



Construction of Information Evaluation System of College Education Management

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Abstract. The construction of teaching management information is very important to the management level and teaching reform and innovation. However, due to external factors, the information construction of university education management has problems such as low utilization rate and lack of unified standards. Colleges and universities should start from the two dimensions of service and management, optimize the existing evaluation index system of teaching management information level, formulate improvement measures according to the development trend of the new curriculum standard, improve the level of education management information, and provide technical support for teaching work.

Keywords: College education management; information development and evaluation system.

1 Introduction

There is a gap between the development of higher education information construction and the information technology update [1]. Building educational information system, exploring high-quality resources and improving infrastructure construction are the key links in the development of higher education. It points out that the construction of the development and evaluation system of university education management information, through the application of information technology and management method, can realize the comprehensive, scientific and quantitative evaluation and monitoring, and promote the refinement, high efficiency and intelligence of university education management [2]. The significance of university education management informatization is shown in Figure 1.

2 Problem Discovery

2.1 The Application Effect Of Big Data Technology is not Good

The new generation of information technology, such as big data and cloud computing, has been rapidly popularized in various industries [3]. However, in the field of

university education management, the application of big data is not satisfactory. Teachers and students have a limited understanding of big data and have an insufficient understanding of its impact. Although some educational managers focus on the efficiency of information processing, they do not make full use of the potential of big data technology. Due to information security considerations, some colleges and universities have not set up education management data management departments, leading to the separation of information education management systems of various departments [4].

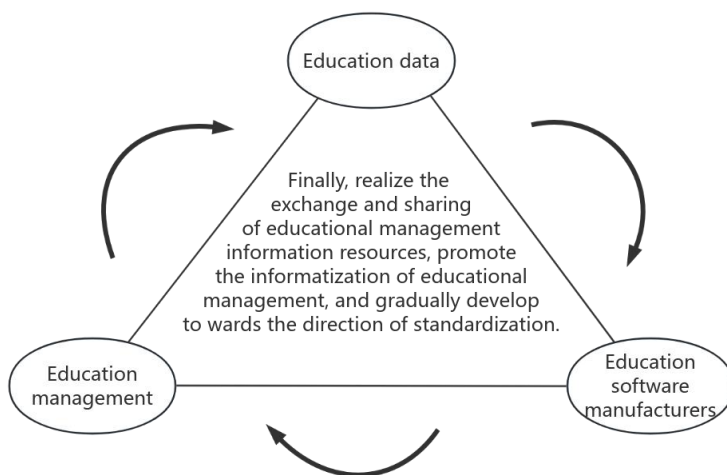


Fig. 1. Significance of informatization of school education management.

2.2 The Standards of Education Management Data are not Uniform

The lack of unified standard of education management data is the key factor that restricts the development of university education informatization. In order to realize the upgrading of education informatization, it is necessary to manage all kinds of data uniformly, and set standards to restrict data types, structure and content, so as to reduce unstructured data and give full play to the advantages of big data technology [5]. However, in practical work, some universities have delegated the authority of data standard management to various departments, which leads to the circulation and sharing of teaching management data.

3 Optimizing Strategy

3.1 Information Technology Infrastructure was Strengthened

The informatization of university education management needs to improve the system to ensure the smooth progress of data sharing and work. We will intensify information-based infrastructure to achieve balanced distribution of resources [6].

Establish a scientific information system, promote information transmission and problem discovery, and simplify information storage and integration. Attach importance to information grouping, build a clear and regular information organization module, to ensure the clear and effective information transmission.

3.2 We will Strengthen the Training of Professional and Technical Personnel

Colleges and universities should train technical personnel and management teams to improve the efficiency and quality of information construction and promote the development of educational management information. Attention should be paid to diversified training methods, to cultivate talents with the ability of data development, mining, storage and analysis, and to meet the needs of information education and management [7]. Organize various training activities, improve the information technology level of management personnel, and hire enterprise information technology personnel to participate in it, and enhance the professionalism of education management information construction in colleges and universities [8].

4 Education Management Information Technology Level Evaluation System

Although there is a macro strategy to improve the education management informatization, the effect of the unified strategy is limited due to the differences between colleges and universities. It is suggested to establish an evaluation system to quantify the factors affecting the information level of educational management and calculate the evaluation results according to this.

4.1 Key Indicator Extraction

The informatization of university education management is composed of three layers of indicators, and there are many factors affecting the level of informatization in the actual teaching. In order to determine the main influencing factors, the researchers explored the key elements based on the policies and systems of the Ministry of Education, drew the "evaluation index system of the informatization level of university education management", and invited experts to correct it, and obtained the real and effective index system, as shown in Table 1.

4.2 Build the Overall Framework of the System

Based on the above evaluation indicators and the specific requirements of the information function of educational management in colleges and universities, an overall framework integrating the data layer, collection and processing layer, evaluation layer and display layer is constructed, as shown in Figure 2.

Table 1. Evaluation index of education management informatization.

Level 1 indicators	Level 2 indicators	Level 3 indicators
Information construction	Management system construction	Campus portal website application Unified certification and portal collection System safety
	Business data construction	Data production management Data production quality
Information services	Business handling services	Business system handling service A table process processing service
	Business query class service	Business system query service One-stop service hall inquiry service
	Data utilization class services	Data utilization category Decision-aid platform utilizes services
	Information technology service requirements	Information technology service requirements Campus portal website information service needs
	Campus portal website application	Information release and update
Information security	Informatization development strategy and support	Annual working program Participation in information meetings Information technology exchange situation Management System
	Information management rules and regulations	Information security code of conduct Information security emergency response mechanism
	Operational guidance	System maintenance System fault handling Information administrator
	Personnel team construction	Information security officer Information research Information training

4.3 Design Key Modules

Data Acquisition Module

This module is the basis and data source of the evaluation system. In order to ensure the accuracy and objectivity of the evaluation results, attention is paid to the design of the data acquisition module. Among them, manual collection mainly targets data not recorded in various department, which requires manual input into the evaluation system, while automatic collection uses software to transmit and update data regularly. The database is used for data persistence, the server handles http requests, supports data modification, deletion, and search, the terminal realizes online interaction, fills in the questionnaire and generates feedback, and saves it to the server.

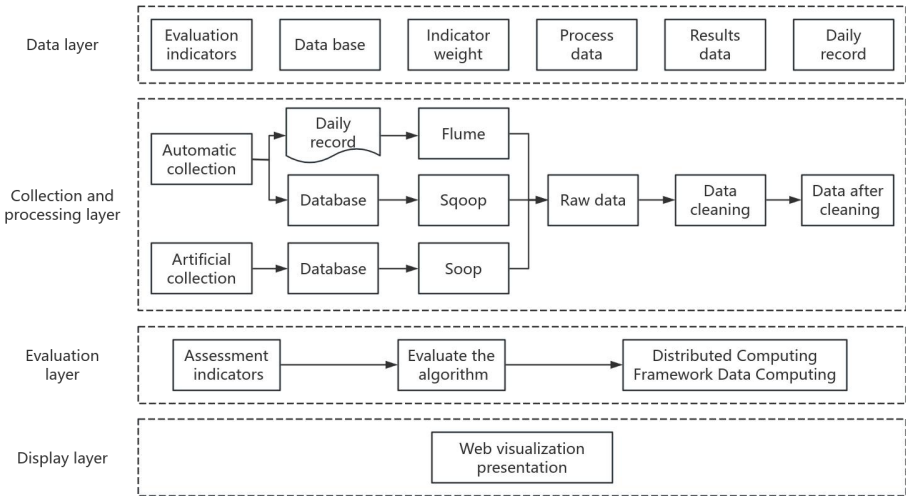


Fig. 2. Overall system framework diagram

Data Cleaning

The built-in automatic data acquisition module has data problems, which may affect the system response and assessment accuracy. To solve this problem, a data cleaning module is introduced to improve the efficiency and accuracy. Data cleaning mainly carries out data inspection and consistency verification to ensure that the data is concise and consistent. Common methods include online and offline processing, choosing offline treatment considering cost and requirements. The data was preprocessed using the MapReduce module of Hadoop, removing incorrect, empty or incomplete data and retaining only compatible data.

Evaluation Module

The evaluation system scores the three-level indicators in Table 1, and adopts different conversion rules according to the indicator types and weights. The higher the proportion of the use frequency of the education management information platform, the greater its impact on the information construction. The researchers used the comprehensive index method, combined with the linear weighted model, to objectively evaluate the informatization level of educational management in our school. Because there is no strong correlation and obvious difference between the indicators at all levels, this model is used to calculate, and the comprehensive evaluation is obtained through formula 1.

$$EDI = \sum_{i=1}^n W_i \left[\sum_{j=1}^m W_{ij} \left(\sum_{k=1}^r W_{ijk} Z_{ijk} \right) \right] \tag{1}$$

EDI represents the information level of education management, *n* is the number of first-level core indicators, *m* is the number of second-level indicators, *r* is the number of three-level indicators, *W_i* represents the weight of class *i* index in the total index,

W_{ij} represents the weight of class i index and the weight of item j index. Z_{ijk} is the value obtained after the k index in the first index of the first index.

Visualize the Output

After the evaluation results are generated, the system will organize the table for the staff to consult. Through chart analysis, the relevant personnel of education management information can find out the weak links and the links that invest too much but do not achieve the expected effect, reallocate resources, improve the utilization efficiency, make up for the short links, and formulate optimization measures.

5 Conclusion

The innovation of information technology brings new opportunities for the education management of universities. The close combination of information technology and education management has greatly improved the management level of colleges and universities and the pace of digital transformation. As the cradle of cultivating high-quality talents, colleges and universities should base themselves on the social needs and keenly grasp the changes of The Times. Use the Internet platform to efficiently integrate student data, promote the quality of education management, and provide more professional talents for social development.

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