The Research on the Construction and Development Prospect of Tourism Teaching System Based on Virtual Technology

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Abstract: Compared with traditional educational information technology, virtual reality(VR) technology has the characteristics of contextualization, interactivity, measurability, and multi-dimensionality. Dynamic, real-time and interactive functional requirements in the process. Various VR, digital, virtual and mixed reality teaching technologies have been widely penetrated into the teaching of tourism teaching subjects, such as the use of virtual science systems, sports simulation training, and digital stadiums, etc., to provide tourism teaching with updated and diversified sports teaching methods and development trends. . Based on this, this paper takes the application of VR virtual and augmented reality teaching technology as the research entry point and explores the construction and development prospects of virtual technology tourism teaching system.

1. Introduction

With the development of information technology, VR technology has gradually gained extensive attention and application. VR technology refers to a multi-dimensional simulation, real-time virtual environment (Virtual Environment) simulated by new information technology including integrated technology and sensor equipment. Users can use computers and electronic devices to simulate reality in a virtual environment, creating an immersive feeling [1]. Users can not only see high-fidelity images, but also listen to real sounds, even smell smells, and interact in virtual environments.

Tourism is an industry with many participants, extensive business scope and powerful information processing. Using computer, sensing and measurement technology, simulation technology and microelectronic technology and other related technologies, it will have a wide range of uses to carry out three-dimensional virtualization of tourism landscape and tourism business, and then spread it through the Internet. The three-dimensional VR environment provides virtual tourism experience, and provides a simulated research environment for tourism services, as shown in Figure 1. The virtual environment is conducive to the simulation of tourists' travel decision-making process and travel route planning. The wide application of 3D virtual technology in tourism has gradually formed the concept of virtual tourism. In fact, virtual tourism not only provides convenience for tourism decision-making and tourism experience, but also provides a new platform for tourism professional teaching [1]. However, how to use VR technology for undergraduate teaching of tourism management is rarely discussed.

Fig.1 Virtual Tour

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2. Characteristics and Application Status of VR Technology

2.1 Features of VR Technology

The VR virtual integrated reality simulation technology is mainly based on the new computer automatic simulation technology, and organically integrates various technical elements such as artificial artificial intelligence, big data, sensor and information system automatic simulation, and forms an advanced new virtual integrated reality simulation technology, and is widely used in various fields [2]. In essence, the virtual human-machine reality vision technology in VR is to use the various sensory visual organs such as “seeing, hearing, and touching” for people in the future to sense through highly virtual human-machine images and real sounds, and tailor-made for future people.

2.2 Application of VR Distance Education Platform

The distance electronic education service platform mainly refers to the use of virtual VR and other virtual and augmented reality teaching technologies to carry out distance teaching for the re-expanded classrooms of colleges and universities, and to establish a new type of electronic distance teaching activity place. When students study in the classroom, It is possible to carry out VR teaching simulation of the theory of knowledge in the classroom, directly understand the relevant theories and knowledge expansion of the subject, complete the learning tasks in a limited space, achieve understanding of teaching and cultivate interest in learning. This not only improves the efficiency of students' learning but also saves time costs [2]. VR virtual classrooms can also overcome many external environmental conditions. For example, affected by the spread of the epidemic, it is difficult for students to complete lectures in specific locations, and it is also difficult for students to go to experience places for practical learning. Traditional video online courses also greatly reduce the quality of teaching. In this regard, the use of VR virtual technology can transform online classrooms.

3. Advantages of Virtual Tourism Professional Teaching

3.1 Virtual Tourism Can Simulate Tourism Host, Guest and Media

Tourism is divided into subject, object, and medium. The subject and object do not overlap in geographical location. They must reach the object through the tourism channel, and then return to the subject. The virtual tourist's own position will not move, but its situation will leave the real-life scene and arrive at the desired place [3]. In professional teaching, students can separate virtual subject, object and medium.

3.2 Virtual Tourism Can Simulate the Multi-Sensory Experience in Tourism

The sensory experience of tourism generally includes sight, hearing, touch, and smell, among which visual contact is the main one. Virtual tourism is also based on vision, through three-dimensional simulation of the real scene, and the corresponding music settings to implement the auditory experience, placed in an illusory tourist destination, as if you have seen and heard in the tourist destination. Virtual tour cannot imitate the defects of touch and smell, which will be compensated by visual prompts and text supplements, as shown in Figure 2. The full autonomy and interaction of virtual tourism enables students to gain a freer feeling in the actual landscape, and to have a deeper understanding of tourists' psychological experience [4].

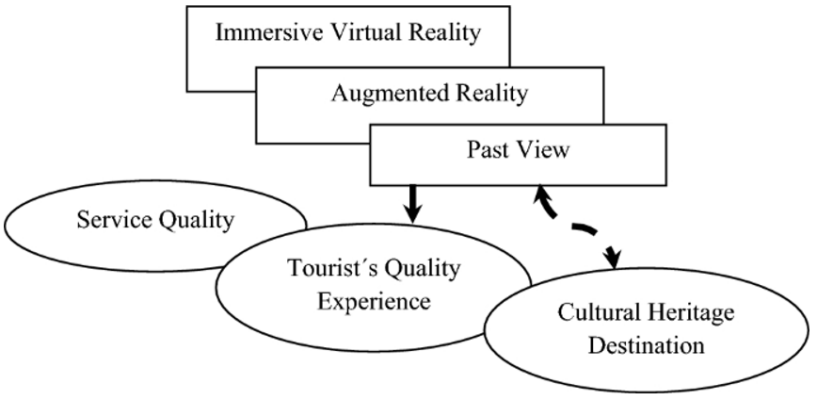

Fig.2 Virtual Tourism Can Realize Multi-Sensory Experience

3.3 Virtual Tourism Helps Students to Cultivate Qualitative and Quantitative Thinking

The underlying database provides qualitative sensory information and quantitative data resources for the virtual tourism system. Students use the virtual tourism system for learning. In addition to intuitive perception, they can also interact with the virtual environment in multiple dimensions through a variety of sensors and information query methods [4]. Students can obtain qualitative and quantitative information from the comprehensive and integrated environment. so as to obtain perceptual and rational understanding, and help to deepen the understanding of concepts and germinate new ideas.

3.4 Virtual Tourism Can Simulate Diverse Tourism Activities

Traditional online travel is only a platform for providing information and conducting transactions, which is relatively boring and plays the role of travel media in the travel system. Virtual tourism provides a variety of simulated tourism activities with realistic tourist attractions as the background to complete the tourism process [5]. At the same time, virtual tourism can develop surreal and super-space activities, which broadens the breadth, depth and breadth of tourism teaching methods.

4. System Analysis Based on Virtual Tourism Professional Teaching

4.1 Multimedia Information Query

In the virtual teaching environment, multi-dimensional and multimedia information can be inquired. The application of multimedia technology to input text, image, audio, video and other information into the background database not only enhances the visibility of the system, but also enriches and enriches the content and functions of the tourism geographic information system, and is conducive to the intuitive effect of tourism teaching [5]. For example, in tourism teaching, by querying a certain scenic spot, the text and voice introduction of the scenic spot, as well as the related picture retrieval, can be obtained, and the video and network video in the system can be called to make the query expression more vivid, direct and vivid.

4.2 Tourism Spatial Information Processing

The virtual tourism teaching combined with 3S technology (remote sensing, geographic information system, global positioning system) can enhance the data acquisition and analysis ability of the virtual teaching system. Global Positioning System (GPS) is mainly used to locate remote sensing information data, provide spatial coordinates and update data [6].

Remote sensing (RS) is a remote sensing technology. With the progress of aerospace, remote sensing can obtain high-resolution, multi-spectral and dynamic spatial information on the ground, and perform image correction, enhancement and presentation. Global positioning system and remote sensing system have been widely used in tourism geographic information system (TGIS) to provide

technical support for spatial issues in the tourism industry, such as tourism resource survey, tourism route planning, tourism scenic spot planning, and tourism spatial effects [7].

4.3 Virtual Attractions

The virtual scenic spot is not only a scene simulation, but also involves the operation and space management of the entire scenic spot. Virtual attractions can also simulate and expand tourism e-commerce. Using network multimedia technology to display virtual attractions in virtual three-dimensional space, at the same time, using the latest payment technology and social media technology can carry out three-dimensional virtual e-commerce [8]. Students can use this to simulate the process of “tour guide”, and at the same time they can practice three-dimensional virtual business.

5. Construction of VR Technology in Tourism Teaching System

5.1 Construction of Virtual Tourism System

In the actual teaching of tourism teaching, for different professional disciplines, it is very necessary to fully cultivate the theoretical and practical operation ability of each student, so we usually refer to or talk about “experience operation”, and sometimes we think that some dangerous factors are high. For example, when teaching chemical biology and other disciplines, many metal materials are highly dangerous, and the experience equipment is easily damaged. This kind of experience cannot really lead students to perform manual operations in life.

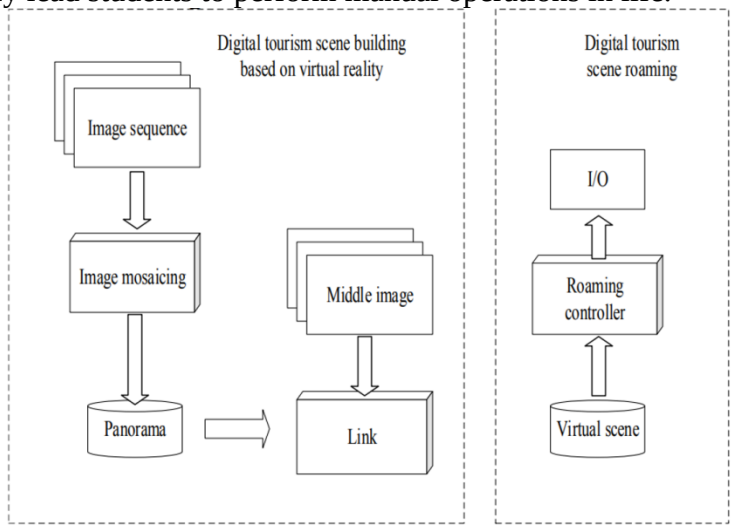

Fig.3 Construction of Virtual Tourism System

To fully protect the safety of all students, this virtual technology is used to conduct virtual teaching for ordinary college students, which can overcome the above dangerous experience conditions and experience environment, reduce the cost of loss of experience equipment, and promote students' understanding and experience of experience operation. Effect recognition, effectively meet the needs of colleges and universities to construct realism and virtual scene teaching cognition and intelligent multimedia simulation teaching in colleges and universities and many other virtual teaching technology needs, can effectively provide students themselves with a realistic simulation teaching situation [8]. Virtual practice training forms an interactive teaching mode, which enables students to achieve a comprehensive virtual mastery of basic knowledge and practical skills through observation, operation and practical training in real virtual situations [7]. Using VR virtual and augmented reality science and technology to develop and construct a new virtual science system (as shown in Figure 3), on the one hand, it can not only allow most students to fully observe and deeply understand the scientific experience, but also because they can fully participate in the construction of the virtual science system. In the scenario, it has changed the situation that students can only go to the designated place to contact the physical objects and understand the relevant equipment in the past when they conduct experience operation and learning, comprehensively expand the students' innovative and

practical thinking, and effectively improve the learning and work efficiency of teachers and students [9].

5.2 Roaming in Digital Venues

In the teaching of tourism teaching courses, teachers can even use computer simulation technology and digital technology to combine and set virtual digital teaching scenes with different differences according to the characteristics of teaching professional courses, such as virtual digital education museum teaching scenes, digital Teaching cities, campus sports scenes, etc., guide the majority of students to play different teaching roles in different teaching scenes, and obtain real teaching experience and visual experience by using virtual digital scenes [9]. Students can even transform the learning objects in the virtual environment, which increases the vividness of teaching and strengthens the communication between teachers and students, which is conducive to the popularization of relevant knowledge by teaching, and can also be used when visiting cultural heritage such as cultural relics. , restore the background and historical scenes of the cultural relics at that time, and use the way of playing stories to explain and evaluate, which will further promote students' understanding of cultural relics [10]. In this way, we will continuously improve the self-learning work efficiency of the majority of students, and at the same time continue to expand the students' independent innovative learning thinking, promote the overall optimization and improvement of the teaching technology level of tourism teaching courses, and realize the integrated development and innovation of network virtual augmented reality + tourism teaching course teaching.

6. The Development Prospect of VR Technology in the Field of Tourism Teaching

VR's virtual and augmented reality teaching technology is also expected to be widely used for cultural education outside the classroom, such as in-depth education and training of interested students through music and art, the integration and development of immersive classroom digital libraries, and so on. From the perspective of practical application, although the actual application scope of VR interactive virtual mixed reality sports technology in my country's education and teaching industry is still very small, the VR interactive virtual mixed reality sports technology itself still has strong sports teaching technical advantages and development potential, its diversified design, real and vivid physical education classroom will greatly improve the independent learning and comprehensive understanding ability of physical education students, and greatly improve the efficiency of physical education teaching [6]. The interactive teaching features will have the opportunity to greatly improve the students' professional comprehensive theoretical practical application ability. All that VR augmented mixed reality technology brings to the development of tourism teaching and training industry will gradually attract more and more technical attention and extensive favor of tourism educators in our country and will eventually make its technology inevitable faster and more widely used. It is widely used in various fields of tourism teaching and vocational training and plays the role of an important technical guide [10].

7. Conclusion

VR technology has the characteristics of contextualization, interactivity, measurability, multi-sensory, etc. It has important value for tourism teaching that attaches importance to tourism experience simulation and tourism field planning. The application of VR technology in the tourism management practice teaching system can enhance the teaching effect, cultivate the practical ability, strengthen the interaction between teachers and students, and enhance the innovation consciousness.

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References

[1] Bo Wendy Gao, Chris Zhu, Hongmei Song, Ianthe M. Belisle Dempsey: Interpreting the perceptions of authenticity in virtual reality tourism through postmodernist approach J. Inf Technol Tour 24 (1): 31-55 (2022).

[2] Zaosheng Ma: Human Action Recognition In Smart Cultural Tourism Based On Fusion Techniques of Virtual Reality and Som Neur. Neurosci. 2021: 3495203: 1-3495203: 12 (2021).

[3] Andreea F. Schiopu, Remus I. Hornoiu, Mihaela A. Padurean, Ana-Maria Nica: Virus tinged Exploring the facets of virtual reality use in tourism as a result of the COVID-19 pandemic Telematics Informatics 60: 101575 (2021).

[4] Khyrina Airin Fariza Abu Samah, Mohd Nor Hajar Hasrol Jono, Al-Afiq Che Mohamad Zulkepli, Noor Afni Deraman, Shahadan Saad, Alya Geogiana Buja, Lala Septem Riza:. Immersive Virtual Reality in Preserving Historical Tourism ICSET 2021: 234-239.

[5] Chen Danhong: Using Virtual Reality Technology to Improve the Teaching Quality of Tourism Management Experience, Educational Exploration, 11(3), 221-225, 2018.

[6] Pavan Kumar Katkuri, Sarah Schoemann: Application of Computer Technology Tourism Talents Training. ICIMTECH 2021: 248: 1-248: 4.

[7] Archana Mantri, Srilakshmi Anireddy: Evaluation System of Tourism Psychology Teaching Quality Based On Convolutional Neural Network. ICISCAE (ACM) 2021: 964-967.

[8] Yan Haopeng: Application of Virtual Reality Technology in Tourism Experience Teaching System. Education and Occupation, 30, 132-135, 2018.

[9] MYung Ja Kim, C. Michael Hall: The Application of The MultiMedia Technology in Teaching Introduction To Tourism. MVHI 2019: 124-126.

[10] Choong-Ki Lee, Michael W. Preis: The Implementation of The Virtual Tourism Teaching System. ISCID (2) 2019: 225-228.