Research on the Application of Augmented Reality Technology in Secondary vocational School Tourism Teaching

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Abstract: With the great importance attached to tourism by the state, the development of the tourism industry has shown a rapidly growing trend in the demand for professional talents. However, some secondary vocational schools in the process of cultivating tourism professionals, there are still some obsolete cognition and concepts, which leads to the teaching process is still using the original traditional teaching methods. In recent years, with the continuous development of information technology, augmented reality technology has entered the field of education, this paper describes the application of augmented reality technology in secondary tourism teaching research.

Keywords: augmented reality technology; secondary tourism; teaching and learning

Introduction

With the continuous improvement of science and technology and the continuous integration of technology, "Internet + Education" continues to innovate and change, bringing about new changes in the landscape. The emergence of augmented reality technology has brought new experiences and influences to the life, work and learning of the public, further expanding resources and enhancing cognitive experiences. Strengthening the application of augmented reality technology has important practical significance. The combination of augmented reality technology and secondary tourism teaching helps to promote the reform of vocational education teaching more effectively, thus making it play a better effect and role.

1.Current situation of secondary vocational school tourism teaching

1.1 Outdated teaching concepts

Tourism is a practice-focused field, and there are significant differences between the secondary vocational tourism curriculum and the subject curricula of ordinary high schools. In the teaching of secondary vocational tourism, in addition to the need for students to learn theoretical knowledge, it is more important to focus on the cultivation of students' practical skills. However, due to the influence of traditional teaching concepts, teachers tend to overemphasize the accumulation of theoretical knowledge and neglect the training of professional skills, which makes the students disconnected from the theoretical knowledge and practical skills, and adversely affects their future employment.[1]

1.2 Outdated teaching environment

In the current education model, information technology has given new possibilities to the teaching method. However, some secondary vocational colleges and universities located in remote areas or lagging behind in development, due to environmental conditions and economic and financial constraints, have difficulty in realizing the updating of informatization teaching equipment, and still maintain the traditional chalk and blackboard teaching mode. Even if some schools are equipped with computer equipment, the lack of necessary teaching software has limited the teaching methods of teachers to the use of outdated PowerPoint presentations. Without the aid of network resources and teaching resource banks, the informatization potential of teaching has not been fully released, and the effectiveness of teaching has not been significantly improved, which to a certain extent restricts the effectiveness and efficiency of teaching and learning, and is gradually becoming a bottleneck in the modernization of education.

1.3 Lack of teaching resources

At present, more and more educational institutions have noticed the importance of computer and network-led information-based teach-

ing, and the gradual popularization of information-based teaching has also led to an increasing demand for multimedia teaching materials that help teaching. Now you can find a lot of teaching software on the network, many of which can not be well in line with the characteristics of the secondary school, can be truly applicable to help teachers teach the multimedia resources are relatively few, so that the auxiliary teaching materials in the actual teaching and can not provide great help.

2. Concepts, Characteristics and Principles of Augmented Reality

2.1 The concept of augmented reality

Augmented reality technology is a comprehensive technology further upgraded and developed on the basis of virtual reality technology. It mainly integrates computer vision, image processing, graphics, multi-sensor technology and display technology. It utilizes computer-generated virtual information to fuse with the real environment observed by the user, thus superimposing the real environment and virtual objects in the same picture surface or space to enhance the user's perception and perceptual experience. It is not an independent technology, and is closely related to a variety of real-life information so as to better mine real-life information.[2]

2.2 Characteristics of augmented reality technology

2.2.1 Real-time interaction

Augmented reality technology can provide real-time data feedback and information interaction, and users can instantly adjust the interaction between virtual elements and the real environment according to their needs.

2.2.2 Mapping Real and Virtual Worlds

Augmented reality technology can map virtual information into the real world, so that the virtual object and the real environment can appear in the user's field of vision at the same time, forming a strong sense of immersion and realism.

2.2.3 Three-dimensional perception

With AR technology, virtual information can be presented in the real world in three dimensions, enhancing the sense of realism and spatiality and providing a more three-dimensional and immersive experience.

2.3 Principles of augmented reality

The goal of augmented reality is to try to visualize virtual information in the original (real) world. As shown in Figure 1, a smartphone can estimate lighting by estimating the current lighting conditions, while motion tracking allows the smartphone to understand and track its position and allows objects to rotate, zoom in and out.[3]

2.3.1 Smartphone cameras

2.3.2 Capture module

2.3.3 Tracking module
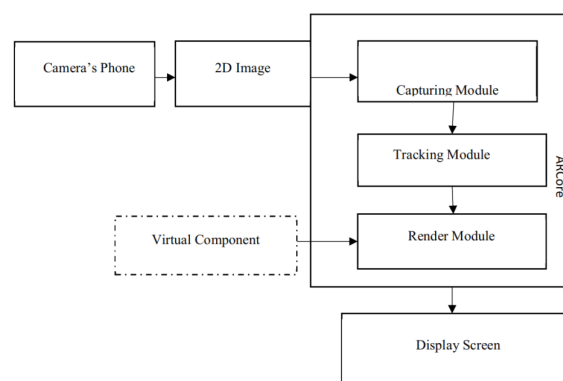
2.3.4 Rendering Module

Figure 1: AR System Architecture Block Diagram

3. Benefits of Augmented Reality Technology for Secondary vocational School Tourism Teaching

3.1 Unique sights can be observed through AR technology

Augmented reality technology allows students to observe sights or objects that are normally difficult to see, such as ancient ruins and complex architectural constructions. For some dangerous or hard-to-reach environments, such as volcanoes, deep oceans, deserts, etc., students can also visit them virtually through AR technology.

3.2 Improved student understanding of content and engagement

Teachers use AR technology to create three-dimensional models of tourist attractions, simulate real tourism management and service scenarios, such as hotel layout, ticket sales, tourist navigation, etc., so that students can actually operate in the virtual environment, and transform "dead" knowledge into "live" skills. This will transform "dead" knowledge into "living" skills and further strengthen students' professional knowledge while enhancing their interest. Augmented reality (AR) technology creates a dynamic and interactive learning environment for secondary vocational tourism teaching, enabling students to observe and understand the characteristics and historical background of tourist attractions from multiple perspectives and in an all-round way, which greatly enhances students' learning experience and learning effect.

3.3 Ability to break the limits of time and space

With AR teaching, we are able to create virtual learning spaces that release the time and place constraints of learning and provide students with dynamic learning resources that make them feel as if they are there. With this technology, anytime, anywhere, students have access to popular tourist attractions or locations they want to learn about. They can visit places of interest around the world through AR technology without leaving the classroom. Teachers can use AR technology to create a variety of real travel environments and scenes to make classroom teaching more vivid and interesting.

4. Reform Paths and Suggestions for Secondary vocational Tourism Teaching

4.1 Changing traditional concepts of teaching

Teachers should change from the traditional teaching leader to the guide and learner. Under the traditional teaching concept, secondary vocational tourism teaching overly emphasizes the leading role of the teacher, but ignores the subjective experience of the students, and pays insufficient attention to the students' interest, desire to learn, and psychological receptivity, which leads to unclear understanding and cognition of the students' tourism profession. To address this problem, teachers need to pay more attention to the individual differences of students in classroom teaching, and appropriately implement the teaching concept of "student-centered and teacher-led".

4.2 Renewal of teaching methods

In the traditional classroom teaching environment, teachers usually adopt the way of explanation to teach, which is helpful for the learning and understanding of some theoretical knowledge. However, tourism is a discipline that requires high practical ability, and traditional teaching methods may not be able to meet the requirements of the discipline, and teachers need to innovate their teaching methods. For example, when teaching the course of Tourism Policies and Regulations, teachers can use actual cases to trigger students' thinking and discussion, so as to deepen their understanding of the knowledge; when teaching China Tourism Geography, through the AR technology, the geomorphological terrain of various tourist attractions is visualized to students, so as to let them understand and remember what they have learned in a more profound way.

4.3 Enhancement of teachers' pedagogical capacity and competence

In order to enhance their teaching ability and level, teachers need to remain self-driven and continue to learn and update their knowledge in order to master and apply new teaching technologies, such as AR, VR, etc., to provide students with diversified learning experiences. While adapting to the latest developments in the tourism industry, teachers need to integrate knowledge of educational psychology and teaching methodology; create a positive classroom atmosphere and guide efficient teacher-student interactions; learn new teaching concepts and technologies on a regular basis, and find and correct deficiencies in teaching through self-reflection and self-assessment in order to promote self-improvement.

5. Conclusion

In this era of rapid development of information technology, augmented reality technology not only provides a technological platform or tool for teachers and students also plays an advancing role in classroom teaching, which is of great significance to the future development of schools and the concept of smart classroom reform. The new generation of teachers need to fully understand and grasp the development of information technology, adapt and use these technologies to optimize teaching in order to improve the quality of teaching and students' learning efficiency.

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