Reflections on the Application of Virtual Reality (VR) Technology to Morality and Rule of Law Education

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ABSTRACT

The application of virtual reality (VR) technology to practical teaching of "Morality and Rule of Law" course is to generate a learning environment generated by utilizing VR technology. The article explores the value of VR technology in its application to "Morality and Rule of Law" course in junior high school. Starting from the current situation of practical teaching in "Morality and Rule of Law" course in junior high school, it analyzes the practical value of VR technology in "Morality and Rule of Law" course. And combined with the practical application of course teaching, this article elaborates on the strategies of using VR technology to implement practical teaching in junior high school "Morality and Rule of Law" courses such as creating scenarios and enhancing experience, proactive exploration and enhancing autonomy, as well as diverse scenarios and meeting personalization. At the same time, this article analyzes the challenges brought by the integration of VR technology and morality and rule of law education in practical teaching design, moral ethics, and other aspects due to the inherent shortcomings of VR technology.

Keywords: *Virtual reality (VR) technology, "Morality and Rule of Law", Teaching, Curriculum reform, Compulsory education.*

1. INTRODUCTION

With the rapid development of science and technology, the era of big data is gradually transitioning to the era of artificial intelligence, which has brought changes to people's lifestyle. With the great strides of the "metaverse", the society is moving from the digital big data information age to the intelligent age. At the same time, the modernization of education has been developing at a high speed, providing an innovative path for education and learning methods. The application of "metaverse" in the field of education, that is, education metaverse, is both an opportunity and a challenge to the development of education. As an important support for the education metaverse, the development and application of VR technology are of great significance. In recent years, the application scope of information technology represented by "VR" has expanded and developed into the field of mass education. This article aims to explore the application of "VR" to practical teaching of "Morality and Rule of Law" course in junior high school by taking "Morality and Rule of Law" course as an example.

2. THE VALUE OF APPLYING VR TECHNOLOGY TO JUNIOR HIGH SCHOOL COURSE "MORALITY AND RULE OF LAW"

"Morality and Rule of Law" course in junior high school is a comprehensive course based on students' daily lives and aimed at guiding and promoting the development of "morality and rule of law" among junior high school students. Specifically, the core value of "Morality and Rule of Law" course is to educate students on the basic viewpoints of morality and the rule of law, and to cultivate the moral and legal literacy of middle school students in the new era. Its basic function is to improve their social understanding and participation abilities. Different from subject courses such as mathematics, Chinese, and chemistry that are fixed in classroom teaching, the teaching of "Morality and Rule of Law" course requires not only theoretical knowledge learning

but also more immersive perception and participatory experience for students. It is necessary for the professional teachers of the "Morality and Rule of Law" course in junior high school to arrange more practical teaching activities in the teaching, so that students can internalize theoretical knowledge in the heart, circulating the process from knowledge to practice and from practice to knowledge to realize the unity of knowledge and practice, so as to truly achieve the educational goal of the discipline. The traditional teaching method of "Morality and Rule of Law" course emphasizes teaching, and the presentation of teaching content is limited by time and space, as well as the influence of teaching practice activities by time and place. Generally, teaching methods such as watching video materials, keynote speeches, and thematic knowledge competitions are used, which are relatively dull in form and simple in method. Students' interest in participating is not high, and the coverage of activities is not wide enough. It is difficult to achieve the effectiveness of practical teaching in "Morality and Rule of Law" course. With the advancement and requirements of curriculum reform, more and more schools choose to combine subject courses to study in educational bases. However, in the actual implementation process, these practical teaching activities are influenced by factors such as location and time, and often fail to achieve the expected teaching objectives, affecting students' learning outcomes.

VR, also known as spiritual realm technology, is a computer system that can create and experience virtual worlds. [1] It mainly includes aspects such as simulating the environment, perception, natural skills, sensing equipment, etc. VR can be further divided into reality augmentation technology, immersive virtual reality technology, interactive virtual reality technology, desktop virtual reality technology, etc. The main characteristics of VR technology are reflected in its ability to provide multiple senses of perception, making it difficult to distinguish between true and false existence in virtual environments, and the interactivity of action and reaction in virtual environments. [2] VR technology is applied in the field of education, and its main use is that it can generate a highly realistic, close to reality environment, that is, a highly simulated virtual reality learning environment. In such a virtual environment, learners can gain knowledge growth and skill enhancement through perception, interaction, and information feedback.

In the virtualization of subject course practical teaching environment, teaching organizers can construct a virtual teaching environment based on the educational objectives of subject courses, and achieve complex and difficult to operate practical teaching in real life on the terminal devices of VR technology. Students can observe and experience in the created virtual environment, reducing the cost of subject course teaching while improving the effectiveness of subject course practical teaching. Based on the research and practice, methods, and guidance of "morality and rule of law" education and teaching, virtual reality technology and "morality and rule of law" education and teaching have a certain degree of affinity. [3] VR technology can reproduce real-life scenes, break through time and space limitations, and enrich practical space. [4] The virtual environment created by educators using VR technology can guide learners to construct values and establish awareness of morality and the rule of law, which is isomorphic to the guidance of "morality and the rule of law" education.

3. STRATEGIES FOR APPLYING VR TECHNOLOGY TO PRACTICAL TEACHING OF "MORALITY AND RULE OF LAW" COURSE IN JUNIOR HIGH SCHOOL

The practical teaching in "Morality and Rule of Law" course is an important component of the curriculum and an important way to practice the teaching objectives of strengthening moral education and cultivating people. However, there are many problems in the current practical teaching process of "Morality and Rule of Law" course. Applying VR technology to "Morality and Rule of Law" course can provide new paths to solve these problems, allowing the practical teaching of "Morality and Rule of Law" course to burst into vitality. Based on the requirements for cultivating core competencies in "Morality and Rule of Law" course in junior high school, applying "VR" to practical teaching of morality and rule of law in junior high school is not intended to replace the inherent traditional practical teaching forms, but to be a beneficial supplement. Applying VR technology to practical teaching of "Morality and Rule of Law" is to utilize the advantages of VR technology to solve practical problems in practical teaching of "Morality and Rule of Law", and to realize the practical teaching function of "Morality and Rule of Law".

3.1 Creating Scenarios and Enhancing Experience

Conceptualized knowledge needs to enter students' minds through a certain context, allowing them to immerse themselves in the context and connect their own experiences with knowledge. When "VR" is applied to the practical teaching of "Morality and Rule of Law" course in junior high school, course teachers should combine objective reality, give full play to their subjective initiative, use virtual technology to build a virtual learning environment, make the situation, stories, characters, etc. of practical teaching activities in the teaching objectives virtual, and let students immerse themselves in them to experience and feel.

For example, in the course content of "Morality and the Rule of Law" in junior high school, the unit 4 of eighth grade volume I "Safeguarding National Interests", and the lesson 8 "National Interests First", teachers can use VR technology to create the real "December 9th Movement" scene on December 9, 1935 in a virtual environment through system coding in the introduction link of the course teaching and combining historical facts, so that students can be the "space-time historical participants" to experience the high voices of "overthrowing Japanese imperialism", "opposing North China autonomy", and "stopping civil war and unanimously opening up to the outside world", experience the climax of resistance against Japan and national salvation, and feel the lofty aspirations of students in Peking to serve the country and the people. This kind of simulation can enable students to experience from the macro level of the scene to the micro level of sound, light, and touch, allowing them to travel through time and space, reproduce historical scenes, and experience on the spot across time and space in a virtual practical teaching environment. For another example, in the content of "Morality and Rule of Law" course in junior high school, ninth grade, volume I, unit 3, "Civilization and Homeland", and lesson 6, "Building a Beautiful China", teachers can use VR technology to create scenes such as "Saihanba Forest Farm", "Yucun Village, Anji County, Zhejiang Province" and "The Northwest-North-Northeast China Networks of Shelterbelts" by using real scenes and integrating design in the summary and review phase of the course, so that students can "walk into" these scenes, experience the true portrayal of "lucid waters and lush mountains are invaluable assets". Utilizing the familiar natural scenery and cultural landscapes of students to create a "Beautiful China" scenario can let students explore the four seas and experience the magnificent mountains and rivers of the motherland. This kind of experience in virtual reality environment is different from the sound and light perception of traditional video and audio, and it can present a richer physical experience through multidimensional touch. Although the scenes and characters are virtual, students can observe and touch in this virtual learning environment, and feel the emotions more realistically. In such vivid, innovative, and diverse practical teaching activities, students can better establish a scientific outlook on life, worldview, and values.

3.2 Proactive Exploration and Enhancing Autonomy

The application of "VR" to the practical teaching of "Morality and Rule of Law" course in junior high school can better play the role of students as the main body. The "Statistical Report on the Development of China's Internet" is jointly released by three departments, and the data in the report shows that netizens aged 10-19 account for 17.5% of the total number of netizens. [5] Contemporary teenagers have grown up together with China's networking. In the big data information age, teenagers are no longer satisfied with traditional education and teaching methods. Teenagers are not only recipients of information, but also creators of information. [6] In modern classrooms, students are no longer satisfied with playing the roles of listeners and observers in the past, but are more eager to play the roles of explorers and practitioners. Teachers should not only "give students fish", but also "teach students to fish". Teachers can use the diverse and multi-dimensional nature of VR technology to stimulate students' internal learning motivation, achieving a transformation from external light and shadow tactile experience to internal spontaneous exploration. [7] Therefore, teachers need to enhance students' media literacy and extend their concepts. They should not only enable students to master certain VR technology, but also enable them to master the methods of independent exploration, so that students can transition from passive education to active inquiry learning, establish students' confidence, and enhance their sense of self-efficacy.

For example, in the content of "Morality and the Rule of Law" in junior high school, the unit 4 of seventh grade volume II "Walk into the World of the Rule of Law", and the lesson 9 "The Law Is

Around Us", teachers guide students to use VR technology to work in groups and let students explore the phenomenon, characters and events of the rule of law in daily life independently. Under the guidance of teachers, students can use technology to create virtual rule of law event scenes based on independently searched materials, allowing students to play different roles and explore independently in the virtual scene. This experience can make students more deeply feel that law is the norm and guarantee of our daily life. For another example, in the lesson 3 "Citizen's Rights" and the lesson 4 "Citizen's Duties" of the unit 2 "Understanding Rights and Duties" of volume II of eighth grade, teachers can use VR technology to create scenes for the election and performance of deputies to the National People's Congress, allowing students to independently choose the characters in the virtual scene as "representatives of the National People's Congress" or "voters" or "bystanders", and actively explore the rights and obligations of their "virtual roles" through students, so as to deepen their understanding of the relationship between rights and obligations. Comprehending the exercise of rights and the fulfillment of obligations in accordance with the law, is related to the dignity of each person and the happiness of the family, as well as to the progress of society and the development of the country. Traditional practical teaching methods are difficult to meet students' needs, but the integration of VR technology can stimulate students' enthusiasm and thirst for knowledge, enable them to actively participate in the virtual learning environment, enhance physical and mental experience, and enable students to play a greater role as the main body.

3.3 Diverse Scenarios and Meeting Personalization

Teaching students according to their aptitude is the best embodiment of personalized teaching in educational modernization. However, in specific teaching, it is often difficult to achieve due to the influence of educational resources, standardized and procedural educational activities. In the practical teaching of "Morality and Rule of Law" course in junior high school, there are also many factors that affect personalized teaching. For example, practical teaching forms such as going to Xibaipo, Red Flag Canal and other patriotic research classes, because of the huge cost of consumption, long time, high security risks in organizational practice, teachers often choose the top ones to participate in the practice. Such activities can not guarantee the standardization of practical teaching, and it is more difficult to achieve personalization. With the physical and mental development of teenagers, more and more teenagers need personalized assistance and guidance. "Morality and Rule of Law" course can utilize VR technology to meet students' needs for independent learning and exploration. Students can achieve personalized feelings through the presentation of virtual scenes based on their actual needs and under the guidance of course teachers.

For example, in the course "Morality and the Rule of Law" in junior high school, the introduction of the course of "Discover Yourself" in the lesson 3 of "Growth Beat" in the unit 1 of volume I of seventh grade, students can discover three scenes of learning life in junior high school independently, which can be the scene of learning knowledge in the classroom on campus, or the scene of participating in comprehensive practical activities outside school, or the scene of being at home with their parents. Under the guidance of teachers, students can use VR technology to create scenarios independently. In virtual "real" scenarios, students can be both participants and bystanders. By allowing students to transform their identities and roles in virtual scenarios, observing personalized scenarios from a multidimensional perspective, teachers can guide students to discover and solve problems. By using a "scene representation" approach, students can better accept themselves and explore their own potential. For another example, in the course of "Morality and the Rule of Law" in junior high school, the lesson 4 "Unveiling Emotions" and the lesson 5 "Tasting the Flavor of Emotions" in the unit 7 of seventh grade volume II, teachers can use VR technology to create scenes such as classroom learning environment, outdoor sports environment and comprehensive practice activities, so that students can choose different identities such as "bystanders" or "participants". By observing others or displaying their expressions, language, and actions in dealing with events in the context, students can experience the information expressed by different emotions. Through teacher guidance, students can exercise scientific emotional management. As mentioned above, teachers of the "Morality and Rule of Law" course can use "VR" with the assistance of "VR" professional technicians to solve the problem of "personalized teaching" in the junior high school "Morality and Rule of Law" course. They can design different virtual practice teaching environments based on the

actual situation of students, meet the individual needs of students, and provide them with a rich personalized learning environment.

4. THE CHALLENGES FACED BY VR TECHNOLOGY IN PRACTICAL TEACHING OF "MORALITY AND RULE OF LAW" COURSE IN JUNIOR HIGH SCHOOL

Although the integration of VR technology into the field of education is a future development trend, it is inevitable that there are many problems and challenges in the application process of virtual reality technology.

Firstly, there are technical flaws in VR technology. Although "VR" has moved from a cutting-edge field of high precision to popularization, it is still hindered by its own software and hardware technology defects in its widespread application process. Learners immerse themselves in a virtual learning environment and require corresponding device support. Currently, most common VR technology devices are headworn helmets or eye masks, which are affected by device resolution, making it difficult for learners to feel realistic image quality. At the same time, the glare of high light on the eyes not only affects learners' vision, but also causes some users to experience dizziness. [8] Moreover, both headworn and eye mask devices are expensive, but the user's vision has not been effectively improved, and the supporting volume of the equipment is relatively large, which affects the promotion of VR technology in practical teaching in the field of education.

Secondly, the design issues of applying VR technology to practical teaching of moral and legal courses. The reason why "VR" has great advantages in the practical teaching of the "Morality and Rule of Law" course in junior high school is that it is based on a set of reasonable teaching design that meets the actual teaching needs. If there are problems in the teaching design of a virtual learning environment for practical teaching of "Morality and Rule of Law" course in junior high school, no matter how excellent and perfect the technical software and hardware are, they cannot be effectively applied to teaching. At the same time, due to the limitations of the teacher's own technical mastery, the teachers also need to engage in interdisciplinary communication with teachers in related disciplines such as information technology and artificial intelligence, and have professional personnel assist in completing course teaching design and implementation.

Thirdly, the application of VR technology to practical teaching to "Morality and Rule of Law" course poses moral and ethical challenges. In order to better apply virtual reality technology to practical teaching of "Morality and Rule of Law" course, and ensure that learners have a better immersive experience, VR systems inevitably need to collect a large amount of personal information data from learners. Some scholars have explained in their research on the construction of artificial intelligence courses in junior high school that the data collected by VR systems includes but is not limited to learners' behaviors, habits, concerns, and cognition of things. [9] In the research on creative teaching, some scholars have pointed out that VR systems, after analyzing the collected data, use this personal information to react on learners' usage process, and these impacts are intangible and subtle. [10] The collection of the personal information can easily trigger an invasion of learners' privacy. At the same time, technological development in the context of commercialization can also easily lead to the leakage of learners' information, leading to negative chain reactions. Education authorities and technology use schools should take appropriate measures and develop security plans for collecting information in advance to ensure that the personal information collected through VR technology is beneficial for teaching and is also a reasonable need for students' better development.

With the big data era striding into the era of artificial intelligence, the integration of VR technology into subject teaching will become the future trend of education and teaching. Applying VR technology to practical teaching of course "Morality and Rule of Law" utilizes a learning environment generated by "VR" to virtualize the environment for practical teaching of "Morality and Rule of Law" course, providing students with a personalized virtual learning environment, enhancing the effectiveness of practical teaching of "Morality and Rule of Law" course, and exerting students' main role in "Morality and Rule of Law" course, which can effectively solve the problems in practical teaching of "Morality and Rule of Law" course. At the same time, due to the inherent shortcomings of VR technology, the integration of VR technology and "morality and rule of law" education is also challenged in practical teaching design, moral ethics, and other aspects. It is

necessary to further explore the deep integration of technology and education.

5. CONCLUSION

The application of VR technology to practical teaching of "Morality and Rule of Law" course is to generate a learning environment generated by utilizing VR technology. The article explores the value of VR technology in its application to "Morality and Rule of Law" course in junior high school. Starting from the current situation of practical teaching in "Morality and Rule of Law" course in junior high school, it analyzes the practical value of VR technology in "Morality and Rule of Law" course. And combined with the practical application of course teaching, this article elaborates on the strategies of using VR technology to implement practical teaching in junior high school "Morality and Rule of Law" courses such as creating scenarios and enhancing experience, proactive exploration and enhancing autonomy, as well as diverse scenarios and meeting personalization. At the same time, this article analyzes the challenges brought by the integration of VR technology and morality and rule of law education in practical teaching design, moral ethics, and other aspects due to the inherent shortcomings of VR technology.

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