Research Article

VR-Based Innovation of the Ideological and Political Teaching Mode in Colleges

Feng Chen and Hongming Jiang

Ideological and Political Theory Teaching Department, Wuhan City College, Wuhan 430083, Hubei, China

Correspondence should be addressed to Hongming Jiang; jianghongming@wic.edu.cn

Received 1 June 2022; Accepted 1 July 2022; Published 21 July 2022

Academic Editor: Zhao Kaifa

Copyright © 2022 Feng Chen and Hongming Jiang. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The current ideological and political (IAP) teaching has some disadvantages, such as emphasizing theoretical form over practical teaching, students’ differences in personality and cognition, and lack of interaction between teachers and students. Therefore, this paper first analyzes IAP teaching based on VR communication and summarizes the disadvantages of current IAP teaching and the application advantages of VR technology. Based on the principles of interactivity, practicality, and richness, the IAP teaching system is constructed based on the double-center teaching mode, and the teaching content are designed. In addition, in order to provide a carrier for VR IAP teaching, this paper designs the functional module, development process, and framework of the development of VR venues with red theme, combining with red historical events. The IAP education system proposed in this paper can help to explore the potential and advantages of VR technology that applied to IAP education in colleges and realize the modernization of IAP education.

1. Introduction

Cultivating socialist builders and successors with all-round development in morality, intelligence, physique, and beauty is the ultimate goal of education, and cultivating students’ patriotism is the eternal theme in education [1]. Among them, the practical teaching of IAP theory course is the main position of IAP education for college students [2, 3]. How to better implement patriotism education in the practical teaching of IAP courses is not only a theoretical problem but also an operational problem in the process of practical teaching.

VR technology is a technology that reflects the real situation through the virtual environment [4]. It has various functions for teaching activities, especially for courses with a high theoretical degree, such as IAP courses, which help to strengthen the intuition and practicality of teaching [5, 6]. Therefore, it is necessary to strengthen research on this technology and IAP teaching and find an effective way to combine them. However, most related research works discuss VR technology, a brand-new media, only from the theoretical perspectives of application methods [7, 8]. However, the practice teaching effect of IAP courses in China has been unsatisfactory in recent years because of the objective factors such as few teachers, students in quantity, limited practice bases for cooperation with schools, insufficient funds for practice or inadequate preparation, and immature time, which lead to the practice teaching of IAP courses in colleges and has always been the weak link in talent cultivation in China. While most scholars focus on discussing the ways and significance of VR technology, they usually adopt VR technology to build 3D models, restore the red spots and red stories in IAP education, and so on, and they focus on its technology application. In addition, there are a few examples of exploring expression techniques, and there are some problems such as single expression forms and lack of rich artistic expression forms. The research about how to better integrate and apply VR technology in practical projects is also relatively lacking [9, 10]. Therefore, it is still necessary to explore the richer forms and connotations of the integration of VR technology and IAP education according to the point of theory and practice, so as to tap the
potential and advantages of VR technology applied to IAP education and better advance the development of IAP education.

2. Analysis of IAP Teaching in Colleges Based on VR Communication

2.1. The Disadvantages of Current IAP Teaching. In order to improve the teaching effect, the teaching research of ideological education theory course in colleges has been in the stage of reform and exploration. After summing up, it is found that the problems existing in IAP education at present are shown in Figure 1, which mainly focuses on the following points [11, 12]:

(1) Pay more attention to theoretical form than practical teaching.

Many colleges’ IAP education for students has remained in theoretical teaching, focusing on theoretical education, while IAP education should integrate theory with practice. Ideological politics expresses the spirits and thoughts of the sages and has the characteristics of science, theory, and politics. It is challenging for understudies to understand the significance and function of the theory with a single mode of theoretical transmission. Some colleges may organize students to visit the red teaching base for practical teaching, which is limited by time, space, safety management, teaching funds, and other issues. At the same time, due to the lack of practical teaching conditions and experience, practical teaching is difficult to carry out for a long time.

(2) Students have differences in personality and cognition.

Most of the students in colleges are born after 1995 or 2000. They are the generation who grew up under the foundation of the quick advancement of the Internet. Many students have their own unique personalities and flamboyant personalities. From elementary school to high school, IAP course has always been one of their required courses, but many students have little knowledge of the ideas and concepts of IAP education. In their cognition, IAP education is mostly serious, so it will inevitably lead to rejection. The diversity of information brought by the Internet makes it difficult for students to feel the charm of IAP education.

(3) Lack of interaction between teachers and students.

More teachers carry out educational work through lectures and indoctrination. They only unilaterally export their understanding of the IAP theory, mechanically complete the teaching tasks, and often test students’ knowledge mastery through examination. In teaching activities, students are not approached, students’ emotional needs are understood, and humanistic care is lacking, which not only widens the distance between teachers and students but also weakens the ultimate goal of IAP education.

2.2. Advantages of VR Technology in IAP Education

2.2.1. Advantages of VR Technology. Digital technologies include VR (Virtual Reality), AR (Augmented Reality), MR (Mixed Reality), and XR (Extended Reality). Figure 2 analyzes them from the technical advantages, performance advantages, and market share, respectively.

Compared with AR and MR, VR is a completely immersive virtual environment. At present, the mainstream devices of VR are mostly opaque headsets, and users can be completely immersed in virtual scenes. The mainstream devices of AR are based on the real world, and users can view the real world and virtual elements clearly. In the application of education, a strong sense of immersion can bring students a better experience. Studies have shown that when applied to education, VR is more immersive than AR, which attracts students’ attention and makes students’ knowledge more impressive. In addition, XR is widely used in stage art at present, and it is still in the exploration stage of concept and technology, while VR technology has reached a relatively mature stage. Therefore, this paper chooses VR technology to innovate and explore the IAP teaching mode.

2.2.2. Application Value. Based on the above analysis, the innovative exploration of applying VR technology to IAP education can obtain the following values, as shown in Figure 3:

(1) Represent the content scene.

Students can understand complex concepts through multiple presentation forms. When interacting in a virtual environment, students are allowed to explore independently and create new experiences for them. In addition, the real-time interactive function can immediately visualize the results. Therefore, they can make adjustments according to these results in order to achieve their learning goals and thus increase their learning ability.

(2) Innovate the teaching mode of IAP education.

The integration of new technology and IAP education has promoted the benign development of IAP education in colleges. VR technology, as a means of teaching communication, explores and makes use of its own advantages to enrich teaching means and communication methods. Inspired by the integration of new technologies, teachers will gradually change their thinking and learn new means of communication to innovate their own teaching methods, which is conducive to the informatization transformation of IAP education in colleges.

(3) Break the limit of time and space.

In class, students can use VR equipment under the guidance of teachers and enter the built virtual
practice scene for practical experience activities. Compared with the traditional way of practice, this means of communication can break the restriction of time and space on the teaching process.

(4) Improve teaching efficiency and reduce teaching cost.

This means of communication has the characteristics of replicability and mobility, so it does not have to spend a lot of manpower and material resources to create physical space scenes, which can not only ensure students’ efficient practice but also save cost and space.

3. Design of the IAP Teaching System Based on VR Technology

3.1. Design Principles

(1) Interactivity

Communication means not only meeting the requirements of timely interaction but also meeting the interactive requirements of students and IAP education content, which can arouse students’ empathy and form emotional interaction and communication.

(2) Practicality
At present, IAP education in colleges focuses on theoretical education and ignores practical education. The IAP education in the new era requires that the practical education be supplemented and perfected through various communication means and teaching methods, which requires students to carry out experiential learning through effective communication means.

3.2. Design of the Teaching Mode. In order to further improve students’ learning motivation and make the learning effect to a higher level, this paper constructs a VR teaching system with teachers as guidance and students as the main body, which is based on the construction of situational cognitive learning theory and combined with specific VR venues.

The teaching design mode of “Dominant-Subject” is a combination of teaching-oriented and learning-oriented design, which emphasizes not only giving full play to the guiding role of teachers in teaching but also reflecting the dominant position of students in learning [13].

(1) Analysis of teaching objectives
Teaching objective is the starting point and basis of educational teaching activities and also the destination of educational teaching activities. It is the concrete and clear expression of visible behavior of learners after a certain learning process. It determines the level of students’ learning content expected by teaching, which provides teaching a clear direction.

(2) Analysis of learner characteristics
The analysis of learners’ characteristics is a significant stage during the time spent on the informative plan. Movements of every kind of informative plan are to empower students to learn better in the learning process, achieve learning objectives, and improve teaching results. While as the primary assemblage of learning exercises, student study with their own attributes in the learning system. Therefore, in order to improve the teaching effect, before the implementation of teaching, the characteristics of learners must be analyzed. Generally, the characteristics of learners are analyzed in the following aspects:

(a) Students of different ages have different learning styles
(b) According to the personality characteristics of learners, we should choose appropriate teaching strategies and organizational forms according to different personality characteristics, and at the same time, we should teach students in accordance with their aptitude
(c) The starting level of learners is that any kind of learning is based on the original cognitive construction and reorganization of knowledge

3.3. Teaching Content Design. In order to get rid of the shortcomings of the traditional teaching mode, we give full play to the students’ learning initiative in the learning process and the teacher’s guiding role in teaching activities, based on the above “leading subject” teaching design mode, and this paper designs the VR teaching content as shown in Figure 4.

3.3.1. Matching of VR Venues. According to the course content, different practical teaching topics need to visit different red VR venues. Through the overall analysis and carding of the relevant course content in the early stage, combined with the existing resources of the red VR venues, the practical teaching topics are effectively matched with the red VR venues. At the same time, we should give full play to the ideological guiding role of China’s red culture, which is to guide college students to distinguish and choose different ideas from other countries, so as to guide their behavior with correct ideas.

3.3.2. Design of Learning Content. As shown in Figure 5, the design of learning content can be divided into the following four parts:

(1) Determine the theme of learning activities
According to the content of the course, the appropriate theme of learning activities is the direction, soul, and destination of the whole practice, and it is also the basic basis of the final classroom effect evaluation. Only by designing a clear theme of learning activities can learners carry out in-depth learning activities purposefully.

(2) Make clear learning objectives
Teaching objectives are preset by teachers before teaching according to the analysis of the teaching purpose and learning situation, as well as the expected development direction of teaching activities and the expected teaching effect. Through the analysis and determination of teaching objectives, we can better design all the learning activities and effectively carry out teaching activities.

(3) Design learning tasks
When designing learning tasks, the designed learning tasks should be targeted and challenging so that students can really immerse themselves in the learning activities of the VR venue.
(4) Implement learning activities

In the implementation process of learning activities, teachers should do a good job of guidance, fully mobilize students’ learning enthusiasm, adjust the virtual situation, and establish a real immersive learning activity in VR venues.

3.3.3. Role Analysis. The role analysis of teachers and students includes the following three perspectives:

(1) Guide teaching

Due to the limited number of virtual reality equipment, it is temporarily unable to satisfy all students to enter VR venues for learning at the same time. Some students are immersed in learning with virtual reality equipment, and some students are not entering VR venues. At this time, teachers’ organization and help are needed to guide them to perform their duties correctly and cooperate to complete their tasks.

(2) Students’ independent experience

Through the independent experience of VR venues, students can solve the problems in the form of group cooperation, complete the learning tasks, and promote their personalized development.

(3) Cooperation and exchange between teachers and students

Through the students’ personal experience, each student will have different feelings and different questions. Students can communicate with each other to make the atmosphere of class harmonious.

3.3.4. VR Venue Learning Experience. Students enter the VR venue to realize immersion learning, so as to experience the perception, emotion, behavior, and reflection. Through the learning experience of VR venues, it is easier to stimulate learners’ learning interest, improve their learning motivation, strengthen learners’ perceptual knowledge, and be more conducive to the cultivation of emotional awareness.

4. Development of the Red Theme VR Venue

As mentioned above, through the design of the IAP teaching system based on VR technology, it can be seen that in the actual teaching process, a virtual exhibition hall with the theme of major events in the century-old party history is needed for VR teaching. The virtual exhibition hall built with three-dimensional technology takes virtual reality technology as the main technical means. Combining sculpture, oil painting, theater, and other artistic expressions, the representative revolutionary historical events, classic moments, and stories of cultural relics in the century-old party history are combined with visual language to create an interactive experience system that spans time and space.
Therefore, combining with some red historical events, this paper makes a preliminary design for the development of VR venues with red theme.

4.1. Module Design. Combining the pledge to join the party with some characters’ stories during the revolution and construction period, the experiencer can switch scenes while listening to the pledge to join the party by using VR equipment and immerse himself in VR scenes of one related story after another so that the experiencer can be infected and empathize with the stories that happen around. It is mainly divided into three modules: history preface module, hero wall module, and scene experience module.
summarizing the picture so that the experiencer can have a clearer understanding of the relevant content. In the background part, solemn and magnificent music is used to set off the scene and arouse the emotions of the experiencers.

(2) Hero Wall Module
This module is the supplementary scene of the hero sculpture module. In this module, on the one hand, there are many heroes who struggle for the new China and the Communist Party, mainly in the form of animation, showing the photos of many heroes. On the other hand, it shows photos of the pledge of party membership and its history of development. The main purpose is to let the experiencers feel the historical changes of the pledge to join the party and pay tribute to many great heroes.

(3) Scene experience module
This module is the scene of bombing a bunker by Dong Cunrui. First of all, the scene selection interface appears, and the experiencer can operate the handle to enter different scenes. The experiencer can be in the scene of bombing a bunker by Dong Cunrui and watches the process of bombing a bunker. In this part, the experiencer should have a sense of presence and emotional touch. Therefore, in the production of scenes, environmental modeling needs to refer to the scene at that time to restore, and the focus of animation is to show the fierceness of war and the tragic hero.

4.2. Development Process. After determining the project content and framework module, we need to sort out the development process of the system according to the framework module. First of all, the presentation form and visual presentation effect of each module in the whole project should be planned. Secondly, the interaction of each module and the technology needed are analyzed, and then the preliminary resource preparation and production are started. Finally, develop and test the application with the prepared resources and technologies to be implemented. The specific flowchart is shown in Figure 6:

4.3. Program Framework. After making the resources needed for development, Unity 3D is adopted as the development platform, and the development kit Steam VR Plugin is used to determine the process and build the basic structure framework according to the script. Through the analysis of scripts, the required development framework in the program is shown in Figure 7:

After the development based on the above framework, the details need to be optimized. If the scene switching of each module is not natural enough, which makes the experiencer feel abrupt, it can be optimized by modifying the script time. If the animation of characters’ movements is more mechanical, and the scene special effects are not enough, it is necessary to add narration and background music to enrich the content.

5. Conclusion
Based on the principles of interactivity, practicality, and richness, this study constructs the IAP teaching system under VR technology in combination with the double-center teaching mode, in order to try to reform the current practice teaching method of IAP courses in colleges. VR teaching in the double-center mode can improve students’ interest in learning by analyzing teaching objectives and learners’ characteristics. In addition, combined with some red historical events, this paper preliminarily designs the development of VR venues with red theme, including module design, development process design, and program framework design, which provides a carrier for IAP education. The IAP education system proposed in this paper can help explore the potential and advantages of VR technology that is applied to IAP education in colleges and can realize the modernization of IAP education.

Data Availability
The dataset can be accessed upon request.

Conflicts of Interest
The authors declare that they have no conflicts of interest.

Acknowledgments
This work was supported by the 2021 Hubei Vocational and Technical Education Society Scientific Research Project: “Exploration of Teaching Models of Ideological and Political Courses in Vocational Colleges from the Perspective of Moral Education Research on Strategies of Developing” (Project number: ZJGB2021007) and the 2021 Wuhan City College Teaching and Research Project: “Ideological and Political Education in Institutions of Higher Education Based on Local Resources of Chinese Revolution” (Project number: 2021CYZDJY004).

References
[1] Q. Zhang, “Advantages and Paths of VR Helping IAP Education in Colleges and Universities,” Media, vol. 21, no. 07, pp. 79–81, 2022, in Chinese.
[2] D. Wu, Z. Cao, and Z. Sun, “Research on the innovation of learning space of IAP theory courses in colleges and universities-based on virtual reality technology,” Journal of Beihang University (Social Science Edition), vol. 34, no. 4, pp. 158–164, 2021.
[3] W. Xu, “The value and application of VR technology to empower IAP education in colleges and universities,” Ideological and Theoretical Education, vol. 23, no. 11, pp. 88–93, 2021.
[4] Y. Gao, X. Yan, and X. Li, “Design and implementation of immersive virtual reality venue —— taking the development of red VR pavilion in the practical teaching of IAP theory course in colleges and universities as an example,” Audio-visual Education Research, vol. 38, no. 12, pp. 73–78+85, 2017.
[5] L. Zhou and M. Fan, “On the characteristics and reform approach of students’ evaluation system of IAP theory courses
in colleges and universities,” *Hubei Social Sciences*, vol. 14, no. 03, pp. 180–184, 2014.

[6] M. Liu and J. Zhang, “Research on the future classroom teaching model from the perspective of virtual reality,” *China Audio-visual Education*, vol. 34, no. 05, pp. 30–37, 2018.

[7] Y. Tian and Y. Liu, “Exploration of the application of virtual reality technology in the practical course of exhibition design,” *Art Education Research*, vol. 26, no. 20, p. 98, 2017.

[8] E. A. L. Lee and K. W. Wong, "Learning with desktop virtual reality: I," *Computers & Education*, vol. 79, pp. 49–58, 2014.

[9] J. Allison, “History educators and the challenge of immersive pasts: a critical review of virtual reality ‘tools’ and history pedagogy,” *Learning, Media and Technology*, vol. 33, no. 4, pp. 343–352, 2008.

[10] J. Dong and Q. Gan, "Application mode of VR technology in practical teaching of IAP theory courses in colleges and universities," *Journal of tonghua normal University*, vol. 32, no. 05, pp. 106–108, 2011.

[11] Yu Chen, “Virtual practice teaching of IAP theory course: connotation value and path,” *Vocational and Technical Education*, vol. 17, no. 11, pp. 59–62, 2015.

[12] H. He, "Preliminary exploration of constructing college students’ IAP education oriented to virtual practice," *Theoretical Guide*, vol. 4, no. 8, pp. 116–121, 2019.

[13] L. Chu-Dai, “Building an efficient classroom based on "double-master" teaching,” *Exam Weekly*, vol. 42, no. 01, pp. 3–4, 2021.