEEE 39 bus New England system is a simple presentation of 345 kV system in New England. It includes 10 generators, 21 loads, and 46 lines. The base of system is based on 100 MVA. For this base condition, active power is 6254.2 MW and reactive power is 1387.1 Mar [18]. single-line diagram of system is shown in Fig. 10 [19-24].

5.2 500 MW PV Farm

Using of renewable energy specially wind farms and solar farms increase in the last decades. In this research a PV farm with maximum 500 MW output power at 1000 W/m^2 or 1 sun is determined. The irradiation output and its generated power with respect of this conditions are shown in Figs. 6 and 7.

6. SIMULATION

Several case studies are considered in this research. First case is just PV farm in IEEE 39 bus New England system as shown in Fig. 11.

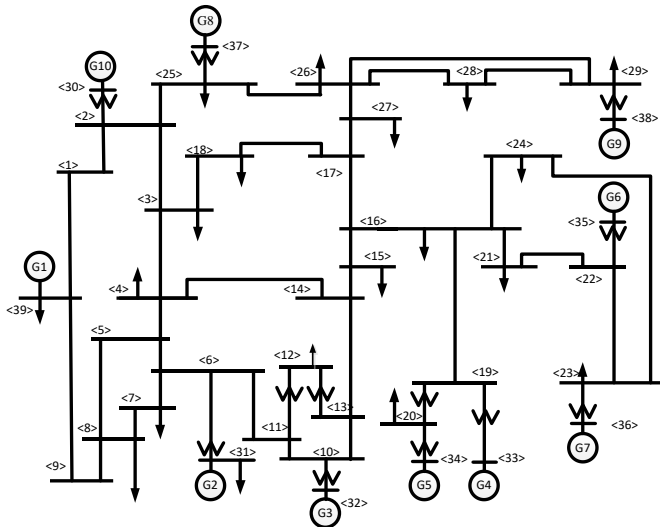


Fig. 5. IEEE 39 bus New England system.

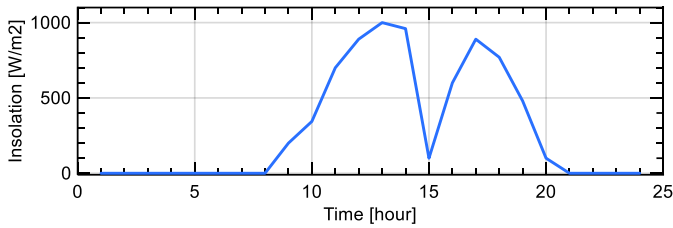


Fig. 6. Irradiation data.

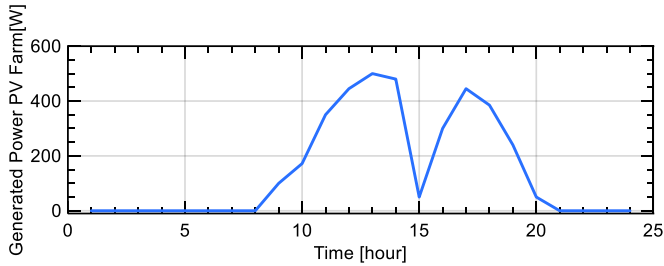


Fig. 7. PV produced power.

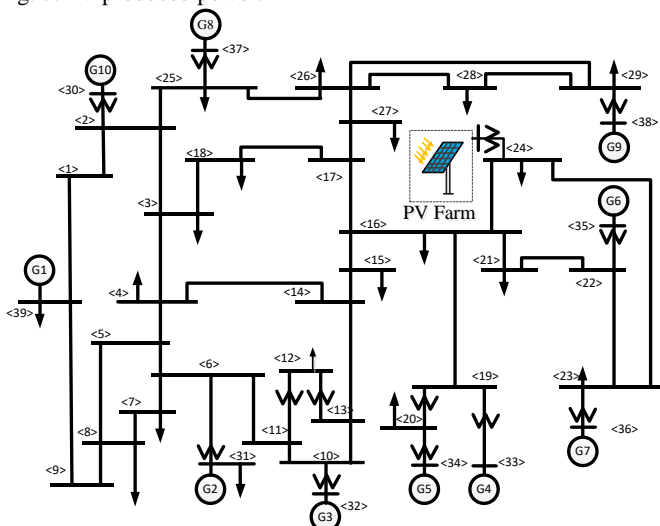


Fig. 8. IEEE 39 bus New England system with PV farm.

6.1 PV Farm

IEEE is shown in Fig.11. PV farm is located at bus 24. A new 500 MW PV (at 1 sun or 1000 W/m²) farm is being added to the IEEE 39 bus New England system and will be connected

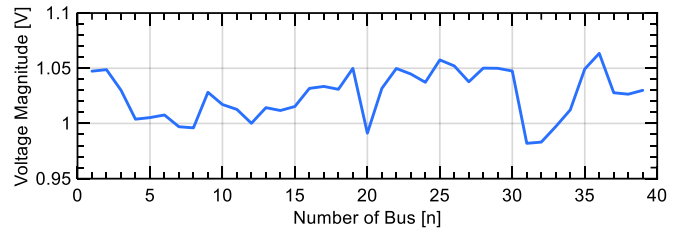


Fig. 10. Voltage Magnitude.

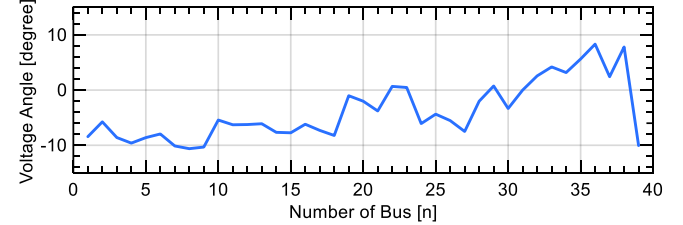


Fig. 11. Voltage Angle.

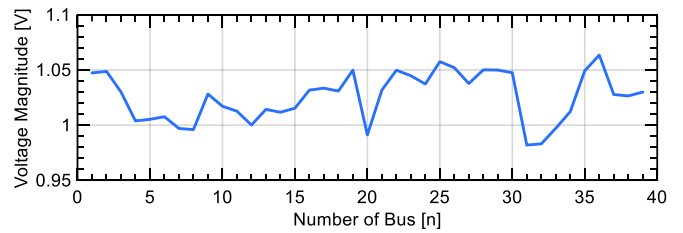


Fig. 12. Voltage Magnitude.

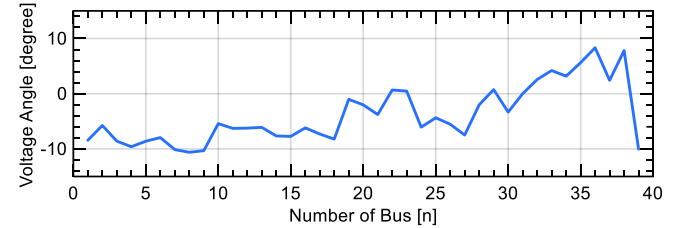


Fig. 13. Voltage Angle.

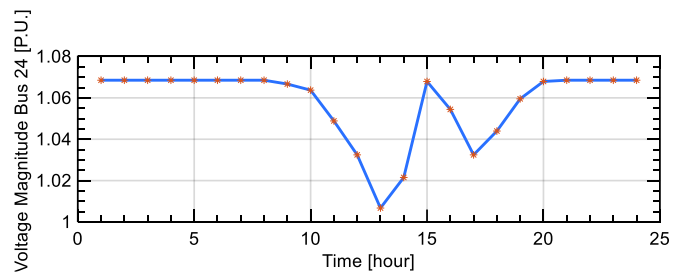


Fig. 14. Voltage Magnitude Bus 24.

to bus 24 through a new standard transformer with 0.1 pu impedance to a new bus (40). The hourly insolation data for a typical day is provided that used linearly at the simulation.

6.2 PV Farm with Fault in Bus 16

Conduct a series of fault studies (4) for load bus 16 in the network at t=3:00 pm. Examine both symmetrical and asymmetrical faults to determine the minimum and maximum fault currents. Mention in the report how you are considering fault current contribution from the PV plant.

7. FAULTS

When the fault occurs, voltages of some lines and buses reaches values lower than its voltage threshold. The area includes of these lines and buses is considered as the area of

Table I. Fault analysis with PV at bus No. 16

Fault condition	Total fault current
Balanced three-phase fault	74.5829 per unit
Line-to-line fault	64.5907 per unit
Double line-to-ground fault	65.2595 per unit
Single line to-ground fault	69.6191 per unit

Table II. Fault analysis without PV at bus No. 16

Fault condition	Total fault current
Balanced three-phase fault	65.9024 per unit
Line-to-line fault	57.0732 per unit
Double line-to-ground fault	62.8437 per unit
Single line to-ground fault	64.3427 per unit

vulnerability related to voltage sag [25]. Results of fault analysis for line to line fault is shown in Table I and Table II. For this analysis llfault function is used from [14]. Line to line fault current. in this case for bus 16 is 64.5907 per unit.

Also, this study has been done without present of PV farm. Without PV farm line to line current is 57.0732 per unit that is 11% less than previous case with PV farm. This also shows that PV farm increase fault current in grid.

8. RESULTS

First to test power flow with Gauss-Jordan elimination PV farm is not considered. Then first power flow with conventional Power flow and inversion code of MATLAB is done. The results for voltage magnitude and power angle are shown in Fig. 10,11. At next step, invented Gauss-Jordan elimination method is used for inversion of Matrix. The results are shown in Fig. 12 and 13. As it is shown the results are the same. Then Performed Gauss-Jordan elimination is correct. Next power flow with existing of PV farm at bus 24 is done. For this aim quasi static power flow is considered for 24-hour operation of PV farm. As explained Photovoltaic farm is considered as PQ bus with negative generation in power flow analysis and 24 power flow is run for this system as quasi static or time series power flow. First it is observed that voltage of PV change with change of radiation. Then it can be concluded that with change of radiation that led to change of produced power pf PV farm, voltage magnitude of buses change. If Irradiation increase that power will also increase, load profile of bus will decrease.

More importantly it is shown in Fig. 14 that voltage magnitude is decreased with present of PV farm. Then, PV farm will reduce bus voltage profile. Then a capacitor bank should be added to increase bus voltage especially at day time that output power of PV increase.

9. CONCLUSION

In this report effect of Photovoltaic farm on power system grid and power flow studied have been evaluated. Static power flow or time series power flow is used. The results are discussed using MATLAB simulations. It is shown that adding PV farm to grid will reduce bus voltage profile. Then a capacitor bank should be added to increase bus voltage especially at day time that output power of PV increase. As future work and research in this area can be done with modifying quasi-static or time series power flow with smaller time step that give more accurate results. Then other renewable energy generations also can be used. Moreover, other factors effected PV farms like temperature can be added. In addition, effect of variable loads can be studied to have better analysis.

10. Reverences

- [1] A. Kumar *et al.*, "A review of multi criteria decision making (MCDM) towards sustainable renewable energy development," *Renewable and Sustainable Energy Reviews*, vol. 69, pp. 596-609, 2017.
- [2] M. Naghizadeh, E. Farjah, T. Ghanbari, H. Pourgharibshahi, and M. T. Andani, "Efficient Grounding Method for DC Microgrid with Multiple Grounding Points," in 2018 Clemson University Power Systems Conference (PSC), Sep. 2018, pp. 1–6.
- [3] M. Naghizadeh, E. Farjah, and T. Ghanbari, "DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition," *IEEE Trans. Ind. Electron.*, vol. 67, no. 5, pp. 4120–4132, May 2020.
- [4] B. A. Mather, "Quasi-static time-series test feeder for PV integration analysis on distribution systems," in 2012 *IEEE Power and Energy Society General Meeting*, 2012, pp. 1-8: IEEE.
- [5] Q. Li, B. Mather, J. Deboever, and M. J. Reno, "Fast QSTS for distributed PV impact studies using vector quantization and variable time-steps," in 2018 *IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, 2018, pp. 1-5: IEEE.
- [6] J. Deboever, S. Grijalva, M. J. Reno, and R. J. Broderick, "Fast quasi-static time-series (QSTS) for yearlong PV impact studies using vector quantization," *Solar Energy*, vol. 159, pp. 538-547, 2018.
- [7] M. Naghizadeh, E. Farjah, H. Samet, and T. Ghanbari, "Fault Tolerability of Power Electronic Interfaces, Impact of Grounding Architecture," in 2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe), Jun. 2018, pp. 1–6.
- [8] M. J. Reno and R. J. Broderick, "Predetermined time-step solver for rapid quasi-static time series (QSTS) of distribution systems," in 2017 *IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, 2017, pp. 1-5: IEEE.
- [9] M. J. Reno, J. Deboever, and B. Mather, "Motivation and requirements for quasi-static time series (QSTS) for distribution system analysis," in 2017 *IEEE Power & Energy Society General Meeting*, 2017, pp. 1-5: IEEE.

- [10] R. Hunsberger and B. Mather, "Temporal decomposition of a distribution system Quasi-Static time-series simulation," in *2017 IEEE Power & Energy Society General Meeting*, 2017, pp. 1-5: IEEE.
- [11] M. G. Villalva, J. R. Gazoli, and E. Ruppert Filho, "Comprehensive approach to modeling and simulation of photovoltaic arrays," *IEEE Transactions on power electronics*, vol. 24, no. 5, pp. 1198-1208, 2009.
- [12] A. M. Humada, M. Hojabri, S. Mekhilef, and H. M. Hamada, "Solar cell parameters extraction based on single and double-diode models: A review," *Renewable and Sustainable Energy Reviews*, vol. 56, pp. 494-509, 2016.
- [13] B. Jamil, A. T. Siddiqui, and D. C. Denkenberger, "Solar radiation on south-facing inclined surfaces under different climatic zones in India," *Environmental Progress & Sustainable Energy*, 2018.
- [14] Mohadeseh Naghizadeh, Ebrahim Farjah, Teymoor Ghanbari, Eduard Muljadi, "Effect of Grounding Conditions on DC Microgrid Power Electronics Interfaces," 2023 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA, 2023, pp. 1-6.
- [15] G. Sharma, A. Agarwala, and B. Bhattacharya, "A fast parallel Gauss Jordan algorithm for matrix inversion using CUDA," *Computers & Structures*, vol. 128, pp. 31-37, 2013.
- [16] M. Naghizadeh, H. S. Gohari, H. Hojabri, and E. Muljadi, "New Single-Phase Three-Wire Interlinking Converter and Hybrid AC/LVDC Microgrid," *IEEE Trans. Power Electron.*, vol. 38, no. 4, pp. 4451-4463, Apr. 2023.
- [17] H. Saadat, *Power system analysis*. 1999.
- [18] M. Pai, *Energy function analysis for power system stability*. Springer Science & Business Media, 2012.
- [19] T. Athay, R. Podmore, and S. Virmani, "A practical method for the direct analysis of transient stability," *IEEE Transactions on Power Apparatus and Systems*, no. 2, pp. 573-584, 1979.
- [20] E. Afzalan and M. Joorabian, "Analysis of the simultaneous coordinated design of STATCOM-based damping stabilizers and PSS in a multi-machine power system using the seeker optimization algorithm," *International Journal of Electrical Power & Energy Systems*, vol. 53, pp. 1003-1017, 2013.
- [21] Ruhani, B., Andani, M. T., Abed, A. M., Sina, N., Smaism, G. F., Hadrawi, S. K., & Toghraie, D. (2022). Statistical modeling and investigation of thermal characteristics of a new nanofluid containing cerium oxide powder. *Heliyon*, 8(11), e11373.
- [22] Safi Samghabadi, F., Ramezani Bajgiran, S., Marciel, A., & Conrad, J. (2023). Effect of ionic strength and salt identity on swelling behavior of weak polybasic brushes with various charge fractions. *Bulletin of the American Physical Society*.
- [23] O. Mirzapour, F. Mohammadi, and M. Sahraei-Ardakani, "Multidimensional Scenario Selection for Power Systems with Line and Generation Outages," in *2022 North American Power Symposium (NAPS)*, Oct. 2022, pp. 1-5.
- [24] S. Ameli, M. J. Morshed, and A. Fekih, "Baseline Control Strategy for Maximum Power Tracking for a 5MW Offshore Wind Turbine," in 2019 IEEE Green Technologies Conference (GreenTech), Apr. 2019, pp. 1-6.
- [25] S. Shakeri, M. Naghizadeh, and S. Esmacili, "Identifying the Voltage Sags Vulnerability Area with Considering FACTS Devices," in 2020 28th Iranian Conference on Electrical Engineering (ICEE), Aug. 2020, pp. 1-5.

Current Harmonic Mitigation Using D-STATCOM

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Abstract: Increase of rectifiers for converting AC current to DC current can increase current harmonic in grids. These rectifiers can be Diode rectifiers or Thyristor based rectifiers used for variable speed drives or other applications. Then, a filter should be used to reduce these harmonic components. In this project, a Voltage Source Converter (VSC) is used as distributed static var compensation (D-STATCOM) to mitigate current harmonic produced by rectifiers. This Power quality issue is introduced, and its IEEE standard is discussed. Then its source and effect on grid is studied and simulation results are shown. Finally, a VSC D-STATCOM is used for mitigation of current harmonic in power systems.

Keywords: Current Harmonic Mitigation, Power Quality, Rectifier, D-STATCOM, Voltage Source Converter.

1. INTRODUCTION

Nonlinear loads are increased widely in recent years. Among these nonlinear loads power electronic based loads have a huge effect on current and voltage distortion of grid. Some of these loads like motor drives, electric vehicles, air conditioning systems, distributed generation and storage systems, LED lights, computers and laptops, cell phone chargers create power quality issues in distribution systems [1-2].

In DC system, power is generated with DC sources like Photovoltaic systems or converted from AC generators to DC format using a rectifier. AC systems are based on three phase AC grid that a rectifier is used to convert AC current to DC for utilization in DC loads.

Rectifier convert AC current to DC current. They use semiconductor devices like Diode, Thyristor, or IGBTs and MOSFETS. Diode rectifiers do not have control on current but are more reliable and less expensive [3]. However, Thyristor and other active switches has control on current. However, the main problem of these converters is producing of current harmonic. This produced current harmonic of rectifiers can disturb grid current with increasing of motor drives in industry areas and DC loads like battery in electric vehicles.

Harmonics are Periodic disturbance for steady-state condition. It can happen on grid voltage or current that ideally should be sinusoidal. Current harmonic caused by non-linear loads like power electronic rectifiers [4].

Conventionally harmonic filters are used for reducing current harmonic. Harmonic filters are divided to passive filters and active filters. Passive filters have problems as resonance, fixed filter frequency, and tuning issues.

Active filters include static synchronous compensator (STATCOM), active power filter (APF), dynamic voltage regulator (DVR), and unified power quality conditioner (UPQC) [3]. Power electronic converter used on them like in active power filters are voltage source converter (VSC).

Different researcher used STATCOM for reactive var compensation. A complete review of distribution systems voltage sag has been done with DVR and D-STATCOM in [5]. In addition, a DSTATCOM is proposed in [6] and its different control methods are discussed for optimum operation. It used an instantaneous reactive power theory for an adaptive controller. Moreover, a D-STATCOM for load compensation is introduced in weak grid power systems. Each of these methods have their own advantages and

disadvantages that depends to their application and operation conditions [7].

In [8], the mathematical modeling of two-level voltage source converters is presented to assess overvoltage and overcurrent transients experienced by the switches under DC and AC fault scenarios and by considering different grounding schemes. For this purpose, the maximum value of switches current and voltage are determined under SLG, DLG, PPG, and NPG fault conditions. The results confirm the significant impact of grounding resistance on the switches currents and voltages under different ground fault conditions.

In [9], an accurate method is proposed to identify an AOV to voltage sag in case of SPG fault occurrence. The voltage sag performance assessed considering the most often used FACTS devices for mitigation of voltage sag in practical applications, STATCOM and TCSC.

In this project an active harmonic filter is used to reduce current harmonic in distribution levels. This is called distributed static var compensation (D-STATCOM) and used to mitigate current harmonic produced by Diode and Thyristor rectifiers. In addition, an unbalance load is used. The structure of this report is as following. First power quality issue is introduced by current harmonic source and power quality disturbance source are studied. Then, indices and characteristics on current harmonic is define. Moreover, standards and guidelines regarding this power quality issue will be discussed.

In addition, impact of current harmonic disturbance will be shown. Also, means for mitigation on current harmonic will be introduces. Finally, a D-STATCOM will be used to reduce the current harmonic and its operation and control will be discussed with a simulation.

2. CURRENT HARMONIC SOURCE

Harmonics source are generally nonlinear loads that can change sinusoidal waveforms to other formats. Fig.1 shows operation of linear load vs nonlinear load. As it is shown linear load with sinusoidal voltage in a stiff grid, has sinusoidal current. However, nonlinear load produces non sinusoidal current from sinusoidal voltage.

Current harmonic sources can be diode or thyristor Rectifier used for Variable Frequency drives, home users, Electric Vehicles, and Electric Trains. 3-phase variable frequency drive is the most common harmonic source which can use diode or Thyristor rectifier. Some of current harmonic sources are shown in Fig.4.

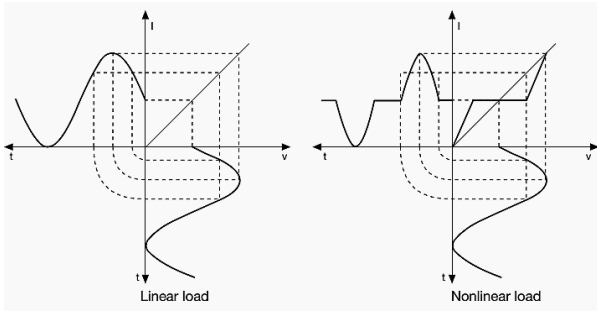


Fig. 1. Linear load waveform and Non-linear load waveform [3].

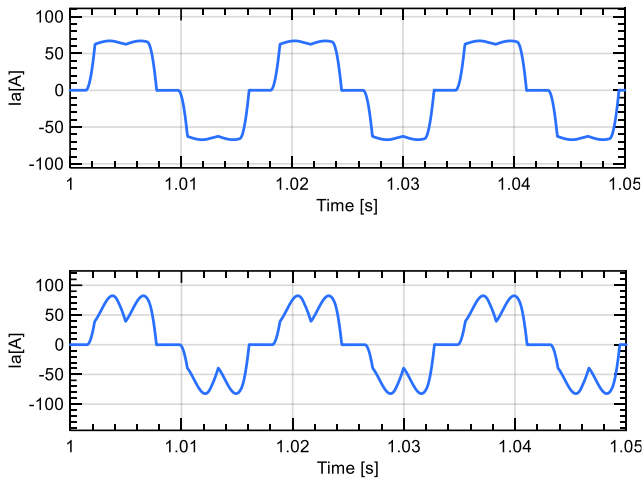


Fig. 2. Different diode rectifier currents.

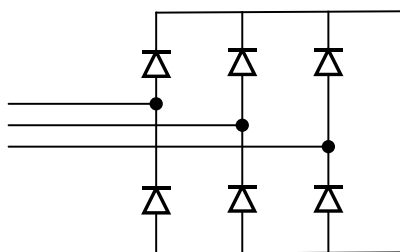


Fig. 3. A diode rectifier current [2].

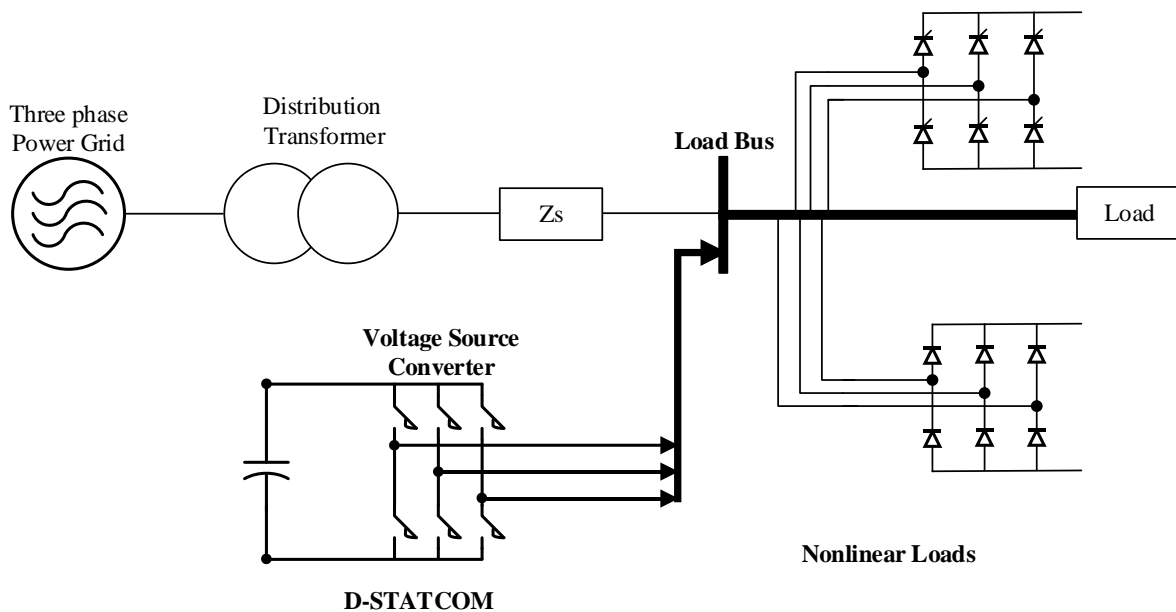


Fig. 4. Current harmonic sources.

2.1 Diode Rectifier

Current harmonic produced with nonlinear loads like rectifiers. A diode rectifier circuit with load is shown in Figure 3. This case is when current source inverter is used at motor drive side. In addition, a diode rectifier circuit with capacitor load is shown in Figure 2. This is a case that a voltage source converter is used.

2.2 Thyristor Rectifier

Thyristor rectifier has better control of current and is more efficient, however it needs a controller for fire pulses of thyristors. Due to discontinuous voltage of thyristor rectifier, a capacitor load cannot be used, a Thyristor is shown in Fig. 5. A Thyristor rectifier current is shown in Fig. 6.

3. INDICES & CHARACTERISTICS

To show effect of current harmonic appropriate indices should be introduced. The indices are essential for current harmonic measurement and evaluation of harmonics. Then remedial actions like harmonic filters can be used to mitigate in case indices are showing more than it standard values. The first and most important indices is Total harmonic distortion (THD):

$$THD_I = \frac{\sqrt{\sum_{h=2}^H I_h^2}}{I_1} \quad (1)$$

Next important indices is Individual harmonic distortion (IHD):

$$IHD_I = \frac{I_h}{I_1} \quad (2)$$

In addition, one of most important indices is Total demand distortion (TDD):

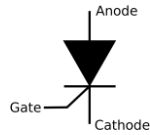


Fig. 5. Thyristor.

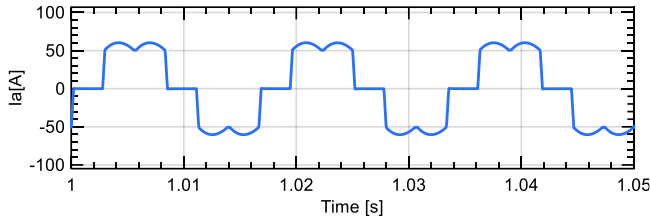


Fig. 6. Thyristor rectifier current.

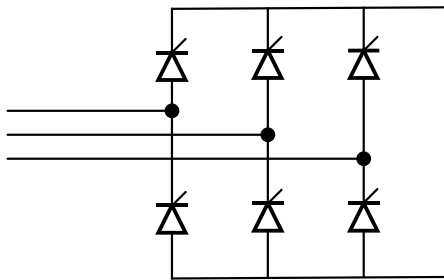


Fig. 7. A thyristor rectifier circuit II.

$$TDD_I = \frac{\sqrt{\sum_{h=2}^H I_h^2}}{I_L} \quad (3)$$

TDD compare to THD includes current rating of device and gives better understanding of harmonics.

4. STANDARDS

Like any other evaluation a base value should be used for comparison and evaluation. For current harmonic IEEE Standard 519 is used which is define by Institute of Electrical and Electronics Engineers (IEEE). This standard is IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems first introduced in 1981 and then revised in 1992 and 2014. Its Focus is on Harmonic measurements and Recommended harmonic limits for voltage

Table 1: Voltage Distortion limits

Bus voltage V at PCC	Individual harmonic (%)	Total harmonic distortion THD (%)
$V < 1.0$ kV	5.0	8.0
$1 \text{ kV} < V \leq 69 \text{ kV}$	3.0	5.0
$69 \text{ kV} < V \leq 161 \text{ kV}$	1.5	2.5
$161 \text{ kV} < V$	1.0	1.5 ^a

Table 2: Current Distortion limits for systems rated 120 V through 69 kV

Maximum harmonic current distortion in percent of I_L						
Individual harmonic order (odd harmonics) ^{a, b}						
I_{SC}/I_L	$3 \leq h < 11$	$11 \leq h < 17$	$17 \leq h < 23$	$23 \leq h < 35$	$35 \leq h \leq 50$	TDD
$< 20^c$	4.0	2.0	1.5	0.6	0.3	5.0
$20 < 50$	7.0	3.5	2.5	1.0	0.5	8.0
$50 < 100$	10.0	4.5	4.0	1.5	0.7	12.0
$100 < 1000$	12.0	5.5	5.0	2.0	1.0	15.0
> 1000	15.0	7.0	6.0	2.5	1.4	20.0

and current distortion.

4.1 Harmonic Voltage Limits

Harmonic Voltage Limits for power system is define based on its voltage level. For harmonic voltage limits utilities company are responsible at point of power coupling (PCC). Harmonic voltage limits for 120V to <69kV are shown in Table 1[].

4.2 Current Distortion Limits

The other standard factor is Current Distortion Limits. For current limit users are responsible at PCC point to keep current harmonic limit at its value.

Current harmonic limits for voltage levels of 120V to <69kV are shown in Table 2. In addition, current Distortion Limits for voltage levels greater than 161kV are shown in Table 3.

4.3 Harmonic Measurement

Another important consideration is harmonic measurements. Harmonic measurement should be accurate for appropriate operation in power system. According to IEEE 519 standard any instrument used should comply with the specifications of IEC 61000-4-7 and IEC 61000-4-30 standards.

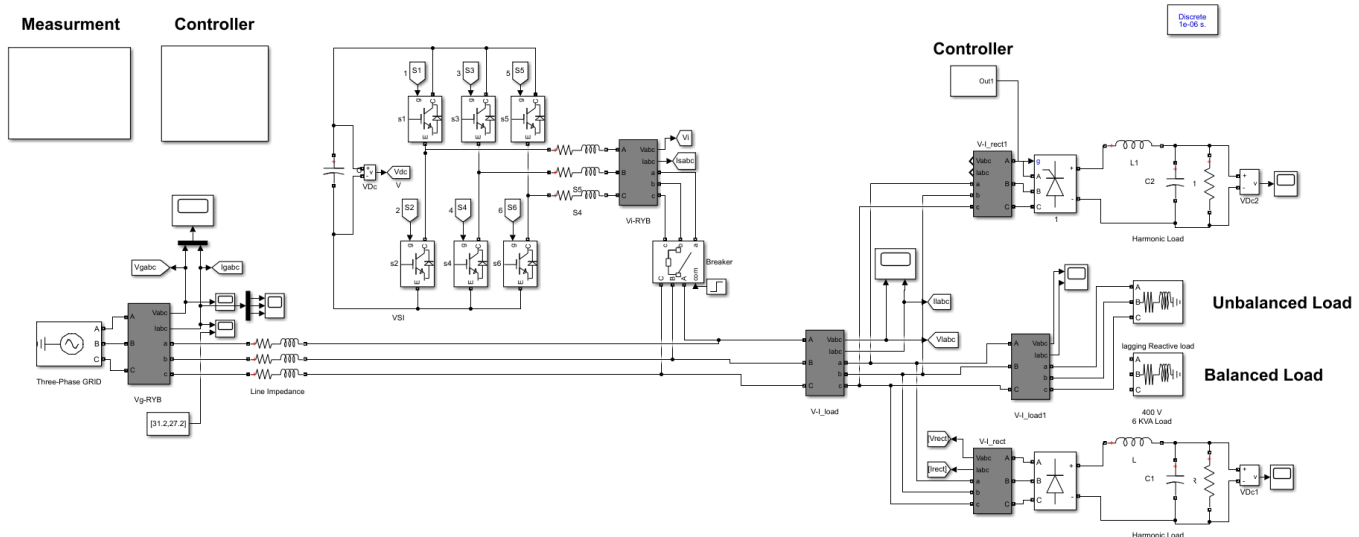


Fig. 8. Simulation.

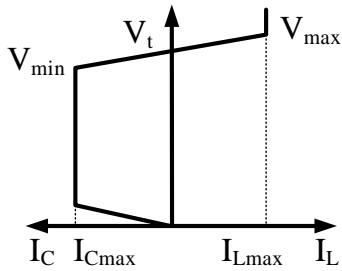


Fig. 8. STATCOM V-I characteristics.

Table 3: Current Distortion limits for systems rated greater than 161 Kv.

Maximum harmonic current distortion in percent of I_L						
Individual harmonic order (odd harmonics) ^{a, b}						
I_{hp}/I_L	$3 \leq h < 11$	$11 \leq h < 17$	$17 \leq h < 23$	$23 \leq h < 35$	$35 \leq h \leq 50$	TDD
< 25°	1.0	0.5	0.38	0.15	0.1	1.5
25° < 50	2.0	1.0	0.75	0.3	0.15	2.5
≥ 50	3.0	1.5	1.15	0.45	0.22	3.75

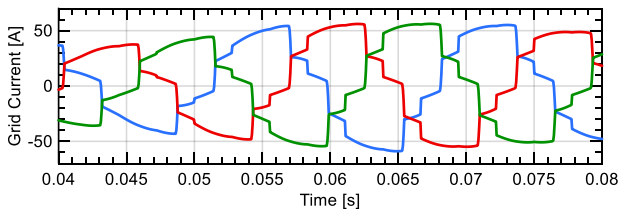


Fig. 10. Grid current before suing D-STATCOM.

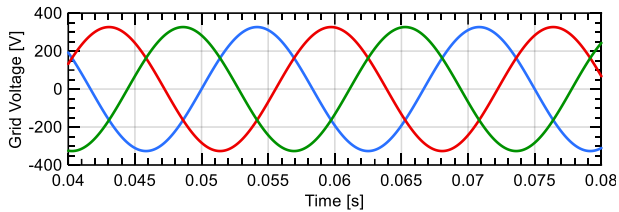


Fig. 11. Grid voltage before suing D-STATCOM.

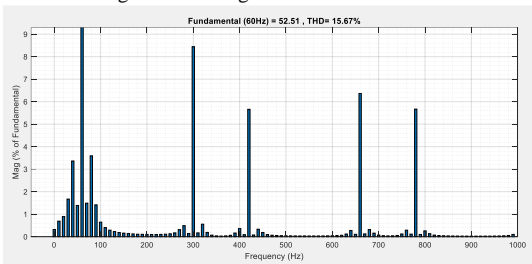


Fig. 12. Current FFT before suing D-STATCOM.

Frequency (Hz)	Magnitude (%)	Phase (°)
30 Hz	1.67%	190.8°
40 Hz	3.36%	71.7°
50 Hz	1.35%	7.0°
60 Hz (Fund)	100.00%	-20.0°
70 Hz	1.45%	-60.8°
80 Hz	3.55%	235.8°
90 Hz	1.42%	126.7°
100 Hz	0.65%	103.5°
110 Hz	0.40%	88.7°
120 Hz (h2)	0.29%	76.8°
130 Hz	0.23%	66.5°
140 Hz	0.19%	57.2°
150 Hz	0.16%	48.4°
160 Hz	0.14%	40.0°
170 Hz	0.12%	32.0°
180 Hz (h3)	0.11%	25.1°
190 Hz	0.11%	16.0°
200 Hz	0.10%	7.9°
210 Hz	0.10%	-0.4°
220 Hz	0.10%	-9.3°
230 Hz	0.10%	-18.4°
240 Hz	0.11%	-29.0°
250 Hz	0.13%	-41.7°
260 Hz	0.17%	-58.8°
270 Hz	0.31%	269.3°
280 Hz	0.45%	137.9°
290 Hz	0.14%	77.1°
300 Hz (h5)	8.45%	147.6°
310 Hz	0.17%	4.7°
320 Hz	0.56%	-61.2°
330 Hz	0.19%	176.1°
340 Hz	0.07%	162.7°

Fig. 13. Current IHD before suing D-STATCOM

5. EFFECT OF CURRENT HARMONICS

The goal of power systems is to transfer electrical energy from generators to end users. Then, electric current and voltages should be sinusoidal, and any disturbance can change their shape. Non sinusoidal waveforms will have harmonics that can have undesired effect on power systems. For example, Harmonics in power systems result in

- ✓ Increased heating in the equipment and conductors
- ✓ Cable Insulation Breakdown
- ✓ Misfiring in variable speed drives and Motor failure
- ✓ Transformer failure
- ✓ Capacitor bank failure
- ✓ Resonance
- ✓ Circuit breaker tripping [10-14]

6. D-STATCOM

Flexible AC transmission systems (FACT) compensate reactive power [3] and improves voltage profile and currents waveform. It can include series or shunt methods or a combination of both. It includes Static Var Compensator (SVC), Thyristor-Controlled Series Capacitor (TCSC), Static Synchronous Compensator (STATCOM), and Unified Power Flow Controller (UPFC). Among them STATCOM has these advantageous:

- Better characteristics
- Faster response
- Constant current characteristics
- Controllable Voltage source
- Smaller in size

However, STATCOM also has these disadvantageous:

- Higher losses
- Higher Cost [14-18]

Voltage current characteristic of STACOM is shown in Fig. 4. Its V-I curves are shown in Fig.8. As it is shown, STATCOM can operate at full current range from 0.2 p.u. So, the rating of power system current cannot limit STATCOM for producing capacitive or inductive current and does not depend on AC voltage system. Then, for medium and low voltage systems like distribution levels distribution STATCOM(D-STATCOM) is introduced to improve current and waveform characteristics of electric system.

7. SIMULATION

In this project MATLAB/Simulink tool is used for system simulation. The simulated system is shown in Fig. 9. It includes a three-phase system that is operate as infinite bus with stiff voltage. Then, it is connected to loads and consumers through a line impedance. Loads include a diode and thyristor rectifiers and an unbalance load. These work as nonlinear and unbalance loads that disturb grid current and inject harmonics. Then, to improve the current waveform a D-STATCOM is connected at PCC to compensate current waveform though a breaker.

7.1 Before using D-STATCOM

Current and voltage waveforms are shown in Fig. 10 and 11 before connecting D-STATCOM. As shown current waveform has harmonic and is not sinusoidal. However, grid voltage is sinusoidal.

In addition, Fast Fourier Transformation (FFT) tool of MATLAB/Simulink is used to evaluate current THD. The FFT results are shown in Fig. 12. As it is shown, current THD is 15.67% in this situation that is more than IEEE 519 standard limits.

Moreover, Individual harmonic distortion (IHD) are shown in Fig. 13. As it can be seen, 5th order harmonic is the highest

harmonic component. Also, 5th order Individual harmonic distortion is 8.45% that is more than IEEE 519 standard limits.

7.2 Using D-STATCOM

To mitigate current harmonic a D-STATCOM is used. Control of D-STATCOM is very important and has several stages. First a Clark Transformation is used to convert abc to dq0. dq0 are constant and using them for proportional integral (PI) controller is more effective. Then, a Phase Locked Loop (PLL) is used for grid synchronization. More importantly, Current controller using PI controller will be used. These controllers have feedforward part and decoupling part. In addition, a DC link Voltage control is used with a PI controller. Finally, inverse dq0 to abc transformer is used and generated reference signal will be used in sinusoidal modulation.

8. CLARK TRANSFORMATION

Clark Transformation transfer abc component to direct quadratic(dq0) components. Formula for abc to dq0 transformation is:

$$\begin{bmatrix} u_d \\ u_q \\ u_0 \end{bmatrix} = \frac{2}{3} \begin{bmatrix} \cos(\omega t) & \cos\left(\omega t - \frac{2\pi}{3}\right) & \cos\left(\omega t + \frac{2\pi}{3}\right) \\ -\sin(\omega t) & -\sin\left(\omega t - \frac{2\pi}{3}\right) & -\sin\left(\omega t + \frac{2\pi}{3}\right) \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \end{bmatrix} \begin{bmatrix} u_a \\ u_b \\ u_c \end{bmatrix} \quad (4)$$

This transformation needs angle of power system grid. Then a Phase Locked Loop (PLL) is used to obtain information of grid angle. It is also used for grid synchronization. Then PLL obtains grid angle from grid voltage measurement as shown in Fig. 15. Also, abc/dq0 transformation measured convert grid voltage, load current, and D-STATCOM current to dq0 components. Grid current controller of D-STATCOM is shown in Fig. 14. It first calculates grid current from load current using a low pass filter. Then it controls DC link voltage using a PI controller. Then, control output current of D-STATCOM using two PI controller. Each PI controller includes a feedforward from grid voltage and a decoupling component to separate each controller's operation. These controllers are tuned based on observation of PI errors and try and error. And at the end each signal will transfer from dq0 to abc using a dq0/abc transformation. These signals are

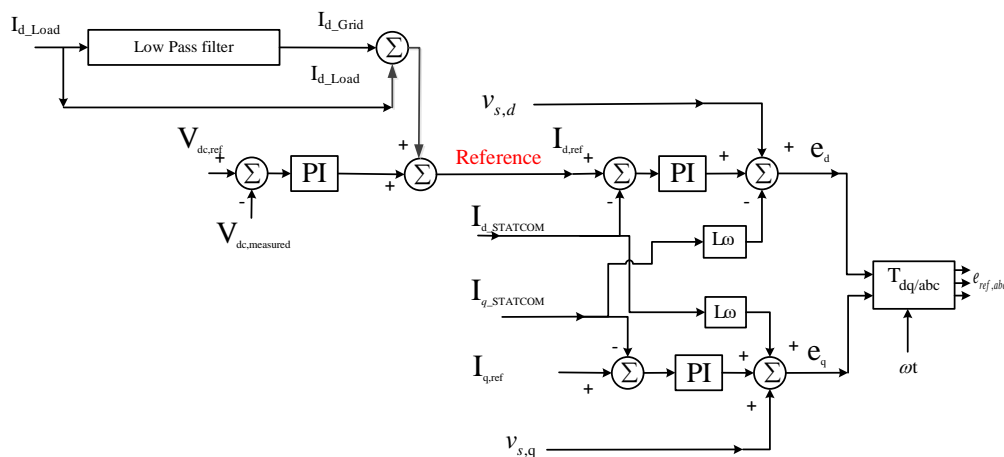


Fig. 14. A thyristor rectifier circuit II.

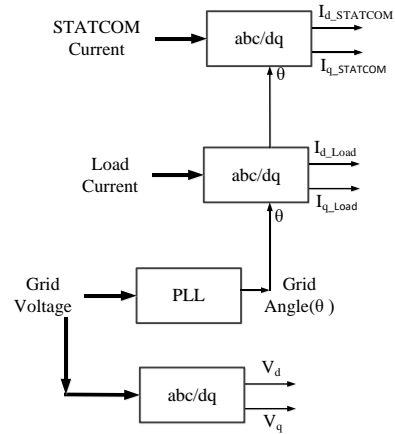


Fig. 15. PLL and abc/dq0 transformations.

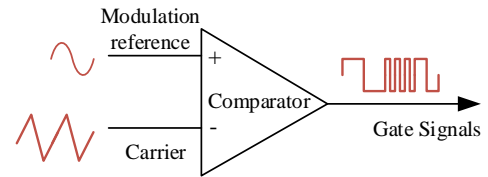


Fig. 16. Sinusoidal modulation.

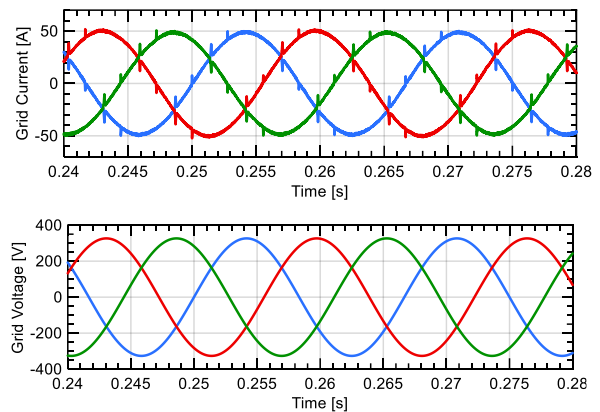


Fig. 18. Grid voltage after using D-STATCOM.

reference signals that feed to modulation block.

9. MODULATION METHOD

Modulation is used to transfer reference signals to logic signals for gate pulses. Different modulations can be used include Sinusoidal modulation, space vector modulation, hysteresis modulation, harmonic elimination modulation, and

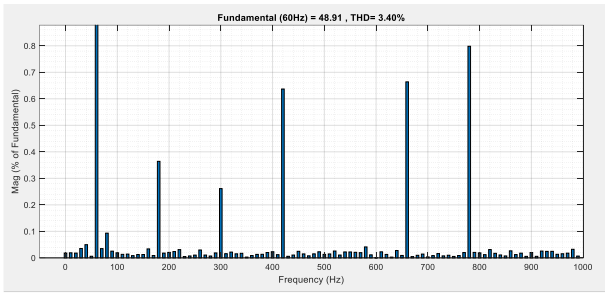


Fig. 19. Current FFT after using D-STATCOM.

40 Hz	0.05%	7.6°
50 Hz	0.01%	193.4°
60 Hz (Fund):	100.00%	-0.9°
70 Hz	0.03%	17.5°
80 Hz	0.09%	19.5°
90 Hz	0.03%	-46.1°
100 Hz	0.02%	-49.2°
110 Hz	0.01%	-56.8°
120 Hz (h2):	0.01%	50.2°
130 Hz	0.01%	204.7°
140 Hz	0.01%	-48.1°
150 Hz	0.01%	-40.5°
160 Hz	0.03%	203.5°
170 Hz	0.01%	-19.0°
180 Hz (h3):	0.36%	10.1°
190 Hz	0.02%	258.7°
200 Hz	0.02%	-41.7°
210 Hz	0.02%	237.0°
220 Hz	0.03%	73.8°
230 Hz	0.00%	37.0°
240 Hz (h4):	0.01%	101.2°
250 Hz	0.01%	-52.1°
260 Hz	0.03%	247.5°
270 Hz	0.01%	262.3°
280 Hz	0.01%	-8.7°
290 Hz	0.02%	-87.1°
300 Hz (h5):	0.26%	-66.2°
310 Hz	0.02%	-53.3°
320 Hz	0.02%	8.7°
330 Hz	0.02%	208.7°
340 Hz	0.02%	123.5°
350 Hz	0.00%	-50.1°

Fig. 20. Current IHD before using D-STATCOM.

340 Hz	0.02%	123.5°
350 Hz	0.00%	-50.1°
360 Hz (h6):	0.01%	16.2°
370 Hz	0.01%	54.0°
380 Hz	0.01%	140.6°
390 Hz	0.02%	195.2°
400 Hz	0.02%	152.9°
410 Hz	0.01%	-14.6°
420 Hz (h7):	0.64%	248.6°
430 Hz	0.02%	196.6°
440 Hz	0.01%	-27.7°
450 Hz	0.02%	133.8°
460 Hz	0.01%	134.7°
470 Hz	0.01%	17.9°
480 Hz (h8):	0.02%	265.2°
490 Hz	0.02%	36.5°
500 Hz	0.01%	135.8°
510 Hz	0.01%	-80.4°
520 Hz	0.03%	167.9°
530 Hz	0.01%	30.2°
540 Hz (h9):	0.02%	267.7°
550 Hz	0.02%	214.1°
560 Hz	0.02%	241.0°
570 Hz	0.02%	80.5°
580 Hz	0.04%	223.8°
590 Hz	0.01%	34.1°
600 Hz (h10):	0.00%	193.5°
610 Hz	0.02%	155.8°
620 Hz	0.01%	110.6°
630 Hz	0.00%	183.4°
640 Hz	0.03%	0.8°
650 Hz	0.01%	112.9°

Fig. 21. Current IHD using D-STATCOM.

so on. In this project Sinusoidal modulation is used.

In Sinusoidal modulation Carrier waveforms are Triangular waveforms which compared with reference waveforms and Gate signals will be generated as shown in Fig. 16. As shown in Fig. 19, after using this D-STATCOM Current THD is reduced to 3.4% that is below 5%. Then D-STATCOM could perform efficiently to mitigate current harmonic.

In addition, 5th order Individual harmonic distortion that was highest harmonic distortion is also reduced to 0.26% as shown in Fig. 20. Moreover, based on Fig. 21 that shown FFT analysis of current harmonic, 7th order harmonic become the dominant harmonic component in current.

10. CONCLUSION

In this report, current harmonic mitigation have been discussed. First Current Harmonic distortion sources

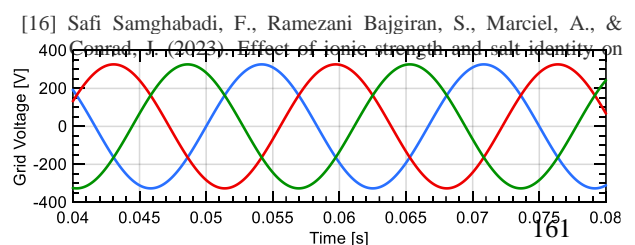
specifically rectifiers and unbalance loads were studied. Then Indices and STANDARDS of harmonic based on IEEE 519 standard were shown. In addition, Rectifiers current characteristics were studied and to mitigate current harmonic a D-STATCOM method were shown to solve Current Harmonic distortion of Rectifiers. The proposal D STATCOM was verified with simulation.

11. REFERENCES

- [1] X. Liang, "Emerging Power Quality Challenges Due to Integration of Renewable Energy Sources," in *IEEE Transactions on Industry Applications*, vol. 53, no. 2, pp. 855-866, March-April 2017.
- [2] Fang Zheng Peng and Jih-Sheng Lai, "Dynamic performance and control of a static VAr generator using cascade multilevel inverters" *IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS*, VOL. 33, NO. 3, MAY/JUNE 1997
- [3] K.R. Padiyar, *FACTS Controllers in Power Transmission and Distribution*, NewAge International Publishers, India, 2008.
- [4] M. S. El-Moursi and A. M. Sharaf, "Novel controllers for the 48-pulse VSC STATCOM and SSSC for voltage regulation and reactive power compensation," in *IEEE Transactions on Power Systems*, vol. 20, no. 4, pp. 1985-1997, Nov. 2005.
- [5] M. H. Haque, "Compensation of distribution system voltage sag by DVR and D-STATCOM," *2001 IEEE Porto Power Tech Proceedings (Cat. No.01EX502)*, Porto, Portugal, 2001, pp. 5 pp. vol.1-.
- [6] B. Singh and J. Solanki, "A Comparison of Control Algorithms for DSTATCOM," in *IEEE Transactions on Industrial Electronics*, vol. 56, no. 7, pp. 2738-2745, July 2009.
- [7] A. Ghosh and G. Ledwich, "Load compensating DSTATCOM in weak AC systems," in *IEEE Transactions on Power Delivery*, vol. 18, no. 4, pp. 1302-1309, Oct. 2003.
- [8] M. Naghizadeh, H. S. Gohari, H. Hojabri, and E. Muljadi, "New Single-Phase Three-Wire Interlinking Converter and Hybrid AC/LVDC Microgrid," *IEEE Trans. Power Electron.*, vol. 38, no. 4, pp. 4451-4463, Apr. 2023.
- [9] S. Shakeri, M. Naghizadeh, and S. Esmaeli, "Identifying the Voltage Sags Vulnerability Area with Considering FACTS Devices," in *2020 28th Iranian Conference on Electrical Engineering (ICEE)*, Aug. 2020, pp. 1-5.
- [10] Ruhani, B., Andani, M. T., Abed, A. M., Sina, N., Smaism, G. F., Hadrawi, S. K., & Toghraie, D. (2022). Statistical modeling and investigation of thermal characteristics of a new nanofluid containing cerium oxide powder. *Heliyon*, 8(11), e11373.
- [11] M. Naghizadeh, E. Farjah, H. Samet, and T. Ghanbari, "Fault Tolerability of Power Electronic Interfaces, Impact of Grounding Architecture," in *2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe)*, Jun. 2018, pp. 1-6.
- [12] O. Mirzapour, F. Mohammadi, and M. Sahraei-Ardakani, "Multidimensional Scenario Selection for Power Svstems with

Maximum harmonic current distortion in percent of I_h						
Individual harmonic order (odd harmonics) ^{a,b}						
I_{gh}/I_h	$3 \leq h < 11$	$11 \leq h < 17$	$17 \leq h < 23$	$23 \leq h < 35$	$35 \leq h \leq 50$	TDD
< 25	1.0	0.5	0.38	0.15	0.1	1.5
$25 \leq 50$	2.0	1.0	0.75	0.3	0.15	2.5
≥ 50	3.0	1.5	1.15	0.45	0.22	3.75

- [14] S. Ameli, M. J. Morshed, and A. Fekih, "Baseline Control Strategy for Maximum Power Tracking for a SMWT Offshore Wind Turbine," in *2019 IEEE Green Technologies Conference (GreenTech)*, Apr. 2019, pp. 1-6.
- [15] Molladseh Naghizadeh, Ebrahim Farjah, Teymoor Ghanbari, Eduard Muljadi, "Effect of Grounding Conditions on DC Microgrid Power Electronics Interfaces," *2023 IEEE Texas Power and Energy Conference (TPEC)*, College Station, TX, USA, 2023, pp. 1-6.



swelling behavior of weak polybasic brushes with various charge fractions. *Bulletin of the American Physical Society*.

- [17] M. Naghizadeh, E. Farjah, and T. Ghanbari, "DC Microgrid Grounding Impact on Power Electronic Interfaces in Fault Condition," *IEEE Trans. Ind. Electron.*, vol. 67, no. 5, pp. 4120–4132, May 2020.
- [18] Roshan, S., Taherian, M., Allahbakhshi, M., & Fariah, E. (2018, May). Improvement of Pulse Power Generators Based on Buck


Boost Converter. In *Electrical Engineering (ICEE), Iranian Conference on* (pp. 1275-1279). IEEE.



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