Research on College Students' Ideological education and Social Integration Based on Network Education

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Abstract: With the continuous deepening of education informatization, the social integration ideological education and of undergraduates have become one of the research focuses. This also places higher demands on the core component of the personalized learning and support service system-the learner model. A multi-level and multi-dimension personalized learner model was designed to solve the problems which exists in the existing learner model of online education to study role of data mining, learning analysis and other technologies in implementing a personalized learner model of online education. A social network information dissemination model based on relative weights of users is proposed, and the propagation path and propagation process in the network are analyzed, and the impact of different paths on information dissemination is discussed. Based on the above foundations, it provides the decision-making basis for political education and social integration research support services for undergraduates in an online education environment, thereby effectively enhancing the online education effectiveness.

1. Introduction

After more than ten years of development, the Internet industry is increasingly and profoundly affecting our country's politics, economy, culture, and even everyone's life. Contemporary college students are one of the earliest groups to accept the Internet and are greatly influenced by the Internet. According to the 30th CNNIC statistics, at the end of 2012.07, the number of Chinese netizens reached 5,380,000, and the Internet penetration rate was 39.9 percent. In the netizen profession, the student accounted for 28.6%, which is much higher than other groups. Among them, the Internet use rate among college graduates or above is basically saturated. In all kinds of Internet applications, instant messaging has always been the largest application of Chinese Internet users for many years. The proportion of search engines, web music, and online news in web applications is also at the forefront. As of network applications continuously developing, various universities and related departments are continuously launching content-rich and diverse online learning resources, such as video open classes in Chinese universities and high-quality courses in colleges and universities. It is one of the directions for development of higher education to promote college students to effectively conduct online learning. Under the background of continuous improvement of online learning conditions and increasingly rich online learning resources, undergraduates' online learning behavior is attracting scholars' great attention.

To improve political education quality (Dong et al., 2017) for students is directly related to the improvement of the political quality of students. The so-called quality of political education for college students refers to the level of political education of educators and the satisfaction of college students. The integration of social practice teaching is an important part and indispensable part of the ideological theory course in colleges and universities. The effect of practical teaching is related to whether the students can truly identify, understand, and master the theories taught by teachers in ideological theory classes.

2. Online Deucation Environment

2.1. Social Network Communication Model

The social network service (SNS) is based on the Internet technology application under the Web2.0 architecture (Cheng et al., 2015.). In social networks, users spread information such as videos, pictures, and viewpoints to the surrounding users through the Internet, thereby realizing the gradual expansion of individual social scope. In the end, a large-scale social network is formed. With the continuous popularization of social networks and the ever-increasing scale, social network-related research has attracted the attention of researchers. In these studies, how to describe the dissemination of information in social networks and reveal them The characteristics and propagation laws have very important theoretical research and practical application value, and it is also one of the current research hotspots.

Through research and analysis, we have found that the process of dissemination of information on a real network is affected by the status of the publisher and its own behaviour. Whether information can be transmitted from one node to another and make the latter a communicator, both The user's influence is related to the latter's user's ability to accept. However, the current research results seldom consider the above factors. In response to this problem, based on the traditional SIR propagation model, this paper carries out the process of information dissemination in online social networks. In detail analysis, the information propagation path is classified according to the user characteristics of the node. A network propagation model based on the user's relative weights is proposed, and numerical simulations are performed under different network models.

For ease of description, the network topology of the RWSIR propagation model is defined in the case shown in Fig. 1. Without loss of generality, the more neighbors a node has in the network, the greater its influence in the network. This type of node is considered to be Authoritative nodes (such as node 1 and node 9); otherwise, they are considered ordinary nodes (such as node 5, node 17, and node 18).

According to the influence of the nodes, define four types of information transmission paths:

P_a: Authoritative node to ordinary node, such as path $1 \rightarrow 5$;

P_b: ordinary node to authoritative node, such as directional path $5 \rightarrow 1$;

P_c: authoritative node to authoritative node, such as bidirectional path $1 \rightleftarrows 9$;

P_d: ordinary node to ordinary node, such as bidirectional path $17 \rightleftarrows 18$.

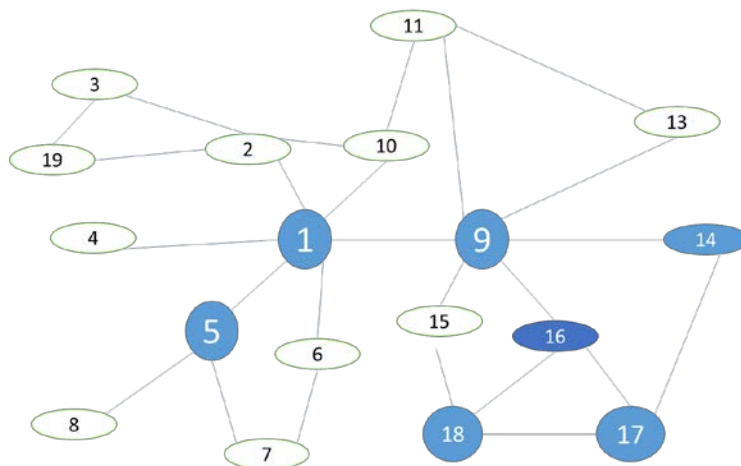Figure 1.Network topology of the RWSIR propagation model

Simulation results:

In the model, one node with the highest node degree in each network topology is selected as the propagation node, and the remaining nodes are all healthy nodes. The popularity of the information is set to 0.5. When the healthy node g_s is connected to the propagation node g_1, the healthy node. The probability of p_1 becomes the propagation node. After the propagation node propagates the

information to all the neighbours, it becomes the immune node with the probability of $p_2 = 1$. Figure 2 shows the healthy nodes, propagation nodes, and immune nodes of the two networks over time t. Change curve $S(t), I(t), R(t)$.
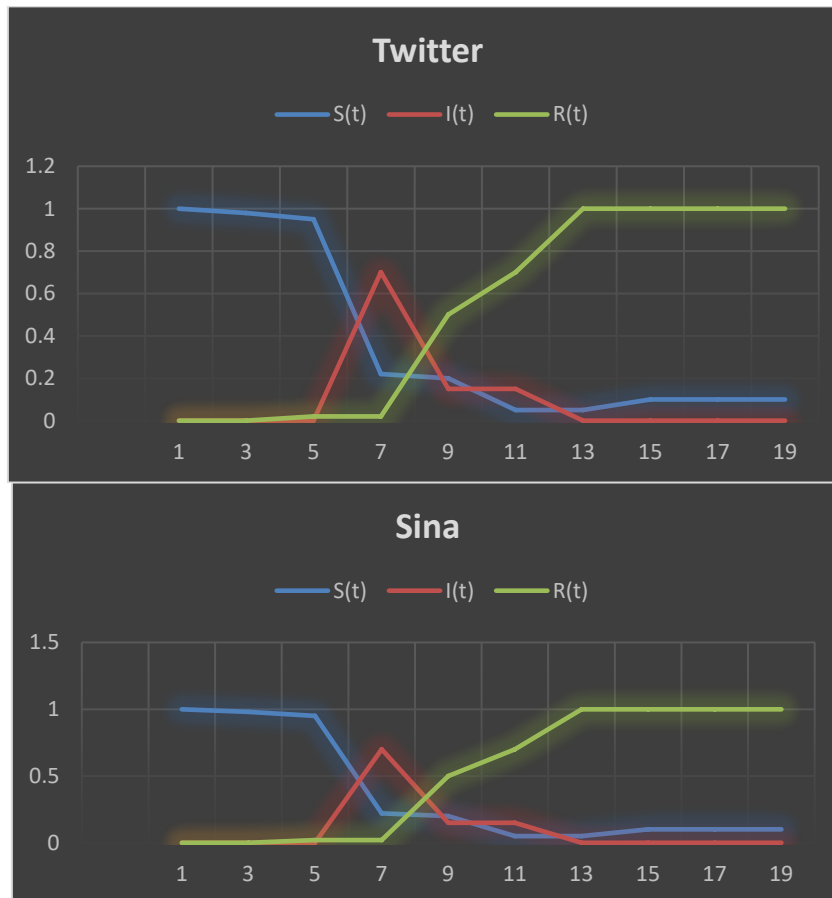

Figure 2.Change curve $S(t), I(t), R(t)$

As can be seen from Figure 2, after the initial propagation node is given, since the total number of network nodes is constant, $S(t)$ continuously decreases as the healthy node is continuously transformed into a propagation node; after the propagation node completes all propagation processes, it changes to Immune nodes, so that $R(t)$ keeps growing; propagating nodes have slower speeds in the initial period of propagation. With the number of nodes reaching a certain scale, they quickly increase to reach the maximum value. Due to the impact of network size and propagation probability, the propagation nodes become immune. The speed of the node is eventually greater than the speed at which the healthy nodes are transformed into propagating nodes, so that the $I(t)$ curve grows from the beginning to the maximum and then decays, eventually tending to zero. The three types of nodes show some of the same in each network topology. The law, at the same time, there is a certain difference between the simulation network and the real network.

2.2. Online education learner model

The study of the e-learning learner model originated from Intelligent Tutoring Systems (ITSs), which are the most important functional modules in ITSs. The learner model in online education is a mathematical model that characterizes learners such as individual descriptions, cognitive states, learning styles, and emotional states. It is the key to achieving personalized learning, and is an intelligent, personalized online education system. Core components. With the rise and development of concepts such as "Internet Plus" and big data, the traditional education model has undergone major changes. Data mining, learning analysis and other technologies have provided a good environmental foundation for the study and practice of personalized learning. The application of the learner model in online education can enhance the ability of the online education system to interpret

learners' needs and lay a foundation for personalized learning. In foreign research, there are many typical learner models in online education, including overlay models, lead edition models, perturbation models, constraint-based models, Bayesian network student models, student models based on fuzzy theory, etc. (Chrysafiadi, et al .,2012). Most of these models focus on the representation of learner's knowledge in different ways and discriminate the learner's mastery of domain knowledge so as to carry out personalized learning inference. For example, Millán, Loboda et al. (Millán et al., 2010) constructed a Bayesian network-based learner by analyzing the Bayesian network definition, conditional independence assumptions, and inference mechanisms, and based on the objectives, objects, and influencing factors of the construction model. The model structure; Cakula and Sedleniece (Chrysafiad et al., 2016). Advances in personalized web-based education. Springer.) integrated the fuzzy logic evaluation method into the learner model, and applied it to the C language course, and the application effect was well verified. In addition, Cakula(Cakula et al., 2013) and Sedleniece (Sedleniece et al .,2012.) also proceeded with other aspects promoting the personalized development of the online educational system. Under the background of knowledge management, they combined the ontology, metadata standards and other technologies to build a personalized network. Learning system model; Nan Li, Noboru Matsuda et al.(Li et al.,2011.) [8] studied a technique that can be applied to the learner model, machine learning technology, which can improve the learner model's ability to automatically update data.

Compared with the research direction of foreign scholars, there are two branches in the research direction of the domestic online education learner model. One is to divide the learner model in the online education into an overlay model and a deviation model according to the differences in learners' knowledge representation. And the cognitive model. The other is based on the life cycle of the data and its function and role in teaching activities. The learner model in online education is divided into static model, dynamic model and evaluation and error diagnosis model.

The construction of a personalized education model for online education needs to solve three problems: first, the initialization of a personalized learner model; second, the dynamic updating of a personalized learner model to analyze the dimensional indicators of the individual learner characteristics; and third, the learner model. The association between levels provides the basis for subsequent personalized services. Trying to solve the above problems, the study designed a multi-level, multi-dimensional online education personalized learner model. The model consists of three layers: data layer, logic analysis layer, and application layer, as shown in Figure 3.
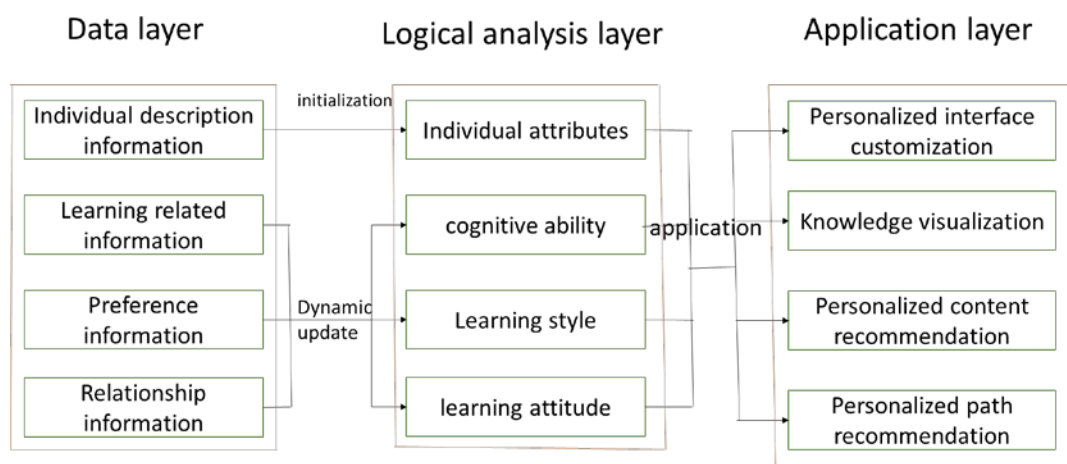

Figure 3. Personalized education model for online education

According to the personalized learner model designed above, the learner characteristics including individual attributes, cognitive ability, learning style, and learning attitude are determined. The evaluation indexes affecting each dimension are all in the logical analysis layer of the learner model.

(A) Individual attributes. The individual attribute is based on the characteristics of demographics. It is a collection of all personal basic information of the learner in the online education system, including personal information such as student number, name, age, major,

education, etc., and the system login user name, password, and IP. Address and other information. In the correlation analysis, the individual information will be used, such as age, major, education, and student source.

(B) Cognitive ability. Cognitive ability is the level of mastery of domain knowledge by learners in a certain period. It includes cognitive level based on a certain knowledge point and comprehensive cognitive ability based on a certain course of knowledge. The former is determined according to Bloom's cognitive classification theory of object classification, which divides cognitive ability into six levels: memorizing, understanding, applying, analyzing, synthesizing and evaluating, and then solving the problem according to the learner's test. The process of learner's cognitive ability judgment is shown in Figure 4.
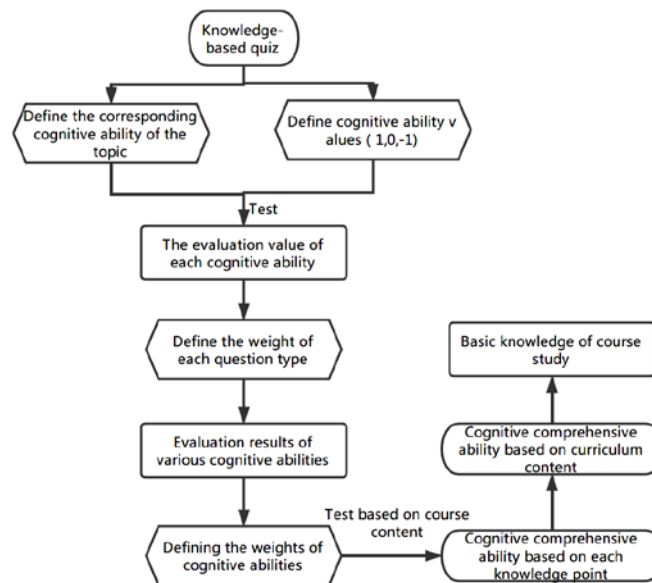

Figure 4. Process of learner's cognitive ability judgment

(C) Learning style. Learning style is a kind of self-preferred and prone behavior that learners show when they learn. It can significantly affect the learning outcomes of online education students, and can foresee learners' online learning behavior to a large extent. . This study identifies the learner's learning style by analyzing the learner's learning behavior in various types of online education systems, such as the number of clicks on websites, the order in which pages are clicked, the stay of modules, the choice of types of learning resources, and the choice of learning tools.

(D) Learning attitude. Learning attitude is the psychological tendency or internal reaction state which the studier holds during the process. It has a regulating effect on the learning behavior, and the effect on the learning effect has also been proved by many experimental research institutes. It is a combination of emotion, behavioral tendency and cognitive state. This study divides learners' attitudes in the online education environment into three levels: negative, intermediate, and positive. Through the three dimensions of emotional experience, behavioral tendency, and cognitive state, the indicators are evaluated and the corresponding attitude levels are obtained. To determine the learner's comprehensive level of learning attitude.

3. Social Integration of College Students

3.1. Relevant Theories of Promoting the Quality of College Students'

This theory includes the following aspects:

(A) Value-assurance of students' The so-called value-identification refers to the recognition and sharing of a certain value by an individual or an organization through mutual interaction, or the pursuit of a certain common ideal, belief, and principle. The value orientation of oneself in social life is the conscious acceptance and voluntary attitude taken by members of society towards the specification of social values. The so-called value recognition of college students' means that

educators and college students jointly recognize and accept the value of education goals and contents in the process of, and voluntarily participate in activities and consciously improve ideological and political quality. The recognition of the of students is basis for the improvement of the quality of for college students. There is no common value of identity, or only the educator's value of identity but not the educated's value of identity, cannot have good results or quality. The value of the of students not only includes the overall value of the of the educators and college students, but also the value of educators and college students on the specific goals and contents of. Only educators and college students both agree with and have a high degree of recognition. Only when has a clear value orientation and a common basis for interaction can we effectively promote the development of. If educators have doubts about the value of college students' ideological education, or question the specific goals and contents of ideological education, then the value orientation of ideological education may fluctuate, or be confused or even go wrong. If the value of ideological education of college students is devalued and resented, ideological education is difficult to carry out and the effect cannot be reflected. Therefore, the value of the ideological education of college students is the basis of the effectiveness of the ideological education of college students and the basis for improving the quality. There is no value recognition, and the effect and quality are empty talk.

(B) The integration of ideological education of college students The so-called integration, is to put some scattered things in a certain way and connect with each other, so as to achieve information systems, resources sharing and collaborative work, and ultimately form a valuable and efficient overall. The integration of university students' ideological education means that education theory, knowledge, information, and personnel are comprehensively implemented and operated in accordance with certain educational objectives to form a practical and quality education system.

The reason why the integration of ideological education among college students is particularly needed is that college students are not only influenced by ideological education, but also influenced by social environment and network information. The influence of social environment and network information is often diverse, multiple, and changeable, that is, it has both positive and negative effects. It has both short-term and long-term effects. It has both traditional and modern influences. What is the impact on students? It often presents individual differences. These influences or the formation of preconceived ideas are inconsistent with the concepts of ideological education, or are in conflict with the ongoing ideological education, and affect the recognition and acceptance of college students.

Therefore, ideological education must not only persuade and educate the university students, but also use the correct theories to solve and guide the social issues and information problems that students care about, and help students to understand and solve doubts. This requires the ideological education of college students to be persuasive, influential and penetrating. Integrating college students' ideological education is the key to improving education level and education quality. Its integration is mainly reflected in two aspects. First, the integration of educational resources. The integration of educational resources is the decision to optimize the allocation of educational resources. This is an important task for educators. Educators' resources for education include theory, knowledge, information, examples, models, and emotions. Traditional ideological education pays more attention to book theory, and the educational methods are relatively flat. Now adopting the traditional ideological education model is often difficult for students to accept. To this end, ideological education must break through traditions, carry out comprehensive allocation of educational resources, and overall decision-making, and build a three-dimensional education model. Specifically speaking, it is necessary to enrich and enrich the content of convincing people with reason, and to form an educational advantage in obeying the truth, obeying others in an affair, and obeying others in an emotional manner. To obey people in the truth is to educate the students with the logic and thoroughness of the theory; to obey the truth is to apply the implication, the correct theory, and fruitful examples and practice to persuade the students; to be emotional is to educate people to speak theories The true feelings of the real people hardy students. This is a manifestation of the ability of educators to adhere to the principle of putting people first and theory in contact with

practical principles under contemporary social conditions, and it is a requirement for high quality ideological education. In the second aspect, the educational power is integrated. The power of the ideological education of college students not only comes from the educators but also from the college students. This interactive integration of educational forces is the true meaning of education to believe in the masses and rely on the masses.

(C) Characteristics of the ideological education of college students The characteristic feature is the style and form of a thing that distinguishes it from other things. It is determined by the specific environmental factors on which things depend, and it is unique to things. Features are the foundation and vitality of the survival and development of things. The characteristics of college students' ideological education are mainly reflected in the macroscopic and microscopic aspects. The macro aspect is the difference between the ideological education of college students and other ideological education: First, ideological education is the educating education that shapes the soul, cultivate behavior, and learn to be a person. It is different from professional education that accepts science and technology, masters tools, and learns to do things. Secondly, the specific target of ideological education for college students is college students. College students are in a golden age of learning and development. They have distinctive characteristics that are different from those of other types of personnel. Ideological education must be directed at the characteristics of undergraduates, which is different from the thinking of other personnel. Political education. Third, the ideological education of college students in the contemporary society must be rich in the characteristics of the times that are open, democratic, competitive, and informative. This is different from traditional ideological education in the past. The characteristics of education in the macroscopic aspect, giving the education of the times, pertinence and effectiveness are the key points for improving the quality of ideological education among college students. On the micro level, college students' ideological and political educators are full of individual education styles. The so-called personality is a person's traits different from other people in terms of thinking, character, quality, and will. This trait is expressed in the way of his speech, behavior, and emotion. Any educator has a personality, but the personality is plain, or the personality is distinct; personality is general, or personality is outstanding. Educators should enhance their personality characteristics and make their own personality characteristics reflected in education to form their own educational style. Lack of style education is often a bland education. Therefore, the microscopic aspects of education, giving persuasiveness and appeal to education are important conditions for improving the quality of ideological education for college students.

(D) The game theory of ideological education of college students The so-called game theory means that when there are interactions between multiple decision-making subjects, each subject makes a kind of decision based on the information they have and their knowledge of their own abilities. behavior. Game theory is a theory in which two or more people use their opponent's strategies to transform their own countermeasures in an equal match, achieving the goal of winning. It is a theory of interactive decision-making. The reason that the ideological education of college students can introduce game theory is because the ideological education of college students is a multi-subject activity. Not only does the educator play a leading role, but it also faces a certain number of college students. In the era of open environment, market competition, information society, and democratic development, educators and educated people not only have increased independence and autonomy, but also face diverse and changing social environments. There are obvious differences in individual choices. In particular, undergraduate students, who are educated at school, are also affected by various ways through social interaction, mass media, and online activities, forming various preconceived ideas.

When the school's ideological education is in line with certain preconceived ideas, it is conducive to the promotion of ideological education and the improvement of its quality. When ideological education is in conflict with certain preconceived ideas, it will produce ideological education. The tension between the value orientation and preconceived ideas has led to alienation, indifference, and even rejection of ideological education. In other words, under the conditions of contemporary society, the recognition and acceptance of undergraduate ideological education is

difficult to form a completely identical situation. It is ineviTable that neglect, questioning and even rejection of ideological education occurs, such as escaping from ideological education activities, without reason not to be ideological and political Theoretical courses, doing other things in the process of ideological education. How do you understand and treat these situations in the ideological education of college students? First of all, we must affirm that these situations that arise in the process of ideological education for university students are consistent with the open, competitive, democratic, and diversified development conditions of contemporary society. They cannot be closed, dependent, concentrated, and single-minded traditional thinking methods. To solve these new problems, we cannot adopt simple methods of criticism, repression, and punishment. Instead, we must use methods that are compatible with openness, competition, democracy, and diverse development. This is the reason for adopting the game. Game theory is a process theory to promote the quality of college students' ideological education. In the process of ideological education for college students, first of all, both educators and college students should be treated as equal subjects, and college students must be recognized for their independence, independence, and choice of rights in the process of ideological education, and earnestly adhere to the principle of putting people first. Second, we must consider the ideological education of college students as a system. This system includes educators, college students, and educational goals, contents, methods, and environments.

4. Conclusion

Using big data technology under Internet platform, you can obtain data that cannot be collected by humans, analyze the learning process quickly, and sum up the information or status of learners in all aspects to fully enhance learning ability, improve learning outcomes, and adapt to learning needs. Conduct ideological education and social integration. Big data technology has demonstrated its advantages in f education, especially online education. As Professor Zhu Zhiting and others pointed out, the next research paradigm for educational technology should be "individual adaptive learning" supported by big data. In the future, big data technology will play a significant role in personalized, intelligent, and networked education. However, the learning process is an extremely complex process. It involves the interaction and effects of various aspects, including the quality of the environment, the state of learners, the influence of peers, and the guidance of teachers. The data does not fully indicate the real situation. Regardless of how sophisticated big data technology is, it is only using the past data to predict the future, and the development of online education learners cannot rely entirely on the previous state to judge. We should carefully apply big data technology to the field of education without over-expanding the power of technology. Therefore, the realization of personalized education through the application of big data technology is both a challenge and an opportunity. It should make full use of the advantages of technology and optimize the tool software and education environment.

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