

Research on Strengthening Psychological Education Service in Colleges and Universities from the Perspective of Big Data

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Abstract: In today's information age, the Internet, cloud technology, the Internet of Things, and big data technologies are driving significant transformations across all sectors of society. Big data has become pervasive in all aspects of life. The advent of technology has significantly impacted all aspects of human beings, including work, personal life, and cognitive processes. This influence extends to the study and daily lives of students in colleges and universities, presenting both opportunities and problems for psychological education at higher educational institutions. This paper examines the behavior patterns of college students and utilizes big data technology from the perspective of enhancing psychological education services for developing a contemporary psychological education program that aligns with the current era and ultimately advancing psychological education in colleges and universities.

Keywords: Big Data; Psychological Education in Colleges and Universities; Service Demand; Development

1. Introduction

What exactly is big data? It's important to understand that big data covers a broad range of topics. According to Wikipedia, in the field of information technology, big data refers to a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications, which faces various challenges involved in managing datas, such as capture, curation, storage, search, sharing, analysis, and visualization. With the rise of the cloud era, big data application fields are rapidly expanding. This expansion is

bringing about major changes in people's jobs, lifestyles, and cognitive processes. In the field of big data research, Schoenberg pointed out the fact that "there will be three significant shifts towards our approach to datas after human beings enter the era of big data: first, our focus will shift from working with sample datas to encompassing all available datas; Secondly, as we embrace the abundance of datas, we must let go of the pursuit of spirituality and accept the inherent complexity; Third, by leveraging big data processing, we move away from seeking causality and instead prioritize understanding relationships" [1]. College students, as individuals responsible for staying updated with the progress of the era, will definitely see a transformation in their study and personal lives due to the impact of big data technology. This transformation is evident in the use of datas to document their experiences and share various aspects of their lives. As college students are in a crucial phase of physical and mental growth, their psychological issue naturally become a significant aspect of college education. Therefore, we can improve the effectiveness of psychological education and further its development in higher education institutions by actively utilizing the opportunities provided by the big data era in daily psychological education at colleges and universities, analyzing service demand, and designing an appropriate psychological education system that is in line with the current era.

2. The Significance of Psychological Education in Higher Education Institutions from the Perspective of Big Data

Over the past few years, the psychological issues experienced by college students have had a significant impact on their academic performance, personal lives, and the general

functioning of educational institutions. Furthermore, these problems have had adverse effects on the steady progress of colleges and universities, resulting in many societal issues. Psychological health is essential for the typical academic, personal, and professional functioning of college students. Hence, the crucial objective of psychological education in higher education institutions is not only to avoid and address students' psychological disorders, but also to stimulate their individual potential, thereby enhancing their overall competence and cultivating unique personal qualities. In the age of big data, it is imperative for colleges and universities to analyze various aspects of students' lives, such as their ideological preferences, interests, social attitudes, and emotional changes. This can be achieved by closely monitoring students' learning progress, test results, campus card usage, library borrowing, and other relevant information. By gathering and analyzing data on students' basic information, daily performance, and consumption patterns, valuable insights can be obtained. Utilizing big data technologies, extracting and analyzing crucial data with the assistance of the underlying data is necessary to develop a quantitative analysis model for assessing the mental health of college students and creating a platform for psychological crisis intervention. This allows students to begin receiving prompt and effective psychological care prior to the onset of a psychological crisis.

3. Opportunities and Challenges Faced by Psychological Education in Colleges and Universities from the Perspective of Big Data

The combination of big data and psychological education is a highly regarded area of academic focus. Given that they were born in the information age, modern college students have a remarkable ability to rapidly embrace new media advancements and effectively incorporate them into daily lives and studies. In their daily lives, communication and sharing via social platforms like WeChat and live broadcasting have become the norm. Meanwhile, a substantial volume of material obtained via the Internet is subtly influencing the mental health of college students.

3.1 Opportunities for Psychological

Education in Colleges and Universities from the Perspective of Big Data

"The era of big data is subtly transforming individuals' professional and personal lives" [2]. The emergence of the big data era has brought significant transformations to educational concepts and modes of thinking. Every aspect of education is now infused with big data, including psychological education at colleges and universities.

First of all, applying big data, the psychological test is advantageous in understanding and analyzing the psychological patterns of college students. In typical psychological education research, the conventional method of conducting a questionnaire survey assumes that the respondents are well informed. However, this approach is susceptible to interference from factors such as time, location, and the respondents' characteristics, which can lead to survey results that lack specificity and relevance. Nevertheless, "big data mode exhibits the notable attributes of substantial volume, rapid velocity, diversity, and precision" [3], which possesses significant worth and notable timeliness in contrast with traditional statistics. As a result, it can accurately depict students' actual circumstances and perform rapid data analysis and processing. Second, the use of big data technology enables the extraction and analysis of data from a variety of social platforms within the campus environment. This process serves as a genuine and efficient data resource for tracking students' mental well-being. Based on this premise, utilizing the established crisis intervention model to forecast an individual's future behavior can be beneficial in developing more focused mental health education programs. At the same time, employing this research methodology can result in cost savings, increased efficiency, and enhanced educational outcomes. Furthermore, students have the opportunity to utilize big data to construct their own data analysis platform, enabling them to examine their own circumstances based on pertinent data, which allows them to promptly ascertain their psychological state.

3.2 Challenges of Psychological Education in Colleges and Universities from the Perspective of Big Data

"The application of big data technology provides numerous benefits to individuals in

their studies, careers, and daily lives. Though utilizing science and technology is a mixed blessing” [4]. Big data technology, as a novel approach, has presented significant obstacles while simultaneously providing convenience and numerous advancements to psychological education in higher education institutions. Education management in certain colleges and universities remains underdeveloped, characterized by the absence of standardized education management datas and a uniform approach to education management in terms of content and format.

These issues have become barriers to both the cultivation of talent and the delivery of high-quality education in higher education institutions, which can be attributed to two main factors. On the one hand, from a psychological education management standpoint, there is a shortage of highly skilled people in the field of professional big data analysis due to a widespread lack of knowledge among psychological educators at colleges and universities. As a result, the concept of protecting students’ personal privacy while using big data for personal information analysis is unclear. Consequently, societal issues such as the “privacy problem”, “data gap” and “psychological invasion of big data” [5] arise, posing significant obstacles to safeguarding students’ personal privacy and their physical and emotional well-being. On the other hand, due to the distribution of various types of datas across multiple departments or systems, colleges and universities experience “data islands” and “fragmentation”. As a result, the collection of useful information becomes challenging. In the field of information processing, the exponential growth of data volume has posed a significant challenge in properly storing and processing large amounts of datas with varying source standards and structures. Therefore, while raising awareness of big data and addressing it with various structures, it’s crucial to remember that “the key outlet for the innovation of mental health education is helping college students to properly understand the Internet, so as to form a good network morality and healthy psychology to avoid the negative influence factors of the Internet” [6].

4. The investigation of the Enhancement of Psychological Education Services in Higher

Education Institutions by the Application of Big Data

4.1 Improve Comprehension and Cultivate Awareness of Big Data

“Data awareness primarily refers to the cognition of the significance and unpredictability of the data” [7], “the essence of fostering data awareness is truth” [8]. Big data’s attributes, such as its extensive storage capacity, rapid processing speed, diverse nature, and inherent authenticity, enable psychological educators in higher education institutions to assess students’ psychological development with greater accuracy and effectiveness. Colleges and universities should prioritize the integration of big data into students’ psychology education, recognizing its profound significance, which accounts for that students may genuinely appreciate the value of statistics when they encounter real-life situations and practical challenges [8]. Hence, it is imperative to coordinate the personnel involved in big data technology and the relevant departments responsible for mental health education in order to provide adequate human and material resources for the integration of diverse datas, which will create a favorable working environment for big data and maximize its potential. Furthermore, it is necessary to promote and enhance the understanding of big data across the entire institution. Psychological educators ought to disseminate knowledge about big data through psychological counseling, mental health teaching, group counseling, and other methods, which allows them to stay up-to-date with the current trends and develop a mindset for big data while also helping foster habits for analyzing it. After that, effectively provide college students with improved mental health education services by continuously innovating the mode of operation and ways of mental health education.

4.2 Multi-channel Innovation of Psychological Education Mode in Colleges and Universities

Psychological education in colleges and universities should provide focused instruction and assistance based on the primary requirements of college students, enabling them to internalize the teachings and manifest them via their behaviors. In the present day, it is common for college students to utilize social

software platforms such as QQ, WeChat, and Weibo to communicate. Due to the extensive presence of these social networking platforms, individuals are increasingly inclined to express their genuine emotions in the virtual online world. Additionally, “a multitude of adverse news, erroneous concepts, and diverse perspectives disrupt the lives of students, rendering it challenging for them to distinguish between aesthetics, morality, virtue, veracity, and deception. In particular, when there is a discrepancy between the artificial beauty portrayed online and real-life social interactions, college students may experience significant psychological instability. It can result in an addiction to the internet, leading to issues such as internet addiction, personality disorders, and confusion in understanding one’s own identity and social roles, which means that college students exhibit a deficiency in self-regulation capability. Consequently, the lack of authenticity in the network and the disparity between the virtual world and real life can lead to a range of psychological issues among students, as they may struggle to cope with negative emotions and detrimental psychological states” [9].

On this basis, colleges and universities can utilize these internet platforms to create a multi-channel interactive education paradigm that operates both online and offline. First of all, to get a grasp on students’ living situations, mood fluctuations, and shifts in their cognitive frameworks, it is essential to analyze the information they convey. This analysis facilitates efficient learning and tackles the ideological and spiritual confusion college students encounter. Also, with the creation of online games, students can alleviate stress and mitigate the potential risks of mental illness while engaging in the gaming experience. Meanwhile, enhance the university psychological file database gradually by utilizing the big data sharing platform built by the university network center. Finally, it is necessary to categorize the data generated on the social platform and various systems within the campus network in order to uncover the psychological traits of college students, understand their behavioral patterns, and cater to their varied requirements. This will help to improve the effectiveness of mental health education implementation.

4.3 Gradually Improve the Psychological Education Intervention Mechanism to Implement Preventive Actions

“The psychological issues faced by college students are interconnected with factors such as social stability, campus security, and the overall well-being of numerous families” [10]. In recent years, the research on psychological crisis management for students in colleges and universities has grown significantly and yielded numerous achievements. However, there remain certain misconceptions, for example, “regarding the inadequate and incomplete understanding of the objective and significance of establishing a psychological intervention mechanism for students in many schools, a majority of these institutions mistakenly believe that the implementation of mental health activities and the provision of mental health education as well as counseling alone suffice to construct a psychological intervention mechanism” [11].

Accordingly, in the age of big data, colleges and universities are increasingly recognizing the importance of establishing intervention mechanisms and making efforts to enhance their psychological education intervention mechanisms. On the one hand, that requires effort to build a comprehensive psychological early warning system that involves mental health clinics, secondary institutions, administrative classes, student dormitories, and students’ families. More precisely, we should prioritize the identification and reporting of individuals experiencing abrupt psychological crises, offer guidance and suggestions, safeguard personal privacy, and provide safety monitoring. On the other hand, it is vital to meticulously document the daily behavioral data of the participants using big data technology, which will enable the establishment of a quantitative analysis model for the mental health of college students by scientifically analyzing the data within a specific area. Meanwhile, “utilize several channels to gain a comprehensive understanding of students’ psychological perplexities and challenges” [12], and promptly identify specific students’ mental health hazards to provide early intervention. In order to cope with the mental health issues faced by college students, it is imperative to not only develop more efficient strategies but also establish a comprehensive psychological

prevention and intervention mechanism that “encompasses various components such as online consultation, psychological testing, and mutual assistance. This mechanism should be designed to cater to the diverse needs of students at different levels” [13]. By integrating data resources, we may enhance the provision of psychological counseling services to students, making them more comprehensive and easy, which will enable the team to identify and address psychological crises at an early stage stop.

4.4 Improve the Safeguard Mechanism of Psychological Education in Colleges and Universities

The rapid advancement of information technology necessitates a significant demand for network technicians. Consequently, colleges and universities must enhance their psychology education teams to meet the challenges posed by the era of big data. Nevertheless, there are significant non-professional issues in the field of big data analysis and early detection of psychological education teams in higher education institutions. The team’s prevalence of non-professional mental health workers prevents the utilization of big data analysis technologies from aligning with the students’ circumstances, leading to a lack of smooth functioning. Thus, it is imperative for colleges and universities to establish prominent teams dedicated to the field of big data. “The formulation of the management system for connected big data can be achieved by adhering to the problem-oriented and methodical idea, scientifically analyzing, and accurately interpreting the situation” [14]. Simultaneously, it is crucial to prioritize the development of skilled individuals in the field of big data by arranging “specialized training initiatives aimed at enhancing their proficiency in consulting, management, and application” [15]. The training content has two parts. The training program should encompass not only the development of skills required for psychological educators to utilize big data technology but also the provision of knowledge in mental health education for professionals involved in big data analysis, so as to attain the objective of enhancing the overall competence of all individuals involved in psychological education.

5. Conclusion

In summary, within the background of the big data era, information technology has introduced novel concepts to the management of education in colleges and universities. Given its role as the primary means of developing talent, it is imperative that mental health education for college and university students aligns with and stays abreast of the swift advancements of the new era. To prioritize the fundamental task of cultivating character and civic virtue from the perspective of pluralistic integration is crucial. The application of big data technology in education management can significantly enhance the efficiency and effectiveness of colleges and universities. By harnessing the speed, pertinence, predictability, precision, practicality, and other attributes of big data technology, we can expand information channels and innovate the working mechanism of mental health education, which will facilitate the efficient and high-quality development of education management in colleges and universities.

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