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THE IMPACT OF SCHOOL DIGITALIZATION POLICY ON THE LEARNING PROCESS IN ELEMENTARY SCHOOLS

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Abstract

The school digitalization policy is a strategic effort by the government and educational institutions to utilize information and communication technology to improve the quality of learning. The purpose of this study is to examine how the school digitalization policy impacts learning in elementary schools. This study will examine various aspects, including learning planning and implementation, teacher-student interactions, and learning outcomes. The research method used is a descriptive qualitative approach with data collection through literature studies. The results show that school digitalization has a positive impact in the form of increased variety of learning methods, student learning motivation, and efficiency of learning administration. However, this policy also faces several challenges, including limited infrastructure, teachers' digital competency readiness, and gaps in technology access for students. Therefore, sustainable policy support, teacher training, and equitable access to technology are needed for optimal school digitalization.

INTRODUCTION

The development of information and communication technology (ICT) has transformed many aspects of life, including education. One important policy in the national education system is the digitalization of schools to adapt learning to the needs of the digital era. Digitization in elementary schools is expected to make learning more interactive, engaging, and student-centered. The school digitalization policy includes providing technology for creating online learning platforms and improving teachers' technology skills. In reality, the implementation of this policy has had diverse impacts on the learning process. On the one hand, technology can help teachers deliver material creatively and help students understand learning concepts. Conversely, obstacles such as limited infrastructure and digital literacy skills persist.

Based on this background, this study focuses on evaluating the impact of school digitalization policies on the elementary school curriculum. This study is expected to

provide a comprehensive overview of the advantages and disadvantages of school digitalization, which can be used as a basis for developing better educational policies. School digitalization is theoretically related to constructivist learning theory, which emphasizes the active role of students in the learning process. According to Piaget & Inhelder (2008) , learning will be more meaningful if students actively participate in the process of discovering and constructing their knowledge through their own experiences. With digital technology, students can explore various learning resources independently and interactively.

Furthermore , Vygotsky & Cole (1978) stated through social constructivism theory that learning is a social process that occurs in the interaction of individuals with others and with their environment. In elementary education, digital technology functions as a mediator that can improve interactions between students and educators and between students. Mayer's multimedia learning theory is also relevant. Mayer (2005) argues that presenting information with a combination of text, images, audio, and video will be more effective. The digitalization of schools allows the use of multimedia learning approaches that can improve elementary school students' understanding and retention of learning.

Therefore, theoretically, there is a strong foundation to support improving the quality of learning in elementary schools when school digitalization policies are implemented. School digitalization can be viewed from the perspective of educational public policy as a public policy created to address societal problems and needs in the digital age. According to Dye (2013) , public policy is whatever the government chooses or does not do. The government can use technology to improve the quality and equity of educational services through school digitalization policies.

Furthermore, (Anderson, 2014) explains that public policy is a collection of actions undertaken by government actors with the specific goal of solving public problems. School digitalization policies aim to improve educational management learning and human resource readiness for technological advancements.

However, Edwards (1980) created a policy implementation theory that emphasizes four key components influencing the success of policy implementation: resources, disposition, communication, and bureaucratic structure. These four components are crucial for implementing school digitalization policies in elementary schools. This is particularly relevant to teacher readiness, resource availability, and school institutional support. Based on this theoretical foundation of public policy, it is clear that the success of school digitalization policies is determined not only by how the policy is formulated but also by how it is implemented within the context of the educational environment in which it is implemented.

RESEARCH METHODS

This study uses a descriptive qualitative methodology with a literature-based research approach. This study aims to comprehensively understand the phenomenon of school digitalization policies and how they impact learning in elementary schools, using theoretical and conceptual studies (Sugiyono, 2013) .

The reason why a qualitative approach was chosen is because this research will do so. Theoretically, the purpose of qualitative research is to understand social phenomena from a broader perspective. (Moleong, 2018) states that qualitative research aims to understand the phenomena experienced by research subjects comprehensively through descriptions of words and language. The digitalization of schools as a public

education policy and its effects on learning is the phenomenon discussed in this study. Literature-based research is the main method of data collection. Library research according to (Zed, 2008) is a series of actions that include reading, recording, processing, and collecting library data.

Therefore, the information used in this study comes from various relevant written sources. These sources include government policy documents, textbooks, national and international scientific journals, educational legislation, and official reports from relevant institutions. Content analysis is a method used to conduct data analysis. According to Krippendorff (2018) , content analysis is a research method used to generate applicable and valid inferences from texts or other communication media.

The analysis consisted of data reduction, conceptual categorization, and systematic and logical drawing of conclusions. Appropriate literature sources were selected, the relevance of the theories used, and consistency of analysis across sources ensured the accuracy of the research data. Therefore, it is hoped that this literature-based research approach can provide a strong theoretical basis for studying how school digitalization policies impact learning in elementary schools.

RESULTS AND DISCUSSION

The discussion of the research findings is analyzed using public policy indicators in the field of education, specifically referring to Edward III's policy implementation theory. This theory encompasses several aspects, such as communication, resources, disposition or attitude of implementers, and bureaucratic structure. These indicators are used to examine the extent to which school digitalization policies impact the learning process in elementary schools.

School Digitalization Policy Communication

According to Edwards (1980) , policy communication is a crucial component that determines whether implementers can understand and implement the policy correctly. Clarity of policy content, consistency of messages, and intensity of outreach to relevant parties are all aspects of communication. Legislation, technical guidelines, outreach programs, and teacher training are all ways to communicate school digitalization policies. A literature review shows that communication about school digitalization policies still faces many challenges.

Policies are often presented in a normative and administrative manner, emphasizing the use of technological devices, but without in-depth explanations of expected changes in educational methodology. As a result, elementary school teachers tend to view digitalization as simply the use of digital media, rather than as a transformation of the learning process focused on developing 21st-century competencies. This situation suggests that the lack of policy communication leads to ineffective policy implementation at the educational unit level.

The Indonesian government, through the Ministry of Primary and Secondary Education, launched the Learning Digitalization Program for 288,865 schools across Indonesia since August 15, 2025. As of November 2025, more than 215,572 technology devices such as Interactive Flat Panels, laptops, and digital learning content have arrived at recipient schools, indicating that the program's communication has been translated into concrete actions of digital device distribution (Abdullatif et al., 2023) .

However, several media reports noted that even though devices have been distributed, teachers' understanding of the strategic goals of digitalization—namely, pedagogical transformation, not just technology—remains a challenge, as policies are often delivered administratively without adequate pedagogical support. This suggests that policy communication must go beyond simply distributing devices and include capacity building for implementers.

Policy Implementation Resources

Edward III stated that resources are a crucial component in policy implementation. Facilities and infrastructure, human resources, and financial resources all fall into this category. As part of the national education digitalization strategy, the Indonesian government is targeting 300,000 schools to have internet access by 2025.

Furthermore, the government is providing infrastructure such as solar panels for schools lacking internet and electricity. This allows electronic devices to operate in remote areas. However, digitizing learning remains a significant challenge. 2022 data shows that nearly 45.94% of elementary schools lack adequate internet access.

In addition to infrastructure, teachers' digital skills are a crucial resource. Tens of thousands of teachers have received training and technical guidance as part of the digital literacy policy, which has helped address this issue.

Disposition or Attitude of Policy Implementers

Teachers' encouragement and commitment to policy implementation are components of their disposition. A positive attitude significantly contributes to successful implementation, said Edward III. A literature review shows that most teachers welcome digitalization because it offers a variety of engaging learning media options.

However, journal research shows that not all teachers are proficient in using technology, and a lack of training and understanding of technology can be a barrier to effective implementation. Furthermore, resistance to learning transformation occurs because teachers are still overwhelmed by the new workload associated with digital administration. This suggests that to improve implementation dispositions, teachers need ongoing professional support and mentoring.

Bureaucratic Policy Structure

Policy implementation procedures, task allocation, and inter-agency coordination are all part of the bureaucratic structure. Edward III stated that overly complex bureaucracy can hinder innovation. The central and regional governments are working together to develop policies on school digitalization in Indonesia.

This collaboration is evident in efforts to reach schools in the 3T (third-to-third) regions through the installation of SATLINK and solar panels, as well as the distribution of digital devices. However, there are reports that the budget will be adjusted for the revitalization of digitalization and education in 2026, indicating that policy implementation depends on the dynamics of the state budget bureaucracy. This suggests that bureaucracy can play a significant role in determining the sustainability of future policies.

Policy Implications for the Learning Process

The impact of public education policies on learning is measured. School digitalization should significantly transform education, making it more interactive, engaging, and relevant to the needs of a digital society. The digitalization of elementary schools has transformed learning with the increased use of interactive media, videos, and digital learning content.

This has increased student enthusiasm and engagement in education. Digitalization is also seen as a tool that can help everyone access education, especially in remote areas where access to educational resources was previously limited. However, several issues, such as uneven internet access and inadequate infrastructure in some schools, remain obstacles to achieving the full impact.

CONCLUSION

Indonesia's strategic efforts to respond to the challenges of educational transformation in the digital era include school digitalization policies. Based on literature research and public policy analysis using the Edward III policy implementation indicators, it can be concluded that this policy has shown progress but has not yet fully achieved its maximum effectiveness for learning practices in elementary schools. In terms of policy communication, the central government has disseminated information through national program regulations and the provision of digital devices to schools.

Policy communication, on the other hand, has not been fully understood as a pedagogical transformation by implementers at the school level, as it tends to be more administrative and technocratic. As a result, digitalization is often viewed as a tool acquisition rather than a paradigm shift in learning. This suggests that the success of policy communication is determined not only by the amount of information conveyed but also by the clarity of its meaning and how the policy should be implemented.

Budget allocations for the provision of technological devices and expanded internet access have supported Indonesia's school digitalization policy in terms of implementation resources. However, resource disparities between regions, particularly between urban and remote areas (3T), continue to be a significant issue. Limited internet access, electricity, and teachers' digital skills demonstrate that successful policy implementation depends heavily on the readiness of human resources and supporting infrastructure, not just the availability of technological devices. The disposition or attitude of policy implementers indicates that teachers are generally positive about digitalization of learning, as they are perceived to increase the variety of learning methods and student engagement. However, optimism is not always accompanied by confidence and the ability to utilize technology in the learning process.

This indicates that policy implementation is heavily influenced by policies that are sensitive to teacher workload and support for ongoing training. Furthermore, from a bureaucratic structural perspective, many cross-sectoral parties—central government, local governments, and educational institutions—contribute to the implementation of school digitalization policies. Complex bureaucratic structures often lead to delayed coordination, overlapping authority, and dependence on annual budget developments. This situation indicates that an inflexible bureaucratic system can lead to the failure of sustainable and consistent implementation of education digitalization policies. Considering the policy's impact on education, school digitalization has brought numerous benefits, such as increased use of interactive media, broader access to learning resources,

and increased student desire to learn. However, these impacts have not been evenly distributed and have not significantly contributed to improving the quality of learning.

Digitalization may be a symbolic policy and will not profoundly transform learning without strong digital pedagogical support. Overall, the school digitalization policy in Indonesia is currently in the implementation phase. Although the policy direction is correct, implementation still requires strengthening substantive communication, equalizing resources, increasing the capacity of implementers, simplifying bureaucratic structures, and integrating technology with contextual pedagogical practices. Therefore, school digitalization should be used as a public policy tool to improve the quality, equity, and equity of basic education in Indonesia, not the ultimate goal of the policy.

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