



## Comparative Analysis of Management System Information Systems in E-learning: A Study of Indonesia and Untied States

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### ABSTRACT

This study compares the implementation and effectiveness of Management Information Systems (MIS) in e-learning between Indonesia and the United States, aiming to identify unique challenges and opportunities in each country.

A qualitative approach, including a systematic review of academic literature and industry publications, was used to conduct a comparative analysis of e-learning MIS in both countries.

The United States benefits from advanced technological infrastructure and high digital literacy, facilitating effective MIS implementation in e-learning. Indonesia, while facing challenges like limited internet connectivity and varying digital literacy, is making progress through initiatives like Rumah Belajar and Google Classroom.

This study highlights best practices from the U.S. and adaptive strategies from Indonesia, offering valuable insights for improving e-learning systems globally. It emphasizes the importance of collaboration and knowledge sharing to overcome infrastructural barriers and enhance digital literacy in developing nations.

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## INTRODUCTION

Education is a part of important things in our life. Education start with kindergarten, elementary school, junior high school, high school, and universities. We lived in modern technology and we realized all of the things that we do in this life mostly using a “technology”.

Management information system (MIS) is part of the technology, and now MIS is a part of education also known as electronic learning (E-Learning). Electronic learning or E-learning is digital resources and technologies to facilitate the education and training. There are so many E-learning like University online classes, virtual classrooms, online courses, digital collaboration and assessment tools.

E-learning is one of function from learning management systems (LMS), the systems can be literature review, organizational capabilities and it can be effectively implementing e-learning system. MIS in education can be a part of integral tool for managing, delivering, enhancing educational services, and help students for studying.

This journal will aims about the different and comparative analysis of the implementation and effectiveness of MIS in E-learning between two countries: Indonesia and the United States. By the examining these two diverse educational environments, the study seeks to uncover the unique challenges and the opportunities each country faces in integrating MIS with E-learning.

As far as we know Indonesia has challenge with the implementation of E-learning MIS systems. Limited internet connectivity, and diverse socio-economic backgrounds. In the United States, they had characterized by advanced technological infrastructure and widespread digital literacy, enabling robust and the scalable e-learning platforms. United States has well-established learning management systems for example, canvas and blackboard, which is can offer comprehensive features for online education, including the real time analytics, personalized learning paths and extensive integration with other educational tools.

This comparative analysis of the management informations systems (MIS) in e-learning between Indonesia and the United States. This research will be identify the unique challenges and opportunities in each country.

## LITERATURE REVIEW

### MIS and E-learning

E-learning or electronic learning is conceptualized with different ways by different individuals, it's because people have different lenses when viewing a phenomenon (Rose, Abdon, Narayan in journal Review pn the use eLearning in teacher education during the coronavirus disease (COVID-19) pandemic in Africa). Implementation of E-learning in education has been favourable in multiple contexts. Studies has presented several advantages associated by the implementation of e-learning technologies into university education (Raspopovic et al., 2017 in Alaa Zuhir Al Rawashdeh Journal). The definition of Management Information System (MIS) is basically concerned with the process of collecting, processing storing and transmitting relevant information to support the management operations in any organizations. (Ajayi and Omiri, Fadekemi 2007 in Yaser Hasan Salem Al-Mamary Journal).

E-learning and Management Information System (MIS) had become integral to modern education. E-learning use digital tools and resources to facilitate learning, while MIS helps manage and enhance these educational services. Since studies emphasize are growing to importance of these technologies in education, particularly in response to the COVID-19 pandemic, which accelerated their adoption (Rajhans et al., 2020).

The COVID-19 pandemic accelerated the adoption of e-learning globally, emphasizing the need for robust MIS to support virtual education (Rajhans et al., 2020; Chung et al., 2020). In United States, platform like Canvas and Blackboard are widely used due to their comprehensive features, including real-time analytics and personalized learning paths.

### **Implementation of MIS in United States**

The implementation of MIS in United States well-established infrastructure for E-learning, and it's supported by advanced technology and widespread digital literacy. United States has extensively integrated MIS into educational institutions. For instance, Blackboard and Canvas are widely used LMS that provide comprehensive features for online education. These platforms support real-time analytics, which help educators monitor student performance and engagement effectively.

### **Implementations of MIS in Indonesia**

Indonesia presents a contrasting scenario where the implementation of MIS in E-learning is still evolving. Indonesia faces challenges such as limited internet connectivity, diverse socio-economical backgrounds, and varying levels of digital literacy. Despite these hurdles, there are efforts to enhance E-learning through platforms like Rumah Belajar and Google Classroom. However, these systems often lack the advanced features found in their U.S/ counterparts, such as real-time analytics and extensive integration capabilities.

## **METHOD**

This study used a qualitative method to explore the differences in Management Information System (MIS) for E-learning between Indonesia and United States. The data collection process includes a systematic review of existing literature, such as academic journals, industry publications, etc related to E-learning MIS in both countries. A comparative analysis will then be conducted to highlight the differences and similarities between Indonesia and United States.

The method of comprehensive understanding of how MIS in E-learning is implemented and operates in different contexts, focusing on qualitative data from literature reviews. We using literature review to get the analysis of E-learning in MIS between Indonesia and United States.

The comparative analysis focuses on key themes, including technological infrastructure, digital literacy, and user satisfaction. This approach helps in understanding how MIS in e-learning operates and the unique challenge and opportunities each country faces.

## **RESULT AND DISCUSSION**

### **In United States**

#### **The United States benefits**

1. United States has a highly developed technological infrastructure. Supports the implementation of MIS in E-learning.
2. United States has high levels of digital literacy among students and educators facilitate the effective use of E-learning MIS.
3. United States has personalized learning paths and extensive integration with other educational tools enable for educators to adjust their teaching methods to individual student needs. Training and support for using these systems are available, and has facilities with adoption and effective uses.
4. In United States the students enjoy the e-learning experience due to high digital literacy levels and easy to access to technological resources.

#### **For Educators:**

Educators in the United States benefit significantly from the country's advanced MIS infrastructure. Systems such as Canvas and Blackboard are integral to the educational

framework, offering great features that support teaching and administrative tasks. These platforms provide real-time analytics, enabling educators to monitor student performance continuously and adjust their teaching strategies accordingly. The availability of personalized learning paths is a critical feature, allowing teachers to customize learning experiences based on individual student needs. This level of customization supports differentiated instruction, where teachers can offer tailored content and assessment that align with each student's learning style and pace.

Furthermore, extensive integration with other educational tools enhances the functionality of these systems. For instance, integration with Google Workspace, Microsoft Teams, and various educational apps provides a seamless experience for both educators and students. These integrations facilitate collaborative projects, streamline communication, and enable efficient management of educational resources. Training and professional development programs are widely available to help educators maximize the potential of these systems. Institutions often provide ongoing support and resources to ensure that teachers are proficient in using these technologies, which enhances the overall quality of education.

#### **For Students:**

Students in the United States experience a highly interactive and personalized E-learning environment. The advanced features of LMS platforms like Canvas and Blackboard support engaging and individualized learning experiences. Real-time feedback and analytics allow students to track their progress and understand their strengths and weaknesses. This immediate insight enables students to take a proactive role in their education, seeking additional help or resources as needed.

The integration of various educational tools within these platforms further enriches the learning experience. Tools for digital collaboration, such as shared documents and virtual breakout rooms, foster a sense of community and collaboration among students. Additionally, the use of interactive multimedia content, such as video, simulations, and gamified learning modules, makes learning more engaging and effective. The high level of digital literacy among students in the U.S. means they are generally well-prepared to navigate these technologies, which enhances their learning outcomes.

#### **In Indonesia**

1. Indonesia faces challenges with technological infrastructure, limited internet connectivity, etc.
2. Indonesia has digital literacy varies widely, with significant disparities between urban and rural areas.
3. Indonesia has training and support for using these systems are less frequent, leading to varied levels of proficiency among educators. The government initiatives to make improve digital literacy and provide more resources and support to educators.
4. In Indonesia some students has less experience with consistent E-learning environment because the infrastructural limitations and socio-economic disparities.

#### **For Educators:**

In Indonesia, the implementation of MIS in e-learning presents several challenges. The country's infrastructure is less developed, with significant disparities in internet connectivity, particularly between urban and rural areas. Educators often face difficulties in accessing reliable internet, which impacts their ability to utilize advanced LMS features

effectively. Commonly used platforms like Rumah Belajar and Google Classroom offer basic functionalities but lack the advanced features found in systems like Canvas and Blackboard. These limitations hinder educators ability to provide personalized learning paths and integrate additional educational tools seamlessly.

Despite these challenges, efforts are being made to improve the situation. The Indonesian government has launched various initiatives to enhance digital literacy and provide better support for educators. Programs aimed at improving internet infrastructure, particularly in rural areas, are crucial steps towards enabling more effective use of e-learning MIS. Additionally, professional development and training programs are being developed to help educators become more proficient in using available technologies. However, the current state of infrastructure and resource availability means that many educators still rely on traditional teaching methods, which limits the potential benefits of MIS.

### **For Students**

Students in Indonesia experience a more varied e-learning environment due to infrastructural and socio-economic challenges. Limited internet access, especially in rural areas, significantly affects students ability to engage fully with e-learning platforms. The lack of advanced features in commonly used LMS platforms means that students often receive more generalized content, which doesn't cater to individual learning needs as effectively as the systems used in the United States.

Digital literacy levels among students in Indonesia vary widely, impacting their ability to effectively use e-learning tools. Initiatives to improve digital literacy are essential to ensure that students can navigate and benefit from e-learning platforms. Programs aimed at increasing access to technology and providing training on digital skills are critical for enhancing the e-learning experience. Despite these challenges, there are on going efforts to improve the situation, with the government and various organizations working to provide better access to technology and support for students.

### **Comparative Analysis**

The comparative analysis reveals that United States has advanced technological infrastructure and high digital literacy gives a conducive environment for the effective implementation of MIS in E-learning for either educators and students. Indonesia's ongoing efforts to improve digital infrastructure, widespread digital literacy, and strong government support which facilitate the effective use of advanced LMS platforms. These systems provide personalized learning paths and extensive integration with other educational tools, enabling a highly interactive and tailored educational experience for both educators and students.

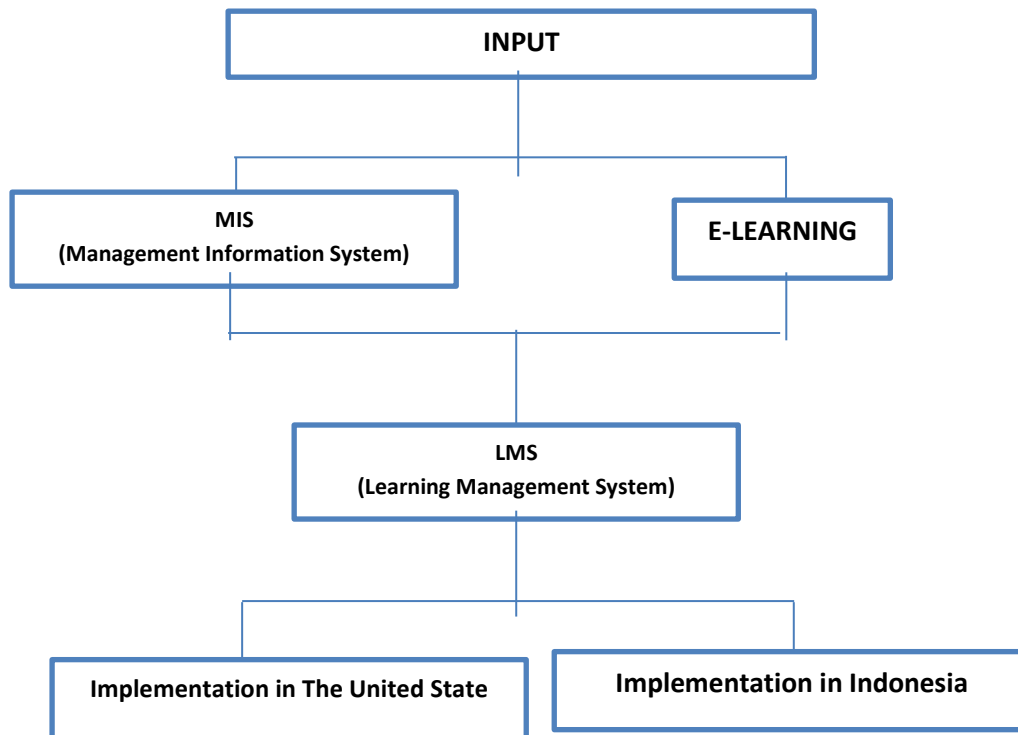
In contrast, Indonesia faces several challenges that hinder the effective implementation of MIS in e-learning. Limited internet connectivity, especially in rural areas and varying levels of digital literacy are significant barriers. The lack of advanced features in commonly used LMS platforms means that educators and students do not benefit from the same level of personalization and integration found in the United States. However, on going efforts to improve digital infrastructure and literacy show promise for the future.

Either countries United States and Indonesia can learn from each other's experiences. The United States best practices and advanced functionalities offer valuable insight. While Indonesia's adaptive strategies to overcome infrastructural barriers provide lessons for other developing nations. Collaborative efforts and knowledge sharing can help improve e-learning system globally.

## Challenges

**United States:** Ensuring data privacy and addressing the digital divide remain pertinent challenges despite the advanced infrastructure. While most urban areas have excellent access to digital resources, some rural areas still struggle with connectivity issues.

**Indonesia:** Improving internet connectivity and digital literacy are primary challenges that need immediate attention to facilitate effective e-learning. The socio-economic disparities and varying levels of access to technology exacerbate these challenges, making it difficult to implement advanced e-learning systems uniformly across the country.



**Figure 1** The frame work from

### Opportunities:

Both countries can learn from each other's experiences. The United States' best practices and advanced functionalities offer valuable insights for improving the implementation of MIS in e-learning. Conversely, Indonesia's adaptive strategies to overcome infrastructural barriers provide lessons for other developing nations. Collaborative efforts and knowledge sharing can help improve e-learning systems globally, fostering a more equitable and effective educational environment.

## CONCLUSION

### Conclusion

The conclusion from this research is Management Information Systems (MIS) in transforming education through E-learning, particularly evident in the contrasting contexts of Indonesia and the United States. The United States benefits from advanced technology and



high digital skills, making e-learning more effective with personalized learning. In contrast, Indonesia faces challenges such as poor internet and varying digital skills. Despite these issues, initiative like Rumah Belajar show efforts to improve. By working together, both countries can improve global education. The United States can share advanced technology ideas, and Indonesia can show how to adapt in tough conditions. Looking forward, improving digital infrastructure and helping teachers are crucial for better e-learning for everyone.

The implementation of MIS in e-learning highlights significant differences between the United States and Indonesia. While the U.S. benefits from advanced infrastructure and widespread digital literacy, enabling personalized learning and extensive tool integration, Indonesia is working towards overcoming infrastructural and socio-economic barriers. Tailored strategies and collaborative efforts are crucial for enhancing e-learning systems in both countries, contributing valuable insights to the global discourse on digital education. The ongoing efforts in Indonesia to improve digital infrastructure and literacy are essential steps towards achieving more effective and equitable e-learning experiences for all students and educators.

By addressing the identified challenges and leveraging opportunities for collaboration, both countries can make significant strides in enhancing the effectiveness of MIS in e-learning. These efforts will not only improve educational outcomes but also ensure that all students have access to high-quality, equitable educational opportunities in an increasingly digital world.

## Suggestion

### 1. Enhancing Digital Infrastructure:

**United States:** Continue to invest in improving internet connectivity in rural and underserved areas to bridge the digital divide. Additionally, ensure that all educational institutions have access to the latest technology and infrastructure.

**Indonesia:** Accelerate efforts to enhance internet connectivity across the country, especially in rural areas. Invest in building and upgrading digital infrastructure to support more advanced e-learning systems.

### 2. Improving Digital Literacy:

**United States:** Maintain and expand digital literacy programs for both educators and students. Ensure that ongoing professional development opportunities are available to help educators stay current with technological advancements.

**Indonesia:** Implement widespread digital literacy initiatives to equip both educators and students with the necessary skills to effectively use e-learning platforms. Continue generating and resources to help educators integrate technology into their teaching practices.

### 3. Government Support and Policies:

**United States:** Strengthen policies that support data privacy and cybersecurity to ensure safe and secure use of MIS in e-learning. Provide continued funding and resources for technological advancements in education.

**Indonesia:** Develop comprehensive policies and strategies to support the integration of MIS in e-learning. Ensure that there is adequate funding and resources allocated to improve digital infrastructure and literacy.

### 4. Collaboration and Knowledge Sharing

Foster international collaboration and knowledge sharing between the United States and Indonesia. Exchange best practices, insights, and strategies for effective implementation of MIS in e-learning. Such collaboration can provide valuable lessons and drive improvements in both countries.

Both countries can learn from each other's experiences. The United States advanced technological infrastructure and best practices offer valuable insights for Indonesia. Conversely, Indonesia's strategies to overcome infrastructural barriers can provide lessons for other developing nations. Collaborative efforts and knowledge sharing can enhance e-learning systems globally, ensuring all students benefit from technological advancements in education (Bhardwaj et al. 2021; Rasheed & Wahid, 2021).

Governments should prioritize investments in digital infrastructure to ensure all regions, especially rural areas, have reliable internet access. Ongoing training programs for educators on the use of MIS and digital tools should be expanded to ensure they can effectively integrate these technologies into their teaching practices. Fostering international partnerships and knowledge exchange can provide valuable insights and innovative solutions to common challenges in implementing MIS in e-learning. Providing financial aid and resources to students from disadvantaged backgrounds can help bridge the digital divide and ensure equitable access to e-learning opportunities.

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