

Research on University Education Management Decision-making under the Combination of Experience and Data

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Keywords: Education management, Big data, Mapping-inversion, Data-experience fusion, Decision optimization.

Abstract. To achieve the credible purpose of education and teaching management, it is necessary to conduct education management big data mining from the perspective of multidimensional and complex. From the perspective of the actual needs of college education management, this paper introduces the significance of education management big data mining, puts forward the educational data mapping and experience inversion learning mechanism, and discusses the establishment of education management model based on big data mining. Firstly, the differences between educational data mining and traditional data analysis are analyzed. Secondly, how to find education management and decision-making knowledge from educational data is proposed. Finally, an educational management model based on the integration of experience and data is constructed. Research shows that university education and teaching big data mining is reflected in the multi-dimensional and complex characteristics of information. Moreover, education management decision-making based on fusion analysis of data-experience is a trusted decision-making, and it is also a meaningful study of future education management in colleges and universities.

Introduction

With the continuous deepening of education information construction, the development of modern information technology has put forward new requirements for college education management and decision-making. In fact, university management is a kind of integrated management of data and experience. From the perspective of the status quo and development of university management, it can be found that education plans, educational evaluations, and educational decision-making information reflected in various periods have different levels. Data and empirical characteristics at different angles and in different senses. It is an urgent task for colleges and universities to explore the causal relationship of education management from these large amounts of data and to find an effective education management model. In order to adapt to the reform and innovation of higher education in China, the education management of public security colleges needs new and more effective means to explore various information resources to play its due decision-making potential. Under the guidance of this background, educational OLAP technology, educational data mining and knowledge discovery came into being. It is these three new data analysis technologies based on big data that provide new research methodology and analysis tools for college education decision-making, which can help improve the correctness and timeliness of educational decision-making in colleges and universities, and reduce the risk of decision-making in education management. Based on the research of literature [1-9], this paper introduces the significance, characteristics and functions of educational big data mining from the perspective of practical needs of college education goal decision-making, and proposes a learning mechanism based on data mapping and experience inversion.

The Role of Data Mining in Education Management Decision-making

In the process of education management, education management decision-making plays a more important role. A credible education management decision-making is based on data analysis and factual argumentation, and the credibility of education management decision-making depends on data analysis and the credibility of the factual argument. With the non-equilibrium effect of China's

market economy on the educational competition mechanism, the multi-dimensional, extensive, complex, uncertain and dynamic system characteristics of education management decision-making data become more and more obvious. [1] It shows the state of big data operation. Therefore, the application of big data mining in the field of education management decision-making is the need of benign existence and credible development of the educational management system of colleges and universities. The specific effects are as follows:

Strengthened the Education Management Information Processing Function

Traditional education management decision-making is mainly based on education statistics. Data inquiry based on education statistics is a kind of transaction processing. It is a perceptual education management process, supports formal daily operations, lacks analytical skills from education statistics, and education. Management decision-makers cannot compare and analyze the relevant data of an education and teaching management with the support of a large amount of historical data, and obtain scientific analysis results. Therefore, the multi-dimensionality, extensiveness, uncertainty and dynamics of education management decision-making drive the application of big data mining in its field, thus strengthening the positive energy of education management information processing.[2]

Helps Reduce the Risk of Education Management Decision-making

The multi-dimensional, extensive and dynamic characteristics of education management information bring great uncertainty to education management decision-making. For example, data reflecting internal conditions such as educational goals, education and teaching operation process is called internal information, reflecting the needs of talents in the social field. The data of educational related parties such as knowledge discovery and update is called external information, and the data characteristics of socio-economic factors related to the education system are called environmental information. The uncertainty of these multidimensional data will create the risk of educational management decisions. The key to how to diagnose and control this risk is to reduce uncertainty in education management decisions through multidimensional educational data analysis.

Conducive to Adapt to the Development Requirements of Educational Management Information Intelligence

Different education management objectives have different understanding and understanding of educational data for different educational data. In addition, because education management decision-makers themselves have different degrees of bias and diversity in their understanding of educational data, the data under different educational concepts reflect different meanings. Traditional educational data analysis is only reflected in the formalization of data. With the expansion and enlargement of the field of educational analysis data selection, education management decision-making must have the ability to learn data, that is, intelligent education management decision-making ability. In fact, in the education management decision-making, not only can the known educational data be judged and evaluated, but also the assumptions and predictions of the unknown but necessary educational data can be made. [4]

Management Decision Based on Data mapping and Empirical Inversion

Learning Mechanism of Data Mapping and Empirical Inversion

The so-called education management data mapping is a reflection of the implementation process of various education and teaching management states in education management information. Under the education management data mapping, different education management systems will produce corresponding under different educational decision-making environments and objectives. Educational management rules and models, the rules and patterns in this context are called inversion of educational management experience. In fact, an effective education management decision is determined in the study of data mapping and knowledge inversion.

In the modern education system under the background of scientific management of informationization and decision-making, in order to achieve scientific and effective education decision-making, it is necessary to establish a learning mechanism for education data mapping and knowledge inversion. In fact, one of the main reasons why an education system can operate effectively is to have a complete education decision-making system. This effective education decision-making system realizes education data mapping and knowledge inversion from experience (referred to as mapping and anti-referential the learning process of the performance. The "mapping and inversion" learning mechanism as a model of big data mining can be effectively applied to the decision-making of education management, thus establishing a more practical method of data mining for college education management. At the same time, in the education management big data mining, the ordinary data mining model can also be organically applied to the MAI. [5]

Education Management Decision-making Knowledge Discovery Method

Educational management knowledge discovery can be divided into parametric discovery and model discovery [6]. In the process of establishing and running the MAI model, the education management big data mining has completely become an educational management goal optimization task, that is, from the analysis of educational management data, the data indicators that are most suitable for the realization of college education goals can be found.

The depth of education management big data mining can be roughly divided into two levels. At the shallower level, the query/retrieve of the existing university database management system, the reporting function combined with multi-dimensional analysis and statistical analysis methods are used to conduct so-called online analysis. Process [7] to derive statistical analysis data for educational decision making. At a deeper level, it is required to discover implicitly unknown knowledge of educational decision attributes from educational data at the MAI level. Strictly speaking, online analysis is not in the scope of data mining before and during the development of the new concept of education management data mining. However, in terms of the need for decision support, the two can play a complementary role.

Education Management Optimization Based on Integration of Experience and Data

Basic Ideas and Methods

The current education management data mining and knowledge discovery are basically based on the analysis of educational management data. The analysis process and results are completely dependent on mathematical calculus and knowledge reasoning. From the existing research results, it can be found that education management data mining emphasizes rationality too much. Analysis, which has a phenomenon that deviates from the actual management of education and decision-making [8].

The educational management experience diagnosis process proposed in this paper regards knowledge discovery in education management data mining as an empirical diagnosis process based on MAI learning mechanism. In the process of education management, education management decision-making experience is a non-negligible problem of management. Therefore, in the education management big data mining, the experience diagnosis results in different education management operations must also be included in the education management decision-making system. It is called educational management decision based on the collaboration of empirical diagnosis and data analysis.

From the latest theoretical and practical research of modern education management, a credible education management model is based on the rational and emotional synergy process. Therefore, a credible education management decision should also be based on this rational and perceptual collaborative process.

Integrated Education Management Decision Based on Experience Diagnosis

In fact, collaborative education decision-making based on empirical diagnosis emphasizes the whole process of education management data mining personnel and domain experts participating in education management decision-making. Experts in the field of education are very clear about the problems that need to be solved in the field. In the definition stage of the problem, the education management decision-making experts explain to the data mining personnel that the data mining personnel introduce the technology used in data mining and the types of problem-solving problems to the education management decision-making.

This paper analyzes big data mining from the perspective of education management. In fact, knowledge discovery in the education management database should be more focused on supporting the entire process of knowledge discovery in education management, rather than being limited to one aspect of data mining. Through the specific problems encountered in the actual work of education management decision-making in different periods of the education management system, this paper finds that a large part of the workload of education management decision-making is interaction with various education management data reports. Therefore, when developing an education management big data mining system, special emphasis is placed on the support of education management and database interaction. [9]

The education management decision-making model based on experience diagnosis pays special attention to the support of decision-makers and database interaction. In practice, the education management decision-makers propose a hypothesis model based on the data in the database, and then select relevant data for educational management decision-making knowledge. Excavate and constantly adjust and optimize the data of the model. The entire process is divided into the following steps:

(1) Definition of educational management tasks. In this process, it is necessary to establish exchanges between decision makers and education managers from different perspectives of the education management system to understand exactly what tasks need to be addressed. Educational and educational management tasks are defined to clarify the types of knowledge and related data that need to be discovered.

(2) Education management data discovery. The main contents involved in understanding the education and teaching management tasks are: based on the data structure of the original education management data and the meaning represented by the data, and extract relevant decision data from the education management database.

(3) Education management data cleanup. The education management data of colleges and universities is cleaned up to make it suitable for subsequent data processing. This requires background knowledge of education management, and should also be based on actual tasks to determine the clean-up rules.

(4) Determination of the educational management decision model. An initial education management decision model was selected through analysis of educational management data. Model definition is generally divided into three steps: fusion data extraction (statistical and empirically aware interaction), decision model selection, and selection of trusted decision indicators.

(5) Analysis of education management data. It includes four processing stages: defining the selected education management decision model in detail, determining the type of the model and related data and management attributes; calculating the relevant credible indicators of the model through the calculation of relevant education management data, and obtaining the education of the model. The attribute value is managed; the education management decision model obtained by the test data is tested and evaluated; and the education management decision model is optimized according to the evaluation result.

(6) The output result is generated. The results of education management big data analysis are generally complex and difficult to understand. It is easy to accept the results of management decision analysis in the form of documents or graphs.

The process model is centered on the education management work. Through the analysis of the working methods of the education management decision-makers in the process of data mining, the design of the education management decision-making system is more focused on supporting the whole process of big data mining.

Conclusions

Education management decision-making knowledge discovery based on education management data mining is a learning-based MAI learning process. Big data mining as a knowledge management decision-making knowledge extraction plays a big role in the whole process, but other processing stages for education management the task of making knowledge discovery is also very important. This educational management decision-making process of big data mining describes the relationship between various attributes in education management decision-making, which is very important for designing and implementing educational knowledge systems. At present, most of the research on knowledge discovery in education management database is limited to the research of common data mining methods, which is not conducive to the informationization and optimization of education management decision-making. It should be noted that the decision-making knowledge discovery in the education management database is oriented to practical applications and ultimately serves educational management decisions. This requires a lot of research not only on big data mining methods, but also on the multidimensional characteristics of education management data. In-depth research with experience diagnosis, designing an educational management decision-making model that is suitable for implementation and easy to use, in order to build an educational management decision support system with practical significance and application value.

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