International Journal of Web-Based Learning and Teaching Technologies
Volume 18 • Issue 2

Teaching Strategy of University History Based on Virtual Reality Technology

Xijuan Zhang, Puyang Petrochemical Vocational and Technical College, China
Xiaoyan Wang, Puyang Petrochemical Vocational and Technical College, China
Jinyan Lu, Yantai University, China*

ABSTRACT

Today's mature virtual simulation technology should be effectively combined with college education to give full play to better educational advantages. The history teaching supported by modern information technology paves the way for the rational distribution of educational resources and the movement of centralized users to fragmented learning time, which brings infinite possibilities for the development of education. A more liberal education model will inevitably advocate higher requirements of users for self-discipline, so it is difficult to ensure the teaching quality in relevant practice. The rapid development of virtual simulation technology improves the possibility of successful history teaching reform, and the combination of virtual simulation technology and history teaching will effectively promote the great changes and outstanding development of the whole education industry. The combination of virtual technology and history teaching can make students better integrate into the teaching situation, improve learning efficiency, and effectively achieve the educational purpose.

KEYWORDS

History Teaching, University Education, Virtual Environment, Virtual Simulation Technology

INTRODUCTION

With the development of information technology, the advantages of virtual simulation technology, such as reality, vividness, immersion, experience, and interaction, have gradually become apparent (Aidinopoulou & Sampson, 2017). Especially the restoration of historical scenes, which combines vision, hearing, and touch, is constructed by virtual simulation technology so that students can better experience the historical background, historical environment, and the occurrence of historical events (Ashby, 1997). It is important to (a) fully integrate virtual reality, the computer, and the human and the database and the network; (b) focus on teacher-student interaction, knowledge application, and effect improvement; (c) and better integrate knowledge and behavior in teaching (Biocca, 1992).

In the educational process of our country, history teaching is mainly responsible for deepening students' understandings of the diversity and richness of world civilizations, exploring the dialogue among different civilizations based on our history, broadening our horizons, and establishing national

DOI: 10.4018/IJWLTT.320230 *Corresponding Author

self-confidence and pride (Barton, 2012). In the process of education, general history teaching courses are very important for inheriting excellent cultural traditions and historical deeds and enhancing national confidence (Billingsley & Scheuermann, 2014). Virtual technology is suitable for information technology education, and it helps to improve the teaching effect of general history and culture courses (Cheng, Ma, et al., 2022). Therefore, it is necessary and reasonable in the curriculum system of history teaching (Cheng, Yang, et al., 2022).

Therefore, while clarifying the educational purpose, colleges and universities should consider not only the scores of professional knowledge examinations but also students' practical abilities and professional skills, so that the focus of educational content will gradually shift from professional knowledge to professional knowledge (Domingo & Bradley, 2018). The traditional guidance method is centered on theoretical guidance (Freedman et al., 2008). If we continue to use the traditional guidance method, it will not help the improvement of students' practical abilities (Cheng, Wei, & Cheng 2022).

VIRTUAL SIMULATION TECHNOLOGY

Virtual Simulation Technology and Its Development Status

Virtual reality (VR) technology is characterized by immersion and interaction. It can use technical means and related equipment to completely stimulate people's vision, hearing, touch, and other sensory functions, so that people can interact with each other in a three-dimensional space (Han et al., 2016). Therefore, it is of practical significance to introduce VR into the experimental classroom of history in colleges and universities for the related teaching and research of history in colleges and universities and the "construction of new free art" in history (Howatt & Smith, 2014). At present, VR has become a hot spot in the development and application of network technology, and its excellent simulation function enables virtual simulation technology to complete positive feedback to social reality quickly. For example, the Paris municipal government helped to complete the reconstruction work, and the society has exerted great influence and positive feedback on the development of many historical virtual simulation technologies (Hartzler et al., 2001). In the field of higher education, many famous universities have built their own virtual simulation laboratories, including Beijing Normal University, Tsinghua University, Shanghai Jiaotong University, Beijing University of Aeronautics and Astronautics, etc., which are used for education and academic research. In 2016, China also began to pay attention to the development of VR technology (Kenyon et al., 2004).

In recent years, with the rapid development of computer science in China, virtual reality technology has been greatly supplemented, but most of the funds and research directions are directed to entertainment industries such as movies and games, and the development in the field of culture and education is extremely limited (Lee., 1983). The year 2016 is regarded as the "first year of virtual simulation" in China (Liangxi & Vinh, 2022). In this year, the viewpoint of "realizing systematic breakthrough of core technologies" was put forward. VR technology establishes a virtual space environment through a computer and carries out real-time simulation interaction through visual, tactile, and other perceptual methods (McMichael, 2007). *Virtual environment* refers to the use of a computer plane system and various interface devices to display and control the interactive three-dimensional environment generated on the computer. In the past two years, benefiting from the residential economy, the global VR industry has experienced explosive growth, with shipments reaching 6.7 million units in 2020, a year-on-year increase of 70.4% (Makriyanni & Psaltis, 2007). It is expected to approach 15 million units in 2022. The forecast of global VR shipments from 2018 to 2022 is shown in Figure 1. China's VR shipments will be 1.9 million units in 2020, and it is expected to reach 5 million units in 2020. The forecast of China's VR shipments from 2018 to 2022 is shown in Figure 2.

Virtual simulation technology has three basic characteristics. First is *immersion; that* is, users can master related equipment and enter the virtual environment, which is almost the same as the real world and will not make people feel incongruous. The second is *interactivity*, which is reflected