Application of Information Network Technology in Distance Training

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Abstract: *With the continuous growth of people's demand for education, the traditional education model can no longer meet the needs of students. Therefore, scholars have begun to explore how to provide more flexible and convenient distance training through information network technology. The application of information network technology in distance training has become a hot topic in the field of education in recent years. With the rapid development of various Internet technologies, the application of distance education has become an indispensable part of modern education. This article aims to explore the application of information network technology in distance training, analyze the application of information network technology in distance training, and explore how to optimize the effectiveness of distance education and improve students' learning experience and learning outcomes. Through in-depth research on the application of information network technology in distance training, it will help promote the development of distance education and improve the utilization efficiency of educational resources.*

Keywords: *Information Technology; Network Technology; Remote Training*

1. Introduction

In today's society, information network technology has become an indispensable part of people's daily life. Whether it's work, games, entertainment, or learning, people are increasingly dependent on the Internet. Especially in the field of education, in previous educational models, students needed to participate in classroom teaching at a fixed time and place, and the learning effect was limited by the resources and abilities of schools and teachers. However, with the continuous development of information technology, distance education has become an effective way to compensate for differences in educational resources. Through the Internet, students can receive education anytime and anywhere, and use online courses, online interaction, and other tools for autonomous learning and interactive communication. Therefore, in-depth research on the application of information network technology in distance training is not only a development trend in the field of education, but also an innovative mode to meet the learning needs of students. This article will explore the application of information network technology in distance training, demonstrate its advantages and limitations, and provide readers with some practical methods for reference.

2. Overview of information network technology

2.1. VR virtual reality enhancement technology

VR virtual reality enhancement technology is a technology that simulates the real world, enabling users to experience immersive experiences. This technology enables users to enter the virtual world through devices such as helmets and handles, 3D modeling, and animation. The combination of VR technology and education is also highly praised by more and more educators.

High quality VR enhanced virtual spaces can help students understand the course content more comprehensively and deeply, making people feel more immersive. Compared to traditional textbooks and slides, VR technology can make the learning content more vivid and visualized, giving people a more authentic experience. This virtual reality experience can also allow students to experience learning topics more deeply without actual contact.[1]

In addition, VR technology can also be used for education using robots and other equipment. Some university professors have begun to use VR technology to engage students in lectures. This approach

can greatly enhance students' interest and enthusiasm in learning, and promote their initiative and creativity in learning. The application prospect of VR technology in education is very broad. It can create immersive experiences and new learning methods, allowing students to enjoy knowledge while also learning with ease and pleasure.

2.2. Cloud computing technology

Cloud computing technology has been widely used due to its flexible and efficient characteristics. This technology places computing, storage, analysis, and other functions in the cloud, allowing data or applications to be used anytime, anywhere through the network. Cloud computing technology can achieve real-time data sharing and multi-party collaboration, and can greatly reduce costs and improve efficiency.[2]

In the field of education, the application of cloud computing technology has brought many conveniences. Educators can deploy educational applications in the cloud and manage courseware, exercises, exam information, etc. in a unified manner, greatly improving teaching efficiency. At the same time, students can easily conduct online learning through cloud computing technology, utilize cloud storage and share educational resources, and achieve multi-platform learning and collaborative learning, greatly enriching learning methods.[3]

In the future, with the continuous development of cloud computing technology, it is bound to promote the sharing and circulation of educational resources, and further achieve fairness and convenience in education. At the same time, cloud computing technology can also make full use of big data analysis to provide scientific basis for educational decision-making.

2.3. Video communication technology

Video communication technology is a technology for making video calls over the network, allowing people in different locations to communicate in real time. Video communication technology is widely used in the field of education. It can help teachers achieve online teaching and distance training through live video, online courses, and video conferences.

The biggest advantage of video communication technology is that it can break time and space constraints, allowing students to participate in learning anywhere.[4] At the same time, video communication technology can also make teaching more vivid and vivid, and teachers can use various methods such as physical objects, charts, and animations to elaborate on the course content.

3. Application status of information network technology in distance training

3.1. The development status of information network technology in distance training

3.1.1. National policy support

With the advent of the information age, the Chinese government has also begun to vigorously promote the construction of information based education. The state has issued a series of policies and documents to encourage educational institutions to adopt information network technology for distance education. For example, the "Several Opinions on Accelerating the Development of Higher Education Networking" issued by the Ministry of Education in 2005 proposes to combine the development of higher education prosperity with modern information technology to accelerate the process of higher education networking and informatization. In 2016, the National Internet plus Action Plan was launched, which mentioned the development of online education and distance education, improving the quality of education services, and strengthening the cultivation of innovative talents.

The national policy support provides a good policy environment for the application of information network technology in distance education, and also provides more convenient and high-quality educational services for students.

3.1.2. Teaching in educational institutions

With the rapid development of information network technology, more and more educational institutions begin to use information network technology for distance education. For example, in the field of adult education, China Telecom Institute (CTI) has established a distance education network of 21 provincial alliances and more than 60 cooperative units, releasing various types of courses through

video conferencing, live streaming classes, and recorded courseware. At the same time, some universities in China are also actively exploring and applying information network technology, such as Tsinghua University, Peking University, and other famous universities have begun to implement distance education.

In addition, some online education platforms have also begun to widely apply information network technology for distance training. For example, large-scale online education platforms such as "Xuetang Online" and "Netease Cloud Classroom" have become important places for students to learn from afar. These online education platforms provide students with comprehensive educational services through live video, online Q&A, interactive testing, and other methods.

3.2. Application of information network technology in distance training

With the rapid development of information network technology, distance training has become an increasingly popular educational method. However, there are still some problems and challenges in distance training. This article will analyze the problems of information network technology in distance training based on a case study.

3.2.1. Insufficient interactivity

Compared to traditional teaching, distance education is often less interactive. Because distance education is typically conducted through video or online platforms, interaction between students and teachers is often limited. This lack of interactivity may lead to a decrease in students' interest and participation in learning, thereby affecting teaching effectiveness. For example, some students may be distracted or inattentive when watching online videos, which can lead to their inability to effectively absorb and digest teaching content. At the same time, some students may need more interaction and communication to better understand and master the teaching content.

3.2.2. Personalized learning difficulties

There is also the problem of personalized learning difficulties in distance education. Due to insufficient interaction between teachers and students, personalized guidance on students' learning characteristics, levels, and needs cannot be provided. For example, a statistical data from an online education exam shows that some students have a poor grasp of certain knowledge points, but these knowledge points are important, indicating that students' personalized learning needs have not been met. Without personalized guidance from teachers, students' learning outcomes may be affected.

3.2.3. Difficulties in managing student time

Distance education is typically autonomous learning, especially when it involves online video courses, where students need to flexibly schedule their time to watch. However, due to the lack of self-management ability of many students, it will be difficult for them to grasp the learning schedule, thereby affecting the learning effect. For example, an online education learning report found that although some students have learned a lot of content online, they only have a video duration, while the actual learning time is extremely limited. This means that students often cannot ensure that their learning time is fully utilized.

3.2.4. Difficulty in ensuring teaching quality

In distance education, it is also a problem to ensure the quality of teaching. First of all, due to the limited communication and interaction between students and teachers, it is inevitable to have information transmission bias and misunderstanding. Secondly, due to the different educational levels and teaching quality of various educational institutions, students may choose different distance education platforms, making it difficult to unify teaching standards. For example, in 2018, a Guangzhou university student signed up for a course on an online education platform, but ultimately found that the quality of the course was poor and many of the content did not meet his learning needs.

4. Application of information network technology in distance training

With the advent of the information age, the application of network technology has penetrated into all aspects of our daily life, including the field of education and training. Remote training is conducted through information technology means such as the Internet, which has the advantages of freedom of time and location. This article will analyze in detail the specific application of information network technology in distance training from two aspects: the diversity of network training and the complex

application of network technology in training.

4.1. The diversity of network training

The diversity of online training is mainly reflected in the following aspects:

4.1.1. Diversified teaching content

Through information technology platforms such as the Internet, various online courses can be offered, covering a wide range of knowledge, such as vocational skills training, language training, certification training, and so on. Students can choose the training content they are interested in at home, in companies, in Internet cafes, and other adaptive places, improving the possibility of autonomous learning.

4.1.2. Diversified teaching methods

In the process of online training, in addition to traditional live video and recorded broadcasting, teaching can also be achieved through various forms such as online seminars, interactive Q&A, and simulation experiments. For example, practical courses can be simulated through virtual laboratories to improve students' practical skills.

4.1.3. Diversified teaching resources

The teaching resources in online training are mainly digital resources, such as textbooks, PPTs, videos, animations, etc. These resources have the characteristics of being replicable, transmissible, and reusable, and can be widely used and shared. In addition, there are also diversified learning APPs and resource platforms, such as "School Online" and "Thousand Vocational Education", where students can make full use of information technology resources to learn on different platforms.

4.2. Application of network technology in training

4.2.1. Live video technology

Video live streaming is one of the main methods of online training. Through video live streaming technology, distance learning can be achieved. Through the Internet, students can receive real-time video live streaming lectures. Students can learn anytime and anywhere through computers, mobile phones, and other devices. At the same time, live video also incorporates interactive functions, such as allowing students to ask questions and interact synchronously during the teaching process, improving the learning effect.

4.2.2. Network discussion technology

Webinar is an online real-time interactive teaching method. Teachers can interact with students in real time through the network platform for learning, answering questions, discussing, and communicating. Online seminars can improve students' thinking and practical abilities, cultivate their independent thinking and problem-solving abilities, and promote mutual communication between learners and synchronization of learning progress.

4.2.3. Intelligent evaluation technology

The intelligent evaluation technology in network training mainly includes automatic scoring technology and artificial intelligence evaluation technology. Through these technologies, functions such as online testing and homework correction can be realized. This method reduces the workload of teachers, improves the accuracy and timeliness of evaluation, and promotes learner autonomy and self-evaluation.

4.2.4. Virtual experiment technology

Virtual experiment is an experimental simulation platform based on digital technology. Through virtual experiment technology, students can observe and record experimental processes, experimental parameters, and other data in a remote state, improving their experimental and scientific research capabilities.

The use of virtual experiment technology can not only meet the need for multiple students to operate at the same time, avoiding the shortage of teaching equipment under traditional education models, but also ensure the safety of students and reduce the possibility of safety problems caused by students' dangerous operations.

4.2.5. Knowledge management and service technology

Knowledge management and service technology is a knowledge service platform based on data analysis and data mining technology. This platform can provide students with more personalized learning services and suggestions through the analysis and processing of learning data. For example, the platform can automatically recommend learning content, and it can also provide corresponding learning suggestions and feedback based on the learning situation of students.

5. Conclusion

In short, the application of information network technology in distance training has a very wide and complex diversity and complexity. The diversity of online training includes the diversity of teaching content, teaching methods, and teaching resources; The application of network technology in training mainly includes live video technology, network discussion technology, intelligent evaluation technology, virtual experiment technology, and knowledge management and service technology. The application of these technologies can improve students' autonomous learning ability, improve the effectiveness and efficiency of training, and promote the development of distance education.

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