



Online Based Learning System (E-Learning) as Distance Learning Method Solutions: A Literature Review

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ABSTRACT

This study aims to identify critical success factors influencing the effectiveness of e-learning systems in Indonesia. It examines the advantages of e-learning, such as flexibility and affordability, as well as challenges like the digital divide and varying digital skills. By reviewing literature from diverse sources, the research underscores e-learning's potential as a distance learning solution, emphasizing the need for educational institutions to address challenges to maximize its effectiveness in Indonesian educational settings.

This study employs a literature review method to identify critical success factors affecting the efficacy of e-learning systems in Indonesia. Data is gathered from scientific journals, books, and research reports to analyze the advantages (flexibility, affordability) and challenges (digital divide, varying digital skills) associated with e-learning.

The research results show that e-learning has several advantages as a distance learning solution, such as flexibility, accessibility, interactivity and affordability. However, e-learning also has several challenges, such as the digital divide, differences in digital skills, and learning motivation.

This study contributes novel insights by specifically examining the factors influencing the effectiveness of e-learning systems within the Indonesian educational context. Unlike broader studies, it focuses on the unique challenges and opportunities present in Indonesia, including the impact of the digital divide, varying levels of digital skills among learners, and specific strategies for enhancing learner engagement and motivation. By conducting a comprehensive literature review drawing from scientific journals, books, and research reports, the study consolidates existing knowledge and identifies gaps that are crucial for informing policy and practice.

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INTRODUCTION

Ever since industries began utilizing computers, the relationship between competition and the development of information technology has become deeply intertwined. Advancing into the realm of informatics involves immersing oneself in the latest technological and informational environment. Leveraging informatics technology to its fullest potential requires a shift in mindset, which can be challenging as certain groups may struggle to adapt to this transformation (Sarwani and Supratikta, 2021).

The endeavor to enhance the quality of human resources is continually met with various challenges and obstacles, stemming from both natural and non-natural factors. Presently, one of the significant hurdles faced by Indonesia, along with numerous other countries worldwide, is the Covid-19 pandemic. This global health crisis has severely disrupted efforts to improve human resources, particularly through formal and non-formal education systems. The pandemic has caused unprecedented interruptions, making it difficult to maintain and advance educational initiatives and training programs essential for human resource development (Insiroh, dkk. 2020).

The Covid-19 pandemic has triggered significant transformations across various facets of human life globally. People have had to innovate and adapt to address the new demands and challenges posed by the pandemic. Education, in particular, has seen a notable shift. To reduce the risk of virus transmission and ensure the safety of both students and educators, the traditional in-person learning model has been largely replaced by online education. This transition highlights the necessity for adaptability in teaching methods and the integration of technology in educational practices.

Despite variations in educational policies across regions, distance learning has emerged as the primary solution to ensure the continuity of the teaching and learning process. This approach facilitates virtual interactions between educators and students, making e-learning a crucial tool in bridging these interactions and enhancing the quality of distance education. E-learning plays a vital role as a learning resource in adapting to the demands of the digital era, characterized by Industry 4.0 and Society 5.0. It supports the seamless execution of online education by enabling learning to occur anytime and anywhere. Consequently, the necessity for physical face-to-face meetings between teachers and students, lecturers and students, or tutors and their tutees is significantly reduced, promoting flexibility and accessibility in education (Fadhilah, 2021).

With the rapid advancements in technology and science today, technology has become an integral part of various aspects of daily life, including business operations and educational activities. It is no longer viewed as a novelty but as a fundamental component of modern society, influencing how we work, learn, and interact. In the realm of education, technology plays a pivotal role in enhancing learning experiences and addressing contemporary educational challenges (Polly, et al 2020). Digitalization seems to challenge numerous business models in organizations and raises important questions about the meaning and practice of learning and development (Dignen and Burmeister 2020).

Technological advancements have significantly impacted the educational sector, particularly with the rise of e-learning. The Covid-19 pandemic in recent years necessitated the shift to remote learning, pushing the education system to rapidly adapt to online instruction for both students and teachers. As a result, Indonesia is stepping into a new era of education where the focus is on fostering creativity, enhancing students' skills, and improving overall self-quality. This transformation involves not only altering educational systems but also shifting perspectives and interaction patterns with technology to meet the evolving demands of modern education (Suharwoto, 2020).

E-learning typically denotes the integration of information and communication technology (ICT) networks within educational activities, encompassing both teaching and learning processes. It is also commonly referred to by several other terms, such as online learning, virtual learning, and network- or web-based learning. These terms highlight the diverse formats and platforms through which digital education can be delivered, emphasizing the

reliance on internet connectivity and digital tools to facilitate interactive and flexible learning experiences (Chitra, Raj, 2018).

Online and offline learning activities have distinct differences, leading to both advantages and disadvantages in the implementation of e-learning platforms. Consequently, before developing an e-learning system, it is crucial to identify and comprehend all the critical success factors that influence the system's effectiveness. Additionally, it is essential to evaluate the system through rigorous system control. This evaluation should analyze whether the system is functioning as intended, whether it enhances user performance, and whether it is user-friendly. By thoroughly understanding these factors, developers can create more efficient and effective e-learning solutions (Rijal and Wardani 2019).

This study aims to delve into the intricate factors that influence how effective e-learning can be within the Indonesian educational system, while also addressing the inherent challenges that arise during its implementation. The primary goal is to gain a comprehensive understanding of the precise actions and strategies educational institutions must adopt to maximize the potential of e-learning as a pivotal component of their teaching methodologies.

LITERATURE REVIEW

Technology has revolutionized education by introducing e-learning platforms, which have increased the accessibility of learning materials. Devices such as laptops, computers, smartphones, and tablets have broadened access to educational resources that were once exclusive. In contrast to traditional classrooms where learning was confined and communication limited to classmates present, e-learning now provides diverse learning materials in various formats (text, images, audio, video) easily accessible online. This transition promotes independent learning and enables individuals to learn without geographical constraints. Moreover, interactive tools like wikis, forums, chat features, and collaborative activities foster engagement and facilitate communication, enhancing the overall learning experience (Al-Fraihat, et al. 2019).

E-learning is primarily linked with activities utilizing computers and interactive networks concurrently. While the computer doesn't necessarily need to be the central focus or provide educational content, its substantial involvement, along with the network, remains crucial to the learning process. Distance learning necessitates remote interaction between educators and learners, facilitating prompt instructor responses. Mere dissemination or broadcasting of educational materials without such interactive engagement does not constitute distance learning. Instructors must actively participate in receiving feedback from learners for both concepts, with the distinguishing feature serving as the predominant characteristic of the educational approach. Consistent and intensive utilization of these defining features is mandatory, as sporadic or incidental use does not meet the criteria for either type of learning. For instance, merely running a computer-based training application from a file server does not qualify as e-learning, and merely exchanging emails with a teacher after attending an on-campus class does not suffice as distance learning (Tsai & Machado, 2002).

In another research, online learning, also known as e-learning, is described as an approach utilizing digital technology and the internet as primary tools for education. This method enables students to access educational resources, engage with instructors and peers via digital platforms, without the necessity of attending traditional classrooms. Online learning offers flexibility for students to study at their own pace and convenience, accessible from any location as long as they have an internet connection. Online learning in education has several fundamental reasons that can be accounted for in modern times, including: Flexibility of time

and place; Access to more learning resources; Collaborative learning; and Higher learning effectiveness (Jumrio, 2023).

Online learning, also referred to as synchronous online learning, involves direct supervision by teachers. It utilizes technology, particularly internet platforms, to deliver and access learning materials in a more flexible manner (Astuti & Febrian, 2019). Essentially, online learning equates to distance learning (PJJ), which historically has relied on technological advancements for its implementation, evolving from basic to cutting-edge technologies over time (Belawati, 2019). In summary, the evolution of distance learning history can be categorized based on the predominant technologies employed.

Table 1 Conventional Learning and Online Learning Comparison

Parameter	Conventional learning	Online Learning
Time and place	Conventional learning requires a specific time and place where students must be in the classroom at a predetermined time.	
Interaction	Conventional learning allows students to interact directly with teachers and classmates and get immediate feedback.	Meanwhile, online learning models can limit interactions between students and teachers as well as between students with each other. However, the online learning model provides opportunities for students to interact with teachers and students from various regions.
Learning Method	Conventional learning often prioritizes traditional learning methods, such as reading books, lectures, and discussions.	Meanwhile, online learning models can utilize technology such as videos, simulations, and animations to make learning more exciting and interactive.
Evaluation	Conventional learning often measures student progress through written and oral tests.	Meanwhile, the online learning model can provide a more varied evaluation and measure student progress through online tests and assignments.

The difference between Online and Conventional learning (Jumrio, 2023)

A substantial amount of research in the field of e-learning has significantly improved our grasp of the key factors that determine the success of e-learning initiatives. These factors include the quality of the system, the quality of information, the quality of services, user satisfaction, and usability. Despite this progress, researchers often encounter a significant challenge in developing models for e-learning success due to the excessive number of measurements needed for both dependent and independent variables.

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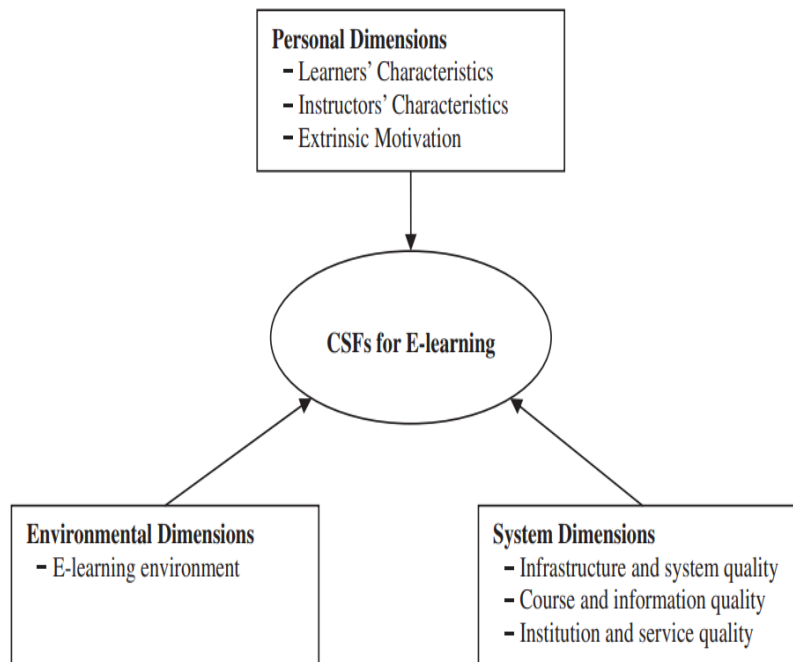


Figure 1 Frame Work

The study highlights the growing significance of information technology in education, especially the expanding adoption of educational technology. Institutions in less developed nations encounter distinct challenges compared to those in more advanced ones, necessitating a deep understanding of what draws students and educators to online learning. By acknowledging these hurdles, stakeholders can enact suitable strategies to ensure the efficacy of e-learning platforms. This research aims to categorize and prioritize Critical Success Factors (CSFs) for implementing e-learning in developing countries, alongside practical implications. The investigation identifies several pivotal factors influencing the success of e-learning in such settings, including heightened technological awareness and attitudes toward online education, enhanced proficiency in basic technology skills, enriched learning materials, the necessity for computer literacy training, user motivation toward utilizing e-learning systems, and robust institutional support.(Pangondian, etc., 2019).

METHOD

This research uses the Systematic Literature Review (SLR) method. SLR is a method used to identify, evaluate, and describe relevant research results according to the research question, topic discussed, or phenomenon of current concern. In using the SLR method, there are several stages carried out by researchers in analyzing and obtaining library data according to the research carried out. Systematic Literature Review (SLR) is a rigorous and

comprehensive method used to synthesize existing research related to a specific topic or research question. It involves a systematic and structured approach to identifying, selecting, critically evaluating, and synthesizing relevant studies from existing literature. SLR is particularly useful in the field of online-based learning systems (E-learning) for distance education, as it allows researchers to gather and analyze a wide range of studies to provide a comprehensive overview of the current state of knowledge in this area. By following a predefined protocol and set of criteria, SLR minimizes bias and ensures the reliability and validity of the review process. The findings of an SLR can help researchers identify gaps in the existing literature, propose new research questions, and inform the development of online learning systems and distance education methods.

RESULT AND DISCUSSION

This study aimed to identify the factors that contribute to the evaluation of e-learning systems' success in Indonesia. To achieve this goal, the researchers utilized a Systematic Literature Review (SLR) method, which involved analyzing existing research on the topic. The findings of this study have theoretical implications, as they contribute to the development of a comprehensive, multi-dimensional model for evaluating the critical success of e-learning. This model incorporates various factors that have been identified through the SLR process, providing a more holistic understanding of what constitutes critical success in e-learning systems.

The rapid growth of the Internet as a platform for delivering courses, along with a growing interest in lifelong learning and constrained budgets, has spurred universities to develop online programs. The accessibility and user-friendliness of current technologies make it feasible for universities to adopt online learning. Those that fail to do so risk falling behind in the global race for technological advancement and globalization (Pangondian, etc., 2019). The results of this study reveal insights into the various dimensions of e-learning effectiveness in Indonesia, focusing on personal, environmental, and system aspects.

Personal Dimensions

In terms of the personal dimension, learners reported positive experiences with e-learning, noting its flexibility and accessibility as key advantages. However, challenges related to digital skills and motivation were also highlighted. Learners expressed a need for more interactive and engaging content to enhance their learning experience. Instructors, on the other hand, acknowledged the benefits of e-learning but raised concerns about the lack of face-to-face interaction and the need for additional training to effectively use e-learning platforms.

Online learning necessitates strong collaboration among all stakeholders, including lecturers and students. This requirement entails that all lecturers possess a level of technological proficiency, demonstrating creativity in delivering content through online platforms, and being adept at discerning student circumstances and needs (Kuntarto, 2017; Riyanti & Paramida, 2020).

Moreover, students are required to furnish details concerning their family background, economic situation, and internet accessibility. This information is crucial as it enables instructors to offer waivers and alternative assignments. One prevalent issue in academia is the lack of uniformity in the lecture process, including the standard and quality of the desired educational outcomes. This variation can impact students differently, making it imperative for instructors to have a comprehensive understanding of their students' circumstances to ensure fair and effective teaching practices (Bahasoan et al., 2020).

Environmental Dimensions

In the environmental dimension, the e-learning environment was generally perceived as conducive to learning, with learners appreciating the ability to study from anywhere. However,

issues such as internet connectivity and access to devices were highlighted as significant challenges, particularly in remote areas. Improvements in infrastructure, such as better internet connectivity and access to devices, were suggested to address these challenges.

To ensure the effective implementation of online learning, a variety of e-learning methods should be utilized. E-learning encompasses various forms of electronic learning media that facilitate online education delivery. It is a teaching approach that leverages electronic devices and internet-based platforms to disseminate educational content to students. This method enables flexible access to learning materials and interactions between students and educators, fostering a dynamic and engaging virtual learning environment (Yustanti & Novita, 2019).

Hence, choosing the appropriate e-learning platform can help maintain students' interest, enthusiasm, and motivation at levels similar to those experienced in traditional face-to-face learning environments. This highlights the importance of selecting a well-suited e-learning system that caters to the needs and preferences of students, ensuring a positive and engaging online learning experience.

System Dimensions

From a system dimension perspective, the quality of the e-learning system was seen as crucial to its effectiveness. While learners appreciated the convenience of e-learning platforms, they also emphasized the importance of system reliability and ease of use. Course content and information quality were also cited as important factors influencing the effectiveness of e-learning. Participants suggested that courses should be well-structured and engaging, with up-to-date information to keep learners motivated and engaged.

For e-learning implementation to be successful, several key factors must be in place, particularly in the system dimension. Within this dimension, three crucial elements must be considered: the quality of systems and infrastructure, the quality of information and learning materials, and the quality of institutions and services. Specifically in Indonesia, regulations play a fundamental role and need to be promptly addressed through Permenristekdikti. These regulations should provide guidance for schools and universities to begin adopting e-learning systems (Pangondian, dkk., 2019).

Overall, the findings suggest that while e-learning offers many benefits, there are also several challenges that need to be addressed to maximize its effectiveness in Indonesia. Improvements in infrastructure, system quality, and course content are essential, along with efforts to enhance digital skills and motivation among learners. Collaborative efforts between government, educational institutions, and technology providers are crucial to overcoming these challenges and ensuring the successful implementation of e-learning in Indonesia.

CONCLUSION

E-learning in Indonesia, while offering many benefits, also encounters significant challenges, including the digital divide and varying levels of digital skills among learners. The digital divide refers to the gap between those who have access to digital technologies and those who do not, which can hinder e-learning effectiveness, especially for marginalized or remote communities. Additionally, differences in digital skills can affect learners' ability to engage with e-learning platforms fully.

Addressing these challenges requires a comprehensive approach, including infrastructure development to improve internet access, digital literacy programs to enhance skills, and targeted strategies to motivate learners. Despite these challenges, the study suggests that e-learning can be a highly effective method for distance learning, particularly given its flexibility, accessibility, interactivity, and affordability.

To maximize the potential of e-learning in Indonesia, it is essential for educational institutions to focus on overcoming these challenges. This can be achieved through improving infrastructure, enhancing digital skills, and motivating learners. Additionally, efforts should be made to increase learner engagement through interactive content and gamification techniques. Collaboration among government, educational institutions, and technology providers is crucial in addressing these challenges and promoting the sustainable use of e-learning. By working together, stakeholders can develop effective strategies and policies to enhance the educational system in Indonesia and provide quality learning experiences for all.

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