Research on Innovative Strategies of Ideological and Political Education Enabled by Big Data

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Abstract: With the rapid development of information technology, the era of big data has come, which puts forward new standards and requirements for ideological and political education and teaching in colleges and universities. To enhance the timeliness of ideological and political education for college students and meet the evolving demands of education in the new era, colleges and universities should focus on data development, prioritize the application of information technology in ideological and political education, and strengthen data security measures. Additionally, they should enhance training in big data education concepts and improve the overall teaching quality of ideological and political education. Building on this, this paper explores the significance of ideological and political education in colleges and universities within the context of big data. By exploring the risk of introducing big data into ideological and political education at the present stage, it puts forward some targeted reform suggestions to promote the stable progress of college education.

Keywords: Big data; Ideological and political education; College teaching strategy

1. Significance of big data enabling ideological and political education in colleges and universities

1.1. Respect individual differences and realize precision teaching

In the context of educational development in the new era, students possess varying ideological and political qualities, leading to differences in their perception and understanding of ideological and political education in colleges and universities [1]. Considering students' individual differences, teachers can utilize big data technology to collect and analyze information such as learning habits, interests, and preferences. This enables educators to gain timely and accurate insights into students' overall situation before beginning instruction. Based on quantitative analysis of the students' psychological activities and behavioral preferences, teachers can design targeted education programs by integrating students' ideological and political status, to achieve differentiated and stratified education for students and meet the teaching needs of different students.

1.2. Optimize the educational model and innovate the educational means

In the era of big data, new media, as a vital teaching tool, is continuously optimized and upgraded, offering an intelligent education model for ideological and political education in colleges and universities. This advancement broadens teaching channels and enhances the effectiveness of ideological and political education. Students can learn through online education platforms, campus micro-blogs, WeChat groups, MOOCs, and other forms. Advanced new media platforms improve the practicability and sharing of educational resources and make educational means more flexible and diversified [2]. However, as the number of new media platforms continues to grow, teachers must utilize big data to filter and accurately assess their impact on ideological and political education in colleges and universities. This enables educators to adopt tailored teaching methods that cater to the diverse needs of students.

1.3. Enhance communication and interaction to improve teaching efficiency

In the era of big data, various social media and network platforms have emerged. In ideological and political education at colleges and universities, teachers collect and organize data such as online educational resources and ideological values, analyze valuable information, and extract meaningful insights based on teaching content to enhance student education. It provides convenient information channels for ideological and political education in colleges and universities [3]. At the same time, teachers can leverage big data technology to share educational platform resources, promote core values to students, and guide them in accessing more knowledge through these platforms. This facilitates information sharing between teachers and students, enhancing the efficiency of ideological and political education while improving overall teaching effectiveness.

2. The dilemma of big data enabling ideological and political education in colleges and universities

2.1. Information data is facing security risks

In the era of big data, the education system of colleges and universities increasingly relies on information technology and big data analysis to collect and organize students' information and data, which is convenient to improve teaching efficiency [4]. However, due to the diverse sources of personal data—including social networks, mobile devices, and transaction information—there is a risk of data leakage at any stage of storage and transmission. At this stage, both students and teachers have a weak awareness of information security. Students often lack a sense of personal privacy protection, while teachers have not received professional information security training and lack the necessary skills to handle sensitive information properly, leaving students' data vulnerable. For example, when processing student data such as identity verification, learning habits, and online activity, unforeseen issues such as hardware failures, operational errors, or hacker attacks can occur. Due to the shared and transparent nature of information resources, these incidents may lead to data loss or unauthorized misuse by third parties, potentially resulting in illegal activities such as online fraud and malicious attacks, thereby threatening students' vital interests.

2.2. Students lack the ability to assess information

With the advancement of information technology, network information has experienced explosive growth. The development of the internet and the continuous upgrading of digital products have made it easier for students to access information. However, due to the vast and complex nature of online content, the transmitted

information is often disorganized, making it difficult to distinguish between true and false. While the internet contains valuable educational resources and ideological and political values, it is also flooded with harmful information and misleading ideological systems. Due to the lack of social experience and awareness of prevention, it is often difficult for students to effectively screen the authenticity and effectiveness of information.

2.3. Teachers' information skill literacy is insufficient

With the rapid update of science and technology, the educational environment is also changing rapidly. The adoption of big data technology in colleges and universities has enhanced educational efficiency and quality while driving reforms in higher education. However, due to the strong professional focus of some ideological and political teachers in colleges and universities, many lack technical training in information technology and data analysis tools. As a result, they have limited understanding of new media network platforms and face challenges in effectively utilizing online teaching platforms for student interaction [6]. Specifically, due to insufficient information literacy and professional skills, some ideological and political teachers in colleges and universities struggle to integrate big data technology into their curriculum. They face difficulties in understanding students' individual needs and perspectives, utilizing information platforms to find relevant teaching cases, and applying visual digital technology to present teaching data effectively. They are not good at using new media technology to enliven the classroom atmosphere and increase the interest of ideological and political teaching, which leads to the decline of the teaching effect of ideological and political education in colleges and universities.

2.4. Uneven sharing of big data resources

Currently, data sharing in ideological and political education at colleges and universities primarily takes place across different disciplines, departments, and teaching staff. This facilitates timely access to information and data for educators, provides targeted resources for teaching design, and enables the efficient resolution of classroom teaching challenges. However, there is no perfect operation mechanism for information sharing under big data. The information system of colleges and universities does not specify who can join the sharing, the duration of information sharing, the screening of shared data, etc. Teachers often need to make their own judgments. Some teachers have more information resources, while others have less information and data. This leads to the increasingly serious problem of "privatization" and "decentralization" of data resources.

On the one hand, under the influence of the "block and block" office model, the functional departments of colleges and universities have built data information management systems belonging to different departments. Students' personal information, learning preferences, and evaluation results are respectively managed by multiple departments such as the academic Affairs Office, the Admission Office, and the Student Office. The data maintenance among various departments is relatively independent and the sharing of data resources is transformed into "privatization". It is not conducive to the complete investigation of data information [8]. On the other hand, due to the "privatization" of data resources and the lack of a systematic digital integration platform, students' information is distributed in a "decentralized" way, leading to problems such as "resource island" and "information barrier" in ideological and political education in colleges and universities. Teachers cannot understand the overall situation of students according to fragmented information and data. Hindering the deep development of ideological and political construction in colleges and universities.

3. The strategy of big data enabling ideological and political education in colleges and universities

3.1. Establish an information security protection mechanism

In the era of big data, to effectively prevent the risk of information disclosure, colleges and universities must prioritize the security of personal information and data when developing ideological and political education databases. Establishing a comprehensive and robust data protection mechanism is essential to safeguarding personal information and ensuring the confidentiality of data.

First, colleges and universities must establish a comprehensive data security management mechanism for information resources. This includes developing strict data protection regulations and policies that clearly define the responsibilities of various departments. Access to the data system should be restricted to authorized teaching staff only, and all information collection must adhere to established system standards to ensure data security and compliance. For example, measures such as managing access rights to the data system, developing detailed operational procedures and processing standards, and enabling real-time background monitoring of the computer system can help ensure the security of information and data.

Secondly, colleges and universities need to use advanced network security protection technology. For example, implementing firewalls, intrusion detection systems, and other security measures can create a strong technical safeguard for data system management. Regular vulnerability assessments and intrusion detection can help identify and address internal security risks. Additionally, installing data backup systems ensures the protection and integrity of information throughout the storage process [10]. Moreover, colleges and universities need to strengthen the awareness of data security protection among teachers and students. As the holders of information data, they should be aware of the importance of personal privacy in the ideological and political education of data-oriented colleges and universities.

Colleges and universities guide students to improve their awareness of data privacy, network security, and data systems by organizing corresponding security technology training and education activities. In addition, teachers need to make daily records in the work of data management, regularly check the security of the computer into the system, and avoid information loopholes and data loss as much as possible.

3.2. Cultivate students' ability of information screening

In the era of big data, information platforms contain a mix of data resources, making it inevitable for students to encounter harmful values and misleading ideological and political concepts while gathering learning materials. To improve students' learning efficiency, colleges and universities need to cultivate students' awareness of information screening and enhance their ability of information processing and independent thinking [11]. Students need to firmly adhere to the socialist core values, critically view the discordant voices on the Internet, and actively adapt to the complex Internet environment.

First, teachers should enhance students' ability to filter information by incorporating topics on network information security and digital media literacy into the curriculum. This will help students learn how to identify and differentiate valuable information from misleading or harmful content. For example, in the course "Basic Principles of Marxism", teachers can use the contrasting ideologies of socialism and capitalism as a starting point to effectively refute false claims about the socialist system found online. This helps students recognize misinformation, enhances their ability to assess data resources critically, and enables them to use online resources effectively for extended learning and research. Additionally, it fosters the development of a dialectical way of thinking.

Secondly, actively organize practical activities to strengthen students' information processing ability. For example, by organizing activities such as network information analysis tests and new media creation contests, colleges and universities can encourage active student participation. These initiatives not only enhance students' understanding and practical application of information technology but also strengthen communication and interaction between teachers and students. Teachers can help students solve the difficulties encountered in information processing and master network information technology more conveniently [12]. Finally, students' ability of independent thinking should be cultivated. Teachers provide a variety of online learning platforms, such as virtual labs and interactive forums, so that students can learn at their own pace, think independently and solve problems in a targeted way.

3.3. Strengthening data skills training for teachers

In the context of the development of education in the new era, ideological and political teachers in colleges and universities should always "keep in mind the original intention of cultivating morality and educating people, keep in mind the mission of educating people for the Party and the country, actively explore education and teaching methods in the new era, and constantly improve their teaching skills". To ensure the quality of ideological and political education in colleges and universities and maximize its effectiveness, higher standards are required for teachers' proficiency in big data applications and information processing skills. Therefore, strengthening the training of teachers' data skills, improving their data literacy, and the ability to use information technology so that teachers can better adapt to the educational needs of the era of big data, is of great importance to the construction of ideological and political education in colleges and universities.

First of all, colleges and universities pay attention to the improvement of teachers' data processing ability by regularly organizing professional data technology training activities. On the one hand, teachers need to effectively integrate the ability of data analysis into classroom teaching, actively participate in the training of modern educational technology, and learn how to collect, process, and analyze big data. By mastering the application of information technology and data platform, teachers can accurately understand students' ideas and learning needs to provide targeted teaching guidance. For example, teachers can learn to create interactive online teaching forums and utilize various data resources to enhance the interactivity and practicality of teaching. This approach facilitates knowledge dissemination and problem-solving in ideological and political education, making course instruction more engaging and effective [14].

In addition, teachers should be encouraged to make use of new media technology for innovative exploration of teaching modes and methods. For example, teachers can use ChatGPT to write teaching plans related to ideological and political education and create a teaching environment for classroom teaching using network technology. Secondly, colleges and universities can hire experts in new media production and network data research to give knowledge lectures so that teachers can clearly understand the production process of media technology, understand the influence mechanism of network information on students, and optimize the education model and teaching content [15].

3.4. Managing data resource platform sharing

The sharing mechanism of ideological and political course teaching resources in colleges and universities can significantly enhance the overall quality of ideological and political education. It facilitates the circulation and utilization of high-quality resources, maximizing the educational impact of these courses. In the actual implementation process, colleges and universities should define the primary objectives of the teaching

resource-sharing mechanism, enrich its content, and establish an effective framework for resource sharing. By fully leveraging the benefits of this mechanism, institutions can support the reform of ideological and political education, foster the cultivation of socialist core values among students, and ultimately fulfill the fundamental mission of moral education and talent development.

First, to establish an effective teaching resource-sharing mechanism for ideological and political courses in colleges and universities, educators should actively collect and upload various high-quality teaching materials. This will help create a comprehensive resource-sharing system, enhance the sharing mechanism, and contribute to the balanced development of teaching resources. Secondly, to establish an effective sharing mechanism for ideological and political course teaching resources in colleges and universities, educators should actively upload teaching outcomes and fully implement the goal of "co-construction and sharing" of teaching resources. This will facilitate the interaction and circulation of high-quality resources across different regions and institutions, enhance the overall quality of ideological and political education, and support the cultivation of socialist core values among college students.

Moreover, to establish an effective sharing mechanism for ideological and political course teaching resources, colleges and universities can regularly organize academic exchanges and discussions on teaching concepts in ideological and political education. These initiatives will help continuously enhance the development of the resource-sharing mechanism while encouraging teachers to actively share their insights and propose practical suggestions for improvement.

4. Concluding Remarks

In short, with the continuous development of information technology, the scientific and technological revolution represented by big data is promoting innovation in the field of education. The General Secretary has stressed that big data is the "free" resource of industrial society, who has mastered the data, who has mastered the "initiative", to "review the situation, carefully plan, advance layout, and strive to take the initiative". As key institutions for shaping students' values and outlook on life, colleges and universities require ideological and political teachers to stay current with the times. Educators should actively collect and analyze student data, understand students' ideological perspectives, and fully leverage the opportunities presented by big data while addressing its challenges. This approach will enhance the efficiency and real-time effectiveness of ideological and political education, ultimately improving students' overall development.

Disclosure statement

The author declares no conflict of interest.

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