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Research on Informatization of Higher Vocational Education (Take Wenzhou Polytechnic as an example)

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ABSTRACT

Higher vocational education, as a type of education, has its own unique characteristics. Keep up with the times and keep learning is requested from high vocational education. Provide the students with the conditions and abilities for continuous learning, so informatization of higher vocational education is imperative. Taking the informatization construction of Wenzhou vocational education as an example, we summarize the path, experience, and shortcomings of informatization construction in our school and put forward suggestions for the improvement of informatization construction in higher vocational education.

Keywords：*Higher Vocational Education; Informatization; Path*

I. INTRODUCTION

In April 2018, the Ministry of Education put forward the "Education Informatization 2.0 Action Plan" to promote the specific implementation plan of "Internet + Education." The national policy level promotes the application of Internet technology in education, and the Internet + education model allows more people to enjoy educational resources more equitably and lays the foundation for building a learning society. In 2020, due to the impact of the new coronavirus epidemic, the country had put forward the requirement of "stopping school," requiring all university, primary and secondary students to study online. Given that China's information technology infrastructure has been relatively well developed over the years, it basically meets the hardware requirements for online education. It can be seen informatization plays a huge role in emergencies such as epidemics. The Party Central Committee has put forward the concept of lifelong learning. Traditional lifelong learning requires a basic material foundation such as venues, teachers, facilities， and also requires coordination of learners' time, making lifelong learning is very difficult. In contrast, in the age of informatization, knowledge is stored on the Internet, so people can learn anytime, anywhere, and choose various resources according to their time and hobbies, breaking the time and space restrictions of traditional learning methods and making learning simpler and easier. Therefore, informatization provides the possibility for lifelong learning.

1.1 Status of information-based teaching at home and abroad

As a result of the epidemic, many countries worldwide have adopted the practice of "stop classes without stopping learning." Developed countries such as the United States, South Korea, and Japan experienced network congestion at the beginning of the epidemic, making it difficult for students to attend classes smoothly, demonstrating the inadequacy of their information technology infrastructure.

1.2 Current status of domestic information-based teaching

China is vigorously building infrastructure to support information networks during the 13th Five-Year Plan period, and this epidemic has tested the country's health system and the quality of our information technology construction. It has proven to be able to meet the needs of online learning in the country's universities, secondary and elementary schools, both in terms of speed and transmission quality. These are also the foundations laid by our country in the era of education informatization 1.0. In terms of infrastructure guarantee, we provide network conditions for informatization teaching. In the age of information 2.0, the requirements of the information society for vocational college students are also constantly improving. The requirements are higher in the informatization 2.0 era, and the informationized society is increasing the requirements for higher vocational students. Higher vocational education is different from undergraduate education and has different requirements for students. For higher vocational students, the learning of theoretical knowledge is not sufficient because, in general, the theoretical ability of higher vocational students is not high, and they know what they know but do not know what they know. However, the development of new technologies in society has put forward

new requirements for the skills of higher vocational students, and the corresponding teaching and pedagogy have not been completely kept up. The informatization construction of higher vocational colleges is at the primary stage, such as the lack of innovation, low sharing, and low utilization of resource library construction. Teachers cannot make good use of informatization tools in the informatization era, and the reform of teaching materials cannot keep up with the changes of the times. These factors invariably restrict the development of China's education informatization.

II. RESEARCH METHOD

This paper is qualitative research (Marshall & Rossman, 2011). It is anchored on key Journals about informatization to find the way of how to contribute Wenzhou Polytechnic informatization

III. DISCUSSION

3.1 Higher vocational education information characteristics

The characteristics of higher vocational education in the new era. Higher vocational education is not a level below undergraduate education but for another type of education. This type of education needs to be supported by technical skills. In the education process, students need to master a lot of advanced technologies, which cannot be taught in traditional ways and methods, so that higher vocational students only "know what they know but do not know why they know." Many skills need equipment, venues, and other conditions so that vocational education to obtain knowledge of the high cost, and information technology using, for example, virtual reality, mixed reality, and other means can be a good solution to this problem.

The characteristics of informatization of higher vocational education. At the present stage, the informatization level of higher vocational education is still in the primary stage, and the construction of informatization only moves the knowledge to the online platform and piles up the relevant pictures, texts and videos together. Higher vocational resource library construction is not of high quality, shared to a low degree, and utilized to a low extent. There are numerous educational platforms, teachers are not tired of them, and students are annoyed, which also invariably discourages teachers and students from using informatization with confidence and quality.

The new era demands a lot from teachers. The new era demands a lot from teachers, who must be able to use advanced tools and technologies and be knowledgeable and versatile to keep up with the development of the times. Compared with the traditional classroom, teachers' knowledge is more demanding, and the teaching format has changed greatly. The traditional classroom is more focused on the transfer of knowledge, while the classroom in the information age is more of an experiential and stimulating classroom, allowing students to better integrate into the classroom. The standard of a good class is no longer whether the content of the teacher's lecture is wonderful and thorough, but whether the careful design of the curriculum, the grasp of the classroom, and the ability to stimulate students' interest in active learning and creative thinking. The application of information technology is also reflected in the teaching materials, whether they can break through the tradition and update knowledge, etc.

3.2 The inevitable trend of informatization of higher vocational education

The informatization of higher vocational education is unstoppable and inevitable. At first, the development of society and science and technology is bound to promote the development of informatization in education. The progress of science and technology is the exogenous factor to promote the development of informatization. In the era of information technology, no industry can stand by itself, and education is no exception. Second, education informatization can better achieve educational equity. Informatization education can realize the sharing of high-quality resources and promote the country's educational equity. Finally, it is the requirement of lifelong learning. Promoting higher vocational students to strive for excellence actively can get better social status and social recognition. Higher vocational education's informatization can realize vocational college students' self-improvement and lifelong learning to provide a guarantee.

3.3 Information construction path of Wenzhou Polytechnic

3.3.1 Information technology hardware construction

Education informatization is inseparable from informatization equipment, such as campus network construction, smart classrooms, and computer hardware conditions. In 2015, our school completed the campus network construction, with wireless network coverage in office buildings, teaching buildings, libraries, training bases, and dormitories, providing students with the basis of information technology for learning anywhere and anytime. 2018, our school renovated a teaching building to construct smart classrooms, which have been used for two years. The smart classrooms have multimedia players, multiple video monitors, audio, large independent screens, movable splicing tables and chairs, audio and video recording equipment are all available, and multimedia computers are installed with teaching platforms such as Smart Vocational Education, Super Star Learning Platform, University Mooc, etc. The class can click on the platforms they are familiar with at any time to conduct teaching activities. Teachers are encouraged to implement small-class teaching, make full use of smart classrooms, and improve the level of information-based teaching. The experimental training classrooms have Building Information Modeling (BIM) training rooms, VR experience halls, and training aids with QR codes, all of which are fully prepared for information-based teaching. In 2019, the shared training base in Jiangsu Province will be opened, and the school has purchased enough desktop workstations and experimental instruments to prepare the hardware for the informatization reform of our school to lay a solid material foundation for the realization of "learning everywhere and learning all the time."

3.3.2 Information technology software construction

Education informatization cannot be separated from the teaching platform. At present, the teaching platforms commonly used in our school are Micro Wise, Smart Vocational Education, Super Star, MOOC, and classrooms installed with these mainstream teaching platforms, making information-based teaching easy to achieve. During the epidemic, our teachers' teaching practice mainly used Tencent Classroom and Nail to teach live. The construction of the teaching platform provided the possibility for our teachers to use online open courses for teaching. The epidemic not only tested the hardware facilities of Informatization construction also tested the teachers' teaching ability and put the completed teaching resource library to the practice test. The survey of information-based teaching in our school during the epidemic is shown in Figure 1: 18.36% are under 30 years old (including 30 years old), 38.77% are 31-40 years old (including 40 years old), 28.57% are 41-50 years old (including 50 years old), and 14.29% are 51-60 years old (including 60 years old). The data show that 58.55% of the teachers in our school are over 41 years old, and the proportion of older teachers is higher. Older teachers are not good at mastering modern advanced technology, and some of them resist online classrooms, which inevitably increases the difficulty of implementing information-based classrooms.

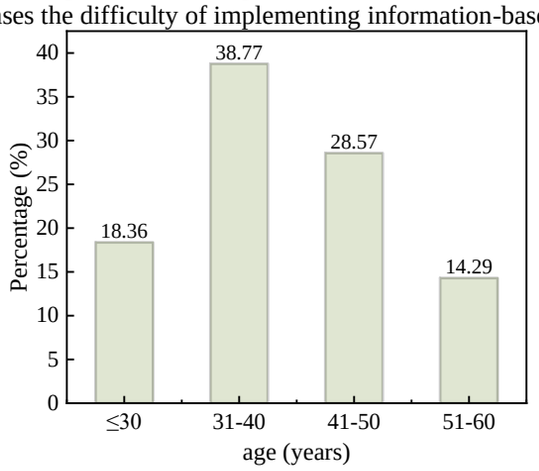

Figure 1 Age distribution

Prior to the 2019 COVID-19 outbreak, the frequency distribution of teachers using the online course platform is shown in Figure 2, 13.2% of our faculty had been using the online course platform consistently,30.5% had been using it for the past 1-2 years, but56.3% were using it for the first time. The data show that more than half of the faculty had not used the online teaching platform before the epidemic, indicating that faculty had little experience using online teaching in the absence of the epidemic. Therefore, the school provided online training to teachers before starting classes, including the platforms available and how to operate them. The teachers were generally resistant at first, but after four weeks, the survey showed in Figure 3 that 25.6% of teachers would use the online and offline blended teaching from time to time. As teachers became familiar with the platform, they changed from being resistant to accepting online teaching, and they even took the initiative to think about how the platform could be improved.

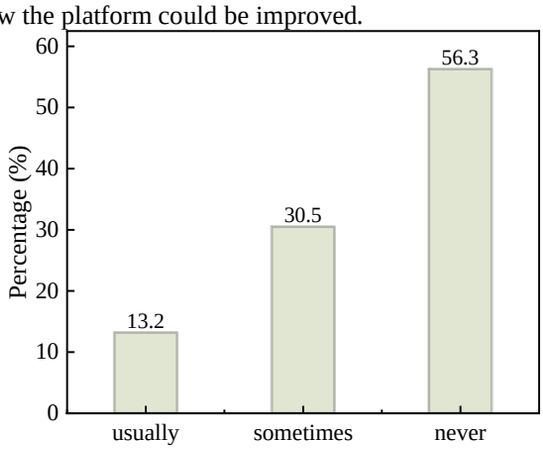

Figure 2 The frequency distribution of using the online course platform

The utilization rate of online teaching devices was shown in Figure 3, 80.1% for laptops, 58.31% for cell phones, 28.60% for desktop computers, and 7.76% for tablets. The proportion of teachers who used laptops for information-based teaching was larger. The popularity of laptops and other electronic products also provides a material basis for teachers' and students' information-based teaching.

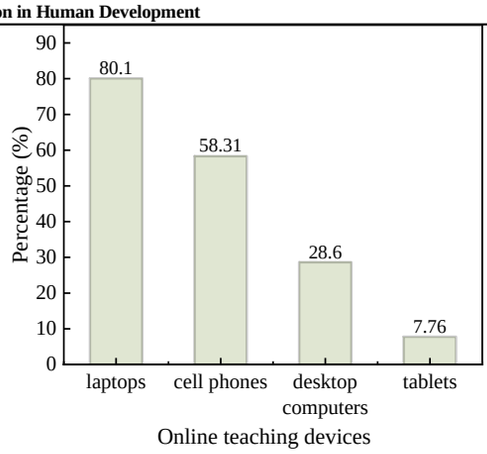

Figure 3 The utilization rate of online teaching devices

The length of online teaching preparation was shown in Figure 4, 4.88% within 1 hour,31.2% between 1-2 hours, 45.20% between 3-4 hours, and 16.74% over 5 hours. The data show that most teachers prepared lessons for 3-4 hours.

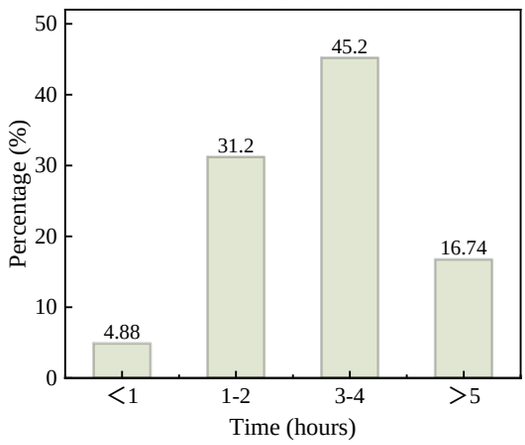

Figure 4 The length of online teaching preparation

The main source of teaching resources is self-made, followed by the online course resource library, and the utilization rate of the school's professional resource library is not high. This indicates that the existing resource library does not fully meet the individual requirements of teachers' teaching, and the most of teachers need to make teaching resources suitable for themselves.

Information-based teaching is also very advantageous in terms of mastering the learning situation. For example, the research study in our school shows that10.52% of teachers can master all students. Majority of teachers were able to grasp the learning situation of the majority of students, with 66.53% of teachers able to grasp the learning situation of the majority of students. In this case, it is possible to grasp students' learning more accurately than traditional teaching methods.

During the epidemic, our university organized 9 weeks of online teaching activities. The results of the research conducted by the Office of Academic Affairs on online teaching activities show that the biggest challenge of online teaching is that the resources suitable for online teaching are insufficient, accounting for 59.99%, followed by poor hardware equipment accounting for 34.57%. The unfamiliarity with platform functions and resources also accounts for 34.57%, indicating the future construction of the resource base. It is necessary to change from the original pile of teaching materials to some useful teaching resources that can be used for online teaching. There is also a need to strengthen the training of the teaching platform further. Due to the wide distribution of students attending classes at home, network resources are uneven, and the construction of rural network infrastructure needs to be increased.

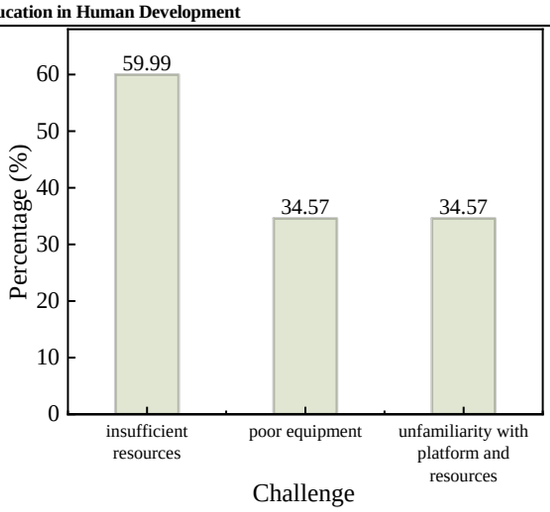

Figure 5 The biggest challenge of online teaching

The survey shows that teachers in our school meet the standards of informatization teaching in terms of teaching hardware, teachers have a high degree of acceptance of informatization and can make good use of the teaching platform, but the initial time and effort spent on informatization teaching is also more. There is a need to improve the quality of resource library construction further to make it more suitable for online teaching.

IV. CONCLUSIONS

According to the current situation of the development of information technology in our school, we study the kinds, ways, and methods of information technology application for teachers and students, whether the existing level of information technology can improve the efficiency of the classroom and stimulate students' interest in learning and creativity. Teaching is inseparable from teachers, teaching materials, and teaching methods. For example, many conditions limit the construction course content, but we can use the information technology to improve the interest and inspiration of the classroom by using the actual construction content through video, pictures, or even the technology of virtual reality and artificial intelligence.

The textbook is no longer just a carrier of text or pictures. However, it has added technology elements such as QR codes, and the textbook can "speak" and "demonstrate dynamically" so that the storage of knowledge is not limited to static and the content is not limited to length but is a dynamic and massive collection of expertise. It is a dynamic and large collection of professional knowledge. The teaching methods can be integrated with information technology to improve the efficiency of the classroom. The study of "three teachings" is also an important factor affecting the development of information technology. Therefore, it is necessary to set up teaching teams, develop high-quality online courses and high-quality three-dimensional teaching materials, discuss the methods of information-based teaching, change teaching attitude and innovate teaching concepts.

From their own point of view, we need to improve teachers' acceptance and application of information technology, and students' recognition of information technology, to "know ourselves"; from the development of information technology, research on the development of technology, technological innovation and the experience of successful cases of information technology in China, to improve the level of information technology in our school has significance, to "Know the enemy." Therefore, whether from their own point of view, or from the perspective of the development of information technology, realistic understanding of the current situation, full investigation, in order to achieve "know yourself and know the other," mutual learning and exchange of experience, and effectively improve the level of information technology in our school.

REFERENCES

Huang Ronghuai, Zhang Muhua, Shen Yang, Tian Yang, Zeng Haijun . Study on the core elements of super large-scale Internet education organization: a case study of online education effectively supporting "stopping classes without stopping school"[J]. Research on Electro-Chemical Education, 2020(3):P10..

Huang Ronghuai, Zhang Muhua, Shen Yang, Tian Yang, Zeng Haijun . Study on the core elements of super large-scale Internet education organization: a case study of online education effectively supporting "stopping classes without stopping school"[J]. Research on Electro-Chemical Education, 2020(3):P10.

Lei Wei . Characteristics, current situation and strategies of professional development of young teachers in colleges and universities [J]. Educational Theory and Practice, 2018 (12) p41-p43.

Li Yi . Discussion on the construction of teaching resource library of vocational colleges based on "Internet +" [J]. Vocational and technical education, 2018.

Marshall, C. & Rossman, G.B. (2011). *Designing qualitative research*. London: Sage Publications.

Ministry of Education of the People's Republic of China . Education, Sports and Arts [2003] No. 9 . Notice of the Ministry of Education on the Issuance of the Work Plan for the Prevention and Control of Infectious Atypical Pneumonia in the Education System. www.moe.gov.cn/jyb_xxgk/gk_gbgg/moe_0/moe_9/moe_39/tnull_110.html

Ministry of Education of the People's Republic of China . Teaching Technology [2018] No. 6 . Notice of the Ministry of Education on the Issuance of the Action Plan of Education Informatization 2.0. http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425-334188.html

Xiao Wan . Web ethnography: a new path for educational research in the era of "Internet +", 2021.(4) p26.