

Application Practice of Virtual Simulation Technology in Clothing Craft Teaching

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Abstract: Clothing technology teaching is a comprehensive teaching course integrating artistry, theory, basic, professionalism and craftsmanship. Because of its strong practicality, clothing technology teaching must be added on the basis of theoretical teaching. Certain practical courses are provided to meet the actual demand of the market for garment craft professionals. This paper takes the teaching of clothing technology major as the starting point, points out the application advantages of virtual simulation technology, and expounds the current teaching status and main problems of clothing technology major, and expounds the application strategy of virtual simulation technology in the teaching of clothing technology major. The reform and improvement of professional teaching will provide experience guidance and reference for the improvement of the teaching quality and level of clothing craft specialty.

Keywords: Virtual simulation technology; Clothing craft teaching; Application; Practice

1. Introduction

With the rapid development of information technology, the market product replacement updating is getting faster and faster. Various high-end technology products are constantly being developed and introduced, and are gradually applied to various industries in our country. They also bring us more convenience and comfortable and efficient experience. Modern information technology such as artificial intelligence, big data, cloud computing, and the Internet of Things, these have been widely and deeply applied in various industries. It has promoted deep-seated changes in various industries fields, and has brought profound changes for people's work, study, and life. Virtual simulation technology, also known as VR technology, mainly refers to the technology of simulating another real system by using one system. Virtual simulation technology is a virtual world computer system that can be created and experienced [1]. Applying virtual simulation technology to the teaching of clothing technology majors to promote the organic combination of clothing technology teaching and virtual simulation technology is not only the product of the deep integration of information technology and professional education and teaching, but also makes the current boring clothing technology classes full of situational, interactivity, openness and sharing. It is an important means to improve the teaching quality of clothing technology to enhance the comprehensive competitive strength of clothing technology teaching.

2. Advantages for applying virtual simulation technology in clothing craft teaching

By applying virtual simulation technology in the teaching of clothing technology majors. First of all, the application of virtual simulation technology breaks through the limitations of traditional teaching time and space. Teachers can teach theoretical knowledge to students in class, and build a practical platform through virtual simulation technology after class, so that students can consult relevant questions with teachers at any time through virtual simulation technology. This can effectively enrich clothing by building a practical teaching platform. The teaching environment for craft majors creates conditions for the practical training of students majoring in apparel craft, so that students majoring in apparel craft can consolidate their knowledge through virtual simulation technology, continue to exercise to improve their practical ability, and enable them to master what they have learned in fashion craft majors proficiently.

Students majoring in clothing technology have the following characteristics: First one is career orientation. This is closely related to the clothing craft major and course; the second one is subjective

initiative which includes study time dominating, study content choosing, etc; the third one is the multiple learning ways which includes classroom learning, practical training learning, after-school learning, extra-curricular knowledge learning, social practice learning, etc; The fourth one is self-reflection. It requires a certain research awareness and exploration spirit to learn clothing technology knowledge and the training skill.

Secondly, the application of virtual simulation technology has improved the education quality and learning efficiency of clothing craft teaching. The number of students involved in the traditional clothing craft practical teaching is limited. And it requires a very long time to prepare the complete practical teaching of clothing craft, and it is also necessary to purchase the necessary raw materials, surface accessories and sewing tools during the process. The application of virtual simulation technology in the practical teaching of clothing technology can be used for all students to learn and practice. In the virtual simulation technology, the sewing and fitting of clothing sections can be simulated, and the virtual simulation effect of information technology can be used to remove the cost of plate cutting and finished product proofing to some extent, and effectively reduce the economic expenditure and time cost [2]. To sum up, the application of virtual simulation technology in the teaching of clothing technology has reduced the workload of teachers, saved education time and economic costs, and improved the teaching quality and learning efficiency of clothing technology.

At last, the application of virtual simulation technology makes the teaching of clothing craft more closely related to the market. The clothing styles in the traditional clothing craft teaching are relatively fixed, the main reason is that the clothing structure and shape in the traditional clothing craft teaching of classic clothing is relatively single, and it lacks of the connection with the popular market. But by using virtual simulation technology to shape the teaching situation of clothing technology specialty can simulate the current popular new technology technology and various popular fabrics, etc. It combines the structural technology course content of clothing technology specialty teaching with fashion trends and popular model materials. The application of virtual simulation technology can not only save teaching time, improve the quality and efficiency of education, but also give students more innovative design room, broaden the international vision of students majoring in clothing technology. It closely linked with the social clothing industry, and cultivate students who understand the market better, high-quality clothing craft professionals who meet the needs of the industry.

3. The current status and main problems of clothing technology teaching

The key to the application of virtual simulation technology in the teaching of clothing technology is to transform the traditional two-dimensional clothing patterns into three-dimensional clothing. Structural plate-making needs to involve the size of the human body, the size of clothing, etc., and there are many contents about data calculation. In the traditional teaching of clothing technology, students mainly understand the body shape and size measurement of the human body, as well as the structural plate size and data calculation methods of different clothing styles through the lectures and demonstrations of professional teachers. Teachers generally make plate-making drawings on the blackboard, and students follow the teacher's practice to make clothing drawings and practice. The teaching method belongs to the teacher-centered indoctrination theory teaching. Due to the large amount of teaching content in the teaching of clothing crafts, the teaching process is a bit boring, and the teaching method is relatively simple. This teaching mode has a weak sense of space. Knowledge is difficult to be understood and mastered by students in a short time, and it is not easy to stimulate students' interest in learning and creativity. The teaching effect of clothing crafts is not good, and some students even become tired of learning during the learning process. In addition to the pattern-making part of garment structure, the course also includes a part of garment craft sewing. This requires multiple steps such as typesetting, fabric cutting, interlining and seaming of the flat garment structure plate-making, and then sewing with a lockstitch machine, and finally completes the garment production. The whole process requires the teacher to demonstrate the operation in order to be able to fully and completely display all the technical content of clothing production. Many clothing production details, students will continue to encounter various questions in the post-production process, which requires teachers to repeatedly explain and demonstrate operations [3]. The entire demonstration is time-consuming, costly, and inefficient. It is only for some students to watch and learn. The scope of the demonstration is small and the educational effect is not good. How to solve the problems existing in the teaching of clothing technology specialty, enrich the teaching methods, and improve the teaching efficiency and teaching quality are the contents that need to be considered. The application of virtual simulation technology in the teaching of clothing technology can solve the above problems to a large extent, make up for the deficiencies in the traditional structural clothing technology teaching, and

realize the complementary advantages of different teaching methods, especially to make students understand clothing technology more deeply. Knowledge, enrich the teaching mode of clothing technology specialty, and realize the improvement of the teaching quality of clothing technology specialty.

4. The application strategy of virtual simulation technology in the teaching of clothing technology specialty

4.1. Create a real practice environment for students through virtual simulation technology

Creating a real practice environment will help to improve the teaching quality of clothing technology major. To create a real practice environment, it is necessary to play the role of virtual simulation technology in terms of intuitive performance, network transmission, information interaction and digital performance. The collaborative teaching form of virtual simulation technology, the virtual expression of teaching scenarios and the simulation delivery of teaching content are all very important. To create a real practice environment for students through virtual simulation technology, it is necessary to take the modern production technology of clothing enterprises as the main content, and create a real scene for clothing technology students by establishing a simulation model and creating a virtual simulation environment. To create a real practice environment, we must first have a clear understanding of the virtual simulation technology system software, and then design and develop the real practice environment. After fully understanding the virtual simulation technology system software, teachers also need to design and make a real practice environment for clothing technology according to the clothing technology professional courses and teaching purposes. The creation of a real practice environment for clothing technology needs to take students' professional practice as a reference, and finally realize a virtual clothing enterprise production process through virtual simulation technology, so that students can obtain a realistic production scene and realize the simulation of production operations. It enables students to be in a virtual teaching place in the teaching of clothing technology, and experience the virtual simulation operation as a clothing worker in a clothing enterprise. Complete the modern production of clothing enterprises in a real practice environment. At this time, students can understand the actual production process more clearly and fully master professional knowledge. [4] See Figure 1.

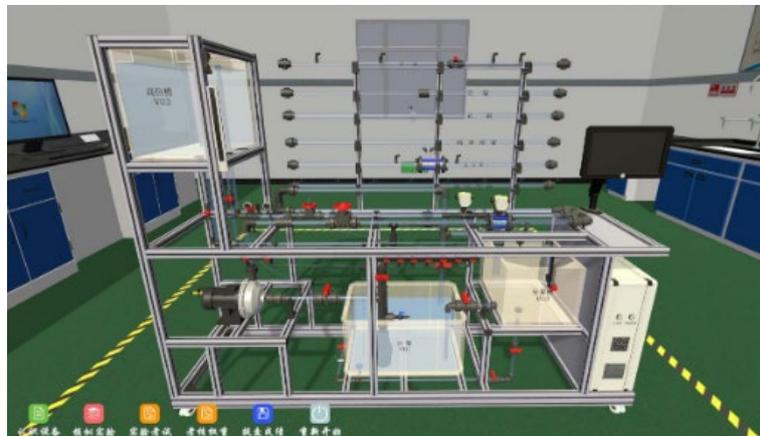


Figure 1: Virtual simulation practice scenario

4.2. Build a real workplace for students through virtual simulation technology

After finishing the classroom study and the practice for students majors the teaching of clothing technology, the teachers of clothing technology also need to build a systematic and perfect clothing technology work platform for students so that students can improve their practical ability in the workplace. In fact, in the virtual simulation technology system, the construction of the working platform is an important basic hardware facility in the teaching process of clothing technology. The construction of the working platform can ensure the smooth progress of the teaching activities of clothing technology. Applying virtual simulation technology to the teaching of clothing technology can provide students with places and tools related to classroom teaching with the help of virtual simulation technology to ensure the effectiveness of clothing technology teaching [5]. For example: in the actual teaching process of clothing technology, the construction of the work platform needs to start from the

following aspects, Firstly, providing students with a sufficiently real production environment of the enterprise. Secondly, presenting the actual production process of the actual enterprise. Therefore, in the teaching of clothing technology, teachers can build a matching workplace according to the characteristics of modern production of clothing enterprises, and in terms of the ratio of equipment and equipment, according to the actual situation of the production workshop of clothing enterprises To carry out effective simulation settings to deepen students' understanding and mastery of the cloth craft production process. If the school's conditions permit, teachers can also set up high-end and advanced production equipment for students in the work platform, which can effectively cultivate the innovative consciousness of students majoring in clothing technology. In the process of building a working platform, teachers should try their best to create a working environment that meets the actual needs of enterprises for students majoring in clothing technology, so as to better improve the quality of practical teaching in the teaching of clothing technology. See Figure 2.

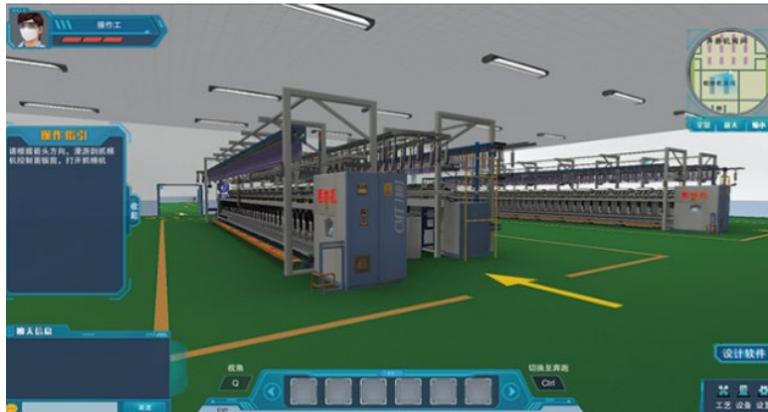


Figure 2: Virtual simulation work platform

4.3. Enriching the teaching methods of clothing craft specialty through virtual simulation technology

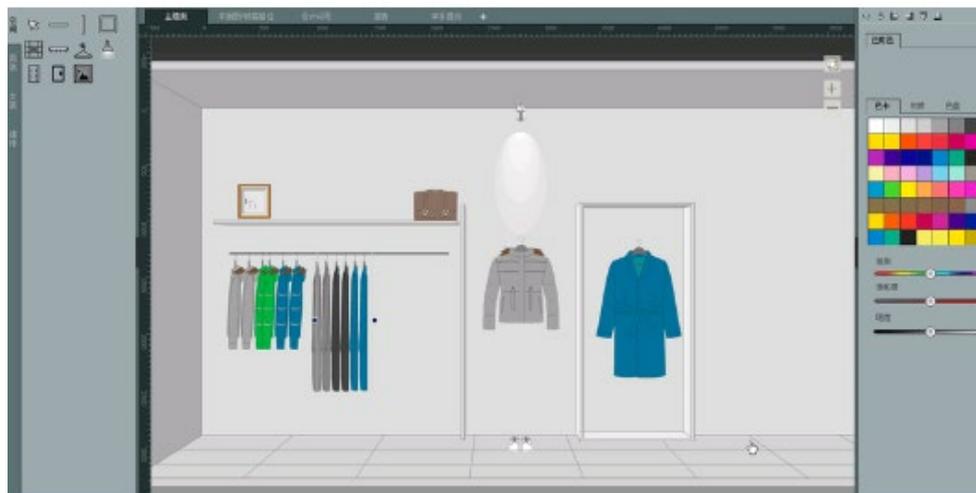


Figure 3: Virtual simulation clothing design system

The virtual simulation technology used in the teaching of clothing technology mainly includes computer simulation teaching, skill simulation training, model demonstration teaching, virtual simulation laboratory, etc. Among them, computer simulation teaching is relatively simple, that is, through the use of media such as images, pictures, sounds, and texts to present information on all aspects of clothing technology teaching, and use of human-computer interaction technology to achieve virtual things forms, movement methods, and processes; skill simulation The training is to use virtual simulation technology to simulate the production process of clothing technology, and observe the problems and effects of students in the practice process through direct practical operation in the teaching process of clothing technology specialty. In terms of skill training, the image is intuitive, so that students can be more to provide help for easy understanding of clothing technology. At the same

time, virtual simulation technology can also be used to construct interactive practical training to directly increase students' practical experience. Model demonstration teaching is to use virtual simulation technology to demonstrate, so that students can intuitively understand clothing Technological specializations teach knowledge acquired and the link between knowledge and practical work. Through the construction of virtual simulation laboratories, various types of virtual simulation laboratories are constructed through virtual simulation technology, and applied to the teaching of clothing technology, which directly reduces the input cost of teaching equipment [6]. For the teaching of clothing technology, if the cost of establishing a laboratory or training room is relatively high to meet the actual needs of students, the school can provide students with diversified teaching forms of clothing technology through the application of virtual simulation technology, so that students can carry out clothing design and production in diversified teaching forms, and stimulate their learning enthusiasm and initiative. Enable students to practice training anytime and anywhere, better improve the quality of clothing technology teaching education[7]. As is shown in Figure 3.

5. Conclusion

To sum up, in today's context, the application of virtual simulation technology in the teaching of clothing technology can not only break through the traditional teaching time and space limitations, but also improve the education quality and learning efficiency of clothing technology teaching. It is helpful to make the teaching of clothing technology more closely related to the market. Relevant teachers can create a real practice environment for students through virtual simulation technology. By building a real workplace for students through virtual simulation technology can enrich the teaching of clothing technology. Methods and other strategies make the original boring teaching of clothing craft have the characteristics of situation, interaction, openness and sharing, and improve the education quality of clothing crafts teaching.

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