

# TRANSFORMATION OF EDUCATIONAL PHILOSOPHY: AN EVALUATION OF HIGHER EDUCATION MANAGEMENT INNOVATION AGAINST THE BACKGROUND OF BIG DATA



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**Abstract:** With the modern information society's rapid development, Big Data (BD) has brought great convenience to residents' lives. Under the background of BD, the application of information technology in various fields has become a trend. Through the transformation of educational philosophy, Higher Education Management (HEM) has also taken on new characteristics and generated new development directions. This article explored the shortcomings and reasons of traditional HEM work, pointed out current problems in it and explained the necessity of innovation in it. This article also analyzed the advantages and development of BD technology in management work. Through the new ideas, methods and tools brought by Big Data technology to Higher Education Management, it was demonstrated that BD technology supported the development of innovative teaching mode, provided a positive learning environment and reduces management costs. Based on the characteristics of HEM work and the advantages of BD technology, innovative research was conducted to analyze students' learning efficiency and enthusiasm to illustrate the innovative effect of HEM work. BD technology, including Artificial Intelligence and precise and flexible management, brings new ideas, methods and tools to HEM, effectively improving efficiency, enhancing students' happiness and reducing labor management costs. They support the development of innovative teaching models, offer university students a positive learning environment and cut down on management costs.


**Keywords:** Big Data. Higher Education Management. Artificial Intelligence. Individualized Education Management.

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**Resumo:** Com o rápido desenvolvimento da sociedade da informação moderna, o Big Data (BD) trouxe grande comodidade à vida dos residentes. No contexto do BD, a aplicação da tecnologia da informação em diversas áreas tornou-se uma tendência. Através da transformação da filosofia educacional, a Gestão do Ensino Superior também assumiu novas características e gerou novos rumos de desenvolvimento. Este artigo explora as deficiências e razões do trabalho tradicional de Gestão de Ensino Superior, aponta problemas atuais e explica a necessidade de sua inovação. Também analisa as vantagens e o desenvolvimento da tecnologia BD no trabalho de gestão. Através das novas ideias, métodos e ferramentas trazidas pela tecnologia Big Data para a Gestão do Ensino Superior, foi demonstrado que a tecnologia BD apoiou o desenvolvimento de modalidades de ensino inovadoras, proporcionou um ambiente de aprendizagem positivo e reduziu os custos de gestão. Com base nas características do trabalho da Gestão e nas vantagens da tecnologia BD, foram realizadas pesquisas inovadoras para analisar a eficiência e o entusiasmo da aprendizagem dos alunos para ilustrar o efeito inovador desse trabalho. Os autores defendem que a tecnologia BD, incluindo Inteligência Artificial e gestão precisa e flexível, traz novas ideias, métodos e ferramentas para a Gestão, melhorando efetivamente a eficiência, aumentando a felicidade dos alunos e reduzindo os custos de gestão laboral. Ademais, apoiam o desenvolvimento de modelos de ensino inovadores, oferecem aos estudantes universitários um ambiente de aprendizagem positivo e reduzem os custos de gestão.

**Palavras-chave:** Big Data. Gestão do Ensino Superior. Inteligência artificial. Gestão Educacional Individualizada.

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# TRANSFORMATION OF EDUCATIONAL PHILOSOPHY: AN EVALUATION OF HIGHER EDUCATION MANAGEMENT INNOVATION AGAINST THE BACKGROUND OF BIG DATA<sup>1</sup>

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**Abstract:** With the modern information society's rapid development, Big Data (BD) has brought great convenience to residents' lives. Under the background of BD, the application of information technology in various fields has become a trend. Through the transformation of educational philosophy, Higher Education Management (HEM) has also taken on new characteristics and generated new development directions. This article explored the shortcomings and reasons of traditional HEM work, pointed out current problems in it and explained the necessity of innovation in it. This article also analyzed the advantages and development of BD technology in management work. Through the new ideas, methods and tools brought by Big Data technology to Higher Education Management, it was demonstrated that BD technology supported the development of innovative teaching mode, provided a positive learning environment and reduces management costs. Based on the characteristics of HEM work and the advantages of BD technology, innovative research was conducted to analyze students' learning efficiency and enthusiasm to illustrate the innovative effect of HEM work. BD technology, including Artificial Intelligence and precise and flexible management, brings new ideas, methods and tools to HEM, effectively improving efficiency, enhancing students' happiness and reducing labor management costs. They support the development of innovative teaching models, offer university students a positive learning environment and cut down on management costs.

**Keywords:** Big Data. Higher Education Management. Artificial Intelligence. Individualized. Education Management.

## INTRODUCTION

The teaching management of universities is an essential component of Higher Education (HE), which directly affects its quality and level. With the growth of BD technology, new educational management platforms and methods have been widely used in HEM work (Chris James; Michael, 2019, p. 504). The application of data analysis, integration and mining can refine the content and direction of Education Management (EM), optimize

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its methods, make the EM process more automated, intelligent and information-based, and improve the quality of EM work (Bahdin Nur, 2020, p. 1240). However, in the context of BD, EM work faces many challenges, requiring educators to think and analyze BD in EM while deeply exploring it.

The EM work in universities has a significant impact on students' learning and life. Research on EM in universities can improve students' learning abilities. Good management of campus environment and facilities directly affects students' learning experience. For example, the comfort and integrity of libraries, laboratories and learning spaces directly affect the efficiency and quality of students' learning. Therefore, many experts have conducted a series of studies on EM work in universities. Electronic learning and digital media will become new forms of education for future education development, and the digitization and intelligence of HEM should be improved (Egielewa; Philipa; Felix, *et al.* 2022, p. 19).

While promoting multicultural education, teachers should use creative thinking development modules to improve the efficiency of educational management (Chantarasombat; Chaiyuth, 2022, p. 35). In the case of work in the field of educational management in Turkey, it was found that enhancing educational management capacity can contribute to disciplinary cohesion (Gokturk, 2023, p. 184). When studying the development of HE, it was found that the learning efficiency of doctoral education was higher than the college students' one under the same period of educational management. Analyzing the role of HEM and its impact on students can effectively utilize its characteristics for educational innovation, thereby promoting students' learning.

Philosophy of education is a subject that probes into the nature, value and practice of education. With the times and society's changes, its concepts and emphases have changed significantly. While traditional ideas emphasize inculcating knowledge and developing basic skills, modern ideas place more emphasis on developing students' comprehensive abilities and literacy, including critical thinking, creativity and problem solving. Cross-cultural education emphasizes that individuals are able to cross cultural and linguistic boundaries, understand and respect the differences among different cultures, and be able to communicate and cooperate freely in different cultural environments. Cross-cultural education emphasizes that individuals are able to cross cultural and linguistic boundaries, understand and respect the differences among different cultures, and be able to communicate and cooperate freely in different cultural environments.

Many experts have conducted a series of studies on the innovation and development of HEM work. Under the new model of HEM, some HE teachers implement new methods of blended learning to promote students' learning and explain the impact of institutional factors on students' learning (Anthony Jnr, 2021, p. 701). Moreover, universities should update their EM models, provide students with learning paths to learn multiple skills and improve the

college graduates' soft and hard skills when they find employment (Succi; Magali, 2020, p. 1834). In the application of AI technology, in the field of HEM, it has been found that the use of AI technology in BD can effectively improve the educators' comprehensive quality (Zawacki-Richter; Victoria; Marin *et al.* 2019, p. 1). Therefore, in order to enhance the ability of HEM, it is necessary to develop lean thinking and innovate in the simplification, convenience and speed of university management affairs (Zighan; El-Qasem, 2021, p. 675). By citing different technologies, the educational management capabilities of universities have been improved to varying degrees. The application of the reformed educational management model to universities has ensured the steady development of school education.

Establishing a correct understanding of education has a counterproductive effect on the practice of EM work. To address the issues of fixed management models and poor quality of EM work in traditional universities, the application of BD technology in HEM can promote the transformation of HEM platforms from offline to online. The process of HEM would become more intelligent, convenient and automated. Based on this, detailed analysis would be conducted to analyze easily overlooked student personal management blocks, timely meeting the various needs of students' learning and life. The first chapter points out the defects of traditional educational management, the second chapter points out the impact of Big Data on educational management, and the third section points out the establishment of a business development environment management system for universities.

## 1 SHORTCOMINGS IN HEM OF HE

Education should be guided by philosophy. The principle, behind the need for philosophy in education, is that philosophy can provide a way of thinking and a value orientation to address deficiencies in HEM work (Alleman-Ghionda, 2009, p. 134). It is repetitive and can be simplified. Therefore, the problems of the existing EM model are explored, and reflection and criticism are conducted.

### 1.1 EDUCATION MANAGEMENT

EM includes multiple management tasks, such as staff management, student management, education and teaching management, safety management and campus management (Guo, 2019, p. 1). These management tasks cover four aspects: work, study, life and ideology, providing a good teaching and learning environment for teachers and students. By clearly delineating educational management functions and improving the mode and method of educational management, the quality of education and teaching is thereby enhanced, and the students' overall development in education is promoted. Realizing personalized education to meet the different students' needs and learning styles is a problem

that needs constant thinking and innovation in EM work (Ilmi; Darma; Musdalifah, 2020, p. 63). Education management refers to the activities of planning, organizing, guiding and controlling educational institutions, resources and processes. It covers various aspects from formulating educational policies to the daily operation of schools or educational institutions, as well as people's demand for personalized and customized learning styles and content. This includes different learning styles, interests and teaching needs for different levels of knowledge.

The central conflict in society is between the people's increasing desire for a better life and uneven and insufficient progress. The requirement for EM work to change with the times and meet the students' ever-evolving demands necessitates ongoing reform and improvement. Based on HEM objects and the times' traits, more humanized management modules are developed to accommodate the populace's growing wants. Philosophy has an impact on how education is value-oriented. Therefore, first of all, it is necessary to establish a correct educational management concept. Innovating educational management methods and models, under the correct concept, can make it more adaptable to the times' changes, thus effectively serving students' learning and life in school education management work. In the traditional Higher Education Management, information communication, among different departments, is not smooth, resulting in information islands, hindering the sharing and integration of resources and information, leading to redundancy and inefficiency.

## 1.2 CURRENT SITUATION OF EM IN UNIVERSITIES

The education, as a whole, and the EM part are interrelated and inseparable. The education, as a whole, is the entire process of the overall education and development, occupying a leading position and commanding the EM part. As a vital part of education, as a whole, EM plays a decisive role in the overall educational function. As an essential part of HE, the quality of educational management work affects the overall quality and level of HE (Garone; Bram; Tondeur, *et al.* 2019, p. 2466). Analyzing the current development status of HEM work can clarify some problems in it. In response to these issues, methods, and approaches for improvement are found to enhance the overall level and quality of HEM, providing some reference opinions for the sustainable development of HE.

At present, the EM work in universities is mainly carried out by the Academic Affairs Office, and the EM departments of each college also undertake a part of the EM work. However, these departments cannot closely coordinate and cooperate in management work, which often leads to errors or inadequate handling of EM work. Universities, in some countries or regions, may also set up EM departments within individual faculties, while supporting the Academic Affairs Office, focusing on the specific needs and curriculum management of individual subject areas. This layout can be closer to the actual needs of the discipline and provide more specific and personalized support.

Low level of informatization: for college students, in today's increasingly advanced information technology, university teaching management needs to move towards the path of information management (Ahmet Demir; Fatih, 2021, p. 180). However, there is still a low level of informatization in current university teaching management, which is reflected in the fact that manual management is still used in current university teaching management. Although this method facilitates school management personnel, it reduces work efficiency.

Lack of scientific evaluation: the process of educational management, in universities, should be a scientific process that conforms to the students' physical and mental development. The evaluation of students' learning situation is an essential basis for evaluating the quality and effectiveness of teachers' teaching (Manathunga, 2019, p. 1227). However, the current evaluation standards and methods of educational management, in universities, are fixed and cannot comprehensively evaluate students' learning situations and teachers' teaching quality. The effectiveness of the teacher's teaching is only evaluated through exams, and the ideas, excellent qualities and other aspects cannot be included in the evaluation and assessment system, resulting in low enthusiasm for learning and teaching between students and teachers, which is not conducive to the students' comprehensive development. Many universities are committed to sustainable development, including energy efficiency, waste disposal and environmentally friendly facilities. The school began to focus on reducing carbon emissions, promoting green energy and sustainable campus design.

In summary, in response to these issues, it is necessary to establish a global perspective on HE, choose the best solution to the problems in HEM and take a series of reform measures to improve the EM work of universities, thereby improving the overall level of HEM work, meeting the students' and teachers' learning and teaching needs, and promoting the sustainable development of HEM work.

### **1.3 IMPACT ON STUDENTS**

The work content of HEM is closely related to students' learning and life (Azzali; Sabour, 2018, p. 603). The low efficiency, inadequate management and inability to meet students' needs of HEM work have a significant impact on students.

Inadequate EM in universities leads to weak discipline among students, which can easily lead to students with weak self-control making violations, thereby affecting the overall learning atmosphere of universities and hindering some students on campus from engaging in a series of learning activities, such as postgraduate entrance exams, reading and research.

Poorly run educational institutions significantly impact the students' lives. For instance, when tasks must be completed, students must practice, which causes a late arrival at the hostel. When they get back to the dorm, water and power development has been halted,



so it is impossible to allocate resources flexibly to meet the students' actual demands. Water and electricity supply, in university dormitories, is usually for a specific period of time, which is to save resources and management costs, but it may also cause inconvenience to students' daily life. When students need to go out for a long time in the evening because of activities arranged by the school, they return to the dormitory to find that the water and electricity have been turned off, which may affect their daily life.

The inadequate management of HE has a significant impact on students' thinking, and the learning atmosphere of the school is affected. As a result, some students, who are between learning and not learning, are guided not to learn, leading to a state of low learning efficiency, low learning enthusiasm and unsatisfactory academic performance among students, in the university, as a whole. It is necessary to conduct innovative research on HEM work, as it can not only reduce the impact of HEM issues on students, but also improve the quality of HEM work in a targeted manner. A number of higher education institutions in Europe are using Big Data technology to improve educational management, including course planning, student performance forecasting and personalized instruction.

In summary, the material determines consciousness, and consciousness has a counterproductive effect on the material. Currently, the awareness of EM in universities has not kept up with the times' development and cannot effectively play its role. Innovation and development cannot be carried out in a timely manner, and thus, they cannot keep up with the times' development requirements. Therefore, it is necessary to address the shortcomings of EM in colleges and universities, so as to promote the uniqueness and innovative development of EM, by changing the existing EM model of colleges and universities, and making changes and innovations to follow the times' pace. A good campus environment can stimulate students' interest and motivation in learning. Comfortable classrooms, modern facilities and equipment, and a pleasant campus atmosphere contribute to the efficiency and experience of learning.

## **2 EM UNDER BD TECHNOLOGY**

### **2.1 BD EVALUATION**

Big Data technology provides more comprehensive and accurate data support, which helps education administrators better understand the internal operation and resource utilization of schools. This more efficient management of resources may have a direct impact on the economic performance of the school. The economic foundation determines the superstructure, and advanced scientific and technological means are used to provide new ideas for educational management. Due to the large amount of data in BD, many data cannot be extracted, managed and processed in a short period, using commonly used software tools. BD

technology is the process of quickly extracting the necessary data information from a variety of different aspects of data. Applying BD technology to HEM requires a systematic and clear understanding of the characteristics of BD technology and efficient EM. By analyzing the problems existing in the traditional HEM system and using BD technology to solve them in a targeted manner, people aim to improve the application ability of BD technology in HEM work and, thereby, improve the HEM workers' work efficiency. The "superstructure" is determined and shaped by the economic structure and economic foundation. Economic basis mainly refers to production relations and modes of production, such as social production organization structure, means of production and labor relations. Therefore, the economic base determines the nature and characteristics of the social superstructure, and different economic bases will produce different superstructures.

This article uses Big Data to analyze students' academic performance, attendance, participation, and other data to predict their academic performance and potential challenges, in order to intervene early and provide customized support.

## **2.2 INNOVATION IN HEM UNDER THE BACKGROUND OF BD**

### **2.2.1 SIGNIFICANCE OF INNOVATIVE HEM WORK**

Innovation is the first driving force that leads the development of education, occupying a core position in the development of it. It follows the objective laws of education development, unleashes people's subjective initiative, and applies science and technology to HEM. The development of internet technology has led to the widespread application of BD technology in various fields. Through continuous practical application, BD technology has gradually matured and improved, and many new working methods have been innovated to serve the innovative development of various fields in society (Chantarasombat; Chaiyuth, 2022, p. 35).

The use of scientific and technological tools is essential to the development of modern HEM. HEM may greatly benefit from the capabilities of AI and accurate analysis provided by BD technology. In addition to offering new development paths for HEM work, the use of these BD technologies, for creative research on HEM models, also introduces fresh ideas for changing HEM models, which has a substantial positive impact on increasing the effectiveness of HEM work. Big Data analytics can more accurately predict which admissions channels or selected criteria will yield higher success rates, based on historical data and trends. This can help universities allocate enrollment resources more effectively and improve enrollment efficiency.

Mobilizing students' enthusiasm for learning: Practice is the driving force for development, and innovative research on HEM models, using BD technology, can stimulate



students' enthusiasm for learning. The EM models in universities are different from those in primary and junior high schools. However, students in universities have already matured in physical and mental development, and can choose their favorite professional courses, based on their interests and needs. Schools should establish a reasonable and scientific EM system, provide students with a diversified and specialized curriculum system, create a good learning atmosphere for students and, then, mobilize their enthusiasm for learning, continuously strengthening their comprehensive qualities.

Improving the students' overall quality: the innovation of EM can promote the students' overall development. Using BD technology to innovate research on HEM models can effectively improve students' overall quality. During their university years, students in universities have limited learning tasks and low academic pressure. Students can use a large amount of their spare time to study their interests and hobbies, which not only enriches their learning life. Universities can appropriately organize activities for students to showcase their talents, skills and interests, promoting the development of their interests and hobbies while improving their overall quality and enriching a large amount of spare time for university students. In fields, such as medicine or law, students are usually required to complete a set of prescribed courses and training, which are usually prescribed by professional regulatory bodies or accrediting ones. Regulated majors often have internship and training requirements, with students required to complete a specific number of hours of practice or training in order to qualify.

Improving students' learning efficiency: the development of educational creativity has been tested through multiple practices in its educational management work. The use of BD technology, for innovative research on HEM models, can improve students' learning efficiency. School teachers no longer make learning plans for students. Students need to rely on their own learning goals for self-directed learning. They need to make their learning plans, allocate their own learning time and conduct their learning effectiveness testing, which is an excellent test of students' self-control. Universities can provide students with specific learning plan platforms, based on this demand. Students can flexibly develop learning plans, based on their self-control, concretize the learning plan and improve their learning efficiency.

Improving the efficiency of EM: in the practice of innovative development in EM, utilizing BD technology to conduct innovative research on HEM models can improve the efficiency of HEM. With the development of science and technology, advanced information technologies, such as computer technology, internet technology and AI, have been widely applied in HEM. If various technologies want to collaborate to manage the various work of universities effectively, data sharing among them is necessary. The HEM platform can connect various systems to achieve the transmission and sharing of information and data among the systems and, thus, achieve unified management and supervision of management

work through the HEM platform (Saroia; Gao, 2019, p. 569). However, data is prone to leakage during transmission, so the HEM platform can encrypt the database to ensure the security of various data on campus, improve the efficiency of EM and ensure the data security of the HEM platform.

Complying with the requirements of the times' development: the premise of innovative development in education is to follow the laws of social development. The use of BD technology for innovative research on HEM models can meet the times' requirements. The improvement of the quality of internal EM in universities can promote the development of HE. Therefore, innovating the EM work in universities is a significant measure. Times are constantly evolving, and in order to keep up with the times' development, new technologies are constantly used to carry out innovative research on college EM, so as to guarantee the vitality of college EM and meet the needs of the development of education, meeting the times' changes.

The innovation of HEM models, in the context of the BD era, is an inevitable trend for future sustainable development. It not only meets the requirements of HE development, but also stimulates students' enthusiasm for learning in school. The students' learning efficiency and educational management efficiency are effectively improved, which plays a vital role in promoting their comprehensive development.

### 2.2.2 INNOVATION OF EDUCATIONAL CONCEPTS AND THINKING UNDER BD

In the dialectical view of philosophy, it is said that dialectical negation is the negation of HE itself, which means that HE itself denies its educational management concepts. People would stay up with the times to build new concepts of educational management and find new ideas of educational management, based on the shift in educational management thinking. Prior to implementing BD technology in HEM, innovative educational management theories and practices should be implemented. Thinking sets the course for action and controls how actions turn out. Diverse ways of thinking lead to diverse outcomes. The outcomes are not encouraging if BD technology lacks an appropriate educational concept and thinking direction. Therefore, before using BD technology to innovate the mode of HEM, it is necessary first to reform the old educational management philosophy and thinking, and then, establish the correct educational management thinking concept to promote the efficient and scientific development of educational management work. A positive way of thinking may prompt people to be more willing to try new things and more confident in the face of difficulties, which may lead to more positive results. Conversely, negative thinking can lead to avoidance of new challenges and lower confidence in one's own abilities and opportunities, which can affect outcomes.

Affirming the application value of BD in EM work: through the analysis and research of BD technology, people choose BD technology that has a prominent role in EM work and apply this technology to the practice of HEM work. Gradually, teachers and students in universities have a clear understanding of BD and, then, effectively use it in educational and learning activities, creating a suitable environment for the application of BD technology in EM work.

Guiding educational management personnel to apply BD technology: science and technology correctly are a double-edged sword that can bring convenience to various fields. Still, improper use can also cause massive disasters.

### 2.2.3 TECHNOLOGICAL INNOVATION IN EM MODE

Developing policies for the application of BD: there is a large amount of information about students, teachers, individuals and family members in the database of the school. Once the information is leaked, it poses a threat to the individuals and family members' personal or property safety. Therefore, universities need to develop policies that are in line with the actual application of the school, provide pre-application system explanations for HEM workers and promote greater effectiveness in EM work.

Establishing correct educational management concepts: BD technology is applied where needed to ensure data security and promote the healthy development of EM work. The EM workers' informationization ability and literacy are the foundation of the application of BD technology. Education managers can flexibly apply and efficiently carry out educational management work for school education and teaching activities, based on the characteristics of BD and the students and teachers' needs.

Traditional educational decisions may rely more on experience and intuition. However, the introduction of Big Data has changed this model, making education management more dependent on data analysis and statistics to make more in-depth and scientific decisions.

The use of Big Data makes education management more transparent, and the process and basis of decision-making easier to trace and understand. This also promotes greater accountability, as decisions can be tracked and evaluated more clearly.

Although personalized education is an advantage of Big Data, it is necessary to consider data privacy and ethical issues more deeply when using student data for personalized education. Ensuring the legitimate, transparent and ethical use of data is an important issue in educational management.

### 3 EM SYSTEM

#### 3.1 ESTABLISHING A BD EM SYSTEM FOR UNIVERSITIES

The educational management model must adapt to the development needs of higher education. People can innovate educational management models, based on the laws of educational development, establish advanced awareness of educational management model reform and, then, use advanced awareness to guide the practice of educational management model reform. The difference of this new system is that it places more emphasis on business and data-driven management methods, and pays more attention to university brand building, financial management and compliance with relevant regulations. This commercial management mode may bring great changes to the traditional educational management mode.

Improving the EM system: in the context of BD, EM work should keep up with the times' pace, apply BD technology to update the traditional EM system and enhance the effectiveness of EM in practical work. The traditional EM system has a small range of data information and limited database content, which cannot provide adequate data information for schools. Therefore, universities have changed the traditional EM system, improved the storage and analysis capabilities of the EM system for data, and provided favorable conditions for the application of BD technology in EM work.

Implementing a personalized EM model: every data item, in the EM system, plays an important role (Mazzola, 2022, p. 1). The EM system is unable to assess the pupils' needs by utilizing data sources fully. Instead, to address each student's unique developmental needs, tailored EM programs should be created based on their unique qualities. In order to allow students to learn online, at their own pace, and so improve their learning consciousness, universities should fully integrate instructional content, create online courseware and transmit it to the new EM system.

In modern society, some traditional working modes of educational management may still exist. Students may be reluctant to give feedback directly to teachers or administrators because of fear of authority, social pressure or cultural habits, resulting in poor communication and impaired learning. This may also be an aspect of education management that needs to be improved in order to better embrace students' opinions and feedback, and create a more open communication and learning environment.

Enhancing BD application capabilities: the main target of EM is students. Improving the application ability of BD technology can enhance students' enthusiasm for learning. Due to the powerful storage space and efficient data information processing ability of BD, schools can use BD technology to design a new EM system and effectively store and process university students' information.

The development of EM is progressive, and efficient EM work introduces BD technology with the aim of digitizing educational activities. Establishing a university BD EM system, and applying BD technology and information technology to HEM can not only comprehensively grasp students' learning dynamic information, but also effectively improve the efficiency of EM work, better serve school education and teaching, and promote the overall development of the school. Therefore, it is necessary to establish a university BD education system.

The new university BD EM system was established: students register their information and perform activities, such as studying, making study plans and checking information through this EM system (Lockard; Rankins-Robertson, 2011, p. 23). The EM staff of colleges and universities always pays attention to the students' overall dynamics in the BD EM system and timely improve and deal with students' demands, so as to effectively guarantee the orderly development of students' learning and life.

Through the analysis of student data, personalized education model can better understand each student's learning style and needs, so as to provide customized education programs for different students.

Predictive analysis and intervention can use Big Data analysis to predict the difficulties or challenges that students may face, and intervene in advance, such as providing additional support or resources.

By analyzing large-scale data and innovating teaching methods, we can understand teaching methods and promote innovation in teaching methods and content.

### **3.2 REFINING BD EM WORK**

Backward educational concepts can hinder the progress of educational management work. Because input from teachers and students is how traditional educational management work is done, many students are afraid to voice their ideas or provide feedback, which affects their ability to learn. The communication between typical EM workers and students is transferred through teachers, and learning efficiency is low. Sometimes, information is not communicated clearly, which has an impact on how well and quickly students' requirements are satisfied. However, these issues can be successfully resolved by developing new information-based EM techniques. Traditionally, education emphasized the teachers' authority and the transfer of knowledge, while modern education concepts pay more attention to the student's participation and self-directed learning. This shift will lead teachers to adopt more interactive and hands-on teaching methods, such as group discussions and project-based learning.

For special student groups, schools use AI technology under BD to record and track critical populations, in real-time, in all aspects and timely understand students' situations for processing. In order to address communication issues, the school utilizes real-time communication technology in BD technology to design communication windows and pages in the BD EM system of the university. It allows for communication anytime, anywhere to grasp students' needs and find targeted methods to meet them.

## CONCLUSIONS

The change of educational idea plays an important guiding role in educational practice. By analyzing the disadvantages of traditional edging work, this paper aimed to provide specific suggestions for improving the overall efficiency of current edging work. BD technology is introduced into environmental management work to reform the environmental management system, and indirectly demonstrates the effectiveness of innovative environmental management by improving students' learning efficiency and enthusiasm. BD technology can effectively convert various affairs on campus into data. By analyzing data information, it can master the contents of students' study, life and other aspects, develop personalized management models and provide students with a good learning environment. Big Data technology allows the collection and analysis of data on individual students, including study habits, interests, learning abilities, etc. This provides the possibility of personalized education. Customized teaching plans can be provided, based on the students' needs and characteristics, promoting the development of education in a more personalized and diversified direction.

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