

Research Article

Research on the Application of VR Technical Ability in Political Education in Colleges and Universities

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Received 21 March 2022; Revised 6 April 2022; Accepted 12 April 2022; Published 2 May 2022

Academic Editor: Jie Liu

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As an emerging multimedia technology, VR technical ability has gradually become the discuss direction of many scholars. The 3d virtual space created by computer allows users to get the feeling and depth of the real environment in VR interaction.. The application of VR technical ability in relevant disciplines that integrate both ideological and political aspects is to promote ascension of the limitations of time and space in the teaching process, to add more impetus to politics, and to continuously innovate ideas in academies and universities. The diversification of political teaching models is heightened, and teaching effects in multiple dimensions are improved.

1. Introduction

In the wake of vigorous becoming different of high and new technology, information technology has built a digital world, digital survival has become a new form of human survival, and VR technical ability has gradually become a field of research by scholars in current social development and application. Virtual reality technology uses sensing devices to enable experiencers to interact with things in all directions in virtual space without limit [1]. VR technical ability is considered to have the general characteristics of high immersion, interaction, and imagination. By simulating reality realistically, VR technical ability has a profound impact on people's practical activities, cognitive activities, and ways of thinking [2, 3]. Guide College deeply roots their patriotism and strives to become newcomers of the era who are responsible for national rejuvenation. Therefore, the integration is of great significance to enhance the effectiveness of education, and it is also an urgent task for college educators [4].

2. The Application Status of Ideological and Political Education of Virtual Reality Technology

VR technical ability is an original computer that gradually grows and reaches certain heights in 20th-century

technology. "Father of Virtual Reality" Jaylen Lanier creatively pointed out in his book "Virtual Reality: A New Beginning of Vientiane" that virtual reality is a medium that can carry the hope of dreams [5–7].

2.1. Application of VR Technical Ability in Ideological and Political Education Courses. The essence of the application of VR technical ability in thought together with political courses is the innovation of guiding pattern, specifically the integration of online and offline and virtual and real teaching. Although the virtual reality teaching mode can improve the single, it cannot completely replace the conventional guiding pattern and it still occupies a central position. Therefore, it is required to interact online and offline and combine virtual and reality [8, 9].

- (1) VR technical ability connects historical and real knowledge, enriching the guiding content of thought together with political courses in the five thousand years of Chinese history, and it is a significant resource and material for thought together with political teaching. Crouch said that "All history is contemporary history." Different histories stand in different eras and have different interpretations and understandings. For the study of former times, David Tebrau once proposed the "history room." As an

educational environment, the “history room” can help scholars better understand specific historical figures or complex historical events and help them see Qing’s position in constant up-growth in former times. VR technical ability is equivalent to providing a “history room” in thought together with political guiding, which can restore the substance of the former times in a virtual form, and educated people can feel and experience from a contemporary perspective. History is engaged, learned, and analyzed. The spark of knowledge created by the combination of the former times and modernity not only enriches the content of thought together with political lesson but also broadens the thinking and thinking of the educated. An analogy is made: CCTV launched a digital online exhibition hall of the same name, which uses panoramic virtual technology to display 360 degrees. Visitors can get an immersive and roaming viewing experience with their mobile phones or computers and experience the great history and brilliant achievements of the 70 years.

- (2) VR technical ability promotes the combination of theory and practice and improves the guiding function of thought together with political courses. Practice is the basis of cognition, and cognition in turn has a guiding part in practice. The development of thought together with political guiding activities requires the combination of theory and practice. The presentation of the effect of thought together with political guiding is also a process from internalization to externalization, from theory to practice. In the process of thought together with political teaching, classroom teaching focuses on the learning of theory, while practical teaching emphasizes the application of theory. Only the combination of the two can achieve the best teaching effect. The application of VR technical ability in thought together with political lesson is a simulated experiential teaching that transforms theory into practice. Visiting teaching practice can be realized without leaving home. An analogy is made, and the Beijing Institute of Technology used virtual technology in thought together with political lesson to implement activities to retake the Long March, allowing learners to experience the hardships during the Long March. The use of virtual technology can inspire educators far beyond the general class explanation. This immersive teaching mode enables the educated to feel the spirit of the Long March more truly in the immersive practical learning, which is more conducive to internalizing the spirit of the Long March in the heart and externalizing it in the action [10].

2.2. Problems Existing in the Ideological and Political Education Curriculum

- (1) The teaching mode is single. The environment is one of the significant factors affecting the effect of

thought together with political guiding. Time and space together constitute the environment of thought together with political teaching. However, due to the limitations of space and time, the thought together with political teaching mode is single [11]. First, the limitation of space makes the teaching mode single. Conventional thought together with political teaching is limited to without end 60 square meters of classrooms, most of which are taught by teachers and indoctrinated theoretical guiding that learners listen to, which limits the diversity of guiding modes in space. Second, the limitation of time makes the guiding mode single. The thought together with political education is a comprehensive discipline involving political science, education, psychology, ethics, and other disciplines. Due to the large guiding task and limited classroom time, some teachers adopt the method of scripting to complete the guiding task. This single guiding mode makes thought together with politics class boring and greatly reduces the enthusiasm of the educated.

- (2) The guiding effect is not good. Theory and practice complement each other. In thought together with political guiding, only when theory is used in practice the curriculum can be effective. At present, my country’s thought together with political courses focuses on theoretical guiding, and its main form is classroom instillation of theoretical education, and the indicator to measure the guiding effect of thought together with political courses is the level of scholars’ test scores. This test-oriented guiding and evaluation method only attaches importance to the improvement of scholars’ theoretical knowledge and ignores the cultivation of practical ability. As a result, scholars are seriously separated, resulting in poor guiding effect of thought together with political lesson.

3. Feasibility Analysis of VR Technical Ability in Ideological and Political Education

The virtual reality instructing of thought together with political theory relevant subjects taught by the school conforms to the needs of the development of the times and the growth of students. In the Internet era where everything is interconnected, the wave of digitization, informatization, and virtualization has had a significant and far-reaching influence on individual behavior habits and manner of thinking. College students are the main force active in the network society in the 5G era. They are keen to obtain information from social networking platforms such as forums BBS, Weibo, and WeChat and like to make friends, shop, entertain, and study in the online world. The mobile Internet makes the survival mode of college students move from realistic survival to virtual survival. The digitization, informatization, and virtualization of the survival mode of college students pose challenges to the guiding of thought together with political education theory courses in colleges

and universities. VR technical ability helps teachers reproduce specific social scenes or build virtual simulation classrooms for guiding and eliminates limits in time and space as so to students can experience virtual guiding situations and accept thought together with relevant subjects taught by the school without leaving home. The virtual reality classroom of thought together with relevant subjects taught by the school conforms to the needs of individual virtual survival and the development of the era of fragmented learning.

3.1. Technical Feasibility Analysis. The basic technical lines of the immersive virtual reality classroom are as follows: first, it is the initial setting and the entire application development process, and the setting of the connection points between the software and the hardware; the second is the three-dimensional construction: the model is divided into two parts from the perspective of the role and the model; the third is motion capture: this part has two parts: body motion capture and expression capture; the fourth is VR/AR: giving character animations and expressions; the fifth is Android APK: the scene and character are imported into the Unity 3D project, and the Android SDK package is used to output the APK software package; and the sixth is the effect test. The virtual reality classroom is mainly composed of two core components, one is to create a virtual reality classroom scene. Maya is the mainstream 3D animation software used in the field of 3D visual art creation at home and abroad [12]. The Maya software is used to realize the modeling, material, lighting, and camera of the basic scene, construct a three-dimensional object model, and create an immersive guiding environment. The Maya software has comprehensive functions, and the interface is simple and easy to operate. The Maya software combination tool is used to construct the 3D model required for guiding. The Maya software takes the standard primitives as the modeling basis and converts them into two-dimensional plan views of editable polygons and then constructs complex shapes by adding lines, turning, adjusting points, twisting, extruding, and chamfering. The second, Unity 3D, is mainly used to realize the interactive function of virtual reality classroom. Unity 3D is a professional game development engine that can visualize virtual scenes, create terrains, add sky backgrounds, create first- and third-person perspectives, and more. The 3D model built by Maya software is imported in Unity 3D in FBX format, and JavaScript language is used to write programs for virtual objects to achieve interactive settings for virtual objects. VRP 3D art virtual reality software is directly applied to fully realize the construction of virtual interactive scenes [13].

3.2. Economic Feasibility Analysis. The immersive virtual reality classroom effectively fills the deficiencies guiding by visualizing abstract theoretical knowledge, transferring dangerous experience to the computer interface, and converting expensive experience equipment into digital information. At the same time, the immersive virtual classroom expands the time and space of practical guiding of thought together with political theory courses, which is conducive to

strengthening the effectiveness of practical guiding. Building a virtual reality classroom mainly uses Maya and Unity 3D software packages. Maya and Unity 3D software technology is mature, powerful, and easy to operate. After training, teachers of thought together with political theory courses can use software to create virtual simulation guiding and reduce guiding expenses. The classroom is shared, which can realize remote guiding. Through the extensive application of virtual reality classrooms, students in areas where guiding funds and resources are scarce can enjoy high-quality guiding resources, promote education fairness, and have good economic and social effects. Virtual reality guiding can better develop students' subjectivity. The college students who grew up in the network environment are different from the conventionally educated people. They have the consciousness of independent learning, and they have psychological needs such as longing for interpersonal relationships with peer groups and showing their individuality. Therefore, they are not used to passively listening to guiding and prefer independent exploration way of learning. Virtual reality is an advanced human-machine interface with a sense of immersion, presence, and multidimensionality [14]. Students can interact with the computer through a variety of sensory channels and learn through the mode of "subject-object" or "subject-object-subject" and "all-to-all communication," which stimulates the enthusiasm for independent learning and highlights the learners' subject position.

4. Research on the Application of VR Technical Ability to Ideological and Political Education in Colleges and Universities

Virtual reality as an academic term originated from Sutherland's (1965) paper "The Ultimate Display." "Computers, drawing tools, and other corresponding equipment use virtual reality to make participants feel three-dimensional, and the multiple senses of the body are integrated with the environment. Let the participants experience the response between behavior and the environment, so that the environment and people can achieve deep interaction and integration." [15] As a novel multimedia technology, VR technical ability has attracted widespread attention and heated discussions. With the help of this new media technology, "The work related to politics has been effectively improved and deeply integrated with the related information technology of conventional thinking" will promote the effectiveness and interest of thought together with political guiding.

- (1) Virtual reality guiding courseware is developed to promote the integration of VR technical ability and the guiding content of thought together with political theory courses in colleges and universities [16]. The form and the content complement each other, and the form must fully exert its function and cannot be separated from the right content. As a tool and method, VR technical ability is the carrier or "form" of the guiding content of thought together with the politics curriculum [17]. With the help of modern virtual

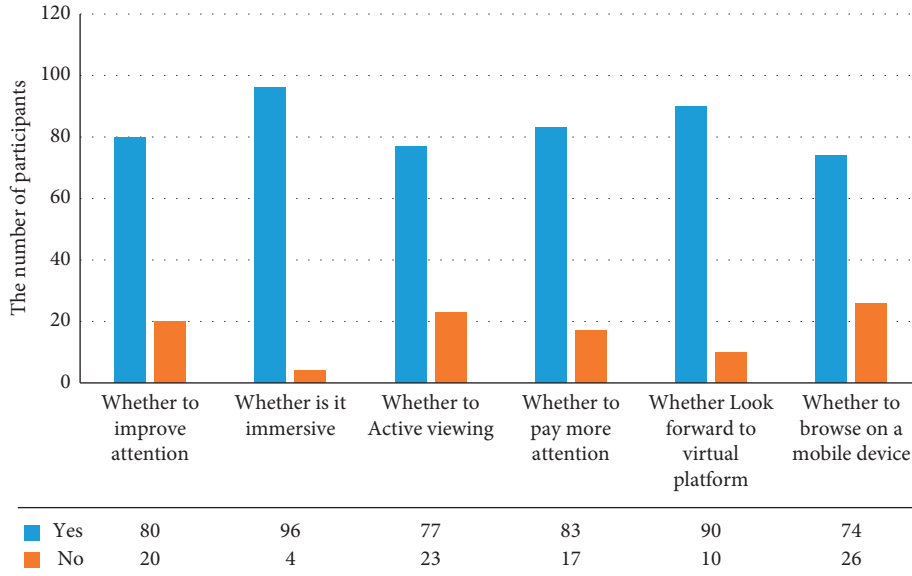


FIGURE 1: Statistical results of questionnaires on the integration of virtual reality technology into ideological and political education.

reality technology, instructing of thought together with the politics curriculum in colleges and universities designs simulation interactive situations based on the theme of guiding content and creates “guiding games” that students can operate according to certain procedures and rules to achieve guiding goals. The virtual simulation technology in form is improved, the shortcomings of dizziness caused by the experience of using the helmet are overcome, and the application of virtual simulation technology on mobile phones is gradually expanded to ensure the update and upgrade of the virtual simulation system. In terms of content, guiding content or guiding topics are selected through collective lesson preparation, research, or consultation with experts, cases with thought together with political education value are selected, and virtual reality classrooms are created according to the principle of “combining the virtual with the real, being able to be true, and complementing each other.” Theoretical knowledge is effectively integrated into the simulation practice guiding activities.

- (2) Looking to teacher guidance, the integration of VR technical ability and instruct methods of thought together with political theory class in colleges and universities is boosted. The materialist view of former times believes that in the process of transforming the world, only by promoting the unity of the subject and the object we can achieve the “consistency between the change of the environment and the change of people’s activities or self.” Instructing of thought together with political theory class in colleges and universities must adhere to the unity of dominance and subjectivity. On the one hand, the virtual reality instructing of thought together with politics class fully mobilizes the subjectivity of learner and opens up a broad space for

TABLE 1: Student users make multi-dimensional evaluation of VR experience results.

Variable	Mean	Standard deviation
Immersion	4.66	0.24
Interactivity	4.55	0.27
Conceptual	4.29	0.22
VR environment adaptability	4.21	0.35
Problem-solving skills	3.96	0.27

scholar to learn independently, explore independently, and construct knowledge. Students independently establish learning goals, select appropriate virtual guiding content on the online guiding platform, and carry out self-education learning. On the other hand, to achieve good results in virtual reality guiding in thought together with political theory curriculum also depends on the active guidance of teachers. Teachers should actively discuss learning goals with students and provide suggestions for students to develop learning plans. In the virtual reality studying of the thought together with political theory course, the interactive communication link between the designers and the students is encouraged to retell the experience process and talk about the guiding feelings and gains. Teachers listen carefully to students’ speeches, grasp keywords to guide students to use theoretical knowledge to think and analyze problems, and enhance the effectiveness of virtual reality schooling [18].

5. Conclusion

In terms of quality, to ensure the application effect of VR technical ability in thought together with politics class, it is necessary to increase the research and development of this

technology and constantly innovate the virtual environment, so that the intrusive feeling of characters is more real, and the scenes and modes are more diverse. “Students can forget the interference of the surrounding environment and immerse themselves in the environment of autonomous learning, which can achieve a historic breakthrough in changing passive acceptance learning to active autonomous learning” [19]. VR technical ability is currently only a guiding method, and it will be developed into a way of thought together with political education art in the future. This art mainly reflects the creation of virtual environment that fully considers the cultivation of students’ values of truth, goodness, and beauty [20].

5.1. Case Analysis of the Application of VR Technical Ability in Ideological and Political Theory Courses. The application of VR technical ability in the field of thought together with political education needs to be evaluated in many aspects. A University’s School of Marxism randomly selected 100 students to experience the “Nineteenth National Congress of the Communist Party of China Virtual Reality Simulation Platform” and complete the questionnaire survey (see Figure 1). In addition, 100 students experience the virtual reality work “The Last Battle” in which Chinese soldiers stubbornly resisted the Japanese army in the Anti-Japanese War and conduct multidimensional evaluations on the experience results. The five dimensions of VR environment adaptability and problem-solving ability are evaluated. Immersion is used to evaluate the user’s concentration, interactivity is used to evaluate the system’s human-computer interaction ability, and conception is used to evaluate the user’s ability to patriotic feelings and firm beliefs during the experience process. To reflect whether the user is adaptable to the VR experience environment, and “problem-solving ability” is used to obtain whether the user’s subjective feeling after experiencing the virtual reality system is in line with the official theme goal. The above five dimensions are, respectively, evaluated with 0–5 points. Each user experience system needs to be scored from each dimension.

After the students experience, the five dimensions were evaluated without distinguishing between genders, and the mean and standard deviation were used for statistics. The statistical results are shown in Table 1. Research shows that all students highly agree with the two dimensions of virtual reality immersion and virtual reality interactivity; in the conceptual evaluation of virtual reality, $SD=0.22$, the standard deviation is the smallest among the five dimensions, reflecting all of students have highly consistent evaluations on the conception of thought together with political schooling produced by the virtual reality system, and the mean value of feedback is $M=4.29$; in the dimension of “fitness to VR environment” $M=4.21$ and $SD=0.35$. Although the standard deviation of the VR environment fitness evaluation is the largest among the five dimensions, the average value is still at a good level. It can be considered that most students can adapt to VR environment guiding; the average value is shown in the dimension of “problem-solving ability.” The lowest value ($M=3.96$) indicates that

there is still some gap between the ideological and educational purposes brought by the VR system to the experimenter and the expected purpose, but the value is still close to a good level.

The above analysis can verify the previous research plan; that is, VR technical ability can enhance student attention, learning initiative, and sense of experience in the process of thought together with political education and enhance the effectiveness of thought together with political culture in colleges and universities. In practice, we have verified the advantages of VR technology, and the characteristics and advantages of VR technical ability can bring new educational territory and guiding method innovation to thought together with political schooling [21]. Virtual reality equipment will become more and more convenient, which will provide a better learning space and a good practice platform for thought together with political schooling, expand educational ideas, and innovate educational and guiding methods. This study proposes immersion methods, interactive methods, and role-playing methods for the integration of VR technical ability into thought together with political education. It advocates the increase in virtual reality communication media in thought together with political education communication media and conducts virtual simulation experiments and simulation experiments on 100 students. After the questionnaire survey, the feasibility of the plan was verified, and the guiding method was also welcomed and praised by the students. Because of its technical advantages and thought together with political education goals, VR technical ability is highly compatible with the goals of thought together with political culture.

5.2. The Future Prospect of VR Technical Ability in Ideological and Political Theory Courses

- (1) The application of VR technical ability in scale and quantity is popularized, and a network of thought together with political courses between “virtual” and “real” is built. The Beijing Institute of Technology’s application of VR technical ability in student training has achieved initial results, and it has built a “three-step process”: using VR technical ability to build an emotional intelligence gas station; building a simulation platform for students’ professional quality and assessment; and releasing the “I do my own way” system; the concept of “Internet + quality education” is gradually formed, the whole process is tracked and recorded, and a quality database of domestic college students is gradually established, in line with General Secretary Xi Jinping’s speech in the 2016 National thought together with political theory class “To do a good job of thought together with political work in colleges and universities, we must change it according to the situation” [22]. The organic integration of information technology and ideological and party political courses produces “re-walking the long march” and explores the application of VR technical ability in the guiding of ideological and

governmental courses. At present, with the development of the times, the application of VR technical ability in thought together with political theory courses in colleges and universities has become possible. In the future, VR technical ability will be introduced into more ideological and governmental classrooms in colleges and universities on a larger scale to fully mobilize students' enthusiasm for learning. The overall improvement of guiding effect is realized; let VR technical ability become a multimedia bridge between teachers and students, guiding and learning, and dynamic and static and truly make the guiding mode of ideological and politics class develop in line with the times. Of course, to realize the expansion of VR technical ability in scale and quantity, it is necessary for colleges and universities to configure a professional R&D team of virtual reality technology, improve the guiding innovation awareness of thought together with political teachers, form thought together with political courses between schools, and realize VR technical ability [23]. The "real" experience beyond the limitations of time and space is pursued, and the thought together with political guiding into a network of "virtual" and "real" is connected, the contact method is "virtual," and the learning and communication are "real"; the guiding environment is "virtual," and the guiding content is "virtual."; situational experience "virtual"; and emotional training "real."

- (2) The application of VR technical ability is deepened in depth and quality, and a good campus with ideological, political, and cultural atmosphere is built. At present, the submission of VR technique in courses that combine politics and ideas is only in the primary stage, and it is only a guiding method used by some colleges and universities and a few classrooms. We must play its radiating and leading role. At the same time, we should also consider deepening the submission of VR technique in courses that combine politics and ideas in terms of depth and quality. VR technical ability not only serves classroom guiding and social practice but also should serve the central link of cultivating people with morality, which runs through the whole process of subjects that combine ideology with politics, and finally, it can "achieve the whole process of educating people, educating people in all directions, and strive to create A new situation in the development of higher education in my country." In the future, classrooms and campuses should be connected, study and life, and be committed to building a good campus ideological, political, and cultural atmosphere, so as to have a subtle impact on students. An analogy is made, and some things have happened in today's society, which are contrary to the core values of socialism. It is difficult to stimulate students' in-depth reflection on the incident with the guidance of

teachers alone. We might as well place students in the environment at that time. Teachers conduct timely guidance and education by observing students' every move, so that students truly understand the core socialist values instead of empty slogans. Everyone should strive to be "a firm believer, an active communicator, and a model of the socialist core values [24, 25]."

The application of VR technical ability in the guiding of ideological and politics class in colleges and universities has broad prospects, and it can be specifically applied in the guiding links of four ideology together with politics classes to make an analogy, and the guiding of moral and legal-related content in "Ideological and Moral Cultivation and Legal Foundation" can be combined with specific social events to develop relevant special software courses, such as the simulation of court scenes and related software courses in the guiding of "Outline of Modern History." VR technical ability can bring students back to the field scene, mobilize students' enthusiasm for learning, and then improve the guiding effect of ideology together with political courses through VR technology. Subjects that combine ideology with politics in colleges and universities are an major part of thought together with political work. The application of virtual reality technology ability can combine ideological and political courses, enhance the attractiveness and attraction of ideological and political courses, and promote college students to establish correct national, national, and cultural concepts.

Data Availability

The dataset can be accessed upon request to the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This study was supported by the Social Science Planning Project of Henan Province in 2021: Innovative Research on the Integration of the Spiritual Pedigree of the Communist Party of China into the Ideological and Political Theory Course in the Information Age (project approval no. 2021bks009).

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