Research on the Influence of Immersive Experience in Art Education on Art Communication and Inheritance

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Abstract: The development of science and technology has made the combination of art and science increasingly close, bringing infinite possibilities to the dissemination and display of art. In the current historical context of the rapid development of digital technology, information technology, media technology, and visual culture, it has had a profound impact on the development and construction of the art and design discipline. Introducing information technology, media, and other technologies into art education and creation has become one of the important artistic practices in the current art and design field. The development and practice of immersive art have brought new connotations and experiences to aesthetic activities, and this unique form of aesthetic characteristics and novel aesthetic methods have injected new vitality into the development of art. Immersive art is a new form of art that combines new technology and changes the way art works are presented in a single format. Immersive experience, as a new business form that integrates technology and culture, is becoming an innovative and cutting-edge emerging field in the domestic cultural industry research field. Immersive art combines multiple forms of art, and is highly popular among the public with stunning visual effects and special interactive experiences, providing people with a comprehensive sensory experience. This article provides an overview of immersive virtual reality (VR) interaction technology and analyzes the role of immersive art education in the dissemination and inheritance of art.

1. Introduction

With the rapid development of technology today, immersive art, as a new form of art, has quickly entered people's vision and become a hot topic in society. With the rapid development of science and technology, the previously passive forms of acceptance are no longer sufficient to meet the innovative dissemination of traditional Chinese culture and people's viewing needs [1]. The experience brought by immersive art is unprecedented in traditional art, and "immersive" is no longer the illusion of the viewer, but can be truly displayed in front of them. Immersive VR interaction technology is developed on the basis of VR technology. The information generated by this technology can not only interact with all surrounding entities, but also interact with 3D dynamic information [2]. Technology is a prerequisite for achieving immersion, and advanced technological elements can achieve many effects that were difficult to present in the past, such as using interactive projection to simulate natural scenes, and visualizing sound and music into brilliant images through sound visualization [3]. The application of immersive VR interaction technology by teachers in the teaching of art and design majors can effectively improve teaching accuracy, expand teaching scenarios, and help students truly experience the process of practical design applications, thereby improving teaching effectiveness. Immersive art utilizes lighting projection, surround sound, images, and other techniques to place students in specific spaces, allowing them to immerse themselves through a comprehensive sensory experience and enhance their overall experience [4]. The innovative education method combining full immersion VR technology and art design professional teaching is used to meet the needs of modern education development and update the traditional teaching concept and innovative education system of art design specialty. The interactive experience in immersive art education can stimulate students' curiosity and sense of participation, allowing them to experience the unique feelings brought by art more efficiently. Building an innovative education system based on the cultivation of students' abilities, breaking the drawbacks

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caused by traditional theoretical education, using innovative thinking as the foundation, and improving students' entrepreneurial quality and ability as the guidance, utilizing virtual simulation technology platforms to promote participatory teaching, guiding students to integrate art and design technology, linking theory with practice, and improving their practical abilities [5]. The continuous collision and integration of technology and art have promoted the development of art, enriched its forms of expression and innovation. Open the shackles of ideological confinement, promote the shaping of students' personalities, stimulate their innovation awareness and entrepreneurial ability, and provide reference for the education of art and design majors in similar universities. With the advancement of technology, the forms of interaction between art installations and people have also become diverse [6]. Technology allows multiple media to participate in art exhibition, fully mobilizing students' senses, rather than relying on visual perception. In the world of art, students resonate with works of art, thereby triggering more thinking and imagination among students.

2. Overview of Immersive VR Interaction Technology

2.1. Basic Feature

People rely on their senses to perceive everything around them, thereby closely connecting themselves with the world. Without their senses, people cannot have a correct understanding of the world. Immersive experiences include sensory and cognitive experiences. The purpose of VR is to imitate and restore the real world, and to make the experimenter feel like they are in the real world in the virtual world. With the continuous development of technology, the current immersive VR interaction technology can provide real-time feedback in all five senses. This strong sense of immersion will make the experience experience experience the feeling of truly reaching the virtual space. By utilizing immersive VR interaction technology, it is possible to truly envision what people once imagined, namely the ability to travel globally without leaving their homes [7]. Experiencers can immerse themselves in VR, and all information collection and interaction are conducted in the virtual world.

Simulation and immersion are the most crucial parts of VR design, and VR must make the experimenter realize that everything they see in the virtual world is real. Another characteristic of immersive VR interaction technology is its infinite imagination. In addition to restoring the real world, virtual space can also present imagined scenes that have not yet appeared in the real world, including scenes that contradict science. To achieve the best effect of immersive experience, it is necessary to have both rich sensory experiences and sufficient cognitive experience activities. Only by combining the two organically can we create an immersive state of flow. For example, The Climb game presents everything in the real world to the virtual world using sensors, so that when experiencing this game, not only can players see the natural scenery in the real world, but they can also directly experience the feeling of climbing, as shown in Figure 1.

Figure 1 The Climb

2.2. Technical Core

In order to make the virtual world more similar to the real world, many different designs need to be carried out in its hardware auxiliary devices, because the biggest characteristic of immersive VR interaction technology is perception. A more common design is a headworn display, which is currently a foundation for supporting VR technology. In addition to headphones, there are also other designs, such as sensors or body sensing devices, which can provide more perception points for the user. When somatosensory devices receive signals from computers, they generate real-time feedback, directly stimulating the senses of the experimenter, resulting in a more realistic feeling [8].

Immersive VR interaction technology has a particularly strong experiential nature, although it belongs to a certain technology, it also belongs to the category of art. To truly connect the virtual world with the real world and ultimately achieve a virtual experience that is no different from the real world, there is absolutely no way to bypass programming. For the teaching of art and design majors, in order to scientifically and reasonably apply immersive VR interaction technology, it is necessary to combine information technology with classroom teaching, in order to provide real-time feedback on students' actual situations. This way, students can immediately realize their shortcomings after receiving feedback, and then make timely corrections, ultimately improving the efficiency of teaching.

3. The Main Significance and Content of the Application of Immersive VR Interaction Technology in the Teaching of Art and Design Majors

3.1. Main Significance

The rise of creative culture and the creative industry requires timely response from the discipline of art and design as an important component. Faced with the rapid development of technologies such as the internet, multimedia, virtual simulation, and human-computer interaction, how to cultivate talents with new market demands in the field of art and design is a response that universities must make accordingly. The traditional art teaching adopts a flat teaching method, which lacks intuitiveness, comprehensiveness, and validation. Students are often in a formal state during the learning process, lacking comprehensive and reasonable validation. In the current teaching of art and design majors, the most important teaching goal for teachers to cultivate students in this field is to enable them to become fully developed individuals, that is, to achieve comprehensive improvement in comprehensive skills, rather than just improving in a certain skill [9].

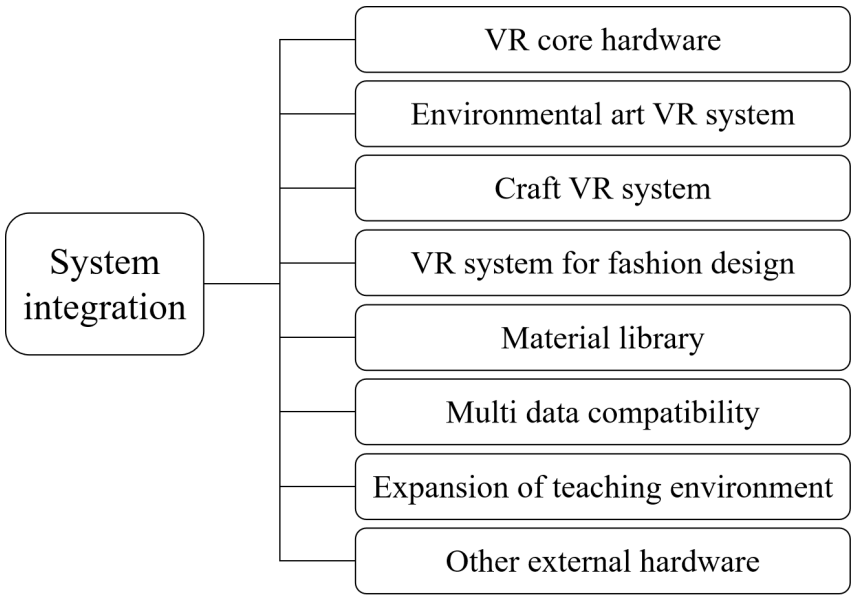

Figure 2 Integrated composition of VR teaching system

Advocate participatory teaching, guide students to integrate art and design technology, integrate theory with practice, and improve students' practical abilities. Based on digital technology, information technology, and internet media platforms, using art and design methods and expression methods, unify art and design teaching projects, and guide students to seamlessly integrate theoretical knowledge and hands-on practice. Students can freely choose teaching courses according to their personal preferences, provide opportunities for independent learning, and achieve a talent cultivation model of "thick foundation and wide caliber", as shown in Figure 2. Utilizing fully immersive VR technology for virtual reproduction of design works, students can verify and modify the appearance, structure, and other aspects of the design works in a virtual world. Therefore, there will be no costs incurred throughout the entire design process, reducing teaching costs.

3.2. Main Content

Among many arts, the art that is most closely related to science and technology is digital media art. It is a comprehensive art that not only includes knowledge in art, humanities, but also scientific aspects. Traditional classrooms confine teachers and students to fixed classrooms, greatly restricting the effectiveness of knowledge absorption, especially in art and design courses with flexible thinking. If the process of knowledge acquisition increases immersion and involves learners in the surrounding visible system of knowledge points or the real environment of skill use, it can effectively increase learners' grasp of teaching content [10].

For certain specific courses, teachers can use interactive software to design corresponding teaching products. This way, when students enter the virtual world, they can understand and recognize the various performance of the products that appear in the courses they need to attend in advance, and it will be easier to complete the design practice in the future. Fully immersive VR technology allows students to directly engage in various interactions during the teaching process, which not only greatly improves their autonomy and participation, but also enables them to better understand and learn in the actual operation process. The fully immersive VR technology has a wide range of applications in the field of higher art education. By restoring the cognitive process of abstract knowledge and simulating experiments realistically, it enhances students' thinking ability.

4. Conclusions

Today is an era where technology, culture, and information are intertwined, which has brought new directions for the development of art education. The degree of sensory openness in immersive experiences is also higher than that of traditional art, and the unobstructed view of the text gives imagination more freedom. This deep aesthetic experience will leave a deeper impression on students. In the context of media integration, immersive art holds infinite development potential in industries such as education and journalism. Applying advanced science and technology to the process of art education can not only enrich the artistic connotation of immersive experience, but also open up new paths for art education. The virtual world obtained through immersive VR interaction technology can visualize many seemingly abstract things, which not only allows art and design works to have more three-dimensional features, but also generates a strong interest in this course for students. The immersive experience model is moving towards a diverse and composite approach, where students no longer only perceive art in books, but also clarify their psychological feelings and participate in interactive immersive experiences of self-expression, ultimately achieving emotional integration between students and art. Through virtual simulation teaching methods, conduct teaching and training that combines virtual and real, expand students' research interests, and gradually improve their innovation ability. Integrating this technology into the teaching of art and design majors is actually a trend of the times, and it can also make teaching more scientific and up-to-date, which is conducive to cultivating more high-end design talents suitable for the current market environment.

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References

[1] Ma Lin. Immersive experience of art exhibitions and interdisciplinary practice of art education [J]. Art Management (Chinese and English), 2019(2):6.

[2] Miao Wenyu, Lu Yan. Immersive Art: Unique Form and Fresh Experience [J]. Journal of North China University of Water Resources and Hydropower: Social Science Edition, 2022, 38(1):108-114.

[3] Liu Jia. Art Appreciation Teaching Strategies of Immersive Experience [J]. Basic Education Research, 2022(24):3.

[4] Zhou Lingling, Song Fei. Analysis of "Immersion" Training Mode of Art Courses for Cultural Industry Management Major [J]. Footwear Technology and Design, 2022, 2(9):67-69.

[5] Kang Jun. Summary of the exploration and practice of VR immersion teaching mode in art design specialty [J]. Footwear Technology and Design, 2022(4):2.

[6] Wang Xin. Research on Digital Display Design of Museum Traditional Cultural Relics under Immersive Experience [J]. Art Education Research, 2022(2):84-85.

[7] Xiong Xuran. Immersive art under the background of media integration [J]. Art Education Research, 2022(6):2.

[8] Zeng Wenjia, Han Zhongling. Research on the Immersive Communication Path of Serious Music Education in the Third Media Era [J]. Journalism Research Guide, 2022, 13(20):25-27.

[9] Zhou Yi. The reform and practice of fully immersive VR technology in experimental teaching of art design major in colleges and universities [J]. Journal of Higher Education, 2020(24):4.

[10] Ruan Ying. Immersive virtual reality interactive technology in the teaching of art and design [J]. Western Quality Education, 2023, 9(4):4.