LEARNING INNOVATION: INCREASING EDUCATIONAL EFFECTIVENESS IN THE DIGITAL ERA

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Abstract:

The development of digital technology has had a significant impact on the education sector. Using technology in learning allows innovations to increase the effectiveness of the learning process. This article aims to analyze learning innovations that can increase the effectiveness of education in the digital era. A literature review was conducted to explore the concept of learning in the digital era, identify the advantages and challenges faced in implementing technology in education, and examine the development of learning innovations in the digital era. The research method used was a literature review of related research and an analysis of relevant data and findings. This research provides a better understanding of the effectiveness of learning innovation in the digital era. Factors that influence the effectiveness of learning innovations are also analyzed to provide a comprehensive picture of the influence of technology in education.

The discussion of this article highlights the effectiveness of learning innovation in the digital era, taking into account the advantages and challenges that arise. The implications of the findings of this research for learning practices are identified and presented, and relevant recommendations are presented to support the effective use of learning innovations in the context of digital education. This research concludes that learning innovations can increase the effectiveness of education in the digital era. However, it is essential to consider the factors that influence the success of these innovations, such as teacher technological competence, infrastructure availability, and adequate policy support. This article makes an essential contribution to understanding technology use in education and provides a basis for continued research in this area.

Keywords:

Learning Innovation, Educational Effectiveness, Digital Technology, Education in The Digital Era.

INTRODUCTION

Education is a critical element of societal development and is vital in preparing future generations. However, the challenges faced by the education system continue. One of the main challenges today is adapting to rapid changes in digital technology. The digital era has significantly changed how we live, work, and learn. Learning innovation in the digital era is an effort to increase educational effectiveness by utilizing the potential of information and communication technology (ICT) (Bransford et al., 2000; Dede, 2010; Hattie, 2009). Learning innovation in the digital era includes various approaches, such as technology, online learning platforms, game-based learning, and many more.

These approaches promise the potential to enrich learning experiences, increase student engagement, and prepare them for the increasingly complex demands of the future (Johnson et al., 2014; Siemens & Tittenberger, 2009). In this context, it is essential to understand the effectiveness of learning innovations in the digital era and how they can improve education quality. Previous studies have identified the benefits of learning innovation in the digital era, including increased learning motivation, increased accessibility, development of 21st-century skills, and improved student learning outcomes (Kozma, 1991; Means et al., 2014).

However, a more comprehensive understanding of the effectiveness of learning innovation in the digital era is still needed. A comprehensive literature review can provide deeper insight into various digital learning approaches, the strengths and weaknesses of each approach, as well as the factors that influence the successful implementation of learning innovations in the digital era (Puentedura, 2013; Zhao, 2009). In this research , we will use a literature study approach to compile a comprehensive literature review on learning innovation in the digital era. We will refer to reliable and relevant scientific literature (Bransford et al., 2000; Dede, 2010; Hattie, 2009; Johnson et al., 2014) to gain a better understanding of the effectiveness of learning innovations and their contribution to improving education. Thus, it is hoped that this research can provide valuable insight for educational practitioners, policy makers and researchers in understanding learning innovations in the digital era and how to optimize their benefits to increase educational effectiveness.

RESEARCH METHODS

This study was carried out using a literature review approach to investigate learning innovations in the digital era and analyze their effectiveness in improving education. This approach involves searching, selecting, and analyzing relevant literature to gain an in-depth understanding of the research topic. In the data identification stage, a literature search was carried out through academic databases such as scientific journals, peer-reviewed articles, textbooks, conferences and research reports (Bransford et al., 2000; Dede, 2010; Hattie, 2009; Johnson et al., 2014). Keywords used include "learning innovation", "education in the digital era", "educational technology", "online learning platform", "game-based learning", and so on.

After the search was carried out, literature was selected that was appropriate to the research topic based on abstracts, titles and content summaries (Kozma, 1991; Means et al., 2014; Siemens & Tittenberger, 2009). Relevant articles and literature were selected for further analysis. Next, a literature analysis was carried out on the selected literature. Analysis includes identifying the main themes, differences, similarities, strengths and weaknesses of various learning innovations in the digital era (Puentedura, 2013; Zhao, 2009). The data and findings found in the literature are then synthesized to obtain a comprehensive understanding of the effectiveness of learning innovation. In the literature analysis process, relevant references are used to strengthen arguments and support the findings presented in the research (Schrum & Levin, 2013). The references used include reliable sources and are related to the research topic.

DISCUSSION
Effectiveness of Learning Innovation in the Digital Era

The effectiveness of learning innovation in the digital era is the focus of attention in efforts to improve the quality of education. Various learning

innovations that use information and communication technology (ICT) have been implemented with the aim of achieving better learning outcomes. In this discussion, we will outline several aspects that influence the effectiveness of learning innovation in the digital era along with explanations and references. Prof's opinion Anies Baswedan, Minister of Education and Culture of the Republic of Indonesia, provided important views on the application of technology in education. He stated that technology can be a catalyst for positive educational change, enabling learning that is more effective and relevant to current developments (Baswedan, 2020). In his perspective, learning innovation in the digital era is not just the use of technology, but also a paradigm shift in learning approaches.

In the context of Islamic education, Prof. Dr. Muhadjir Effendy emphasized the importance of integrating technology with Islamic values in learning. He believes that learning innovation in the digital era must remain rooted in religious and moral values. This approach harmonizes the development of technological skills with a strong understanding of religious values (Effendy, 2019). In learning innovation in the digital era, the following aspects play an important role to increase learning effectiveness:

Accessibility and Affordability:
Learning innovations in the digital era provide opportunities for students and educators to access extensive learning resources (UNESCO, 2020). In Prof.'s perspective. Anies Baswedan, technology can expand access and increase the affordability of education (Baswedan, 2020).

Interactive and Interesting:
Learning innovations in the digital era offer interactive and interesting learning experiences through the use of multimedia elements, simulations and games (Johnson et al., 2014). Prof's opinion Anies Baswedan emphasized the importance of creating interesting and active learning experiences (Baswedan, 2020).

Personalization of Learning:
Learning innovations in the digital era allow educators to provide learning materials tailored to each student's level of ability, learning style, interests and learning needs (Vander Ark & Schneider, 2019). Prof's opinion Anies Baswedan encourages a personalized learning approach (Baswedan, 2020).

Real-time Evaluation and Feedback:
Learning innovations in the digital era provide the ability to collect learning data in real-time and provide direct feedback to students (Hattie, 2009). In Prof.'s view. Anies Baswedan, timely evaluation and feedback are important in improving learning (Baswedan, 2020).
In the Indonesian context, Prof. Anies Baswedan and Prof. Muhadjir Effendy is an important foundation in understanding the importance of learning innovation in the digital era and its relevance in increasing educational effectiveness. From an Islamic perspective, the integration of technology and religious values provides a strong moral and spiritual foundation for students.

Factors that Influence the Effectiveness of Learning Innovation
In the reform era in Indonesia, several educational figures provide essential views on the factors that influence the effectiveness of learning

innovation in the digital era. Prof. Dr. Anis H. Bajrektarevic emphasized the importance of a paradigm shift in education in the digital era by encouraging students to become active, critical, and creative learners (Bajrektarevic, 2018). This aligns with the views of Prof. Dr. Arief Rachman, who emphasized the importance of skills-based learning in the digital era by developing 21st-century skills (Rachman, 2007). Apart from that, in the Society 5.0 era, Prof. Dr. Sugata Mitra provides an essential perspective by prioritizing a self-organized learning environment (SOLE) approach, which encourages students to learn independently and collaborate in finding solutions to their challenges (Mitra, 2018). The opinions of these educational figures show that changes significantly influence the effectiveness of learning innovation in the digital era in learning paradigms, development of 21st-century skills, and student empowerment in the learning process. In facing global change and technological demands, education in Indonesia needs to adopt an inclusive, active, and collaborative approach, allowing students to develop skills and competencies relevant to the future.

The opinions of education figures from the reform era and the Society 5.0 era provide diverse but complementary perspectives. By integrating the views of these figures, we can gain a more comprehensive understanding of the factors that influence the effectiveness of learning innovation in the digital era. The following is a discussion of the factors that influence the effectiveness of learning innovation in the digital era, complete with references:

Technology Infrastructure:
The main factor that influences the effectiveness of learning innovation in the digital era is the available technological infrastructure. These factors include stable internet access, availability of hardware such as computers or tablets, and the reliability of online learning platforms (UNESCO, 2020). Without adequate technological infrastructure, the implementation of learning innovations in the digital era can be hampered.

Educator Competencies::
Educator competence in using technology and implementing learning innovations in the digital era has a crucial role in its effectiveness (Kearney et al., 2012). Educators who have a good understanding of technology and the ability to integrate it effectively in the learning process can improve student learning outcomes.

Relevant Learning Design:
Learning design that is relevant to the learning context in the digital era also plays an important role in the effectiveness of learning innovation (Johnson et al., 2014). Learning design that considers student needs, is interesting, and activates student involvement can increase learning effectiveness.

Institutional Support:
Support from educational institutions and school management is also an important factor in the effectiveness of learning innovation in the digital era (Alzaza & Yaakub, 2019). This support includes providing resources, training educators, supporting policies, and effective management in managing the implementation of learning innovations.
These factors interact with each other and contribute to influencing the effectiveness of learning innovation in the digital era. In implementing learning innovations, it is important to pay attention to and manage these factors in

order to achieve optimal learning outcomes. It is hoped that this discussion will provide a comprehensive picture of the factors that influence the effectiveness of learning innovation in the digital era.

Implications of Findings for Learning Practices

In the context of education in the digital era, Indonesian education figures and Islamic figures in Indonesia provide relevant views. Dr. Anies Baswedan, Minister of Education and Culture of the Republic of Indonesia, stated the importance of utilizing digital technology in the learning process to improve the quality and accessibility of education in Indonesia (Baswedan, 2019). Dr. Anies Baswedan also emphasized the importance of developing 21st century skills so that students are ready to face changes in the world of work influenced by technology (Baswedan, 2019). On the other hand, Prof. Dr. Quraish Shihab, an Islamic figure in Indonesia, emphasized the importance of integrating Islamic values in learning in the digital era. He emphasized that digital technology must be used wisely to support learning based on Islamic values (Shihab, 2017).

These views underscore the importance of utilizing technology in learning, developing 21st century skills, and aligning Islamic values with learning approaches in the digital era. In implementing learning practices, educators can combine the use of technology with an approach that is inclusive, collaborative, and based on Islamic values. By paying attention to the views of Indonesian educational figures such as Dr. Anies Baswedan and Islamic figures such as Prof. Quraish Shihab, educators can design learning practices that are relevant, innovative and effective in facing the challenges of learning in the digital era, while upholding Islamic values and preparing students for a future filled with technological advances.

The findings from the literature review and data analysis of this research have significant implications for learning practices in the digital era. These implications can provide direction and guidance for educators in increasing the effectiveness of learning in the digital era. Here are some implications of these findings: (a) Integrating Technology in Learning: Research findings show that the use of digital technology can increase student engagement and motivation in learning. Therefore, educators need to integrate technology wisely in their learning practices. This can be done through the use of online learning platforms, mobile applications, and other interactive tools that can increase student interaction and participation in the learning process (Johnson et al., 2017; Kebritchi et al., 2017). (b) Active Learning Approach: Research findings indicate that an active learning approach, which engages students in exploration, collaboration, and problem-solving activities, is more effective in improving students' understanding and skills. Therefore, educators need to apply learning methods that encourage students to actively participate in the learning process, such as group discussions, problem-based projects, and simulations (Prince, 2004; Hmelo-Silver et al., 2007). (c) Collaborative Learning: Research findings show that collaborative learning, where students work together to achieve learning goals, can improve students' social skills, problem solving, and understanding. Educators need to create learning environments that support collaboration, both in the form of physical group work and through online collaborative platforms (Dillenbourg, 1999; Kirschner et al., 2018). (d) Formative Evaluation and Quality Feedback: Research findings show that continuous formative evaluation and quality feedback can help students improve their understanding and performance. Educators need to implement evaluation strategies that allow them to track individual student

development, provide constructive feedback, and facilitate student reflection on their learning (Hattie & Timperley, 2007; Black & Wiliam, 2009).

In implementing these implications, it is important for educators to consider the context, needs, and characteristics of their students. Educators also need to stay abreast of technological developments and digital learning trends to ensure that their learning practices remain relevant and effective. So that the application of these implications in learning practices in the digital era can help increase the effectiveness of student learning and prepare them to face future demands marked by technological advances.

CONCLUSION

In this discussion, learning innovation has a crucial role in increasing the effectiveness of education in the digital era. The use of digital technology, active and collaborative learning approaches, and the development of 21st-century skills are essential aspects of efforts to improve the quality of education. Factors that influence the effectiveness of learning innovation include adequate policy and infrastructure support, educator training, active student participation, and support from families and communities. Research findings and views of Indonesian education figures also highlight the importance of integrating Islamic and cultural values in using technology in learning. This will ensure that learning in the digital era prioritizes technological aspects and forms good character and morals by the values upheld in society.

The implication of the findings for learning practice is the importance of utilizing technology as an effective tool, implementing active and collaborative learning approaches, and developing 21st-century skills. Collaboration between government, educators, and education stakeholders is also crucial in creating an adaptive and innovative learning environment in the digital era. In conclusion, education in the digital era needs to continue developing learning innovations relevant and responsive to technological developments and the demands of the times. In this way, education can significantly contribute to increasing the effectiveness of education, preparing students to face changes in the world of work, and forming good character and morals by the values upheld.

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