

Retraction

Retracted: The Influence of Digital Virtual Technology on Contemporary College Students’ Ideological and Political Education

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The Influence of Digital Virtual Technology on Contemporary College Students' Ideological and Political Education

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ABSTRACT With the continuous development of society, the impact of virtual technology on society is also increasing. Digital virtual technology continues to advance social life, and digital virtual technology gradually penetrates into the ideological and political education of college students. This article aims to explore the positive and negative effects of digital virtual technology on the ideological and political education of contemporary college students. Through comparative research, this article explores the use of existing media content, network content and digital virtual technology based on virtual reality to help college students understand ideological and political education in colleges. In order to confirm the learning effect in the comparison process, quasi-experimental design was studied, and an AR-based deep learning education enhancement algorithm analyzed and judged the opinions of students based on the use of AR technology, learning strategy learning and online learning support, and AR-based technology. And how the learning content of online learning affects students' learning motivation and performance, analyze and predict the application of AR technology in teaching. Experiments show that the ideological and political courses based on AR digital virtual technology combined with deep learning ideological and political course education analysis technology proposed in this paper can significantly and effectively improve the learning progress of contemporary college students' ideological and political education. Through comparative experiments, it is found that traditional education and learning methods promote the quality education of college students by 11.58% and 12.96% respectively.

INDEX TERMS Augmented Reality, College Student Education, Digital Virtual Technology, Ideological and Political Education

I. INTRODUCTION

With the development of computers and modern information technology, virtual reality (VR technology), an emerging technology, has begun to fully penetrate human life, as well as the impact of university campuses [1]. The continuous development and improvement of technology can quickly and effectively change the life of users, and change the thinking and lifestyle of college students. In addition, contemporary college students are rich in thinking, and they can borrow digital virtual technology to learn knowledge and use new technologies and methods to open the window of the future world, which can bring high efficiency to university life and study [2]. But the existence of technology itself has its pros and cons, and virtual reality technology is no exception to this situation [3]. On this basis, it is necessary for us to clarify what virtual reality technology is, and reflect on the essence of virtual reality technology from a philosophical point of view, so as to effectively increase the strengths and weaknesses, and play

the positive role of virtual reality technology [4]. Virtual reality technology and augmented reality technology have been widely circulated in recent years, welcoming many investors. With the development and widespread use of this technology, we have discovered a new round of virtual reality education and life has sprung up like mushrooms, leading the revolutionary evolution of new technologies [5].

With the continuous development of science and technology, new information display technology has brought a lot of interesting life and learning methods to students and ordinary users [6]. With 4G communication, WIFI coverage, and humanized design of computer and mobile phone hardware, the network has become an indispensable part of people's daily life [7]. Although the future of virtual reality technology is still uncertain, I believe it will completely change the way we work and study. The reason is simple: virtual reality is not only a technology, it is also a medium, and it has proven the power of the medium [8]. Companies such as IBM, Microsoft, and

Google are using neural networks to promote computer language translation, even though the existing domain of human language knowledge has disappeared [9, 10]. At present, when the book publishing era is gradually depressed, through the organic combination of virtual reality (VR) technology and books in the digital publishing era, the traditional content and value-added services can be fully integrated, and it also gives traditional publishing a new Development path. Through the birth of this technology, readers and users do not need to borrow a book in person, only need to bring a display device to wander in the ocean of books [11, 12]. However, in this state of symbiosis of reality and virtuality, in addition to releasing digital products and exquisite, smooth, and good experience for readers (users), we should also think deeply about how to effectively use virtual reality (VR) technology in the era of digital publishing. , Not in a virtual cycle. Advertisements based on mobile devices such as radio frequency identification technology (RFID) and outdoor augmented reality technology, geography course learning activities, etc., the results show that mobile devices that use augmented reality and contextual learning strategies can stimulate students' willingness to learn and strengthen the memory of learning content. Although mobile AR-based applications have been proven to be more effective than traditional teaching in education, they can still enhance students' collaboration and learning motivation [13]. However, there are still some obstacles and problems in applied education and teaching based on "Augmented Reality" technology. For example, students lack interactive operation experience based on "Augmented Reality" technology, and the screen displays too much information. Teachers do not want to use AR technology in teaching. , Students have not obtained enough research information through interaction based on "AR" technology, small screen device limitations and other factors (including equipment budget, time-consuming, network connection problems, and management support), etc. [14, 15].

Virtual reality technology is that human beings have been increasing in order to meet their own desires to explore the objective world. It integrates dynamic environment modeling technology and multi-source information fusion with the development of computer graphics, human-computer interaction technology, sensor technology, artificial intelligence and other disciplines. Technology, diverse information and timely interactive feedback sensor technology and related application technology. As an interactive experience that can give users direct feedback, virtual reality technology has a large number of loyal users and a huge number of users, and this number is still increasing [16]. Its unique omni-directional perspective function, as a characteristic setting of perspective analysis, bears the important mission of social sharing and understanding. Blessings can ensure that the technology based on digital virtual learning has strong privacy, more attractive expression, rich speed and content, etc., which greatly promotes the enthusiasm of college

students, and becomes the main method of communication for college students, and to a certain extent Changed the lifestyle of college students.

On the basis of analysis, I read a lot of about the impact of digital virtual technology, on the basis of the literature on the ideological and political education of college students, and analyzes the background and current situation of the impact of digital virtual technology on college students' ideological and political education, and put forward my own views from multiple perspectives. And digital virtual technology, the specific tools and ideological and political education of this technological age, make the theme more specific and detailed. Because digital virtual technology combined with the theory of ideological and political education is relatively blank, this field is worth studying new technological tools for ideological and political education in colleges and universities. It has positive and negative effects. Drawing on the theoretical research results of predecessors, combined with digital virtual technology itself The characteristics of college students seeking new knowledge, a comprehensive analysis of the pros and cons of college students using Weibo, so that ideological and political educators recognize the new expression of digital virtual technology and communication tools for future work.

II. BASIC CONCEPTS AND DATA PROCESSING METHODS

A. INNOVATIVE APPLICATION OF VIRTUAL REALITY TECHNOLOGY IN THE CURRICULUM

With the continuous development of science and technology, virtual reality technology, as an emerging multimedia technology, has gradually entered our education field. It uses modern sensing equipment to create a virtual environment based on reality, so that the experiencer can personally feel the feeling and experience of the real environment in the interaction between virtual and reality. The application of virtual reality technology in ideological and political theory courses will make up for the lack of monotonous teaching of traditional ideological and political theory courses, innovative teaching models and social practice models of ideological and political theory, inject new vitality and fresh blood into college ideological and political theory courses, and enhance Its appeal and charm [17].

In order to help people establish correct thoughts and overcome wrong thoughts, ideological and political education must take social practice as the basic method of education. At present, colleges and universities have carried out social practice teaching in various forms and have made great achievements. Virtual reality technology will overcome the short-term social practical effects and object limitations of traditional ideological and political theory courses, and innovate practical methods. Virtual reality technology can break through the time and space limitations of traditional social practice and ensure the long-term effects of education. The social practice of traditional

ideological and political theory courses depends on the objective environment and conditions. In the final practice, the experience of the emotional value of students will be weakened from the actual environment. Virtual reality technology can create virtual positions, personalities and environments, and students can return through digital devices. When you arrive at the scene, any time, any place learning experience will have a long-term impact on students' thinking. Socialist core values are an important part of ideological and political theory courses, but the practice and cultivation of core values is a long-term process and should be integrated into all aspects of social practice in ideological and political theory courses. Traditional education courses and social practice organize students to visit monuments, martyrs cemetery, student heroes admire and confidence in the great rejuvenation of the Chinese nation can be matched by any teaching method, but the training of emotional value requires a long process, and in the actual operation process, It is inconvenient to bring students into the real environment anytime and anywhere. Virtual reality technology is a good auxiliary tool and supplement. We can learn about the visit through social practice, but we can use virtual reality technology to restore the historical situation at that time, and feel that the heroes of great patriotism and integrity return to China, especially today, with the continuous thinking of historical nihilism and the firmness of Marxism. Faith is the main goal of ideological and political education to train students, and virtual reality technology provides students with a way to resist more new media and nihilistic ideas, realizes the innovation of ideological and political education models, and improves the effectiveness of ideological and political education.

B. BASED ON AR DEEP LEARNING EDUCATION PROMOTION ALGORITHM

(1) DEEP LEARNING

Deep learning was proposed in 1976, and it explored deep learning from different perspectives. Deep learning requires critical thinking, critical learning, and critical understanding to transfer the learned knowledge to a new learning context, and ultimately form critical thinking. Summarizing the domestic and foreign research, mainly from three aspects of deep learning learning method, learning process and learning effect. The project is organized and implemented by the William and Flora Hewlett Foundation of the United States. Starting from the learning results of deep learning, 3 fields, 6 abilities and 42 specific characteristics are summarized to define deep learning [18]. In the field of cognition, it improves students' ability to master core subject knowledge, and improves students' ability to think critically and solve complex problems. Improve students' teamwork ability and effective communication ability in the field of interpersonal communication; individually exercise students' learning ability and ability to learn perseverance. The corresponding specific expression also clearly illustrates the specific embodiment of the deep learning

results on the learner. This article tends to define deep learning from this perspective. In the system requirement analysis stage, teaching design and platform design are carried out with reference to the specific manifestations of deep learning results. The AR&DL platform takes the 3D learning results of deep learning as the goal, designs learning resources such as learning content, learning activities, learning evaluation, and creates an interactive platform for communication, sharing, and collaboration.

(2) AUTO ENCODER

One of the simplest and most basic artificial neural networks in deep learning. Its main goal is to adjust its parameters by training the network so that the input data can be reconstructed as much as possible after network training [19]. AE is an unsupervised learning algorithm, which is mainly used to reduce the dimensionality of data and extract features from the data. After AE encodes the input data, it can restore the encoding characteristics to the original characteristics of the input data through as many decoding changes as possible. Among them, the coding characteristic is the characteristic representation, as shown in Figure 1.

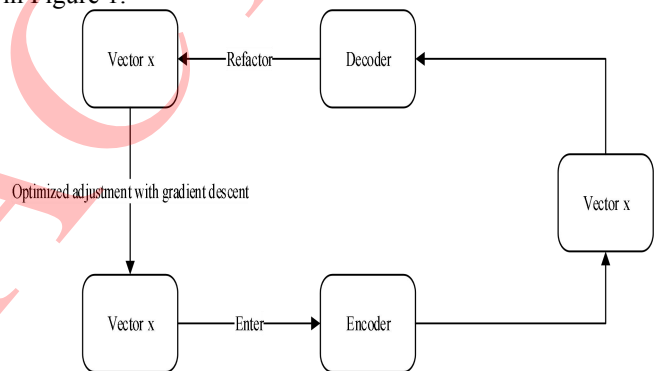


FIGURE 1. AE network model structure diagram

The AE network model is similar to the ANN model diagram, which consists of an input layer X, a hidden layer H and an output layer y. In the AE structure diagram shown in Figure 1, there are mainly two steps: encoding, and the encoder function is:

$$h = f(x) \tag{1}$$

The decoding function is:

$$y = g(x) \tag{2}$$

The effect AE wants to achieve is to make y infinitely close to x as much as possible, that is:

$$g(f(x)) = x \tag{3}$$

The specific calculation formula is:

$$y = f_{\theta}(x) = s(wx + b) \tag{4}$$

$$z = g_{\theta}(x) = s(w'y + b') \tag{5}$$

(3) RECURRENT NEURAL NETWORK

Although traditional network models have good performance in many fields, most models cannot express the complex time correlation between input information. In order to solve this problem, the researchers proposed a new neural network model-cyclic neural network, which can record previous information and use this information to calculate current output [20].

The RNN model is divided into three parts: the input layer neural unit, the hidden layer neural unit and the output layer neural unit. The structure is the same as the traditional neural network model. However, the special feature of the RNN model is that the neuron nodes between the hidden layers are connected. The input of the hidden layer includes not only the input value x of the input layer, but also the output of the hidden layer at the previous moment. This relationship can be summarized as follows:

$$h = f(x + h_{t-1}) \quad (6)$$

The hidden layer neurons of the RNN neural network contain a feedback mechanism, which can transmit context information, so that the RNN model has good processing and predictive capabilities for sequence data samples. It is widely used in the fields of image description generation, text classification, machine translation and music generation.

In the sub-process of signal forward propagation, each neuron node in the network has a non-linear s-type activation function:

$$\text{sigm}(x) = \frac{1}{1 + e^{-x}} \quad (7)$$

In the sub-process of error back propagation, the weight and threshold of each neuron in the network are repeatedly modified through the gradient descent algorithm to achieve the goal of the smallest error function value. We can define the cost function like this:

$$J(w, b : x, y) = \frac{1}{2} \|h_{w,b}(x) - y\|^2 \quad (8)$$

(4) COLLABORATIVE LEARNING

Collaborative learning is the third form of learning organization structure, which is different from competitive organization structure and individual organization structure. It is a strategy for learners to learn in a group or team. The development of learners in the cognitive domain is driven by the cognitive impulses and value impulses generated in social interaction, and the social interaction characteristics in collaborative learning are the important factors for the cognitive development of learners.

C. TRADITIONAL FEATURE LEARNING EDUCATION ALGORITHM

In ideological and political education, the detection of learning effects mainly depends on the dimensionality of data features, the number of training samples and the

complexity of IDS. When determining the classification method of ideological and political education, the complexity of ideological and political education is unique. At this point, the key factors that determine the performance of the model are the feature dimension of the data and the number of training samples. Generally speaking, the more feature information contained in the training data, the higher the accuracy of classification detection. However, too many dimensions of information features can also lead to dimensional disasters. Therefore, designing an appropriate feature learning algorithm to effectively extract the features of the data set is of great significance to the work of ideological and political education. In the harvest learning of ideological and political education, the commonly used traditional feature learning methods mainly include principal component analysis, information acquisition, etc. The specific introduction is as follows.

(1) PRINCIPAL COMPONENT ANALYSIS

The PCA method is a method of converting the original data from a high-dimensional space to a low-dimensional space through a linear transformation. The goal is to obtain the characteristic attributes that best reflect the nature of the system. The basic principle of principal component analysis is to take the random vectors of multiple groups of related indicators, using the basis of linearly transformed orthogonal vectors, which can best represent the characteristics of the original vector group, and make the number of orthogonal vectors the lowest base to meet this condition. In the case of minimal data loss, this method eliminates the correlation of feature attributes through linear transformation and partial information abandonment, transforms the original multi-features into fewer new features, and improves the processing speed and training efficiency.

Assuming that the original data is $X(X_1, X_2, \dots, X_i)(i=1, 2, \dots, p)$, each data contains p characteristic attribute values. The covariance matrix of X is E . If the characteristic root of E is $\lambda_1 \geq \lambda_2 \geq \dots \geq \lambda_i \geq 0$, and the orthogonal vector base corresponding to it is e_1, e_2, \dots, e_i , then we calculate the i -th principal component of the original data feature according to the following formula.

$$y_i = e_i^T x = e_{i1}x_1 + \dots + e_{ip}x_p, i = 1, 2, \dots, p \quad (9)$$

(2) INFORMATION GAIN

Information gain is an important probability distribution in probability and information theory. The basic principle of its application in the field of intrusion detection is to judge its importance to intrusion detection based on the information gain value of characteristic attributes. The greater the value of information gain, the more important the feature attribute is to the intrusion classification process. Assuming that the original data is $X(X_1, X_2, \dots, X_i)(i=1, 2, \dots, p)$, its corresponding probability distribution, the calculation formula of

information gain is:

$$E(X) = -\sum_{i=1}^n p_i \times \log_2(p_i) \quad (10)$$

$$H(X | A) = \sum_{V(A)} \frac{X_V}{X} E(X_V) \quad (11)$$

$$IG(X, A) = E(S) - H(X | A) \quad (12)$$

Among them, E() represents the amount of information transmitted by the distribution, that is, information entropy; H(X|A) represents the information conditional entropy of feature attribute A to data set X; V(A) is the value of feature A Domain, IG(X,A) is the desired information gain.

III. EXPERIMENTS

A. SOURCE OF EXPERIMENTAL DATA

In the past ten years of development, the mobile Internet has profoundly affected the way of life, study and work of contemporary people, especially college students who are about to enter social life. In order to better understand the impact of digital virtual technology, the influence of contemporary college students' ideological and political education and the analysis of digital virtual technology in college students' ideological and political education and research strategies, a questionnaire survey was conducted on the content of the questionnaire on the use of WeChat by college students (see appendix). It is very difficult to conduct a questionnaire survey on the use of WeChat among college students nationwide. In order to obtain the results of the questionnaire more efficiently, only the questionnaire survey was conducted in Dalian, and a conventional method was adopted for sampling survey. In order to ensure the representativeness of the survey results, the author selected 10 universities of different levels and different characteristics in Dalian to sample. This survey is only for undergraduate students. Each school has 200 questionnaires, and the questionnaires are distributed as evenly as possible by grade and major. The total number of questionnaires is about 2000, of which 1962 are valid questionnaires, and the recovery rate is 92.1%. It can be seen from Table 1 that the gender ratio of the respondents is relatively balanced. It can be seen from Table 2 that the respondents are all college students, and the distribution of respondents in each grade is more balanced. It can be seen from Table 3 that the respondents in this questionnaire cover arts, sciences, arts and sports, and the proportion of respondents in all majors of liberal arts is slightly higher than that of arts and sports.

TABLE 1. GENDER DISTRIBUTION

Sex	Number of people	proportion
Male	993	50.6%
Female	970	49.4%

TABLE 2. DISTRIBUTION OF GRADES

Grade	Number of people	proportion
Freshman	493	25.1%
Sophomore	497	25.3%
Junior	499	25.4%
Senior year	472	23.1%

TABLE 3. PROFESSIONAL DISTRIBUTION

profession	Number of people	proportion
Literature and History	513	26.1%
Science and engineering	674	34.4%
Art	481	24.5%
Sports	294	14%

B. EXPERIMENTAL ENVIRONMENT

The data analysis software used in this article is SPSS 21.0 software, which can meet the experimental analysis of this evaluation. For data storage and analysis tools, a notebook computer is configured with an i7 processor and a 512GB storage configuration. The database uses a commonly used mysql database, and the python used for data analysis is used for data preprocessing and filling.

C. EXPERIMENTAL PROCEDURE

- (1) Questionnaire survey and categorization of the results of the questionnaire survey, and statistics are included in the database.
- (2) For data missing in the questionnaire survey, it is necessary to fill, analyze and supplement the data according to the established rules.
- (3) Import the sorted data without vacancies and errors into the software for preliminary analysis.
- (4) Bring into models and algorithms for prediction and research. Draw the result and analyze and predict the result.

IV. DISCUSSION

A. THE OPPORTUNITIES BROUGHT BY DIGITAL VIRTUAL TECHNOLOGY TO EDUCATION OF COLLEGE STUDENTS

With the rapid development of mobile networks and the widespread popularity of smart phones, digital virtual technology, as a representative of smart phone observation, is an emerging force. Through the questionnaire survey, it is found that all college students participating in the survey use digital virtual technology (as shown in Table 4). The popularity of WeChat among college students provides a convenient condition for college students' ideological and political education through WeChat ideological and political educators, as shown in Figure 2.

TABLE 4. USAGE OF DIGITAL VIRTUAL TECHNOLOGY

Grade	used	Unused	Have seen
Freshman	26.10%	25.10%	24.10%

Sophomore	34.40%	25.30%	16.20%
Junior	24.50%	25.40%	26.30%
Senior year	34%	23.10%	12%

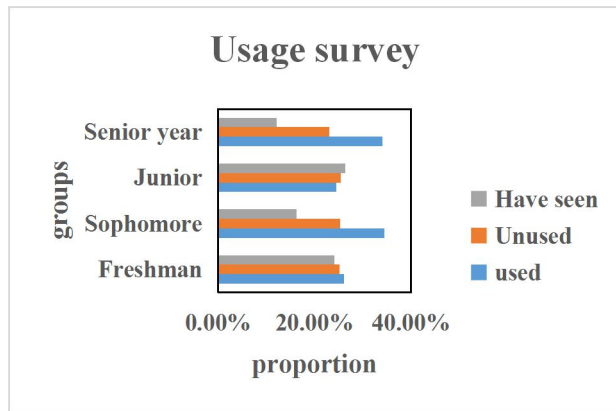


FIGURE 2. Users' understanding of new technology usage scenarios

Under the traditional carrier of college students' ideological and political education, college students lack effective communication with college students' ideological and political educators, and ideological and political education often becomes a "one-man show" for educators. The interactive function of digital virtual technology is conducive to equal and in-depth exchanges between ideological and political educators and college students. According to the questionnaire survey, most college students currently have the willingness to communicate with teachers, and some college students hope to have close contact with teachers through WeChat, as shown in Figure 3.



FIGURE 3. Comparison of interaction

B. EXPERIMENTAL RESULTS OF EDUCATION ENHANCEMENT ALGORITHMS BASED ON AR DEEP LEARNING

In section 2.2, an enhancement algorithm based on deep learning education is designed, and the influence of the structural model of DBN on its feature learning ability is analyzed. In this experiment, the feature learning ability of DBN is compared with classic feature learning methods,

such as principal component analysis (PCA) and information gain. In this experiment, the data set selected from the set is also divided into S1, S2, S3 and S4 and the original data set. The three feature representation methods mentioned above are used to extract features from the data set, and then use support vector machines to classify new feature data, as shown in Figure 4.

TABLE 5. COMPARISON OF ORIGINAL DATA SETS

Data set	PCA	gain ratio	DBN
S1	82.34	90.2	98.06
S2	83.23	82.14	81.05
S3	83.56	83.45	83.34
S4	84.2	84.56	84.8

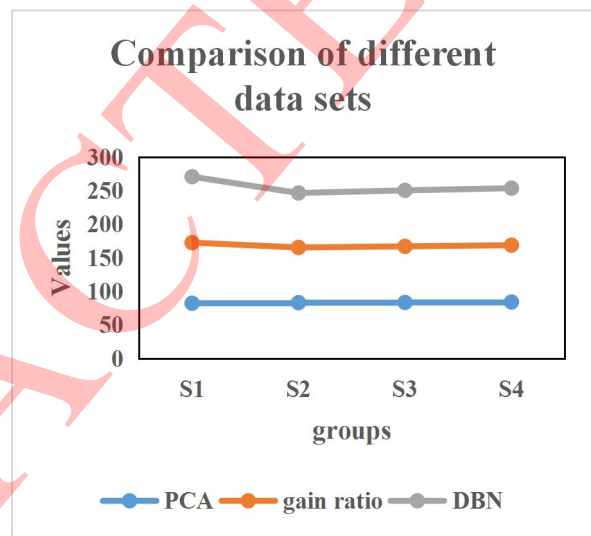


FIGURE 4. Classification results of new feature data

Comparing the experimental results in Table 5 and Figure 5, it can be found that the feature learning method based on DBN is superior to the traditional feature learning method in intrusion detection training on four different data sets. For example, for the large-scale data set S4, the DBN-based feature learning method is 11.58% higher than the PCA method and 12.91% higher than the gain ratio method. Therefore, DBN-based feature learning algorithms are more suitable for feature learning tasks in high-dimensional spaces.

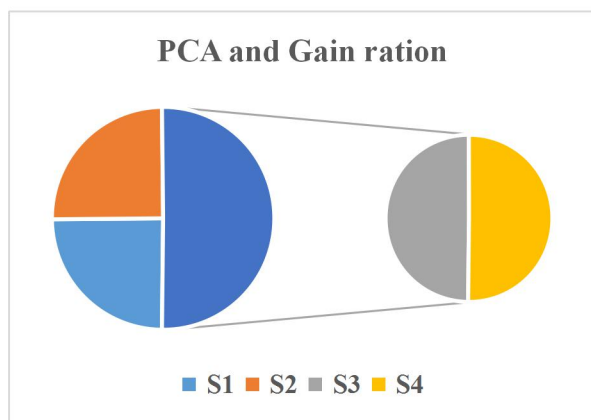


FIGURE 5. Comparative analysis of PCA and Gain ratio

V. CONCLUSIONS

Obviously, virtual reality technology will not replace the role of reading in education. For learners, dealing with complex problems and turning them into mental models is a very effective way of learning. Human language is also very important in learning. Machines can compete with human interlocutors in adaptability and interactivity, and we are still a long way from computer programs. But there is no doubt that the era of virtual reality education is coming. I believe this is consistent with the phased transformation of formal education that we envision.

In the long history of educational development, there are many educational tools and media, pictures, audio, movies, television, radio, multimedia courseware, network classrooms, distance education, etc. These forms are set up and presented to students. Teachers and students have no autonomy. Right, it is very difficult to realize contextual learning in such an environment. The emergence of virtual reality technology has solved the dilemma faced by modern education. In the virtual environment, students can learn independently, build their own knowledge system, and realize the true transformation of the roles of students and educators. Students become active builders and learning subjects of knowledge. The educator is no longer the master of the classroom, but the student's learning partner and guide. The emergence of virtual reality technology has not only opened up a new situation for social development, but also contributed to the development of education, and will bring epoch-making changes to education and teaching.

Virtual reality technology is a product of human practice. Its production and application reflect the height and level of modern human understanding and transformation of the world. Its huge potential and functions need to be continuously developed in the process of practice. But we can also learn from the negative impact of virtual reality technology on contemporary college students. This technology may have some shortcomings in the application process. In the face of these problems, we need to think rationally and respond positively to make it perfect and more Good service for the survival and development of mankind. In general, the future development of virtual reality technology should take the road of human culture,

humanization, and humanization, and finally realize the ultimate care for "people". On the one hand, we must get rid of the dependence on technology and establish human subjectivity. As the power of science and technology in modern society, virtual reality technology is not only a power of reality, but also an outstanding spirit. It should pay attention to the "caring" spirit of people and respect the value of people. In the process of development, promote the humanistic spirit. The main melody, thereby ensuring the subjectivity, is not swallowed by bricks. Only in this way can virtual reality technology truly "always pay attention to personal freedom, real survival and future development, return technology to people's life world, and truly become people's technology".

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