



Maximizing University Talent Potential through Improved Data Collection and Multimedia Management

Huiping Mei¹*

¹Zhejiang Fashion Institute of Technology, Ningbo, 315211, China.

Corresponding author: Huiping Mei, huipingmei278@aol.com

Abstract. In the information society environment, the development of college education bears the important task of talent training. To cultivate talents that meet the social value for the country and society, it is also necessary to constantly mine talents and make data statistics; This paper compares the research and analysis of university talent data collection and management under different conditions of traditional technology and big data multimedia technology; It compares the talent data collection ability of colleges and universities under different technologies and their impact on teaching quality; The paper analyzes the value and coupling degree of different technologies for university management; Through the research, it is found that the talent discovery and training, data collection and management in colleges and universities under the sharing of multimedia information are more excellent and more coupled; In the information environment, using big data and multimedia technology to continuously contribute new technical strength to college teaching and talent training is also a contribution to China's education innovation, the development of high-quality and high-level education management model, and the construction of a more perfect training base for the cradle of training national talents.

Keywords: Multimedia; Big data; Information sharing; Data acquisition and management; Talents in colleges and universities.

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1 OUTLINE OF ENTREPRENEURSHIP EDUCATION

The emergence of computers, artificial intelligence and cloud computing has changed our way of learning, living and working. With the wide application and popularization of the Internet, big data and multimedia information technology are rapidly changing the way people live and learn, and are being used in various fields of society. Talent is the most important resource for social development, and social competition can be said to be talent competition. Enterprises and colleges

are all facing talent competition problems, and they are thinking about how to introduce talents. In the current big data era, data sharing and collection are becoming more and more important. With the arrival of the big data era, data resources are becoming more and more important, and talent sharing platforms and data resources are becoming more and more abundant. The use of big data technology to re-integrate human data collection and human resource management is still mainly in the traditional mode of talent recruitment and management in China, which makes talent resource data collection and management limited, building multimedia-based data collection and management applications can effectively promote the development of shared human resources. At present, the application-oriented talents in colleges and universities are increasingly valued in the contemporary society, and the corresponding demand for application-oriented talents is also increasing. This paper uses multimedia information technology to achieve digital operation and improve the efficiency of talent sharing.

Zhang Yankun (2022) The rapid development of network and computer technology has promoted the maturity and perfection of multimedia information technology. With the in-depth implementation of the new curriculum reform in China, teachers have widely used multimedia information technology in mathematics teaching in middle schools, which not only creates a realistic teaching situation for students with simultaneous sound and image, dynamic and static, but also transforms abstraction into intuition, stimulates students to explore actively, exercises their mathematical thinking, gives full play to their main role in teaching, and further improves the efficiency and quality of mathematics classroom teaching[1]. Fu Chuanchuan (2022) Big data analysis technology provides support for multimedia information processing. Studying the application of big data analysis technology in multimedia information processing is of great significance for promoting technological progress and discovering potential innovation, and most of the technology and innovation are contained in patents [2]. Wei Feng (2022) With the development of multimedia information technology, it plays a more and more important role in teaching. The research role of chemistry also needs the support of information technology. Many learning places need the use of multimedia.

As far as teaching is concerned, multimedia plays a more and more important role [3]. Miao Jun (2022) In the historical context of China's entering a new era of socialism, both economic and social development have entered a new historical period. High speed and high-quality economic development cannot be separated from the support of a large number of talents. Talents can provide assistance for economic and social development, and the human resources provided can provide important support for the building of China's economic power [4]. Li Jindong (2021) Big data technology has strongly promoted the development of social productive forces, and commercial applications are continuously expanding in all walks of life. It also uses the power of Internet technology to provide strong technical support for the development of the entire industry.

In terms of the production of CNC machine tools, due to the use of big data technology, CNC machine tools have been rapidly produced on a large scale, which has played an important role in the upgrading of the entire CNC machine tools and the improvement of quality and efficiency [5]. Zhang Qingyang (2021) Through the objective and fair evaluation of the comprehensive ability of accounting talents cultivated in colleges and universities, on the one hand, it is beneficial to provide direction for cultivating accounting applied talents in colleges and universities, and on the other hand, it can also provide reference for enterprises to select talents. Firstly, this study constructs an evaluation index system for the comprehensive ability of accounting applied talents and selects 15 indicators from three aspects of knowledge level, ability level, and moral level [6]. Yue Liu (2021) Massive amounts of multimedia data (i.e., text, audio, video, graphics and animation) are being generated every day. Conventionally, multimedia data are managed by the platforms maintained by multimedia service providers, which are generally designed using centralized architecture[7]. Niu Jishan(2022)With the complex and changeable external business environment and the accelerated digital transformation of the enterprise, the recognition and expectation of the enterprise on human resources sharing are also constantly improving, which is not only satisfied with the common human resources, centralized management of standardized

business, system integration and process optimization, but also regards human resources sharing as a booster of human resources transformation and change[8].Nie Cuili(2021)On the basis of further improving the level of social and economic development, human resources began to get more attention and favor from companies.

Human resource sharing service is a kind of innovative concept, and is also regarded as a new human resource management model. As an independent operation mode, it naturally plays a very important role for the country and enterprises. On this basis, we can find that human resources are very important in the whole process of social operation, especially for the development of enterprises [9]. Tian Li (2020) With the continuous development of computer Internet technology in China, the informatization level of English education in colleges and universities is getting higher and higher, and the application of multimedia technology is becoming more and more extensive. How to do a good job in the design of English multimedia teaching system has become one of the most important research topics of relevant units [10]. Chen Hu (2022) In the DT era, data has become a powerful evidence and basis for enterprises to implement efficient and accurate management, and scientific and comprehensive data collection is the premise for driving data to play its role [11].

2 THEORETICAL BASIS FOR TALENT RESOURCE SHARING

The word "sharing" first lets us know and apply it to our lives. It is an economic way or means of sharing human resources, such as sharing bicycles and cars, at present, there is a new management mode, called talent resource sharing, which operates in an independent mode. Human resource sharing refers to the introduction of human resources in accordance with the market operation mechanism to provide internal management services for society, enterprises, schools, etc. It is gradually known, accepted and used by the public. Human resources are shared, and their value is also reflected. In order to create higher value, human resource sharing should promote management mode innovation through information and big data AI technology. The innovation of talent resource sharing mode cannot be separated from the establishment of every enterprise and school in the market.

The sharing of information resources and knowledge is a new economy based on the Internet. Knowledge sharing has derived a new concept, namely, talent sharing. Talent sharing is an important resource for the development of economic market and talent management. It can introduce and stabilize talents. It is an innovative way of thinking, attracting and stabilizing talents, so that talent resources can play an important role in social development. Huang Shifeng (2022) talent sharing has attracted wide attention from all walks of life. Especially affected by the COVID-19 epidemic, many enterprises are facing "recruitment difficulties" and "labor shortage"[12]. The talent sharing model can not only effectively alleviate the imbalance between supply and demand in society, but also further promote the efficiency of resource allocation Talents play an important role in gaining the initiative in international competition.

The rational distribution of talents is the strategic resource. It is necessary to reform the talent development system and implement a more active, open and effective talent policy. Talents are now different from the previous unit ownership. They are changed from unit ownership to social ownership. The unit employs people and pays according to their salary, which reduces financial expenditure, it also allows talents to be reasonably arranged and distributed in the society to perform their duties, thus greatly improving work efficiency. It is not just a human resource allocation method to raise troops for a thousand days and employ them for a time. Choosing the best is the best choice for each enterprise. Talent is the first resource. Today, talent sharing is constantly developing under the impetus of the economy, and there is a new trend. The demand for sharing is increasing. In the era of global sharing of human resources and innovation, the competitiveness of the industry does not depend on the number of talents, and it is more

important to be able to use and fully play its role. To deepen the reform of talent development system and mechanism, we should actively explore and build a talent sharing mechanism.

3 THE APPLICATION OF BIG DATA AND MULTIMEDIA IN THE DATA COLLECTION AND MANAGEMENT OF SHARED UNIVERSITY TALENTS

The significance of big data is not the data source itself, but processing the collected data, making it meaningful, building a data sharing platform, and making the data applicable to all places. With the rapid development of big data, data can be converted into economic value, so data collection and management under big data solve many practical problems, such as society, science, education, etc. Talents are the foundation of social economy and the development of major enterprises and colleges. At present, talent sharing is an inevitable trend of social and economic development. The development of talent sharing should not only establish a complete institutional framework, but also have a flexible and efficient operation mode.

The development of talent data collection and management in colleges and universities requires reasonable construction in the legal, political, humanistic and other environments, there is a great demand for application-oriented talents in all aspects and in all positions. Colleges and universities are the bases for training application-oriented talents. Applying big data and multimedia to college talent data collection and management is conducive to solving the shortcomings of sharing talents and improving the mobility of talents in all positions. Big data can fill the gap in data collection and management of applied talents in colleges and universities, and can reasonably build a data collection and management platform. The use of big data in sharing talents can effectively collect data, optimize management applications, thus improving the efficiency of talent selection, which is conducive to moving from talent sharing and management to efficient application-oriented talent governance. Under the background of big data and multimedia, sharing university talent data collection and management has become a development trend.

4 COMPREHENSIVE RESEARCH ON TALENT DATA COLLECTION AND MANAGEMENT IN COLLEGES AND UNIVERSITIES

4.1 Ability Analysis of Talent Data Collection System in Colleges and Universities Under Different Environments

In school education, personnel training and data statistics are a key task. However, there are still many deficiencies in traditional data collection and work due to technical limitations, The accuracy of data analysis and the lack of information collection area cannot meet the needs of the development of education in a modern information society, With the popularization of multimedia and big data technology, the accuracy of data will be more accurate from the Internet environment and the collection of students' daily dynamic data; The following analysis is made by comparing the ability of traditional technology to collect data with that of multimedia technology:

As shown in Table 1, data collection and analysis, data management capability and data monitoring security are compared; It can be seen that the talent data collection ability under the big data multimedia technology is more excellent; It is more convenient for data statistics and processing through the advantages of data analysis of Internet and multimedia technology and the characteristics of cross space and time. In order to see the comparative analysis data more clearly, the data in the table are visualized to get the following figure:

As shown in Figure 1, we can see more specifically the advantages of talent data collection under multimedia technology; In the university area with complex majors and wide teaching environment, first of all, there are great difficulties in data collection, statistics and errors of students. Under the big data and multimedia technology, it is more convenient to collect and

record students' information collection, providing advantages for talent training and management of the school.

Group	Data acquisition	Data analysis	Data management	Data monitoring
Traditional technology	52.14	56.24	51.86	58.47
Multimedia technology	72.36	80.15	78.56	84.79

Table 1: Analysis of data collection capacity of university talents under traditional technology and multimedia technology.

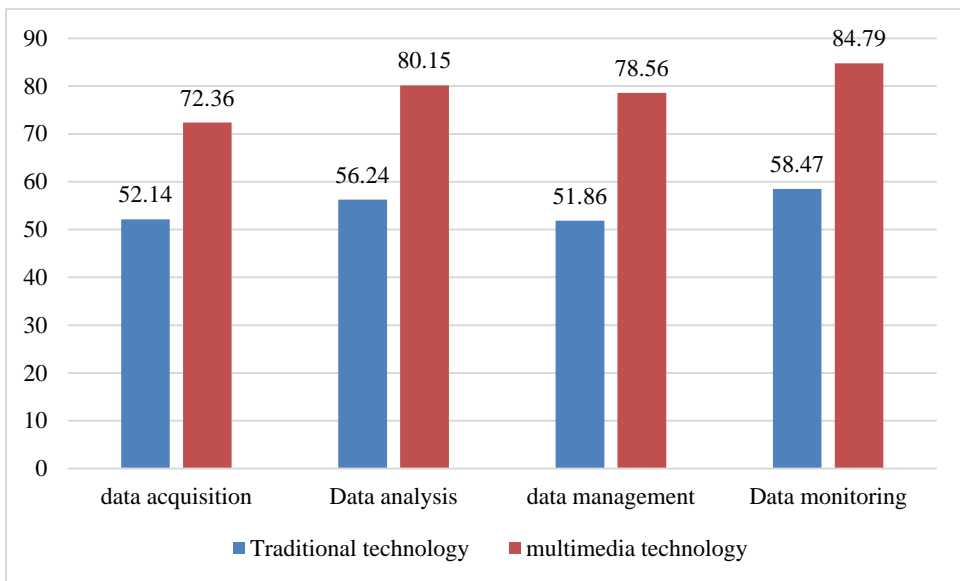


Figure 1: Visualization of college talent data collection ability under different technologies.

4.2 Quality Analysis of Data Collection and Management on Talent Cultivation Under Different Technologies

In university education, both the statistics and management of talent data are aimed at cultivating talents needed by the society and improving the quality of teaching services; The statistics and

analysis of talent data under multimedia technology can not only screen out more excellent talents, reasonably allocate teaching resources, but also directly affect the quality of students' learning. Through data management and monitoring, we can provide more high-quality auxiliary services for the school's teaching methods and curriculum diagnosis, practical teaching analysis, improvement of teachers' education level and professional assessment, In the teaching of diversified personality needs, we should screen out high-quality teaching models that meet the needs of university development; The following table is obtained by comparing the impact of talent data collection and management on teaching quality under traditional technology and multimedia information sharing technology.

Group	Course diagnosis	Practical teaching	Teacher evaluation	Professional assessment
Traditional technology	46.28	52.87	56.32	54.09
Multimedia technology	82.56	76.25	78.56	85.26

Table 2: Impact of talent data collection and management on teaching quality under different technologies.

As shown in Table 2, it can be seen from the table that talent data collection and management under the multimedia information sharing technology have a greater impact on teaching quality and have a better effect on the development of high-quality education. It can improve the teaching mode of professional courses in colleges and universities, and also provide a positive impact on the progress and communication between teachers and students; In order to better understand the impact of different technologies on teaching quality, the data in the table are visualized as follows.

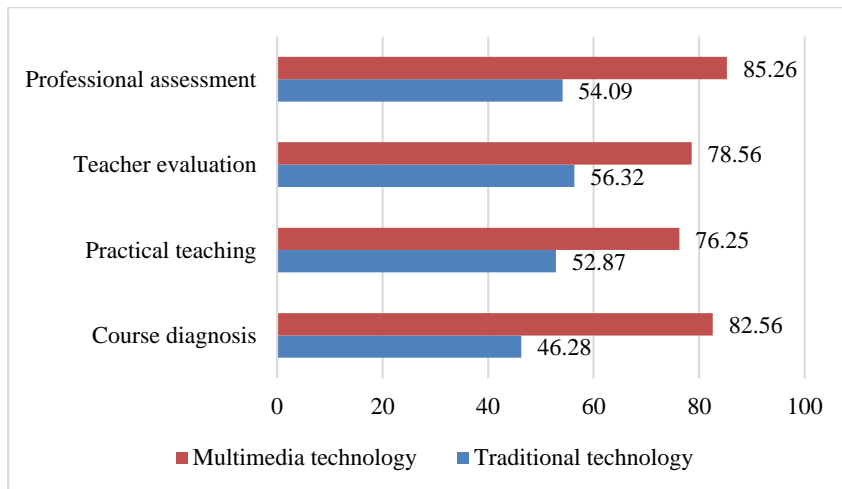


Figure 2: Impact of talent data collection and management on teaching quality under different technologies.

As shown in Figure 2, it is obvious that multimedia sharing technology has a more positive impact on teaching quality; with big data and multimedia technology, it is more convenient to extract feature information from social activities of contemporary college students for statistical collection, the use of multimedia technology also attracts students' initiative to learn independently. Analyzing students' attitudes in teaching can improve the methods of curriculum education and practical education, make it more suitable for different needs, and use the advantages of the Internet to improve teaching quality and development.

4.3 Value Analysis of Talent Data Collection and Management on School Management Under Different Technologies

It is superior to universities and colleges, which are different from basic quality education in that they have less professional subject knowledge and convenient personnel management. Facing a large number of students in colleges and universities; each region has different living environment and customs; in addition, when the information society is exposed to the Internet, there is a diversified demand for future development. Under the numerous professional subjects and complex campus environment of colleges and universities, it also brings many challenges to school management, a good talent data collection and management system also provides more help for supporting school education management. Let's analyze the value of school management by comparing talent data collection and management under different technologies:

Group	Student management	Educational administration management	Teaching resource management	Internal quality monitoring
Traditional technology	50.74	53.26	55.41	49.65
Multimedia technology	82.11	85.36	84.71	88.54

Table 3: Value Analysis of Talent Data Collection and Management on School Management under Different Technologies.

As shown in Table 3, it can be seen from the table that under the analysis of the management of students and educational administration, the management of teaching resources and the internal quality monitoring of the school, the management level under the multimedia information sharing technology is more advantageous and has greater value for the management of the school. In order to understand more clearly, the data in the table can be visualized as follows:

As shown in Figure 3, it can be seen from the figure that the level of school management under multimedia technology is more advantageous, and the management of teacher and student education and teaching resources is more convenient to avoid waste of resources. Under multimedia technology, the transformation and diversification of teaching mode can also be improved through Internet interaction, creating an education management mode that meets the needs of most students. It will play a more auxiliary role in the cultivation of talents in colleges and universities.

4.4 Coupling Degree of University Talent Data Collection and Management Under Different Technologies

Different social environments and developments have different requirements for education and different directions for talent cultivation. In the information society, college education not only needs to cultivate the talents needed by the country, but also should pay attention to the students' desire for different knowledge and the pursuit of art. It should not only cultivate social professionals, but also give play to the students' nature and pursue the characteristics of knowledge and art; Under the multimedia technology, we explore the coupling through the data collection and management mode, and find that compared with the traditional technology, it is more consistent with the university education management mode; It has more coupling degree on the quality and value of talent cultivation; According to the comparative coupling analysis under different technologies, the following table is obtained:

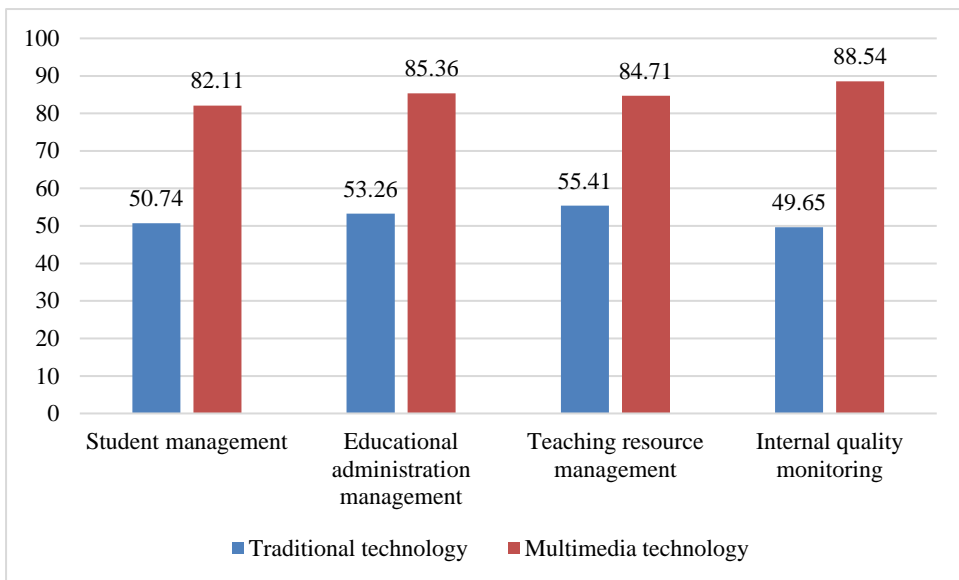


Figure 3: Value analysis of talent data collection and management on school management under different technologies.

As shown in Table 4, the data collection and management of college talents under multimedia technology is more coupling, with a higher degree of coupling, which is more valuable for the talent cultivation and education of students; Where $t < 10.000$; $P < 0.05$. It has statistical significance; The calculation formula of t value needs to be adopted in the research of university talent data collection and management, as shown in formula (1):

$$t_{value} = \frac{\sum_{i=1}^n (x_i - \bar{x}_i)}{\sum_{i=1}^n (x_i - \bar{x})} \quad (1)$$

Group	College talent data collection and management %	
	Before coupling	After coupling
Traditional technology	45.22	52.14
Multimedia technology	56.47	83.45
t	8.282	8.125
P	0.017	0.012

Table 4: Analysis of coupling degree of data collection and management of university talents under different technologies.

Among: t_{value} is the output result of t value; x_i is the i th statistical value in statistical sequence x ; \bar{x}_i is the regression control value, \bar{x} is the arithmetic mean of the statistical sequence x ; In order to more intuitively display the data collection and management of college talents under multimedia technology, the data in Table 4 is visualized to get the following figure:

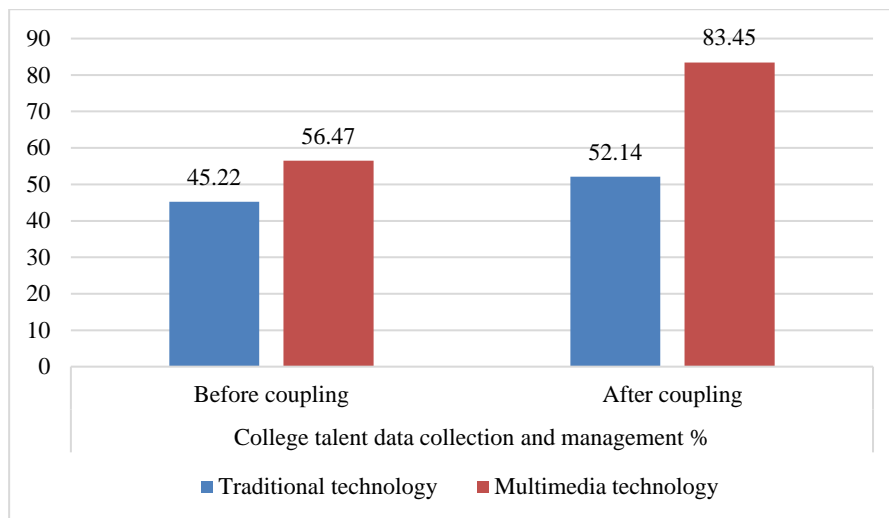


Figure 4: Analysis of coupling degree of university talent data collection and management under different technologies.

As shown in Figure 4, before the use of multimedia information technology, the coupling degree of university talent data collection and management was low, the data of college talent data collection and management under multimedia technology is more coupling. With the development

of the information and multimedia era, students are facing increasing social and network temptations, the school will also encounter more challenges in talent training and reform of education methods. In teaching and management, it needs to constantly innovate talent data collection and management methods that meet the needs of modern education, which can better serve students and schools, and improve the image and value of colleges and universities.

5 DISCUSSIONS

In the economic and social development, big data and artificial intelligence have been widely used in various industries. In the social development of applied talents in colleges and universities, the demand for diversified talents is larger. With the use of advanced science and technology such as artificial intelligence and the Internet of Things, through this study, it is found that the talent discovery, training, data collection and management in colleges and universities under the sharing of multimedia information are more excellent and coupled. It can cultivate talents that meet the social value for the country and society. It also needs to constantly excavate talents and make data statistics to meet the needs of most people's work and social development, play a more active role in promoting the development of the national data economy and harmonious construction, and use big data and multimedia technology to continuously contribute new technical strength to college teaching and talent training, It also provides more technical support and convenience for the data collection and management of various colleges and universities. It also contributes to the innovation of China's education, develops high-quality and high-level education management models, and builds a more perfect training base for the cradle of cultivating national talents.

6 DATA AVAILABILITY

The data underlying the results presented in the study are available within the manuscript.

7 CONFLICTS OF INTEREST

There is no potential conflict of interest in our paper, and all authors have seen the manuscript approved to submit to your journal. We confirm that the content of the manuscript has not been published or submitted for publication elsewhere.

Huiping Mei, <https://orcid.org/0000-0001-6170-9337>

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