

# Optimization Strategies for the Students Education Management Model in Higher Education under the Circumstance of Big Data

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**Abstract:** With the advent of the big data era, China's higher education industry is facing a severe test. Using big data to optimize school education management is an important measure for schools to demonstrate "people-oriented", drive value with data, adapt to social development needs, and improve their own educational efficiency. In the context of big data, the management of student education in Chinese universities is developing towards a scientific, comprehensive, and personalized direction. Students should actively adapt to this situation, starting from building a solid platform foundation, improving the information literacy of management personnel, and strengthening security protection, effectively improving the quality and efficiency of student management work in higher education.

**Keywords:** Big data; College students; Education management; Optimization strategy

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## Introduction

Big data is not only a science and technology, but also an advanced ideological concept. In the era of big data, massive information resources not only provide convenience for students, but also have a subtle impact on their values. Studying the scientific combination of big data technology and university student education management methods, utilizing big data technology and ideas to enhance the ability of universities to guide value, share resources, and evaluate education, is an inevitable move for universities to adapt to the development of the times and the needs of the country.

## 1. The Significance of Optimizing University Student Education Management Models with Big Data

### 1.1 Highlighting the "Student-oriented" Educational Philosophy

The widespread application of big data provides new opportunities for the optimization and transformation of university management models. In the big data environment, massive information resources and convenient information collection, processing, and integration provide strong technical support for the transformation of university education management methods. With the development of technology, the psychological, emotional, and knowledge-based needs triggered by the interest of young college students in new things in the new era also make it urgent for universities to use big data technology to optimize the education management of college students. With the changes of the times, the learning methods of college students are also constantly changing, and the desire for knowledge and self-awareness are driving them to make better and more effective learning methods. In this context, applying big data technology to universities can inject a reasonable driving force into students' educational management, thereby enabling them to better participate in school teaching activities.

### 1.2 Utilizing the Educational Guidance Value of Big Data

In the era of big data, big data has become the most important production factor affecting the development of various aspects of society, and the same applies to teaching in universities. The application of big data technology can change the traditional manual guidance and experiential guidance towards "data guidance", thereby enhancing the rational decision-making ability of university students and enhancing the educational management efficiency of university students. Utilizing big data for university student education management can solve the problems of information chaos and resource fragmentation in current university student education management, and achieve the management

of university students. In addition, teaching management tools based on big data visualization, systematization, and interaction can effectively solve the difficulties and key issues in university management. Based on big data technology, when policies change, universities can adjust according to local policies or conduct small-scale experiments to achieve specific management goals. Under the effective implementation of small-scale approaches, we will innovate and optimize work models on a large scale to promote the sustainable development of student education management in universities.

### **1.3 Meeting the Objective Requirements of Social Development for Higher Education**

The quality of higher education is an important indicator of evaluating a country's comprehensive strength. In order to grasp the pulse of the times and comply with the requirements of socialist construction and development in the new era, further promote the reform of university management methods, and improve the overall strength of the country. It is urgent to innovate the management methods of universities. It cannot only focus on slogans and concepts, but also need to determine our own training goals on the basis of seeking truth from facts and effectively promote the reform of university management work. Big data technology provides a powerful means to promote the deepening and application of student education management in universities. With the support of big data, university managers can obtain more valuable information from students and society, in order to accurately grasp the ideological and social development laws of students, and formulate a management system that meets the interests of everyone, promoting the maturity and efficiency of higher education, and achieving the goal of student education management reform.

## **2. Optimization Strategies for University Student Education Management Models in the Context of Big Data**

### **2.1 Innovating Education Management Concept**

Under the guidance of the "people-oriented" educational ideology, university teachers should timely create diversified humanistic education methods. The education and management of college students should start from their own needs, pay attention to the differences between different types of students, and reform from the psychological and personality aspects of students. In universities, it is necessary to strengthen the education and management of college students, and strengthen the guidance of moral education work for college students. Secondly, it is necessary to fully leverage the subjective initiative of college students and effectively enhance their cultural and quality, fully leverage the advantages and characteristics of big data to continuously enrich students' education and management methods based on exploring and analyzing their behavior, and grasp the dynamics of their learning and life. In the interaction and communication between teachers and students, cultivate students' self-learning ability, gradually shifting from education management centered on educators to education management centered on students. In addition, in daily education management work, it is necessary to organically combine students' knowledge transfer in the classroom with after-school teaching, allowing them to actively participate in teaching activities, truly improving the quality and efficiency of teaching, guiding students to move forward in a standardized and scientific teaching method, combining theory and practice, network and classroom, and improving the analysis of students' problems from the root, To enhance students' ability to respond and distinguish, thereby improving the overall quality and efficiency of university student education management work.

### **2.2 Building a Solid Platform Foundation and Achieving Comprehensive Integration and Sharing of Resources**

Universities should actively adapt to the requirements of the development of the big data era, fully utilize modern information technology, and provide a platform for mutual communication between teachers and students in universities. On this platform, schools can carry out teaching management work such as logistics, finance, and teaching evaluation, systematically integrate and centrally manage the teaching management information of universities, provide convenience for information exchange of universities, and provide certain rankings and structures for various departments of universities, thus effectively solving the phenomenon of information islands and information depressions caused by the fragmented management of various systems in universities. In the process of common development, the comprehensive

application of various data has value for educational management.

Universities should collect, organize, classify, and store student information, establish a big database, conduct information exchange, and maintain big data accordingly. The management of college student education contains multiple aspects of information. From the beginning of student registration, various information will be generated, such as club participation, military training scores, attendance rate, food consumption, health status, etc. Universities need to transform the working methods of multi departmental information management, input these different sources and attributes of information into the same database, fully mobilize the awareness of information participation in various departments of the school, build an intensive and centralized information management system, and clearly divide the responsibilities of each department based on the characteristics of various information.

### **2.3 Strengthening Security Protection and Establishing a Standardized Data Management Mechanism**

Big data not only provides convenience for university administrators, but also raises security risks such as information leakage and data leakage. The increasing prevalence and frequency of public behavior on the Internet pose serious challenges to information security. Compared to the management and operation of social organizations, the management of student education in universities has its own characteristics. Except for students who take the postgraduate entrance examination for further education and engage in related scientific research work, most students have reached the end of their student careers and should devote themselves to socialist construction with full enthusiasm and knowledge. If a student's personal information is damaged or lost, it will cause significant losses to the student, school, and even the entire community. Therefore, it is necessary to rely on big data technology to effectively manage the teaching management of universities, and encrypt and store it. The access, modification, and use of data should be authorized to management personnel at different levels, and data that can be disclosed to the public should be strictly isolated, with independent rights and sufficient confidentiality rights. Universities should actively invite external programmers and IT professionals to assist in building professional firewalls, student information blockchains, and cloud data centers to form scientific and effective emergency plans, which can ensure that schools promptly respond to network intrusions or data leaks, thereby ensuring students' privacy.

### **2.4. Improving the Information Literacy of Management Personnel**

In the context of big data, the management of student education in universities is facing an urgent demand for information technology and high-tech talents. Therefore, it is necessary to introduce advanced management concepts, continuously explore new management models, and consider educational management work from the perspective of development strategies. This requires universities to have high-quality leadership and information talents in management positions. In this situation, managers need to start from two aspects and continuously improve their information literacy and comprehensive quality. Firstly, current leading cadres should have awareness and ability. Universities should continuously enhance the informationization awareness of managers, establish data awareness, recognize the importance of transforming student education management, and actively participate in the transformation work. Secondly, managers should continuously enhance their skills in data search, data collection, analysis, interpretation, and thinking. Universities should regularly carry out training on big data applications, with big data applications as the core, organize the use of data analysis software, explain international advanced management concepts and leadership skills, and apply the theories and skills learned to management work. At the same time, schools should also strengthen the assessment of the management ability of managers, and regularly evaluate them based on student feedback, data application ability, and management effectiveness. From the evaluation results, the shortcomings in current management work can be identified, thereby improving the ability of universities to evaluate the results, and implementing a dynamic management model based on the actual situation of students, continuously improving and innovating.

## **3. Conclusion**

To sum up, the quality of higher education is directly related to the construction of socialist modernization, and therefore has been highly valued by the country. In the context of big data, the management of student education in universities has undergone multidimensional

changes, but its fundamental purpose is to cultivate qualified socialist builders for the country. Although there are still problems with outdated concepts, incomplete hardware facilities, and low management efficiency in the students education management in colleges and universities, as long as schools can actively integrate new ideas and technologies in the era of big data around the direction of socialist education, they can improve the informationization level and comprehensive quality of students' education management, thereby promoting their comprehensive and healthy development.

## References

- [1] Jifei Zhao. Transformation and Strategy of Student Education Management Model in Universities in the Era of Big Data [J]. Shanxi Youth, 2023, (16): 175-177
- [2] Yu Han. Optimization Strategies for the Education Management Model of College Students in the Context of Big Data [J]. Taste Classic, 2023, (12): 116-119
- [3] Liang Gong, Xiaohui Huang. Exploration of Strategies for Transforming Student Education Management Models in Universities in the Era of Big Data [J]. Universities, 2022, (34): 55-58
- [4] Xi He. Strategic Research on the Transformation of College Student Education Management Model under the Background of Big Data Application [J]. Essay Hundred (New Chinese Looseness), 2018, (07): 204.