Innovation of Teaching Mode for Intelligent Media Products——Exploration based on XR

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Abstract—With the rapid development of XR technology, its application in the teaching of intelligent media products has received attention. This article explores the opportunities and challenges that XR technology brings to the teaching of intelligent media products from multiple perspectives, in conjunction with the "XR based Intelligent Media Product Innovation Design Practice Base" construction project jointly established by the School of Journalism and Communication at Shanghai University and Nanjing Ruiyue. Further explore the innovative teaching philosophy and model of intelligent media products based on XR.

Keywords— XR, intelligent media products, teaching mode.

I. INTRODUCTION

Intelligent media design has penetrated into various fields, bringing great convenience to people's lives and work. As an important branch of intelligent media design, XR technology (Extended Reality) brings new possibilities to media design with its unique interactivity and immersion. With the popularization of intelligent media, the demand for intelligent media design talents in society is increasing day by day. "In the teaching practice of the intelligent era, various modern media technologies have become an important foundation for interactive teaching" [1],As one of the core technologies of intelligent media design, XR technology is increasingly widely used in fields such as gaming, film and television, education, and healthcare. In order to cultivate intelligent media design talents that adapt to the development of the times, university teaching urgently needs to be closely integrated with XR technology, innovate teaching methods, and better meet the society's demand for high-quality talents. Universities should actively introduce XR technology in the teaching of intelligent media design, strengthen students' mastery of XR technology, and cultivate intelligent media design talents with innovative thinking and practical abilities.

The School of Journalism and Communication at Shanghai University focuses on "intelligent communication" as its main development direction, and "innovation and design of intelligent media products" is an important construction content and goal. Cultivating students' ability to master innovative design of cutting-edge intelligent media products is a new goal and direction for undergraduate teaching and training established by our college in recent years, and it is also an important feature that distinguishes it from other network and new media majors in universities. In recent years, the college has actively explored and created teaching conditions that can support the practical design of intelligent media products for students in various aspects. The XR product line of Nanjing Ruiyue has matured and is capable of building an excellent intelligent media product design platform, providing a high-quality design environment for teaching in this cutting-edge field. Through the collaboration between the School of Journalism and Communication at Shanghai University and Nanjing Ruiyue, the "XR based Intelligent Media Product Innovation Design Practice Base" has been approved for the 2023 Ministry of Education Industry University Collaborative Education Project. This article explores the XR based intelligent media product innovation teaching model based on this case.

II. THE PROBLEMS IN THE TEACHING OF INTELLIGENT MEDIA PRODUCTS

There are still some problems in the teaching of intelligent media design in current universities. Firstly, traditional teaching methods are unable to meet the needs of students for new technologies, resulting in slow updates of teaching content and a gap with industry development. The teaching content is disconnected from the needs of the industry, and many universities often focus too much on imparting theoretical knowledge in the teaching of smart media products, while ignoring the changes in the actual needs of the industry. This leads to significant differences between the knowledge learned by students and the practical applications in their work, which cannot meet the industry's demand for talent.

Secondly, the teaching method is single and difficult to stimulate students' interest and creativity in learning. Intelligent media product design is a highly practical field, but many universities lack sufficient practical links in this field of teaching. This leads to students lacking practical experience and being unable to effectively apply theoretical knowledge to practice. In recent years, there has been a prominent problem in the teaching of intelligent media product design at the School of Journalism and Communication of Shanghai University, which is that a large number of students are constrained by practical factors such as technology and cost, and cannot truly complete the process of "turning creativity into products". The teaching "practice" of intelligent media product design remains at the level of "product scheme design", How to ensure that all students can complete the process of turning creativity into products with high quality is still a challenge in course practice.

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Thirdly, there is insufficient integration with cutting-edge technologies in the industry. With the rapid development of technology, new technologies and concepts are constantly emerging in the field of intelligent media product design. However, university teaching often updates slowly and cannot timely follow up and impart these cutting-edge technologies, resulting in students learning knowledge lagging behind industry development.

Fourthly, the cultivation of students' innovative abilities is insufficient. The industry's demand for intelligent media product design talents is not only for skill mastery, but more importantly, for innovative thinking and problem-solving abilities. However, in this aspect of teaching, universities often lack the cultivation of students' innovative abilities, resulting in insufficient creativity and difficulty in meeting the needs of the industry.

Finally, there is a lack of cooperation and communication with the industry. The cooperation and exchange between universities and the industry are important ways to improve teaching quality and meet the needs of the industry. However, many universities still lack in-depth cooperation and communication with the industry in this area, and are unable to timely understand the dynamics and needs of the industry. In order to better meet the industry's demand for intelligent media product design talents, universities need to actively improve and innovate in teaching to address the above issues.

III. OPPORTUNITIES BROUGHT BY XR TECHNOLOGY FOR TEACHING INTELLIGENT MEDIA PRODUCTS

XR reflects the latest development of virtual reality technology, covering various forms such as virtual reality, augmented reality, and mixed reality. It can create a completely immersive virtual world, and XR also makes it possible to create an immersive learning environment with low cost and high efficiency. With the rapid development of technology, XR technology, as a new generation of human-computer interaction technology, is gradually penetrating into the field of education, Bringing unprecedented opportunities for teaching intelligent media products. XR technology, with its unique immersive and interactive characteristics, provides students with a brand new learning experience, effectively stimulating their interest and creativity in learning. This article will focus on exploring the specific opportunities that XR technology brings to the teaching of intelligent media products.

Firstly, immersive learning experience. XR technology creates realistic virtual environments, allowing students to experience the design and application of smart media products firsthand. This immersive learning experience not only enhances students' sense of learning participation, but also helps them better understand abstract concepts and complex systems. In the teaching of intelligent media products, teachers can use XR technology to simulate real work environments, allowing students to master knowledge and skills in practice.

Secondly, an interactive learning environment. XR technology allows students to interact with virtual environments and design and develop intelligent media products through rich interactive methods. Students can freely try and explore in the XR environment, thereby cultivating their innovative thinking and practical abilities. In addition, XR technology can also support multi person collaboration, enabling students to improve their teamwork skills while completing tasks together.

Thirdly, real-time feedback and evaluation. By utilizing XR technology, teachers can track students' learning progress in real-time and provide immediate feedback and evaluation. By analyzing the performance of students in the XR environment, teachers can understand their learning situation, adjust teaching strategies in a timely manner, and improve teaching effectiveness. In addition, XR technology can also provide objective evaluation criteria for teachers by intelligently analyzing student learning data, which helps teachers comprehensively evaluate the comprehensive quality of students.

Fourthly, reduce teaching costs. Using XR technology for intelligent media product teaching can effectively reduce teaching costs. The virtual devices and resources in the XR environment can be reused, avoiding the waste of physical devices and materials in traditional teaching. In addition, XR technology can also reduce reliance on physical classrooms and venues, making teaching more flexible and convenient.

Fifth, broaden students' horizons. XR technology breaks the time and space limitations of traditional teaching, allowing students to learn intelligent media products anytime, anywhere. Through XR technology, students can access high-quality teaching resources from around the world, broaden their horizons and knowledge. In addition, XR technology can also simulate future technologies and application scenarios, enabling students to have a clearer understanding and outlook for future development. In an immersive and interactive learning environment, students are free to explore and try, stimulating their creativity and imagination. By aligning with cutting-edge technologies in the industry, XR technology can also help students keep up with the pace of industry development and cultivate innovative talents that meet future needs.

IV. INNOVATION OF TEACHING CONCEPT FOR INTELLIGENT MEDIA PRODUCTS BASED ON XR

Through the construction of the "XR based Intelligent Media Product Innovation Design Practice Base", the teaching needs of the School of Journalism and Communication at Shanghai University in the field of intelligent media product innovation design can be matched and connected with the functions of Ruiyue's XR products, providing students with a more intelligent media product design platform and tools, which can effectively improve the teaching and practical conditions and level of intelligent media products. The construction of the XR based Intelligent Media Product Innovation Design Practice Base is aimed at fundamentally solving many problems in teaching, enabling all students to efficiently complete the design and production of media products using the XR platform. Combining the advantages of XR technology, the concept of intelligent media product teaching can be innovated in the following aspects.

Firstly, enhance the immersive learning experience. XR technology provides an immersive experience for teaching intelligent media products, allowing students to experience the design and application of intelligent media products firsthand. In traditional teaching, students often can only understand abstract concepts through theoretical learning, while XR technology allows students to experience and practice the design of intelligent media products in practice. Therefore, the teaching of smart media products should strengthen the immersive learning experience, allowing students to master knowledge and skills through simulating real work environments in practice.

Secondly, focus on building an interactive learning environment. XR technology allows students to interact with virtual environments and design and develop intelligent media products through rich interactive methods. This interactive learning environment helps cultivate students' innovative thinking and practical abilities. Therefore, the teaching of intelligent media products should focus on the construction of an interactive learning environment, allowing students to cultivate innovative thinking and practical abilities through free exploration and experimentation.

Thirdly, introduce real-time feedback and evaluation mechanisms. By utilizing XR technology, teachers can track students' learning progress in real-time and provide immediate feedback and evaluation. By analyzing the performance of students in the XR environment, teachers can understand their learning situation, adjust teaching strategies in a timely manner, and improve teaching effectiveness. In addition, XR technology can also provide objective evaluation criteria for teachers by intelligently analyzing student learning data. Therefore, the teaching of smart media products should introduce real-time feedback and evaluation mechanisms, so that teachers can timely understand the learning status of students, adjust teaching strategies, and improve teaching effectiveness.

Fourthly, innovate teaching resources and methods. XR technology breaks the time and space limitations of traditional teaching, allowing students to learn intelligent media products anytime, anywhere. This flexible and convenient learning method helps to broaden students' horizons and knowledge. Therefore, the teaching of intelligent media products should innovate teaching resources and methods, fully utilize the advantages of XR technology, provide rich and diverse teaching resources and methods to meet the learning needs of students.

Fifth, strengthen the cultivation of innovation ability. The introduction of XR technology helps to cultivate students' innovation awareness and practical abilities. In an immersive and interactive learning environment, students are free to explore and try, stimulating their creativity and imagination. Therefore, the teaching of intelligent media products should strengthen the cultivation of innovation ability, encourage students to freely explore and try in immersive and interactive learning environments, and cultivate their innovation awareness and practical ability.

It can be seen that combining the advantages of XR technology, the concept of intelligent media product teaching can be innovated from strengthening immersive learning experience, emphasizing the construction of interactive learning environment, introducing real-time feedback and evaluation mechanisms, innovating teaching resources and methods, and strengthening the cultivation of innovative abilities. Through the implementation of these innovative measures, the teaching of intelligent media products will better adapt to the needs of the times and cultivate more outstanding talents with innovative thinking and practical abilities.

V. EXPLORATION OF TEACHING METHODS FOR INTELLIGENT MEDIA PRODUCTS BASED ON XR

In the construction process of the "XR based Intelligent Media Product Innovation Design Practice Base", based on the above teaching philosophy, Nanjing Ruiyue fully leverages its advantages in the XR product line, deeply integrates it with the "Intelligent Media Innovation and Design" course of the School of Journalism and Communication at Shanghai University, deploys interactive content production tools, and produces corresponding results through course training, empowering the teaching of XR+intelligent media product innovation design. Building an AI interactive application platform based on artificial intelligence, allowing students to access the cutting-edge XR technology applications, such as Nibiru panoramic images, Nibiru UI icon tools, template libraries, etc., to achieve the planning and design of a series of intelligent media products based on the AI interactive application platform, thereby improving the level and quality of intelligent media product teaching. This article analyzes the exploration of specific teaching practice methods.

Firstly, based on XR, students can more efficiently master the knowledge system of media product design. The knowledge system of intelligent media product design integrates various sections such as "digital technology", "product manager", "media integration", and "design and operation". With the help of XR, students can more vividly and vividly grasp knowledge content in an interactive and immersive environment, laying a foundation for improving practical abilities.

Secondly, based on XR, provide students with the opportunity to turn creativity into products. In recent years, there has been a prominent problem in the teaching process of intelligent media product design, which is constrained by practical factors such as technology and cost. A large number of students are unable to truly complete the process of "turning creativity into products", and the teaching "practice" of intelligent media product design remains at the level of "product scheme design", How to ensure that all students can complete the process of turning creativity into products with high quality is still a challenge in course practice. However, the XR platform and tools can effectively solve this problem, allowing all students to efficiently complete the design and production of media products through the XR platform.

Thirdly, provide new generation artificial intelligence technology and tool support for media product design based on XR. The field of next-generation artificial intelligence is currently at the forefront, involving a large amount of computer knowledge and theoretical foundations such as

machine learning and deep neural networks, and is the core driving element for the design of future intelligent media products. With the support of XR platform and tools, better visual and interactive support can be provided, helping students better understand the basic theories and technological applications of artificial intelligence, and leading students to creatively apply artificial intelligence technology to innovative design of media products.

Fourthly, based on XR, create conditions for enriching the form of intelligent media products and expanding product functions. With the help of the XR platform, students can face more diverse social application scenarios, seek inspiration for media product design, and more conveniently enrich the form of intelligent media products and expand product functions.

VI. THE ACHIEVEMENTS OF XR BASED INTELLIGENT MEDIA PRODUCT TEACHING EXPLORATION

The construction of the "XR based Intelligent Media Product Innovation Design Practice Base" has produced many significant effects by applying XR technology to the teaching of intelligent media products. Not only does it provide students with an immersive and interactive learning experience, deepening their understanding of abstract concepts and complex systems, but it also enables teachers to more accurately grasp students' learning progress and needs through real-time feedback and evaluation mechanisms, thereby adjusting teaching strategies. Here, a brief analysis will be made based on the experience of the School of Journalism and Communication at Shanghai University.

Firstly, based on the practical base, the upgrading of the teaching mode of intelligent media products has been promoted. Creatively embedding the Ruiyue XR product line into the teaching of innovative design of intelligent media products, completing the upgrading of teaching environment, optimization of curriculum system, and iteration of practical path.

Secondly, build a high-quality intelligent media product teaching team. By updating the teaching philosophy and content of the teaching team at the School of Journalism and Communication of Shanghai University through base construction, we aim to create a teaching team that can proficiently use the XR platform to carry out courses related to intelligent media products.

Thirdly, cultivate a group of composite and innovative talents based on XR+intelligent media products. Cultivate a group of composite and innovative talents who can proficiently master the basic XR technology and apply XR tools to develop various intelligent media products.

Fourthly, support the design and output of a series of intelligent media products. Guide students to complete a batch of high-quality intelligent media product design schemes and specific product designs in the construction of the base.

In summary, with the continuous development of XR technology, its application in the teaching of intelligent media products is gradually receiving attention. This article explores the opportunities that XR technology brings to the teaching of intelligent media products from multiple perspectives, as well as how to combine XR technology for innovation. In summary, XR technology has brought various opportunities and advantages to the teaching of intelligent media products. By combining XR technology for innovation, the teaching of intelligent media products will be able to better adapt to the needs of the times and cultivate more outstanding talents with innovative thinking and practical abilities. Therefore, universities should actively embrace XR technology and innovate teaching methods to better cultivate intelligent media design talents who can adapt to the development of the times. At the same time, we also need to continuously follow up and research the development trends of XR technology in order to better apply it to the teaching of intelligent media products.

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