
Research on the Precision Education Model of College Counselors Driven by Big Data

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Abstract: With the rapid development of information technology, big data technology has become a key force driving educational reform. As the core venue for talent cultivation, universities have become an inevitable trend in the development of education in the new era to achieve precise education through big data technology. Traditional university counselors often rely on experience and have a crude management approach, making it difficult to grasp the personalized needs of students. Big data technology can accurately identify and predict students' behavioral characteristics and growth risks, thereby optimizing educational work. The precision education model of university counselors driven by big data can not only enhance the pertinence of educational work but also promote the comprehensive development of students. This article aims to explore the impact of the big data era on the work of college counselors and conduct in-depth research on the precision education model driven by big data, to provide useful references and inspirations for the development of college counselor education work.

Keywords: Big data-driven; College counselors; Precision education

Online publication: March 26, 2025

1. Introduction

With the vigorous development of big data technology, college counselors' education work faces unprecedented opportunities and challenges. In the context of big data, the number of college students is huge and individual differences are significant, making it difficult for traditional education models to achieve precise attention and guidance for students. The application of big data technology provides new ideas for the innovation of the education mode of college counselors. Through the effective application of big data technology, university counselors can efficiently collect and process data, thereby obtaining comprehensive information about students. With the help of data analysis and mining techniques, counselors can accurately grasp students' actual needs and ideological dynamics, thereby

constructing a more precise education model. The establishment of this model is of great significance for improving the effectiveness of education work, meeting the requirements of university education, and adapting to the development needs of higher education in the new era. Therefore, in-depth research on the precision education model of college counselors driven by big data has important theoretical and practical value.

2. The impact of the big data era on the work of college counselors

Traditional education work mainly relies on offline forms, and information acquisition is often done through survey questionnaires and other means, based on the personal experience of counselors, which has many limitations and makes it difficult to achieve ideal educational results. The arrival of the big data era has brought the advantages of intelligence and networking to the education work of college counselors, greatly expanding the possibilities of education work. Specifically, the impact of the big data era on the education work of university counselors is mainly reflected in the following aspects.

2.1. Effective expansion of educational carriers

The carrier of education is an important medium for university counselors to establish connections with students, and plays an irreplaceable role in educational work. In the era of big data, college counselors are no longer limited to traditional offline education methods, but can obtain information through instant messaging tools such as WeChat and DingTalk, as well as digital platforms such as databases, and engage in diverse interactions with students. This diversified education platform not only breaks through the limitations of time and space but also improves the efficiency of information dissemination and overall work efficiency. Different platforms have their characteristics and can complement each other^[1]. Counselors can comprehensively apply multiple platforms based on their work content to achieve better educational results. For example, the content of ideological and political education is pushed through WeChat official accounts, the daily affairs are notified and managed through the nail platform, and the learning management system is used to track students' learning progress and performance, so as to achieve multi-dimensional and comprehensive education goals.

2.2. Abundant educational materials

The development of college counselors' education work requires rich materials as a foundation. The application of big data technology provides counselors with massive data resources, covering multiple aspects such as moral education, ideological and political education, and mental health education. These abundant data resources provide strong support for the work decisions of counselors, and also facilitate the recording of student information, forming sample data, which is conducive to in-depth analysis of student behavior and thoughts, thereby achieving an accurate grasp of student dynamics and improving the effectiveness and scientificity of educators' work. Compared with traditional information collection methods, big data technology can record students' data comprehensively and without any blind spots, making the information more comprehensive and authentic. Through scientific quantitative analysis methods, counselors can uncover patterns and correlations in data, thereby drawing more scientific and accurate conclusions, providing precise guidance for educational work^[2].

2.3. Achieving precise parenting results

The application of big data technology enables university counselors to have a comprehensive and in-depth understanding of students. Traditional education work is often limited by various factors and adopts a “one size fits all” approach, which makes it difficult to meet the personalized needs of students and provide accurate personalized guidance. Big data technology can not only obtain basic information about students, but also record multidimensional information such as their behavior trajectory, learning status, and ideological changes. By mining and analyzing this data, students’ characteristics can be summarized, and more targeted education plans can be developed to achieve personalized guidance. For example, through a comprehensive analysis of students’ classroom performance data, homework completion data, exam score data, and extracurricular activity participation data, counselors can accurately identify students’ learning strengths and weaknesses and provide personalized learning advice and coaching plans to help students fully realize their potential and improve academic performance. At the same time, big data technology can also detect problems promptly by comparing and analyzing differences in student data, and predict the development of subsequent situations, playing a preventive role. From the perspective of students, with the help of intelligent terminals, they can always understand their grades, learning progress, and other information, thereby achieving autonomous learning and the goal of personalized education.

2.4. Promoting collaborative innovation in education work

The application of big data technology has broken down the information barriers in traditional education work and achieved the interconnection of student work data. By establishing a unified data platform, universities can integrate and analyze academic data from the academic system, daily performance data from the student engineering system, consumption data from the campus one card center, and borrowing data from the library system, thus forming a comprehensive portrait of student growth^[3]. This collaborative mechanism not only improves work efficiency but also helps counselors comprehensively grasp the development status of students and achieve precise education. At the same time, big data technology can also discover the connections between educational elements, providing strong support for the construction of a “three-pronged education” system of “all staff education, whole process education, and all-round education.” For example, by analyzing the correlation between students’ academic performance data and mental health data, counselors can discover the potential relationship between academic stress and mental health, and thus carry out targeted mental health education while providing academic guidance, achieving collaborative promotion of educational work.

3. Big data driven precise talent development strategy for college counselors

In the information age, students’ ideological concepts and behavioral patterns have undergone significant changes, and educational work is facing a more complex situation. As an important executor of student education management, the work effectiveness of college counselors directly affects the achievement of the goal of cultivating morality and talents. Therefore, counselors need to keep up with the pace of the times, attach importance to precise education, and improve

the quality of education through the rational application of information technology. At the same time, universities should provide strong support for the work of counselors and strengthen training to meet the educational needs of the new era. Specifically, the precision education strategy for college counselors driven by big data mainly includes the following aspects:

3.1. Strengthen training and learning to enhance the data literacy of counselors

Counselors are a key force in the education of college students, and their qualities and abilities directly affect the effectiveness of educational work. In the era of big data, there has been a profound change in the work of educating people, and the expansion of information has led to the challenge of decentralization in the work of educating people. Therefore, counselors need to update their concepts promptly, actively learn advanced technologies, and master the application methods of big data technology in information acquisition and analysis. Colleges and universities should attach importance to the promotion of the professionalization mechanism of counselors, establish a systematic training system, and enhance the information technology application and data processing abilities of counselors. Specific measures include regularly organizing special lectures on big data technology, practical training on data analysis tools, etc., to help counselors master core skills such as data collection and mining. In addition, universities should encourage counselors to participate in school enterprise cooperation projects and enhance their practical abilities through real-world data applications. At the same time, a mentorship assistance mechanism will be established, with experienced technical experts providing guidance to counselors to solve problems in education work, cultivate counselors' data thinking and precision decision-making abilities, and thus achieve a transformation from traditional experiential education to data-driven education models [4,5].

3.2. Emphasize students' online behavior and build a precise foundation for nurturing talents

The rapid development of network information technology has made the connection between students' behavior and thoughts and the internet increasingly close. The precise education of college counselors cannot be achieved without in-depth research on data information. Universities should attach importance to the research on students' online behavior, obtain student data through legal and compliant means, and provide strong support for counselors' educational work. Specifically, the smart campus platform can be used to integrate students' behavioral data, such as library borrowing records, campus card consumption records, and online social platform behavior, to construct a digital portrait of students and analyze their habits and preferences through big data. For example, by issuing warnings about students' nighttime online behavior and abnormal consumption, counselors can intervene promptly and provide necessary guidance and assistance. In the process of data collection, universities should establish strict review mechanisms, follow the principle of minimum necessity, and adopt measures such as anonymization to ensure the privacy and security of students. Counselors can implement layered interventions for different groups based on the analysis results, provide time management guidance for students with strong internet dependence, and carry out media literacy education for students who are prone to falling into information cocoons, thereby achieving a shift from the

traditional “one size fits all” model to precision education and enhancing the foresight and pertinence of university education.

3.3. Optimize educational content and achieve differentiated education

In the era of big data, the convenience of information dissemination makes students face massive amounts of information and more diverse value orientations. Some students have formed incorrect values due to exposure to negative information on the internet, which poses challenges to the educational work of counselors. The traditional education model has been difficult to meet the current needs. The counselors need to use WeChat, TikTok and other new media platforms, combined with online forums and other channels, to deeply understand the students’ ideological trends, accurately grasp the students’ ideological characteristics, and timely and reasonably intervene. At the same time, based on big data analysis, a dynamic educational content resource library is established to mine students’ social media behavior and online browsing trajectory data, identify students’ cognitive and behavioral characteristics, and achieve customized differentiated educational content. For example, developing relevant educational works for students who love short videos; For students interested in current affairs content, push in-depth articles. In addition, in terms of content and form, students’ habits should be fully considered, the application of new technologies should be strengthened, the attractiveness of educational content should be enhanced, and a closed-loop mechanism for public opinion warning, content adjustment, and effectiveness feedback should be constructed to meet the diverse learning needs of students [6].

3.4. Improve laws and regulations to ensure the legality and compliance of data applications

In the era of big data, illegal and ethical violations may arise during the collection and use of data, which requires schools, governments, and counselors to work together to solve. Precision education requires collecting student data, but this process may involve student privacy. Therefore, it is necessary to strengthen the construction of relevant legislation and regulations and provide clear guidance for the development of relevant work in universities. Universities should develop network standards following legal regulations and institutional requirements, providing a basis for the work of counselors. Counselors need to raise legal awareness, use data information reasonably to carry out educational work, establish confidentiality awareness, properly store and manage student information, and prevent information leakage. In addition, universities should establish data security committees, standardize data collection and usage processes, develop big data application standards, and clarify the boundaries and division of responsibilities for data usage. At the same time, establish a student data authorization mechanism, giving students the right to choose and the right to know, ensuring that big data applications are both legal and compliant, and have humanistic care, finding a balance between unleashing the value of data and protecting privacy [7].

3.5. Strengthen the integration of online and offline to achieve the unity of data empowerment and humanistic care

In the era of big data, the precise education of college counselors should focus on the deep integration of traditional

management models and information technology. The transformation of online media has led to the emergence of the information cocoon effect. Therefore, when judging students' thoughts and behaviors, we should not only rely on some online behaviors, but also comprehensively consider and strengthen the combination of online and offline. Specifically, data analysis should be combined with face-to-face conversations to better integrate information technology with traditional educational work, achieve more accurate judgments and predictions, and enhance the effectiveness of educational guidance. In addition, establish a two-way interactive mechanism for online data collection and offline verification intervention, collect online behavioral data through intelligent terminals, and cross-validate with offline data to construct a three-dimensional student growth profile. From the perspective of counselors, regular psychological counseling that combines data and heart-to-heart talks should be conducted. This not only involves referencing and analyzing data, but also involves face-to-face communication to grasp the true state of students, achieve closed-loop management of educational work, and achieve the organic unity of data empowerment and humanistic care.

4. Conclusion

In summary, the rapid development of big data technology has provided a new theoretical perspective and practical tools for the precise education of college counselors. With the help of data-driven, precise identification, dynamic analysis, and scientific intervention, university counselors can more efficiently grasp the growth patterns of students, optimize educational strategies, and thus achieve a transformation from an “experience-driven” to a “data-driven” educational model. This transformation not only enhances the scientific and precise nature of education work but also lays a solid foundation for university counselors to better fulfill their responsibilities of cultivating morality and talents in the new era.

However, the precision education model driven by big data is still in the exploration and improvement stage. Future research and practice need to further focus on innovative interdisciplinary education models, break down disciplinary barriers, and integrate theories and methods from multiple disciplines, such as education, psychology, and information science, to build a more systematic and scientific education system. At the same time, improving the data governance system is crucial, and it is necessary to further clarify the norms and standards for data collection, storage, use, and sharing, ensure data security and privacy protection, and provide solid institutional guarantees for precision education. In addition, strengthening the data literacy of counselors is also crucial. Through continuous training and practical exercises, counselors can enhance their ability to use big data technology to educate people, enabling them to more proficiently apply data-driven methods to solve practical problems.

In the era of big data empowering education, college counselors should actively embrace technological changes, explore the empowering role of big data in cultivating morality and talents with an open mind and innovative thinking. By continuously optimizing the education model, improving the quality of education, and contributing to the cultivation of high-quality talents that meet the needs of the new era. In the future, with the further development and application of big data technology, the precise education model of university counselors will undoubtedly show broader development prospects, injecting new vitality and momentum into the high-quality development of higher education.

Disclosure statement

The author declares no conflict of interest.

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