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Innovation of Ideological and Political Education in Big Data Age

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Abstract

The arrival of big data era has affected the logic and trend of social development. Big data broadens the coverage of education, highlights the subjectivity of students, and requires the data of teaching content. Big data enriches the teaching methods of ideological and political education, improves the pertinence of ideological and political education, improves the quality of ideological and political educators, and promotes ideological and political education.Big data's core technology has been generally accepted by colleges and universities, and the application technology represented by Hadoop system has become a common tool for data mining and analysis of ideological and political education in colleges and universities. In the era of big data, we should pay attention to the innovation of data mining and data analysis.

Key words: Big data; Ideological and political education; Data mining; Data security

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1. INTRODUCTION

On December 8, 2017, the Politburo of the CPC Central Committee conducted a second collective study on the implementation of the national big data strategy. Jinping Xi, General Secretary of the CPC Central Committee, stressed that big data is developing with each passing day. We should review the situation, plan carefully, plan ahead and strive for initiative, deeply understand the current situation and trend of big data and its impact on economic and social development, analyze the achievements and existing problems of big data development in China, promote the implementation of the national big data strategy, accelerate the improvement of digital infrastructure, promote the integration and open sharing of data resources, ensure data security, and speed up the construction of digital China, Better serve the economic and social development of our country and the improvement of people's life (Xi, 2017). The arrival of the big data era has changed people's daily way of life, especially the logical way of thinking. As for the ideological and political work in colleges and universities, the traditional educational method has been impacted unprecedentedly. As a way of guiding and changing the subject values, the ideological and political education in colleges and universities is facing a new definition of its existence paradigm. The theoretical paradigm of ideological and political education is essentially the problem area of ideological and political education, emphasizing what ideological and political education studies, what functions and objectives. Although the emergence of big data has not changed substantially in these basic problem areas, in methodology, big data completely reconstructs the development logic of ideological and political education in colleges and universities. In the era of big data, micro-classroom, flipping classroom and other teaching forms of school education have become the favorite learning tools for students. These massive data have brought students

a variety of cultural elements. How to ensure that the dissemination of these data can help students grow up and not affect the shaping of students' socialist values has become an urgent problem.

2. THE INFLUENCE OF BIG DATA ON IDEOLOGICAL AND POLITICAL EDUCATION

Big data itself is a data system. After combining with ideological and political education, big data can sense the complete process of educational activities. By collecting and analyzing relevant data, the data of these activities can be vividly displayed. Through the narration of big data, the interpretation of previous educational events is more authentic. When students master the new teaching content, they can feel the influence and change brought by the relevant theory to the society in advance through the data. This is because big data itself has holography. The development of big data in ideological and political education has many attributes and functions. If we want to fully understand the essence of big data in ideological and political education, we must first understand its characteristics.

2.1 Impact on Ideological and Political Education Attributes

From the point of view of characteristics, big data first broadens the coverage of education. Educational big data integrates all the data in reality into its own educational content. The educational information obtained by students in this way involves all levels of social development. It also improves the students' requirements for the quality of knowledge. Compared with the traditional form of ideological and political education, the ideological and political education in the big data era can accurately output each student's thought and count each student's learning psychology, learning behavior and benefit degree. Through the analysis of educational data by managers, the teaching effect can be presented objectively and truly. Second, highlight the subjectivity of students. The thinking mode of each college student has its own characteristics. The extraction of holographic scene in the teaching process can enable teachers and managers to formulate different teaching plans for different students, constantly refine and quantify the educational standards, and finally analyse and master the learning preferences of each student. Third, the teaching content is required to be digitized. To some extent, the big data era is an era that emphasizes precision and quantification. Teaching content is no longer explained by a single mode of thinking, such as "good" and "bad ", as in the past. Instead, the historical development process of teaching content itself is restored through specific data and models. Under the influence of this characteristic, ideological and political education in colleges and universities has developed from qualitative education to quantitative education, from one-sided pursuit of educational results to a comprehensive historical process. From these characteristics, the integration of big data and ideological and political education highlights the effectiveness, regularity, decision-making and application of ideological and political education. Most of the big data in the field of ideological and political education comes from the daily life of teachers and students, which objectively and effectively reflects the psychological development process and the generation process of value orientation, such as teachers and students' communication activities and students' self-identity in reality.

2.2 Innovation of Ideological and Political Education Function

Big data from the functional point of view, first, enriched the ideological and political education teaching methods. With the development of Internet of things, cloud computing, social platform, mobile phone, computer, wearable mobile devices have become the enthusiastic products of teachers and students. Through network information technology, the resources of ideological and political education can be spread without obstacles, and the form of education is no longer as monotonous as before. Through the intelligent education model, every educator and learner can find out the best educational path and learning method, integrate their own data resources, and plan the future development direction. Second, improve the pertinence of ideological and political education. Through the analysis of big data, we can find the focus of students' attention and study the psychology and behaviour of some student groups. Third, improve the quality of ideological and political educators. Through the study and use of big data supervision technology, ideological education personnel's self-cultivation has also been greatly quality, teachers through data technology can be targeted to optimize the campus network resources, to break the dilemma of fragmentation of ideological and political education resources, To promote the application of campus data more open, more quality. Fourth, promote the scientific development of ideological and political education. Through the realistic social data, the students can experience the development process of daily life. The convenient data extraction provides sufficient case support for the logic and theory of ideological and political education. Big data is not a single data science, it is also a value and methodology, through data guidance, help learners to re-understand the world of daily life, to achieve the concept of self-learning, self-education.

2.3 Changes in the Methods of Ideological and Political Education

The combination of big data and ideological and political education breaks through the traditional teaching methods and transforms passive ideological and political indoctrination into students' active self-education.

First, the integration of big data and ideological and political education requires real-time analysis of students' psychological trends and guidance of public opinion. The new problems brought by the big data era must be solved effectively in the ecology of big data. This requires university administrators to integrate the development of schools with the development trend of big data industry, and to solve the daily puzzles of students with big data's own governance method. Today's college students are expressing their inner feelings through a variety of words, pictures, voice, video, these documents are spread in the form of data in the network, big data technology can effectively analyze these texts, thus playing the role of early warning, Can avoid the occurrence of campus public opinion crisis. For example, in May 2016, when the Paris Institute of Technology conducted data analysis on its own campus network, it found that students with Islamic beliefs at that time had a more intense, extreme message in the campus network and a tendency to organize gatherings. The school carried out psychological counseling for special groups and individuals to ensure the normal daily work of the school (Aiden, 2013).

Second, the integration of big data and ideological and political education requires improving the scientific and technological ability of ideological and political educators. Under the environment of big data, the development of network ideological and political education has become an inevitable development trend. Facing the complicated information on the network, college students will not know how to distinguish and evaluate. As an ideological and political educator, we should have the ability to monitor the hot topics on campus immediately, and explain and answer them through campus BBS network blog, WeChat platform and so on. This way of education requires ideological and political educators to have high political sensitivity and public opinion sensitivity, and to use scientific and technological means to spread their ideas to students. For example, Harvard University and Yale University in the United States are jointly cultivating big data talents for intelligent campus construction in recent years, and incubating data innovation talents with data mining, data analysis and data visualization as the basic training content. These new talents mainly come from university administrators who voluntarily receive education. After passing the examination, they will carry out data analysis work in the intelligent campus center of the two schools (Marz, 2014).

Third, the integration of big data and ideological and political education requires the application of prediction in ideological and political education. One of the important functions of big data is scientific prediction. The more famous case is that Google predicted the outbreak of influenza by obtaining and analysing online entries. The teachers of ideological and political education in schools and relevant scientific and technological researchers should grasp this existing advantage of big data, develop relevant intelligent products or data models, and make the influence of ideological and political education more extensive and deeper through data prediction.

Fourth, the integration of big data and ideological and political education requires the combination of government, school and enterprise to increase effective data services. At the present stage, the government, colleges and enterprises are faced with many common problems. The cultivation and progress of students are related to the development of the whole society. The combination of government, school and enterprise can break through the bottleneck of the ideological and political development of college students, their daily life and their study development. Although many colleges and universities themselves are scientific research institutions with high quality research institutes, in some specific areas of big data, the product research and development of university research institutes is still not as good as some companies and enterprises in the society. Big data company can provide educational products for college students, and the teaching management of colleges and universities also needs these advanced technology products. In this way, the government has played the role of intermediate contact person, guarantor, so that colleges and universities can connect seamlessly with companies and enterprises.

3. THE CORE TECHNOLOGY AND INTERNAL LOGIC OF BIG DATA IN IDEOLOGICAL AND POLITICAL EDUCATION

At present, there are many core technologies of big data in ideological and political education. At present, there are database technology, Hadoop derivative system technology, natural language processing technology, social network analysis technology, information retrieval technology, cloud computing technology and so on. The following uses data mining technology as an example to analyze the integration process of big data and ideological and political education.

The purpose of data mining is to extract useful knowledge and information from a large number of, fragmented, noisy and fuzzy data. There are many methods of extraction, such as neural network extraction, which refers to the division of a neural network into different levels, each level contains multiple nodes, these nodes correspond to different variables. By analyzing the number of levels and nodes, we can estimate the complexity of the neural network and predict its development trend. In the era of big data, the mining and extraction of data related to ideological and political education is more in-depth than before, and the theory and technology of data mining are difficult. It integrates mathematical statistics, database architecture, machine

learning and so on. As an ordinary ideological and political education big data analyst, mastering SAS、SPSS、EXCEL and other daily statistical software has been a relatively basic requirement. However, these basic technical tools are generally used in a single data group. For the massive data in the network, the effect of mining and analysis will not meet the requirements of modern education. Technically speaking, to become a professional ideological and political education data analyst must also master some basic programming languages, such as C ++, Java, Python and so on. Besides, if we want to excavate the deep content of ideological and political education effectively through the means of big data, the relevant researchers also need to master the Hadoop. of developing and running the software platform for dealing with big data

For example, Hadoop, Teachers or researchers of ideological and political education can realize the mining of campus BBS、Weibo, WeChat, email and other information through Hadoop. The process of mining information can be divided into four parts, namely data acquisition, data storage, data mining and data presentation. Obtain information by calling the interface (API) or Web crawler provided by the service provider. To store the extracted mass of information through Hadoop HDFS, A storage system can be built using two open source frameworks (Hadoop、Hive), Hadoop is the basic framework of the system, Hive provides data queries for SQL statements. After doing the first two basic tasks, we can mine the data, It usually uses parallel processing, After dividing the data into sub-blocks for Aprior algorithm processing, Combine the results together, Finally, the results are displayed on the Web page. The effect of data mining depends on the ability of researchers to process data segmentation. When discussing hot issues, college students always generate some high frequency, A wide range of signature words, These feature words are the etymology needed for data mining. In general, For strings with no more than three Chinese characters, they can be placed directly in the index vocabulary of the database, For strings with more than four Chinese characters separated by punctuation marks such as spaces, Divide it into multiple subquery strings.

For example, for the "characteristics of psychological changes of college students" segmentation can be divided into "college students, psychological changes, characteristics." Words are the smallest and meaningful units in linguistics. Spaces are naturally used as delimiters between English words, and Chinese needs to redefine the relationship between words and words. Nowadays, word segmentation technology is very mature, such as forward maximum matching method, reverse maximum matching method, knowledge-based understanding word segmentation method and so on. Both methods apply dictionary matching method to participle and search all words in dictionary in order from long to short in the data to be studied. Or match the string to be analyzed with a related corpus or machine dictionary, and identify a word if the match is successful. The latter method emphasizes that the number of times cut out in each sentence is the smallest. It is based on the previous method to do statistics and segmentation, emphasizing the frequency of the use of words in grammar, syntax, semantic analysis, and judging whether the obtained words are ambiguous.

Participle technology is a common technical method in the process of data mining, because a large number of ideological and political education related data exist in the form of text in the network, and similar to campus video and other audio-visual documents that college students often share. Through the transformation of information technology can also be analyzed in the form of text. From the analysis of technical logic and the development logic of ideological and political education, we can see the deeper logical development law of big data in ideological and political education. Under the guidance of data technology, the judgment logic of ideological and political education has changed from paying attention to process to paying attention to data. Ideological and political education itself is also faced with the problem of unstructured data, daily life emergencies, emergencies, leaders' impromptu speeches and other random events will bring fragmented knowledge to teachers and students. In the past, the knowledge accepted by college students in the classroom is continuous. This random knowledge breaks the order in which students accept knowledge and understand society. If they want to fully understand these fragmented knowledge information and not be affected by its one-sidedness, Teachers and students must use big data cognitive approach to make up for their lack of knowledge of randomness, fragmentation and one-sidedness. The cognitive mode of big data emphasizes the role of positivism and extrapolation of "data ". The historical teaching interaction model between teachers and students will add more structural attributes under the guidance of big data. The continuity and history of information, especially its causality, are desalinated in the analysis of data science, while the function of information, the mode of transformation between information and knowledge, and the process of information flow and change are increasingly prominent. Through the grasp of data ecology, the researchers of ideological and political education can ignore the historical development process of information, and can obtain new information and knowledge by matching the existing data information with the function of ecological structure in the data ecology. Ideological and political theory research has also been innovated and developed.

4. IDEAS OF BIG DATA INNOVATION IN IDEOLOGICAL AND POLITICAL EDUCATION

While firmly grasping the correct guidance of public opinion and adapting to the development requirements of the new situation, the ideological and political education work in colleges and universities needs further innovation, which should be reflected not only in strategy, but also in action. The integration of ideological and political education and data science is an innovation in itself, but this innovation has been in the stage of formal development in recent years. The achievements in essence still can not reflect the superiority of ideological and political education in our country.

4.1 Focus on Data Mining Innovation

There are many basic requirements for the innovation of big data in ideological and political education. The statistics of data samples are more comprehensive than before, at least not the sampling statistical method in traditional statistics, but the statistics of all samples. This data thinking requires researchers to devote more research energy to data mining. Related to the ideological and political education in colleges and universities, the school staff and scientific research institutions are required to concentrate on the construction of campus personal data integration system. This system is essentially the personal information center for everyone on campus. In the present era, the smooth development of ideological and political education in colleges and universities must be targeted and realistic, facing different people and different problems, Only in a short period of time to understand the existence of educational objects, development logic can effectively psychological guidance and ideological and political indoctrination. This personal data integration should include every person's social life information before entering school and campus life information after entering school. In addition to personal natural information, it should also include traces of his daily network activities, including the theme of his speech, the mood of the message, the preference choice on the shopping network and the entertainment network. This comprehensive information integration will help the school supervision department to fully understand the psychological activities and performance behavior of the school staff. All information is extracted not by questionnaire, but by network tracking technology, and different information should be classified and refined to protect sensitive data. Or connect important data to personal personnel files. In addition to establishing personal data integration, the ideological and political research center of colleges and universities should also establish campus public service data integration. Unlike personal data integration, campus public service data integration can be used to analyze the preferences of campus groups. Through this data center, campus managers can easily extract public information from campus networks. You can access the legacy data on smart electronic devices on campus.

4.2 Focus on Data Analysis Innovation

By establishing various forms of data integration centers on campus, we can ensure the comprehensiveness and integrity of ideological and political education data in colleges and universities. In addition, as the ideological and political education of colleges and universities itself, its innovative development also needs big data to provide data support and case support in the field of related theoretical development. Ideological and political researchers in colleges and universities can expand the source of data to the whole network without limiting the time of data generation. The theories of Marxism, socialism with Chinese characteristics, core value system and so on are taken as the research object to extract relevant information, and similar cases around the world are summarized according to different themes. For example, how to carry out student patriotism education in British and American universities as the theme of summing up a number of classic cases and methods. Or take the Marxist theory book publication data as the research object, the statistical analysis Marx theory dissemination route in Africa, Latin America. It can also show the changes of socialist economy, politics, culture and ecology since the 18th National Congress through the analysis of big data. This kind of data mining and analysis based on ideological and political education provides a case for ideological and political theory education in colleges and universities, which is convenient for teachers to explain theoretical knowledge, and is also beneficial to students' understanding of relevant knowledge.

From the above methods, we can conclude that the innovation of big data in ideological and political education mainly lies in two points, one is the innovation in data mining, and the most extensive data is gathered through the latest mining methods. The other is the innovation in data analysis, and the relationship between different data is investigated by innovative analysis, showing the educational resources that have been ignored or not found in the past. For these fields, the integration of big data and ideological and political education in colleges and universities is meaningful and an inevitable development trend, but in the unity of big data and ideological and political education research in colleges and universities, There are also some problems that deserve the attention of campus managers. In the process of personal data information integration, how to define personal privacy and desensitize it has gradually become a difficult problem for data operators. How to complete data analysis without touching personal privacy will become the development direction of campus big data in the field of ethics. The ideological staff of the school should adhere to the principle of ethical autonomy and "do not act or

abuse scientific and technological means because of any temptation; seriously think about the value implications and possible social consequences of each scientific and technological activity; prudently carry out scientific and technological activities that may have unclear and far-reaching effects " (Liu, 2000). At the present stage, data ethics, data security, data ownership, data legislation will become a hot issue in data science. As ideological and political education personnel and scientific research personnel in colleges and universities, how to maintain and promote social fairness and justice through the help of big data, and ensure the harmonious development of campus culture.

REFERENCES

Aiden, E. (2013). *Big data and an emerging science of human history* (p.56). Riverhead.

Liu, D. C. (2000). *Between the truth and the good: Ethical problems and moral choices in the age of science* (p.65). Beijing: China Social Sciences Press.

Marz, N. (2014). *Big data: Principles and best practices of scalable real-time data systems* (p.154). Auerbach.

Xi, J. P. (2017). Implementing the national big data strategy to accelerate the building of digital China. *Guangming Daily*, December 10, (01).