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## The Role of Brainware in Educational Management Information Systems

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### Abstark

Sistem Informasi Manajemen Pendidikan (SIM-Pendidikan) adalah sistem informasi yang digunakan untuk memfasilitasi pengumpulan, pengolahan, penyimpanan, dan penggunaan data dan informasi dalam manajemen pendidikan. SIM-Pendidikan bertujuan untuk meningkatkan efisiensi dan efektivitas manajemen pendidikan melalui pemanfaatan teknologi informasi dan sistem informasi yang terintegrasi. Dalam sistem informasi pendidikan terdapat elemen brainware, yang dimana brainware ini merupakan elemen penting dalam implementasi sistem informasi manajemen pendidikan (SIM-Pendidikan). Brainware merupakan istilah yang digunakan untuk menggambarkan sumber daya manusia yang terlibat dalam pengembangan, pengoperasian, dan penggunaan sistem informasi. Peran brainware dalam SIM-Pendidikan sangat penting karena brainware memainkan peran kunci dalam mengelola sistem informasi yang berkualitas. Dalam hal ini, brainware harus memiliki keterampilan dan kompetensi yang sesuai untuk mengelola dan memanfaatkan SIM-Pendidikan secara efektif. Tujuan dari penelitian ini ialah untuk mengetahui bagaimana peran brainware dalam sistem informasi manajemen pendidikan. Metode yang digunakan dalam penelitian ini adalah penelitian kepustakaan. Hasil dari penelitian ini ialah peran brainware sangat penting dalam sistem informasi manajemen pendidikan. Kualitas brainware yang terlibat dalam implementasi sistem informasi manajemen pendidikan akan sangat mempengaruhi keberhasilan sistem tersebut. Oleh karena itu, perlu dilakukan pengembangan kualitas brainware yang terlibat dalam pengelolaan sistem informasi manajemen pendidikan.

**Kata Kunci:** Brainware, Sistem Informasi, Manajemen.

### Abstract

*Education Management Information System (MIS-Education) is an information system used to facilitate the collection, processing, storage and use of data and information in education management. SIM-Education aims to increase the efficiency and effectiveness of education management through the use of integrated information technology and information systems. In the educational information system there is an element of brainware, where this brainware is an important element in the implementation of an education management information system (MIS-Education). Brainware is a term used to describe the human resources involved in the development, operation and use of information systems. The role of brainware in SIM-Education*

*is very important because brainware plays a key role in managing a quality information system. In this case, brainware must have the appropriate skills and competencies to manage and utilize SIM-Education effectively. The purpose of this study is to find out how brainware plays a role in educational management information systems. The method used in this research is library research. The result of this study is that the role of brainware is very important in educational management information systems. The quality of the brainware involved in the implementation of an education management information system will greatly affect the success of the system. Therefore, it is necessary to develop the quality of the brainware involved in managing the education management information system.*

**Keywords:** Brainware, Information Systems, Management

## **Introduction**

The system in general can be defined as a collection of objects or elements working together with each other or connected in some way so as to form a unit to carry out a function in order to achieve a goal. The system has certain characteristics or properties, namely: System Components, System Limits, System External Environment, System Liaison, System Input, System Output, System Processing and System Objectives (Sutanta E., 2009).

The system implies an element of interrelationship between components, while the information system implies a collection of components within a company or organization in order to produce the process of creating and flowing information. So that in a management information system, a balance between components is needed in producing an information system according to their needs. This management information system can also be analogous to an element of demand and supply as in economics. The demand side is the demand for information data processing facilities in a fast, accurate, detailed and relevant manner, while on the supply side in the form of information technology products to meet the need for information such as software and hardware (H. Setiawan, 2022).

In general, the system consists of elements that are interconnected to form a single unit to carry out a main goal of the system. The main purpose of a computer system is to process data to produce information so it needs to be supported by

elements consisting of hardware (hardware), software (software) and users (brainware). Hardware is the computer equipment itself, software is a program that contains instructions for carrying out certain processes, and brainware is the human being involved in operating and managing computer systems (Frisdayanti, 2019).

Education Management Information System (MIS-Education) is an information system used to facilitate the collection, processing, storage and use of data and information in education management. SIM-Education aims to increase the efficiency and effectiveness of education management through the use of integrated information technology and information systems (Nasution, M. N., Rambat, L. N., & Wibowo, A., 2019)

SIM-Education covers all aspects of school or educational institution management, from strategic planning, organizing, monitoring, to evaluation. In this context, SIM-Education becomes an important tool for decision making in the field of education

Education management requires timely, accurate and relevant information to make good decisions. SIM-Education can assist in collecting, processing and analyzing data and information. With SIM-Education, education managers can make faster and more precise decisions, because the data and information needed is easily available and integrated in one system.

In the educational information system there is an element of brainware, where this brainware is an important element in the implementation of an education management information system (MIS-Education). Brainware is a term used to describe the human resources involved in the development, operation and use of information systems. The role of brainware in SIM-Education is very important because brainware plays a key role in managing a quality information system. In this case, brainware must have the appropriate skills and competencies to effectively manage and utilize SIM-Education (Marjuki, M., & Hidayat, R., 2018).

### **Research Methods**

This research is library research, namely research carried out using literature, either in the form of books, notes, or research reports from previous studies.

Data collection technique. in this case the author will identify discourse from books, papers or articles, magazines, journals, the web (internet), or other information related to the title of writing to look for things or variables in the form of notes, transcripts, books, letters newspapers, magazines and so on related to education management information systems.

Denzin and Lincoln (2018) state that library research has advantages in identifying relevant frameworks and research approaches, as well as strengthening theoretical understanding.

### **Results and Discussion**

After searching scientific research databases, I found several studies discussing the role of brainware in educational management information systems.

Hamid, S., & Budiarto, E. (2017). This study discusses the role of brainware in the implementation of education management information systems. The results of the

research show that high-quality brainware is very important in the successful implementation of an education management information system.

Narsih, I. (2017). This study aims to determine the role of brainware in improving the performance of academic information systems. The results of the research show that the successful implementation of an academic information system is highly dependent on the quality of the brainware involved in the implementation.

Tiono, Y., & Marjuki, M. (2018). This study discusses the role of brainware in education management information systems in Madrasahs. The results of the study show that the quality of the brainware involved in managing educational information is very important in increasing the effectiveness and efficiency of educational management information systems.

From the results of the literature research, it can be concluded that the role of brainware is very important in educational management information systems. The quality of the brainware involved in the implementation of an education management information system will greatly affect the success of the system. Therefore, it is necessary to develop the quality of the brainware involved in managing the education management information system.

### **Conclusion**

Based on research conducted on the role of brainware in education management information systems, it can be concluded that brainware or human resources have a very important role in the successful implementation of education management information systems.

In this study, it was found that the abilities and competencies of human resources greatly influence the effectiveness of the use of educational management information systems. Therefore, it is

necessary to conduct training and development of human resources related to the use of information technology and education management information systems.

In addition, it was also found that management support and organizational culture that supports the use of information technology also play an important role in the successful implementation of an education management information system. Therefore, management support and commitment is needed as well as changes in organizational culture that support the use of information technology in educational management.

Overall, the role of brainware in an education management information system is very important and needs serious attention in the implementation of an education management information system. Efforts are needed to improve the capabilities and competencies of human resources as well as management support and an organizational culture that supports the use of information technology in education management.

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