

## Analysis on the Precise Path of University Students' Ideological Education under the Background of Big Data

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**Abstract:** Based on the rapid development of information technology, big data (BD) has a profound impact on university students' ideological education. This article focuses on the precise path of ideological education for university students under the background of BD. By expounding the related theories of BD and the precision of ideological education for university students, this article analyzes the current dilemmas, such as the lag of educational ideas, the lack of BD literacy of educators, the concerns about data security and privacy, and the need to improve educational content and methods. Furthermore, the main research methods are to update educational concepts, improve the BD literacy of educational subjects, optimize educational content and innovate educational methods. The results show that BD brings opportunities and challenges to the accuracy of ideological education for university students. It is concluded that only by actively coping with difficulties and making full use of the advantages of BD to build a precise path can we effectively improve the pertinence and effectiveness of ideological education for university students and cultivate university students with correct world outlook, outlook on life and values in the new era.

### 1. Introduction

With the rapid development of information technology, BD has become an important force to promote changes in various fields [1]. As the backbone of the future development of the country, the effect of university students' ideological education is directly related to the stability and development of the country [2]. The advent of the era of BD has brought unprecedented opportunities and challenges to ideological education of university students, and it is of great practical significance to deeply explore the precise path of ideological education of university students under the background of BD [3].

Judging from the international situation, the acceleration of globalization has caused multiculturalism to collide with each other, and the bad ideology of the West has been infiltrated through channels such as the Internet, which has impacted the values of university students [4]. In China, during the social transformation period, various conflicts of interest are prominent, and the network public opinion environment is complex and changeable, which makes the ideological education of university students more difficult [5]. The traditional ideological education mode focuses on the uniform content and the uniform way of indoctrination, which is difficult to meet the individual needs of university students and the educational effect is not satisfactory.

With its massive data collection and in-depth data analysis, BD technology can accurately grasp the ideological trends, behavior habits and hobbies of university students, and provide strong support for the realization of ideological education precision [6]. Through the analysis of university students' network behavior data, educators can understand their focus and ideological confusion, so as to formulate educational content and improve the effectiveness of education. However, at present, the application of BD in ideological education of university students is still in its infancy, and there are many problems to be solved urgently [7]. For example, educators have insufficient mastery of BD technology, and it is difficult to effectively use BD to carry out precision education; The problem of data security and privacy protection is outstanding, which restricts the in-depth application of BD in the field of education. In view of this, in-depth study on the precise path of

ideological education for university students under the background of BD will help to enrich the theoretical system of ideological education and provide practical guidance for improving the quality of ideological education for university students.

## 2. The internal relationship between BD and the accuracy of ideological education for university students

BD has four characteristics: huge amount of data, diverse data types, fast processing speed and low value density [8]. These characteristics enable BD to comprehensively and dynamically reflect the development and changes of things. The precision of ideological education for university students means that educators accurately grasp the ideological status and behavioral characteristics of university students with the help of modern information technology, and formulate personalized education programs to enhance the pertinence and effectiveness of ideological education [9]. Its goal is to cultivate university students' correct world outlook, outlook on life and values, strengthen their ideals and beliefs, enhance their recognition of socialist core values and improve their ability to resist the erosion of bad ideology.

BD provides technical support for the accuracy of ideological education for university students. Through the collection and analysis of university students' study, life, social interaction and other aspects of data, educators can accurately understand the ideological needs of university students, thus optimizing the educational content and methods [10]. The demand for precision of ideological education for university students has also prompted the continuous innovation and application of BD technology in the field of education. The two promote each other and jointly promote the development of ideological education for university students.

## 3. The dilemma faced by the accuracy of ideological education of university students under the background of BD

The traditional educational concept is deeply rooted in the minds of some educators, which restricts the advancement of ideological education of university students in the context of BD. For a long time, ideological education has mostly adopted a unified model, emphasizing collective education and ignoring individual differences of students. Educators often carry out teaching with established content and methods, and fail to fully realize the personalized information value of students contained in BD. Under this concept, it is difficult for education to meet the ideological needs of every student, and there is no way to talk about accurate education.

As the implementers of ideological education, educators' level of BD literacy is very important. However, at present, there are shortcomings in the ability of BD among educational subjects. Lack of data collection ability, many educators are not familiar with using various channels to collect students' all-round data, such as data generated by online learning platforms and social media. In addition, the ability of data analysis and interpretation is insufficient, and it is impossible to use professional tools and methods to mine valuable information in the face of massive data. According to a survey of ideological educators in universities (see Table 1):

Table 1: Survey on BD Capabilities of Ideological Educators in Universities

| Survey Item  | Proportion of Educators with the Capability | Data Source  | Self-Assessment of Mastery Level (1-5 points, 5 being the highest) |
|--|---|--|--|
| Proficient in using BD collection tools                      | 25%   | Questionnaire survey of 500 ideological educators from 10 universities | 2.1 points   |
| Able to use data analysis methods to deeply mine data value  | 18%   | Questionnaire survey of 500 ideological educators from 10 universities | 1.8 points   |
| Able to adjust educational strategies based on data analysis | 20%   | Questionnaire survey of 500 ideological educators from 10 universities | 1.9 points   |

From the perspective of "the proportion of people with this ability", only 25% are proficient in BD collection tools, 18% can use data analysis methods to deeply explore the value of data, and 20% can adjust education strategies according to data analysis. This shows that ideological educators in universities are generally weak in BD ability, and most educators have not mastered key BD skills, which seriously restricts the application of BD in ideological education. In the aspect of "self-assessment of ability mastery", the scores of the three abilities are all low, with the highest score of only 2.1. This not only reflects educators' lack of confidence in their own BD capabilities, but also confirms their lack of practical capabilities. The low score means that it is difficult for educators to meet the requirements of precise ideological education in the aspects of BD collection, analysis and application to educational strategy adjustment.

The application of BD involves a large quantity of students' personal information, and the issues of data security and privacy protection cannot be ignored. In the process of data collection, if there is no standardized process, it may lead to the leakage of student information. In the process of data storage and transmission, it also faces security risks. Once the data is tampered with or lost, it will affect the accuracy of educational decision-making. It is difficult to define the privacy boundary in the process of data sharing. How to protect students' privacy rights and interests while reasonably using data to achieve accurate education is an urgent problem to be solved. In the era of BD, information is updated very quickly, but the content of ideological education sometimes fails to keep up with the times. Part of the education content is outdated, lacking the analysis and interpretation of current hot issues and emerging trends of thought, and it is difficult to arouse students' interest. In terms of educational methods, although BD provides diversified means, some educators still rely on traditional classroom teaching and fail to make full use of BD to achieve accurate teaching of online and offline integration.

#### 4. The path of precise ideological education for university students

In the era of BD, educators need to abandon the traditional single and extensive educational concept and establish the concept of precision education. Individual differences among students should be fully recognized, including their unique ideological concepts, behavioral characteristics, and developmental needs. BD technology should be accepted with an open attitude and used as an effective tool to improve the quality of education. Universities need to strengthen the BD literacy training for educators, including offering BD related courses covering basic knowledge such as data collection, analysis, and visualization, as well as organizing practical operational activities. Table 2 shows the follow-up survey results of teachers participating in BD basic training at a certain university. It can be clearly seen from Table 2 that after training, educators have significantly improved their abilities related to BD, laying the foundation for accurate education.

Table 2: Improvement in Capabilities of Teachers Participating in BD Literacy Training

| Capability Dimension   | Proportion of Teachers with the Capability Before Training | Proportion of Teachers with the Capability After Training | Data Source   | Difference in Mastery Level Before and After Training (1-5 points, 5 being the highest) |
|--|--|---|---|---|
| Proficient in collecting multi-source student data                 | 30%  | 75%   | Follow-up statistics of 200 teachers who participated in the training | 2.2 points  |
| Accurately analyzing data to gain insights into students' thoughts | 25%  | 60%   | Follow-up statistics of 200 teachers who participated in the training | 2.0 points  |
| Adjusting educational strategies based on data                     | 22%  | 55%   | Follow-up statistics of 200 teachers who participated in the training | 1.9 points  |

Comparing the proportion of people with various abilities before and after training, the proportion of students who are proficient in collecting multi-source data has increased from 30% to 75%, the proportion of students who accurately analyze data and gain insight into students' thoughts has increased from 25% to 60%, and the proportion of students who adjust educational strategies

according to data has increased from 22% to 55%. All ability dimensions have been greatly improved, which shows that BD literacy training has obvious effect on improving teachers' BD ability and helps to promote the accuracy of education. Judging from the "difference of ability mastery before and after training", the difference of proficiency in collecting students' multi-source data is 2.2 points, the difference of accurate analysis of data and insight into students' thoughts is 2.0 points, and the difference of adjusting educational strategies according to data is 1.9 points. This further proves that the training has effectively improved teachers' mastery of relevant abilities and enhanced teachers' confidence and practical ability to use BD to carry out ideological education.

Big data analysis technology can accurately identify students' hobbies, learning styles, and ideological confusion, and based on this, screen and integrate educational content. The system can automatically match ideological and educational elements related to different majors for students. At the same time, this technology can track network hotspots and changes in social trends in real time, dynamically update educational content, and ensure that students obtain the latest and most relevant knowledge. Big data technology can also promote the deep integration of online and offline education. Online, the learning platform can push personalized resources based on student profiles and optimize teaching content in real-time based on learning data. The offline segment utilizes online data to design interactive activities such as group discussions and case studies, enhancing student engagement. In addition, virtual reality (VR) and augmented reality (AR) technologies can construct immersive educational scenarios, significantly enhancing the attractiveness and infectiousness of education, thereby precisely promoting the innovative development of ideological education for college students.

## 5. Conclusions

In the era of BD, ideological education of university students is facing new opportunities and challenges, and precision has become the key direction to improve the educational effect. Through the research on the theory of BD and the precision of ideological education for university students, this article makes clear the important role of BD and the connotation and goal of precision education.

It is found that there are many difficulties in the accuracy of ideological education for university students under the background of BD. On the level of educational concept, the traditional concept makes it difficult for education to meet the individual needs of students. The lack of BD literacy limits the effective application of BD technology in education. Furthermore, data security and privacy issues are prominent, which hinders the in-depth development of BD in the field of education; The content and methods of education have also failed to make full use of the advantages of BD, and there are problems such as outdated content and single method. Based on these dilemmas, this article puts forward a targeted path construction strategy. The updating of educational concepts requires guiding educators to use big data thinking to carry out educational work. The improvement of big data literacy among educators can be achieved through systematic training and practical activities. The optimization of educational content can ensure its precise adaptation to needs and maintain timely updates. Innovation in educational methods can leverage big data technology to promote the deep integration of online and offline education.

Through the implementation of these paths, it is expected to give full play to the advantages of BD, improve the accuracy of ideological education for university students, help university students to establish a correct world outlook, outlook on life and values, and enhance their ability to recognize and practice socialist core values. The goal of higher education is to cultivate high-quality talents with a firm ideological stance and the ability to resist the erosion of negative ideas.

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