

## THE CHANGE IN EDUCATIONAL MANAGEMENT DUE TO INFORMATION TECHNOLOGY

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### Abstract

This extensive analysis of the literature delves into the various aspects of optimizing the role of information technology in the transformation of educational management. Examining how life is interconnected from the beginning to the end and how the expanding area of information technology might inspire a new way of living, this study summarizes the literature, highlights trends, and provides guidance for academics, educators, and policy makers. The need to understand how technology may replace human labor in the field of education by automating tasks or processes is the driving force behind this investigation. enhancing the human role by giving instructions, assignments, or procedures. altering or restructuring a job or procedure. Several topics are covered in this examination, beginning with the idea of.

**Keywords:** Role, Information Technology, Educational Management Transformation

### INTRODUCTION

The education system in Indonesia is massive, spread out and complex, making transformation efforts a challenge. By considering its national context, Indonesia has made the right choice in the form of using technological tools to encourage policy implementation. With society relying heavily on smartphones, a mobile phone-based approach was chosen to ensure broad accessibility. This is also complemented by a laptop distribution initiative to strengthen school information and communications technology (ICT) infrastructure.

Following a user-centered philosophy, the technology ecosystem solutions built by the Ministry of Education and Culture place the needs of end users at the core of every workflow. These tools not only support policy implementation but also fill the gap between the policy framework and the needs of target users, thereby increasing efficiency, flexibility and ease of use. These technology products are known and recognized because of their intrinsic advantages, not simply because they are required by the government (Peterson, A : 2023).

Just like education reform, the use of the technology ecosystem is also an interesting transformation to be analyzed in more depth. Technological devices only solve temporary barriers. Collaboration, continuous development, and putting end users at the core indicate an internal transformation in the Ministry that is changing the way it works to be more open and adaptive.

The development of science and technology is increasingly rapid and developing in accordance with the times and the demands of society. Therefore, it can make humans develop in their environment. The use of science and technology can develop through the learning process carried out by teachers and in collaboration with school principals and the community for success and for the creation of people who are qualified in information and technology. The development of knowledge and technology can improve the quality of education and can improve the quality of education, as well as making humans more able to access knowledge, especially in the field of religion because increasingly advanced science and technology must be influenced by religion. Because religion is the key to all fields, despite the height and development of science and technology, if it is not accompanied by religion, it will have a negative impact on human life in the future. Education also influences science and technology and also utilizes existing knowledge (Harningsih, 2005).

Developing information technology can spur a new way of human life, from the start of life to the end of life. This kind of life is called e-life, meaning human life that has been influenced by various electronic needs. Nowadays, there is a lot of electronics with various letters starting with e, for example eeducation, e-commerce, e-library, egovernment, e-journal, e-laboratory, emedicine, e-biodiversity, and so on which are based on electronics (Simarmata, et al., 2022).

Education today must be open-minded and able to meet the needs of society and make those needs improve the prosperity of human life. There is also the impact of information and technology on this world, namely globalization, westernization, and liberalization, capitalism. All of this can support success in education. Therefore, there must be an information system that is part of a business entity that continues to change and presents new challenges from time to time. An organization cannot survive for long if there is no information and the use of technology to manage large amounts of data and provide a lot of information for learning or working in a disciplined manner.

## **RESEARCH METHOD**

A methodical and thorough approach is taken in the literature review on "The Role of Information Technology in the Transformation of Educational Management" in order to find and examine pertinent scientific publications. The first step is to precisely outline the research's focus, which should be on the application of information technology to education and how it is changing school administration. This distinction aids in defining the parameters for the review's subsequent phase. (Radha Krishna et al., 2019).

A thorough literature search was conducted across various academic databases, scientific journals, and leading repositories. Using keywords such as "role," "information technology," "transformation," and "educational management," the

search aimed to identify academic sources, scholarly articles, and peer-reviewed books that addressed the research focus. Inclusion and exclusion criteria were established to ensure literature selection aligned with research objectives, with non-academic sources and unrelated material excluded to maintain scientific rigor (Spezi et al., 2017). After identifying potential sources, relevant data, concepts and findings were systematically extracted from each selected publication. Key themes related to the role of information technology, transformation, and educational management were identified and catalogued. This data extraction process facilitates a comprehensive understanding of the diverse perspectives presented in the literature.

The extracted data was then organized into thematic categories to provide a structured presentation of the literature review. This categorization aims to identify common threads, different points of view, and gaps in the existing body of knowledge, thereby contributing to creating a coherent narrative that follows the logical flow of the research objectives (Bandara et al., 2015). Each selected source undergoes critical analysis, evaluating its credibility, methodology, and theoretical framework used. This process involves assessing the strengths and limitations of each publication, acknowledging conflicting viewpoints, and contextualizing differing perspectives within the broader narrative.

The final stage involves synthesis of the extracted data and critical analysis into a cohesive narrative. This literature review is structured to provide a comprehensive exploration of the concept of educational management, emphasizing its role in maintaining identity. This synthesis aims to offer insights, draw connections between various sources, and present a comprehensive understanding of the topic, contributing to the ongoing discourse regarding the role of information technology in the transformation of educational management.

## **RESULT AND DISCUSSION**

### **Education Management Concept**

#### Comprehending Education

The term "education" is associated with the broad role of preserving and enhancing the existence of a new society (the younger generation) in order for it to meet its obligations and responsibilities to society, according to Professor Rehey in the book "Planning for teaching an Introduction to education." Thus, education encompasses more than just what happens in a classroom. One social activity that is crucial to the functioning of a complex society is education.

According to Prof. Lodge in the book "Philosophy of Education" "Education in the broad sense of all experiences can be said to be education. In a narrower sense "Education" is limited to certain functions in society which consist of submitting customs and social background, the community's outlook on life to members of the next generation of society and so on.

Republic of Indonesia Law Number 20 of 2003 concerning the National Education System defines education as a deliberate, planned effort to create a learning atmosphere in the learning process so that students actively develop their potential to have the intelligence, noble character, self-control, personality, and religious and spiritual strength that they will need for themselves, their society, their nation, and their state.  
(Article 1 paragraph 1).

### Understanding Management

The Latin words *manus*, which means hand, and *ager*, which means to do, are the sources of the English word management. The verb *manegere*, which meaning to handle, is created by combining these terms. When translating *manegere* into English, it means to manage with the term management. Manager for those who perform managerial tasks. Ultimately, it was rendered as management or administration when translated into Indonesian. The Experts' Definition of Management:

Management defined by Koontz is a productive art that is based on an understanding of science. Koontz added that science and art are not contradictory, but each complement each other. Meanwhile, according to Oey Liang Lee, the meaning of management is the science and art of planning, organizing, arranging, directing and controlling (supervising) company resources in order to achieve the goals or objectives that have been decided.

### Understanding Educational Management

A subfield of social science called educational management focuses on the study of human behavior, both as subjects and objects. According to philosophy, interactions between people, systems, and organizational setting shape human conduct. The external environment is likewise impacted by these three relationships, both separately and collectively.

According to H.A.R. Tilaar, educational management is the process of coordinating all available resources for education in order to meet predetermined learning objectives. By employing all suitable and available human and material resources to accomplish the predetermined educational goals in an effective and efficient manner, Djam'an Satori offers a concept of educational management as a collaborative process. In order to accomplish predetermined educational goals more effectively and efficiently, Sulistyorini defines educational management as an action or sequence of actions taken in the form of a process of managing the cooperative efforts of a group of people who are members of an educational organization.

Based on the aforementioned definitions of education and management, we can characterize educational management as the process of organizing, planning, carrying out, and overseeing the management of resources, including people, money,

materials, machines, markets, minutes, and information, in order to accomplish predetermined objectives. both successful and productive in the field of teaching.

#### Scope of Education Management

The scope of educational management is divided into three groups, namely: According to Work Areas, According to Objects of Work, and According to Activity Functions.

- a. According to the work area, the scope includes: Management of the entire country, management of one province, management of one work unit, and class management.
- b. According to the object of development, the scope includes: student management, education personnel management, facilities and infrastructure management, education administration management, financing management and public relations management.
- c. According to the Activity Function, the scope includes: Planning, organizing, directing, coordinating, communicating, supervising or evaluating.

#### **The role of information technology in education**

Nowadays, Information and Communication Technology is developing rapidly according to geometric progression. For this reason, scholars agree on the argument that information makes human life easier without having to lose humanity. Humans cannot be separated from education, which is actually also an information activity, even scientific and technological information can be disseminated to the next generation of a nation with education (Wasi'ul Maghfiroh, 2020). Humans can continue to communicate without using information technology, which has become a necessity for every human being to maintain communication and relationships with other humans, especially family and closest relatives. Humans as connoisseurs of communication media must also be wise in using these media. Don't let the existence of communication media that makes it easier for them to establish long-distance relationships, then make them even more lazy to interact with the outside world and communicate with other humans directly.

The very rapid and continuous development of science and technology has brought changes in the pattern of human life, from the end of the 20th century until now, for this reason humanity must be able to resist the influences that have an impact on human life. According to B, Uno, 2010. States that education has a trend in the future seen from:

1. There is rapid progress in the field of education with the help of technology and information
2. There is a use of language that is far from traditional words and uses everyday language

From this it is known that the role of information technology is quite large in education, especially in the learning process. This is reinforced by the phenomenon of the spread of the Covid 19 virus which hit the world at the beginning of 2020. Learning which is usually carried out in educational institutions such as schools, campuses and non-formal educational institutions has been shifted to online learning (on the network). Since this incident, information technology has developed rapidly, learning media has been used massively by almost all corners of the world.

### **Transformation Of Educational Management Through Information Technology**

Educational transformation is driven by various rapidly developing technologies. The following are several technologies that can be utilized in educational transformation (Anshori, (2017); Maksum & Fitria (2021); Nugraha, Baidi, & Bakri (2021); Putri et al (2021); Lamuri, & Laki (2022)):

1. Digital Learning
  - a. Online Learning Platform: Provides access to study materials, interactive quizzes, and other learning resources online.
  - b. Distance Education: Using video conferencing technology and online platforms to deliver learning virtually.
2. Virtual Reality (VR) and Augmented Reality (AR)
  - a. Interactive Learning Experience: Provides an immersive learning experience through 3D simulations and visualization.
  - b. Virtual Tour: Allows students to visit important places or access hard-to-reach virtual environments.
3. Data Analysis and Machine Learning
  - a. Predictive Analytics: Analyze student data to predict academic success and provide appropriate support.
  - b. Personalization of Learning: Using machine learning to customize curriculum and learning methods according to individual needs.
4. Internet of Things (IoT)
  - a. Health Monitoring: Using sensors to monitor student attendance, room temperature, or air quality in the school environment.
  - b. Smart Equipment: Connect smart devices to improve facility and resource management efficiency.
5. Blockchain
  - a. Decentralized Academic Records: Storing academic records on the blockchain to increase data security and reliability.
  - b. Credential Verification: Facilitates easy and secure verification of credentials and certifications.
6. Learning Management System (LMS)

- a. Material and Assignment Management: Provides a centralized platform for distribution of learning materials, assignments, and feedback.
  - b. Online Collaboration: Encourages collaboration between students and teachers through forums, online discussions, and joint projects.
7. Artificial Intelligence (AI) Technology
- a. AI Tutor: Provides personalized learning assistance through AI tutors who can customize learning materials.
  - b. Cheating Detection: Using AI to detect cheating in online exams.
8. Mobile Learning (M-Learning)
- a. Educational Apps: Encourage learning through mobile devices with engaging and engaging apps.
  - b. Responsive Learning Content: Tailor learning content to user devices and preferences
9. Educational Robotics
- a. Robot Teacher: Assists in student learning and interaction by providing explanations or guiding in practical activities.
  - b. Robotics Program: Teaches programming skills and science concepts through robotics-based learning.
10. School Information Management System (School SIM)
- a. Data Integration: Provides a centralized platform to store, manage, and access student, teacher, and staff data.
  - b. Automatic Reporting: Makes it easier to create reports and analyze data to support decision making.

Utilizing this technology is not just a tool, but is also the key to increasing the effectiveness, accessibility and overall quality of education in today's digital era.

## **CONCLUSION**

Technology and information are resources that a company or educational institution must have which can support the success of an institution and can increase profits for the company. Technology and information is data that is processed and can be useful for human life in general and has an influence on the success and achievement of competencies and profits for the company.

Several technologies that can be utilized in educational transformation include: 1) Digital learning; 2) Virtual Reality (VR) and Augmented Reality (AR); 3) Data analysis and Machine Learning; 4) Internet of Things (IoT); 5) Blockchain; 6) Learning Management System (LMS); 7) Artificial Intelligence (AI) Technology; 8) Mobile Learning (M-Learning); 9) Educational Robotics; 10) School Information Management System (School SIM).

Humans can continue to communicate without using information technology, which has become a necessity for every human being to maintain communication and

relationships with other humans, especially family and closest relatives. Humans as connoisseurs of communication media must also be wise in using these media. Don't let the existence of communication media that makes it easier for them to establish long-distance relationships, then make them even more lazy to interact with the outside world and communicate with other people directly.

## REFERENCES

- A. F. Stoner James, D. (1996). *Manajemen*, Edisi Indonesia. Jakarta: PT. Prenhallindo
- Anshori, S. (2017). Pemanfaatan TIK sebagai sumber dan media pembelajaran di sekolah. *Civic-Culture: Jurnal Ilmu Pendidikan PKn dan Sosial Budaya*, 1(1).
- Appley A, Lawrence dan Lee, Oey Liang. 2010. *Pengantar Manajemen*. Jakarta: Salemba Empat.
- Bandara, W., Furtmueller, E., Gorbacheva, E., Miskon, S., & Beekhuyzen, J. (2015). Achieving rigor in literature reviews: Insights from qualitative data analysis and tool-support. *Communications of the Association for Information Systems*, 37(1), 8.
- B. Uno, H. (2010). *Teknologi Komunikasi Dan Informasi Pembelajaran*, Jakarta: Bumi Aksara
- H.A.R. Tilaar. 2002. *Membenahi Pendidikan Nasional*. Jakarta: PT. Rineka Cipta
- Hariningsih, S. (2015), *Teknologi Informasi*. Yogyakarta: Graha Ilmu.
- Koontz, Harold, Ceryl O' Donnell, 1989. *Manajemen*. Jakarta: Penerbit Erlangga.
- Lamuri, A. B., & Laki, R. (2022). Transformasi pendidikan dalam pengembangan sumber daya manusia yang berkarakter di era disrupsi. *Guru Tua: Jurnal Pendidikan dan Pembelajaran*, 5(2), 21-30.
- Made Pidarta. 1999. *Manajemen Pendidikan*. Jakarta: PT. Bina Aksara.
- Maksum, A., & Fitria, H. (2021, April). Transformasi dan Digitalisasi Pendidikan Dimasa Pandemi. In *PROSIDING SEMINAR NASIONAL PROGRAM PASCASARJANA UNIVERSITAS PGRI PALEMBANG*.
- Mary Parker Follet, 2005. *Manajemen*. Jakarta: Indeks.
- Munawar, Z., Herdiana, Y., Suharya, Y., & Putri, N. I. (2021). Pemanfaatan Teknologi Digital Di Masa Pandemi Covid-19. *TEMATIK*, 8(2), 160-175.
- Nugraha, G. A., Baidi, B., & Bakri, S. (2021). Transformasi manajemen fasilitas Pendidikan pada era disrupsi teknologi. *Jurnal Ilmiah Ekonomi Islam*, 7(2), 860-868.
- Peterson, A. (2023). *Education Transformation in British Columbia*. Center for Universal Education at Brookings.
- Radha Krishna, L. K., Renganathan, Y., Tay, K. T., Tan, B. J. X., Chong, J. Y., Ching, A. H., ... & Toh, Y. P. (2019). educational roles as a continuum of mentoring's role in
- Simarmata, J., Chaerul, M., Mukti, R. C., Purba, D. W., Tamrin, A. F., Jamaludin, Suhelayanti, Watrighthos, R., Sahabuddin, A. A., Meganingratna, A. (2020). *Teknologi Informasi; Aplikasi dan Penerapannya*. Yayasan Kita Menulis.
- Shrode, William. A and Dan Voich, Jr. 1974. *Organization and Management: Basic System Concepts*. Malaysia: Irwin Book.
- Siagian Sondang. 2015. *Manajemen Sumber Daya Manusia*. Jakarta: PT. Bumi Aksara.

- Spezi, V., Wakeling, S., Pinfield, S., Creaser, C., Fry, J., & Willett, P. (2017). pen-access mega-journals: The future of scholarly communication or academic dumping ground? *Review. ournal of Documentation*, 73(2), 263-283.
- Sulistyorini, 2001. Hubungan antara Keterampilan Manajerial Kepala Sekolah dan Iklim Organisasi dengan Kinerja Guru. *Ilmu Pendidikan*: 28 (1). 62-70.
- Terry, G.R. 2006. *Prinsip-Prinsip Manajemen*. Jakarta: Penerbit Bumi. Aksara
- Undang-undang RI Nomor 20 tahun 2003 tentang Sisdiknas.
- Wasi'ul Maghfiroh (2020). Dampak Teknologi Informasi (IT) terhadap dunia Pendidikan.  
*Prosiding Pascasarjana IAIN Kediri*
- Wilson. 2012. *Manajemen Sumber Daya Manusia*. Jakarta: Erlangga