

Exploring Teaching Reform in Fashion Design Major based on Virtual Reality Technology

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Abstract: With the development of technology and social progress, digital teaching has become the mainstream trend, and digital teaching technology is constantly integrated into the teaching of fashion design majors. Fashion design will further evolve and improve virtual simulation technology, continuously enhancing the intelligence and interactivity of teaching, and providing students with comprehensive and practical fashion design learning experiences. This article provides an overview of virtual reality technology, its application in fashion design teaching, application types, problems and solutions in the application of virtual reality technology in fashion design, and research on the reform of virtual reality technology in fashion design teaching. It proposes that virtual reality technology effectively improves the classroom teaching efficiency of fashion design, stimulates students' design and innovation inspiration, promotes the practicality of fashion design, and provides students with a good learning environment and methods. Applying VR technology to the field of modern education continuously promotes the development of teaching and education work, providing new teaching models and innovative teaching methods for national education work.

Keywords: Virtual Reality Technology; Fashion Design; Reform in Education.

1. Introduction

Virtual reality technology is a three-dimensional virtual world technology model established using computer technology, with the main purpose of providing realistic sensory simulation experience devices, allowing users to immerse themselves in the changes and settings in three-dimensional space. Virtual reality technology mainly uses display devices to enclose users' visual and auditory senses, and creates a sense of three dimensionality through the differences in images displayed to the eyes, allowing users to experience a sensory state in the virtual world. This technology can provide users with visual and auditory sensations, as well as multiple sensory experience modes such as touch and smell, allowing users to observe things in three-dimensional space in a timely manner[1]. Virtual reality technology, also known as VR technology, is widely used in many fields, such as game development, replica production, and scientific research. It integrates and reproduces various resources in reality through computer network technology, achieves resource sharing, and then spreads widely through network technology. The biggest advantage of virtual display technology is its wide range of applications, providing users with a very realistic experience through high-precision image production and fine carving. The development of virtual reality technology is mainly based on the advancement of high-tech development, such as the use of computer technology, 3D graphics technology, simulation technology, network technology, display technology, and diversified resource mixing modes to present people with a realistic and 3D virtual world. With the development of society and technological progress, virtual reality technology has been applied to many fields, such as technology, culture, and education[2].

2. The Application of Virtual Reality Technology in the Teaching of Fashion Design Major

Virtual display technology also has wide application value in clothing design teaching, which can maximize the quality and level of teaching. Through virtual display technology, a virtual environment can be established, allowing designers to intuitively modify, evaluate, and innovate the designed clothing. This technology can greatly improve the accuracy of clothing design, allowing designers to experience the final effect of clothing more realistically in design, greatly enhancing their design inspiration and creative freedom.

Firstly, virtual reality technology can optimize the process of clothing design. Compared with traditional clothing design, virtual reality technology makes clothing design more convenient, simplifies the design process, and improves the computer technology level of design. By using digital models and computers, the wearing effect and details of designed clothing can be truly presented, greatly shortening the time and process of clothing design and optimizing the production and design process of clothing.

Secondly, virtual reality technology has also enhanced the freedom and innovation of fashion design, providing more creative space for fashion designers, promoting personalized fashion design, and giving designers more choices of elements, such as colors, patterns, and fabrics, which have improved the level of fashion design and allowed designers to fully unleash their creative thinking.

At the same time, virtual reality technology also enhances the interactivity of fashion design. In the process of using virtual display technology for fashion design, designers can intuitively judge the quality of the clothing through their own visual and auditory senses, and make timely adjustments and modifications. Computer technology provides timely feedback on various information data, allowing designers to adjust their design concepts and ideas faster and make the best

design solutions.

Virtual reality technology also allows designers to save costs and waste issues in fashion design. Virtual reality technology does not require physical samples, and designs are first carried out on a computer to determine the design plan before production. This increases design costs and reduces waste issues. In fashion design teaching, virtual reality technology can more quickly apply new design ideas and technologies to teaching work, which is in line with the environmental protection and sustainable development concepts that society needs[3].

Finally, virtual reality technology has also improved interactivity in teaching. In the virtual environment, teachers and students can communicate and design intuitively, discuss each other's design ideas, improve teaching level and quality through interaction, and cultivate students' innovative and practical abilities. This is an important direction and trend in future fashion design teaching.

3. The Application Types of Virtual Reality Technology in Fashion Design Teaching

There are many types of applications of virtual reality technology in the teaching of fashion design majors, such as teaching fashion design styles, clothing structure design, clothing fabrics, and virtual fitting, all of which have enormous utilization value.

In the teaching of clothing style design using virtual reality technology, teachers can create a multi-dimensional virtual space and draw three-dimensional clothing for students to observe and modify. This teaching activity allows students to learn intuitively, improving the efficiency and accuracy of teaching work. In the teaching of clothing structure design, virtual reality technology is applied in clothing structure design. By simulating the real clothing production process, teachers can help students better understand the structure and pattern of clothing, thereby optimizing the design teaching work[4]. In fabric design teaching, teachers can use virtual reality technology to present students with the colors, patterns, and physical characteristics of various fabrics, educating students on how to better match and choose fabrics. In terms of virtual fitting, virtual reality technology allows teachers to visually experience the upper body effect of designing finished clothes, which can be presented through computer technology for better presentation to students. Students can experience the effect of clothing design, how to choose suitable clothing and how to design excellent clothing, thereby improving the quality of teaching. From this, it can be seen that the application of virtual reality technology in fashion design teaching has great value. Through immersive and interactive teaching, teachers can greatly enrich their teaching methods, improve teaching quality and level.

4. There are Problems and Challenges in the Application of Virtual Reality Technology in the Teaching of Fashion Design Major

Virtual reality technology is widely used in the teaching of fashion design majors, but there are also many problems and challenges. For example, from the perspective of intuitive and visual display analysis, virtual simulation technology can present complex 3D structures to students for learning,

helping them understand the relationship between flat patterns and three-dimensional clothing. By rotating and adjusting the human body model in a virtual environment, students can observe the changes in clothing plate making in real life, enhancing their learning interactivity. Although virtual reality technology is widely used in the teaching of fashion design, there are still many problems and challenges, such as technological updates and software compatibility. With the rapid development of computer technology, designers also need to constantly learn new technologies and software achievements in their design work to adapt to industry development. There are differences in interfaces and material libraries between different software, and designers need to constantly master many software operation standards[5]. In personalized learning and modular design, virtual simulation technology allows students to customize their personalized needs through modular design, improving their learning autonomy. However, in actual teaching work, how to effectively improve students' clothing design and innovative design abilities is still a huge challenge. Finally, in terms of obtaining teaching resources, virtual simulation technology avoids the problem of a large amount of materials and preparations in traditional teaching, reducing teaching costs. However, in the process of utilizing this technology, it is also difficult to ensure that students can quickly obtain teaching resources, which is also a problem. So it can be seen that virtual reality technology can improve the teaching quality in fashion design majors, but it will also face many issues such as technological updates, personalized learning and teaching, and resource acquisition. It is necessary to continuously improve the teaching quality and level.

5. Solutions to Problems in the Application of Virtual Reality Technology in Fashion Design Teaching

There are problems that need to be solved in the application of virtual reality technology in the teaching of fashion design, such as the need to improve the way teaching resources are obtained, personalized learning support, interactive operation experience, accurate size measurement, and enrich the learning of appearance design library. In the face of these problems, the first step is to improve the convenience of obtaining teaching resources. Teachers and students need to access resources, improve teaching efficiency, and avoid the need for a large amount of material investment in traditional practical teaching. In addition, personalized learning support requires teachers to develop learning plans based on students' personalized needs, so that each student can learn knowledge according to their own learning pace and interests, thereby improving the value of teaching autonomy and flexibility[6]. Virtual simulation technology can visually present complex 3D structures to students, helping them understand the relationship between flat patterns and three-dimensional clothing. At the same time, it is necessary to enrich the exterior design library. The virtual simulation technology brought by virtual reality technology effectively enriches the exterior design library, replaces traditional design with modern design patterns, and brings many innovative possibilities and personalized design space display opportunities for designers. From this, it can be seen that virtual reality technology can greatly improve the teaching quality, cultivate students' innovation and practical abilities in

the field of fashion design, and cultivate high-quality talents for fashion design and production.

6. Reform measures for the application of virtual reality technology in the teaching of fashion design major

1) Optimizing the design process and improving efficiency

There are many reform measures for the application of virtual reality technology in the teaching of clothing design specialty. The first is to optimize the design process, which is different from the tedious process of traditional clothing design. Traditional clothing design includes design, plate making, production, fitting and modification. However, using virtual realism to design clothing greatly omits many links. Virtual reality technology reconstructs the composition of clothing design through high-precision digital models, and uses computer technology to present realistic design effects, so that users can intuitively feel the wearing effect of the designed clothing, omitting many steps, and improving the efficiency and quality of clothing design.

2) Reduce design costs and expenses

Compared with traditional clothing design patterns, the texture and details in traditional clothing design need to be repeatedly tried on to feel, and require multiple adjustments and modifications, greatly consuming materials and time. However, clothing designed using virtual reality technology can save a lot of process. Without samples and human models, clothing can be quickly optimized and adjusted using parameters such as style, structure, and material, shortening design time and reducing waste problems, which is very in line with the current sustainable development model of the clothing design industry [7].

3) Strengthening Design Freedom and Innovation

Traditional clothing design requires manual drawing and sample making, which consumes a lot of manpower and material resources, and also limits the innovation space of designers. Virtual reality technology provides designers with more creative ideas. With the help of virtual simulation technology, designers can freely use fabrics, colors, and patterns to explore clothing design patterns that better meet current people's needs.

4) Timely feedback to customers

In traditional fashion design, after completing the design, designers need to create finished products for customers to experience. Virtual reality technology can effectively communicate with customers and designers, promote customer participation in the design process, and improve the market acceptance of the design. The reform measures for the application of virtual reality technology in the teaching of fashion design major mainly include optimizing the design process, improving design efficiency, reducing equipment costs, strengthening design freedom, and enhancing innovation, in order to improve the teaching level of fashion design major and cultivate designers with innovative ability and market value to serve the teaching work.

7. The Significance of Reforming the Application of Virtual Reality Technology in the Teaching of Fashion Design Major

The application of virtual reality technology in the teaching of fashion design has profound significance and value. Firstly,

it can promote the integration of industry and education. Virtual reality technology can integrate the design and production processes of enterprises into teaching, allowing students to be exposed to new technologies and processes in a virtual environment. These new technologies not only revolutionize the level of fashion design, but also provide many talents for the development of the fashion design industry. Innovative teaching models can also be developed. Virtual reality technology can bring more possibilities for innovative design to students in fashion design teaching. Teachers can explore innovative teaching models, such as learning together with students and leveraging the advantages of virtual simulation technology to improve teaching quality and level. It can also greatly reduce teaching costs. Compared with traditional fashion design, virtual reality technology can effectively reduce design and production costs. Through high-precision digital modes, teachers can present very realistic design effects to students, shorten design time, optimize design processes, and reduce waste problems. It is a new driving force for the modern fashion design industry. It can also enhance design freedom and innovation level. The application of virtual reality technology in design can create more personalized clothing products, making clothing styles more novel and unique. Finally, the process effect can be optimized by using virtual reality technology to achieve the integration of clothing design and board making, improve design effect and quality, ensure clothing design level, greatly improve teaching quality, and provide innovative talents for the clothing field [8]. With the development of digitalization and the continuous application of digital intelligent technology, it is necessary to continuously improve the teaching level of structure and craftsmanship in clothing design classroom teaching. This not only saves resource waste but also ensures teaching quality. It also promotes the promotion of virtual reality technology, reforms teaching skills, innovates teaching modes, and promotes the improvement of teaching level. The application of virtual reality technology in the teaching of fashion design is a teaching model that is worth promoting. It can change the previous emphasis on theory over practice teaching methods, stimulate students' autonomy and enthusiasm for learning, and use virtual reality technology to not only enable students to grasp professional theoretical knowledge, but also to achieve more intuitive learning and research on fashion design effects. It eliminates many traditional teaching processes, makes teaching more modern and intelligent, cultivates more applied and comprehensive talents, promotes students' comprehensive development, and improves the level of industry progress.

8. Conclusion

In summary, the application of virtual reality technology in the teaching of fashion design has profound value and significance. By using virtual reality technology to transform fashion design into 3D modeling technology, fashion design teaching becomes more concrete and convenient. The visualization of the design process presents the entire process of fashion design teaching to students, including design, cutting, sewing, and fitting, which is omitted, enhancing students' recognition and professionalism in fashion design learning. The development of new technologies in the digital age has penetrated into many industries, especially in the education industry. The teaching of fashion design has achieved unprecedented innovation and progress. The virtual

simulation technology design mode, as an innovative teaching method, redefines the fashion design profession and constantly enriches and changes students' learning experience. The rapid development of technology has driven the improvement of teaching level in the field of fashion design. Modern simulation technology has been introduced into teaching work, and virtual reality tools have created a digital design space for students, promoting teaching quality and level, and driving innovation and optimization of teaching reform.

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