

Research on the Integration of VR Virtual Technology into Nursing Practice Teaching

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Abstract. With the continuous improvement of the modern medical system, the medical technology has been rapidly improved, which can provide patients with higher quality medical services. Nursing is an important part of medical services, and any colleges and universities have opened nursing majors. In order to improve the teaching quality of nursing majors, VR virtual technology has gradually begun to be applied in practical teaching, which has greatly changed the practical teaching mode of nursing majors. On the other hand, it also promote the improvement of the quality of practical teaching. Therefore, this paper will conduct in-depth research and analysis on the integration of VR virtual technology into the teaching of nursing professional practice courses, and summarize some measures based on practical teaching experience to provide reference and experience for other colleges and universities.

Keywords. VR Virtual Technology; Nursing Specialty; Practical Course; Teaching Innovation; Optimization Measures

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1. Introduction

VR virtual technology is an important product of modern information technology. Based on computer technology, it can build a simulation environment and play an important role in many industries and fields. The combination of VR virtual technology and teaching is a new application method of this technology. Combined with relevant educational practice, VR virtual technology has a good application effect in the practical teaching of nursing. Compared with the traditional teaching mode, Nursing students can be exposed to a more "real" practice environment, which can improve the quality

of teaching and help to comprehensively improve the nursing professional ability of students. To this end, it is necessary to master the integration points of VR virtual technology.

2. Analysis of the development of vr virtual technology integrated into nursing professional practice courses

VR virtual technology is a new practical technology in modern information technology. It provides technical support for the integration of multiple disciplines, mainly including computer technology, electronic information technology and simulation technology. In the process of realizing the VR virtual, build a virtual environment (depend on computer technology) in which people can feel "real". From the theoretical point of this technology, VR virtual technology can create a virtual environment, which is generated by technology, but the environment is integrated with actual data, so it can give people a "real" feeling; in the virtual scene, it is combined with real data. There are images combined with real data in the virtual scene. Input the real data into the corresponding system, and the system can generate the corresponding scene. The image content can be either a real scene or a completely fictitious scene. Its performance can improve the authenticity and expressiveness of the scene^[1]. VR virtual technology is an important part of digital technology which built on the development of digital technology. The application of VR virtual technology in nursing practice teaching can build a virtual nursing teaching environment and a corresponding nursing teaching model. Because it is based on the real nursing environment data, it can restore the real situation of nursing education content to the greatest extent. It truly shows the details of nursing teaching content. If the nursing environment data is real enough, the nursing teaching content model is in line with the actual situation, so the nursing practice teaching in the virtual simulation environment is highly scientific and reductive. Therefore, in the field of modern nursing practice teaching, VR virtual technology is increasingly widely used. Compared with traditional nursing teaching methods, VR virtual technology can better meet the needs of modern nursing teaching, and more intuitively display nursing teaching content which can effectively improve the quality of nursing teaching, it is the key to promote the development and innovation of modern nursing teaching methods^[2].

3. VR virtual technology is integrated into the teaching design of nursing practice courses

3.1. VR Environment Creation

Using VR virtual technology to carry out nursing practice teaching, first of all, it is necessary to build a VR virtual environment. In the construction of the virtual environment, the photos taken in the clinic can be programmed by using the simple geometric modeling method provided by VRML technology to construct a three-dimensional model of the disease, and the processed pictures can be imported into the software to construct a three-dimensional DIC model and realize the the three-dimensional display of the lesson content enables students to concretize and visualize the abstract concepts of DIC. At the same time, by constructing a three-dimensional visualization model of the human body, the anatomical structure can be displayed more clearly and in detail. Through the creation of virtual environment, it can provide students with a more realistic nursing learning environment, in which students can more accurately grasp the key points of nursing technology application, which is an effective way to improve the effect of nursing teaching. In addition, in the process of virtual environment creation,

sensor tracking devices such as helmet displays and data gloves need to be equipped to realize interaction with the virtual environment, thereby improving the real-time and immersion of nursing practice teaching ^[3].

3.2. Technology Demonstration

Taking the virtual intravenous injection system adopted by a university as an example, the use of three-dimensional visual effects and an advanced pressure feedback system can virtualize the intravenous injection operation, accurately simulate the feeling of intravenous injection and skin puncture, and simulate bleeding and swelling, and other adverse reactions. During the technical demonstration, students use the mouse to complete other procedures except for puncture, and perform puncture training in the simulated peripherals. During the operation, they can choose a visual profile for observation. Compared with the traditional teaching mode, VR virtual technology is used. It can reduce the psychological tension of students, and can also improve the training efficiency, which has a good application effect. Through the demonstration of VR virtual technology, students can master the application points of corresponding nursing technology. Different from traditional teaching methods, using VR virtual technology to demonstrate can improve the intuitiveness of nursing teaching, and students can intuitively observe the corresponding technology application methods. It is an effective way to improve the quality of nursing practice teaching.

3.3. Analysis of technical application

The VR virtual technology was adopted in the practical teaching of nursing specialty in a university, and a VR virtual system was developed in combination with the teaching content. The system includes multiple typical pathologies such as gastric cancer, lumbar fractures, and craniocerebral injury. Each pathology is based on treatment and nursing procedures, including three nursing modules: preoperative, tree species, and postoperative, including physiological and epidemiological characteristics. As well as clinical nursing and other content, through pictures, videos and animations to help students understand. The VR virtual software has been well received by relevant personnel in the teaching process. The VR virtual system includes a large number of knowledge points, and the operation is relatively convenient, which can reduce the gap between students' theoretical learning and clinical practice, and can also stimulate students' interest in learning. Improving students' self-learning ability is the important significance of VR virtual technology ^[4].

In addition, some colleges and universities use VR virtual software for nursing skills training, including the use of oxygen inhalers, ventilators, ECG monitors and blood glucose meters. Through the nursing technology simulation system, the efficiency of nursing teaching can be improved, so that students can correctly grasp various With the correct use of nursing equipment, students can learn more nursing knowledge and skills in the simulated virtual environment.

3.4. VR data analysis

Using VR virtual technology for clinical nursing teaching will generate a lot of VR data, which has important value, not only for teaching evaluation, teaching model optimization, but also for teaching model improvement. Therefore, it is necessary to do a good job in the analysis of virtual data, and store it in the corresponding database according to the data generated in the application process of VR

virtual technology. In terms of optimization and nursing simulation environment innovation, it has good application effects and is an important advantage of VR virtual technology.

4. The development strategy of vr virtual technology integrated into nursing practice teaching

Through the above analysis, it is clear that VR virtual technology has a good application effect in nursing practice teaching, which can comprehensively improve the teaching quality of nursing practice courses, conserve teaching resources and improve teaching efficiency. However, due to the practical experience shortage, some colleges and universities have not yet achieved the expected goals in the application of VR virtual technology. Therefore, it is necessary to strengthen the application optimization of VR virtual technology and adopt scientific application strategies to ensure that the advantages of VR virtual technology can be fully utilized. Therefore, based on practical experience, this paper summarizes the following scientific and effective VR virtual technology application development strategies.

4.1. Strengthen the construction of information technology

Information technology is the basis for realizing the VR virtual technology teaching, so it is necessary to strengthen the construction of information technology, the core content of which is to strengthen the development of virtual teaching platforms. Teachers can upload relevant virtual learning materials on the remote virtual simulation platform, so that students have a clear understanding of the application points of different nursing technologies. It can break the time and geographical constraints of nursing teaching. When students encounter problems, they can directly obtain relevant information and resources through the information-based teaching platform, which can improve students' learning flexibility. Understand the key points of nursing technology application, and be able to learn its specific content through the remote virtual simulation teaching platform. Through the construction of information technology and the development of a complete virtualized teaching platform, the advantages of VR virtual technology can be fully utilized, thereby improving the teaching effect and providing convenient conditions for students' learning. [5]

4.2. Improve the quality of technical learning

At present, medical technology has been rapidly developed through continuous innovation, and with the fast development of medical technology and related equipment, the relevant courses of nursing are also constantly innovating. The emergence of technological innovation means that students need to learn more content, but the update speed of professional knowledge in the traditional teaching model is relatively slow, so it is necessary to give full play to the advantages of the virtual simulation environment and enrich the teaching content with the help of virtual simulation technology. Teachers can use the virtual simulation teaching platform to show the technical principles and application processes of nursing technology, so that students can have a clearer understanding of nursing technology. In addition, they can also enrich the teaching content and enable students to learn more scientific nursing. This is also an effective measure to improve the teaching quality of nursing practice courses. By improving the quality of technical learning and broadening the teaching scope of nursing, students can learn more professional knowledge, master the application points of nursing technology, and cultivate modern and professional nursing talents. This requires teachers to combine the

application characteristics of VR virtual technology. , to innovate the traditional practice teaching mode, bring the advantages of VR virtual technology into full play, and promote the improvement of technology learning quality.

4.3. Optimizing technology integration effect

When teachers present the application methods of nursing technology and equipment, the traditional teaching methods are ineffective, so students cannot grasp the accurate application points. But the VR virtual which is applied in the nursing model shows the correct use of technology and equipment, and combined with practical teaching can achieve good results. When students learn a certain nursing technology, teachers prepare corresponding materials in the VR virtual technology platform. Learning key points, fully understand the application of nursing technology and related equipment, so as to improve the efficiency of classroom teaching and learning. This process can be completed in VR virtual mode, which is of great significance for practical teaching, and can fully stimulate students' interest in learning and improve The quality of practical teaching.

5. Conclusion

In summary, this paper briefly expounds the application and development of VR virtual technology in nursing practice teaching, and analyzes the application content of VR virtual technology in detail. Finally, it proposes a number of measures to promote the application effect of VR virtual technology. It will play a certain reference and help role in nursing teaching, and continuously improve the application effect of VR virtual technology.

Acknowledgement

1. Phased research results of the 2020 Jiangxi Provincial Humanities and Social Science Planning Project "Virtual Practice Teaching Research on Ideological and Political Theory Courses in Colleges and Universities Based on VR", Moderator: Ding Liangxi, Project No.: JC20111
2. Phased research results of the 2020 Jiangxi Provincial University Party Construction Research Project Planning Project "Research on the Model Construction of "VR + Smart Party Construction Positions", Moderator: Ding Liangxi, Project No.: 20DJYB049

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