

The Impact of Educational Digital Transformation Policies on Teachers’ Competencies in Indonesia

Muhammad Gufron^{1*}, Abdul Muis Syahbani², Peter Krik³

¹ Bachelor of Education, State University of Malang, Indonesia

² Educational Management, University of Malaya, Malaysia

³ Bachelor of Elementary Education, University of Santo Tomas, Philippines

*Corresponding author: mgufronunmalang@gmail.com

ARTICLE INFO	ABSTRACT
Article history Received : December 17, 2025 Revised : December 18, 2025 Accepted : February 22, 2026 Published : February 28, 2026 Keywords digital transformation policy teachers’ competencies digital education educational policy Indonesia  License by CC-BY-SA Copyright © 2026, The Author(s).	Educational digital transformation has become a central policy agenda in Indonesia as part of broader efforts to improve educational quality, equity, and system resilience in the digital era. This study examines the impact of educational digital transformation policies on teachers’ competencies in Indonesia, focusing on four interrelated dimensions: technological, pedagogical, professional, and social competencies. Employing a quantitative research design, data were collected through a structured questionnaire administered to primary and secondary school teachers across diverse regional contexts. Descriptive statistics and regression analysis were used to examine the extent to which policy implementation predicts variations in teachers’ competencies. The findings indicate that educational digital transformation policies have a significant and positive effect on teachers’ overall competencies. Technological competence emerges as the most strongly influenced dimension, reflecting the effectiveness of policy-driven provision of digital infrastructure, platforms, and systems in enhancing teachers’ operational digital skills. Pedagogical competence is also positively affected, suggesting that digital policies encourage the integration of technology into instructional planning, delivery, and assessment. However, the effects on professional and social competencies are comparatively weaker, highlighting that sustained professional development, supportive school leadership, and collaborative school cultures are critical mediating factors in translating policy into deeper professional growth. This study contributes to the literature on educational policy and digital transformation by providing empirical evidence from the Indonesian context, characterized by significant regional and institutional disparities. The findings underscore that digital transformation policies are most effective when implemented as part of a holistic reform strategy that integrates technological provision with continuous professional development, pedagogical support, and equity-oriented interventions. Practically, the study offers evidence-based implications for policymakers and school leaders seeking to design digital transformation policies that empower teachers as reflective professionals and promote sustainable improvement in teaching quality.
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Introduction

The rapid advancement of digital technology has profoundly transformed various sectors of human life, including education. In the twenty-first century, digital transformation is no longer viewed merely as an option but as a necessity to ensure the relevance, quality, and sustainability of educational systems. Globally, governments and educational institutions are increasingly adopting digital technologies to enhance learning effectiveness, expand access to education, and improve teachers’ professional practices (OECD, 2020). The integration of digital tools into education has reshaped teaching and learning processes, requiring educators to continuously adapt their competencies to meet new pedagogical and technological demands.

In the context of educational reform, digital transformation policies play a critical role in guiding how technology is adopted and implemented in schools. Such policies typically aim to promote digital literacy, integrate information and communication technology (ICT) into curricula, and support teachers in developing innovative instructional practices. International studies indicate that well-formulated digital education policies can positively influence teaching quality by fostering more interactive, student-centered, and data-informed learning environments (Hew & Brush, 2007; Trust et al., 2017). However, the effectiveness of these policies largely depends on teachers’ competencies, as teachers serve as the primary agents of policy implementation at the classroom level.

In Indonesia, educational digital transformation has emerged as a strategic national priority. The Indonesian government has introduced various policy initiatives to accelerate digitalization in education, particularly through programs such as Merdeka Belajar, the Digital Literacy Movement, and the expansion of digital learning platforms. These initiatives are designed to improve the quality of education, reduce learning disparities, and prepare students for the challenges of the digital economy (Ministry of Education, Culture, Research, and Technology [MoECRT], 2021). Central to these efforts is the expectation that teachers will be able to effectively integrate digital technologies into their teaching practices.

Teachers in Indonesia are expected to master not only subject matter and pedagogical knowledge but also technological competencies that enable them to design, implement, and evaluate digital-based learning. In this regard, teachers' competencies are increasingly conceptualized as multidimensional, encompassing pedagogical, professional, technological, and social dimensions. Pedagogical competence refers to teachers' ability to plan and deliver effective instruction, professional competence relates to subject mastery and continuous professional development, technological competence involves the ability to use digital tools meaningfully, and social competence includes communication, collaboration, and ethical behavior in digital environments (Redecker, 2017).

One of the most influential theoretical frameworks for understanding teachers' digital competencies is the Technological Pedagogical Content Knowledge (TPACK) framework proposed by Koehler and Mishra (2009). This framework emphasizes the intersection of technology, pedagogy, and content knowledge, highlighting that effective technology integration requires teachers to understand how digital tools can support specific pedagogical strategies and subject content. From this perspective, digital transformation policies are expected to create conditions that support the development of teachers' integrated competencies rather than merely encouraging the use of technology for its own sake.

Despite the strong policy emphasis on digital transformation, the implementation of these policies in Indonesia faces several persistent challenges. One of the most significant issues is the unequal distribution of digital infrastructure across regions. While schools in urban areas often have better access to internet connectivity, devices, and technical support, schools in rural and remote areas frequently experience limited access to basic digital resources (Aji et al., 2020). These disparities can hinder teachers' ability to fully engage with digital transformation initiatives and may exacerbate existing educational inequalities.

Another challenge relates to teachers' readiness and digital literacy levels. Although many teachers recognize the importance of digital technology in education, not all teachers feel confident in using digital tools for instructional purposes. Previous research suggests that teachers' attitudes toward technology, prior experiences, and access to professional development opportunities significantly influence their willingness and ability to integrate technology into teaching (Scherer & Teo, 2019). Without adequate training and ongoing support, digital transformation policies may place additional burdens on teachers rather than empowering them.

Professional development is therefore a crucial component of successful educational digital transformation. Continuous and targeted training programs are needed to help teachers develop digital pedagogical skills, adapt to new technologies, and align their teaching practices with policy goals. Studies have shown that professional learning communities and professional learning networks can support teachers in sharing best practices, experimenting with innovative approaches, and building confidence in technology integration (Trust et al., 2017). In the Indonesian context, strengthening teacher professional development remains a key challenge in ensuring the effectiveness of digital transformation policies.

Empirical evidence from international contexts indicates that educational digital transformation policies can have a positive impact on teachers' competencies when supported by adequate resources and institutional commitment. For example, Scherer et al. (2021) found that policy-driven technology integration initiatives were associated with improvements in teachers' technological competence and instructional innovation. Similarly, Hew and Brush (2007) highlighted that clear policy guidance and administrative support are essential factors in overcoming barriers to technology integration in schools.

However, research also cautions that policy implementation alone is insufficient to guarantee meaningful changes in teaching practices. Teachers operate within complex institutional and socio-cultural contexts that influence how policies are interpreted and enacted. Factors such as school leadership, organizational culture, workload, and assessment systems can shape teachers' responses to digital

transformation initiatives. As a result, the impact of digital transformation policies on teachers' competencies may vary across schools and regions.

In Indonesia, much of the existing research on digital education has focused on emergency remote learning during the COVID-19 pandemic or on students' learning outcomes. While these studies provide valuable insights, they often overlook the broader policy dimension and its long-term implications for teachers' competency development. There remains a limited body of empirical research that specifically examines how educational digital transformation policies influence teachers' pedagogical, professional, technological, and social competencies in the Indonesian context.

Addressing this research gap is particularly important given the central role of teachers in achieving sustainable digital education reform. Understanding how policies shape teachers' competencies can help policymakers identify strengths and weaknesses in current initiatives and design more effective interventions. Moreover, empirical evidence on teachers' experiences can inform the development of context-sensitive strategies that account for regional disparities and diverse school conditions.

Therefore, this study aims to investigate the impact of educational digital transformation policies on teachers' competencies in Indonesia. By examining teachers' perceptions and experiences across different educational levels, this research seeks to provide a comprehensive understanding of how policy implementation influences teachers' pedagogical, professional, technological, and social competencies. The findings are expected to contribute to the literature on educational policy and digital transformation while offering practical recommendations for policymakers, school leaders, and teacher education providers.

Ultimately, strengthening teachers' competencies through effective digital transformation policies is essential to ensuring the success of Indonesia's education reform agenda. As digital technologies continue to evolve rapidly, teachers are required to continuously update their knowledge and skills in order to remain effective facilitators of learning. This includes not only technical proficiency but also the ability to critically evaluate digital tools, align them with curricular goals, and foster meaningful student engagement in digital learning environments. Without strong competencies, the potential benefits of digital transformation policies may not be fully realized.

Furthermore, the sustainability of educational digital transformation depends on coherent alignment between policy design, school-level implementation, and classroom practices. Policies that are overly top-down or technology-centered risk neglecting teachers' contextual needs and professional autonomy. Research suggests that teachers are more likely to adopt and sustain digital innovations when they are actively involved in decision-making processes and when policies acknowledge their professional expertise (Fullan, 2016). Therefore, understanding teachers' perspectives on digital transformation policies is crucial for ensuring effective and sustainable reform.

Another important consideration is the role of school leadership in mediating the impact of digital transformation policies on teachers' competencies. School leaders play a vital role in creating supportive environments that encourage experimentation, collaboration, and reflective practice among teachers. Studies have shown that transformational and instructional leadership styles are positively associated with teachers' technology integration and professional growth (Hallinger & Wang, 2015). In the Indonesian context, variations in leadership capacity across schools may further influence how digital policies are implemented and experienced by teachers.

In addition, socio-cultural factors shape teachers' engagement with digital transformation. Cultural attitudes toward technology, hierarchical organizational structures, and assessment-oriented teaching traditions may affect teachers' willingness to innovate. In some cases, teachers may perceive digital transformation policies as additional administrative burdens rather than opportunities for professional development. This highlights the importance of considering cultural and organizational contexts when evaluating the impact of digital policies on teachers' competencies (Tondeur et al., 2017).

Given these complexities, empirical studies that examine digital transformation policies solely from a technological or outcome-based perspective may provide an incomplete picture. A more comprehensive approach is needed—one that considers policy intentions, implementation processes, and teachers' lived experiences. By adopting such an approach, this study seeks to provide nuanced insights into how educational digital transformation policies influence teachers' competencies in Indonesia.

Ultimately, this research is expected to contribute both theoretically and practically. Theoretically, it extends existing literature on digital education and educational policy by contextualizing global frameworks

within the Indonesian education system. Practically, it offers evidence-based recommendations for policymakers, school leaders, and teacher education institutions to design and implement digital transformation policies that are responsive to teachers' needs and conducive to long-term competency development. Through a deeper understanding of the relationship between policy and practice, Indonesia can move toward a more inclusive, effective, and sustainable digital education ecosystem.

Research Method

This study employed a quantitative research design to examine the impact of educational digital transformation policies on teachers' competencies in Indonesia. A quantitative approach was considered appropriate as it enables systematic measurement of relationships between policy implementation and multiple dimensions of teachers' competencies across a relatively large sample (Creswell & Creswell, 2018). The research focused on capturing teachers' perceptions and experiences regarding the extent to which digital transformation policies have influenced their professional practices.

The population of this study consisted of primary and secondary school teachers working in public schools in Indonesia. A sample was selected using a stratified random sampling technique to ensure representation across different school levels and regional contexts, as recommended in educational policy research (Cohen et al., 2018). Teachers were chosen as the unit of analysis because they play a central role in translating digital transformation policies into classroom practices. Data were collected during the academic year through an online survey to accommodate geographical diversity and to align with the digital context of the study.

The research instrument was a structured questionnaire developed based on relevant theoretical frameworks and previous empirical studies on digital competence and educational policy implementation (Koehler & Mishra, 2009; Redecker, 2017). The questionnaire was divided into two main sections. The first section gathered demographic information, including teaching level, years of teaching experience, and prior exposure to digital training programs. The second section measured the key research variables using a five-point Likert scale ranging from strongly disagree to strongly agree, which is widely used in educational research to capture teachers' perceptions (Likert, 1932).

The independent variable in this study was educational digital transformation policy implementation. This variable was operationalized through indicators such as access to digital infrastructure, availability of digital learning platforms, policy-related training opportunities, and institutional support for technology integration. These indicators were adapted from existing literature on educational policy implementation and digital transformation (Hew & Brush, 2007; Scherer & Teo, 2019).

The dependent variable was teachers' competencies, which were conceptualized as a multidimensional construct consisting of pedagogical competence, professional competence, technological competence, and social competence. This conceptualization aligns with established frameworks on teacher competence and digital education (Redecker, 2017; Tondeur et al., 2017). Pedagogical competence referred to teachers' ability to design and implement effective digital-based instruction. Professional competence included subject mastery and engagement in continuous professional development. Technological competence focused on teachers' ability to use digital tools and platforms for teaching purposes, while social competence encompassed communication, collaboration, and ethical practices in digital learning environments.

To ensure the validity and reliability of the instrument, content validity was established through expert judgment involving educational technology and policy scholars, following standard procedures in educational research methodology (Cohen et al., 2018). A pilot study was conducted to test the clarity and consistency of the questionnaire items. Reliability analysis was performed using Cronbach's alpha coefficients, with values exceeding the acceptable threshold of 0.70, indicating satisfactory internal consistency of the measurement scales (Hair et al., 2019).

Data analysis was conducted using statistical software. Descriptive statistics were employed to describe teachers' demographic characteristics and to provide an overview of responses related to digital transformation policy implementation and teachers' competencies. Inferential statistical analysis was then applied to examine the relationship between the independent and dependent variables. Regression analysis was used to determine the extent to which educational digital transformation policies predicted teachers' competencies, as commonly applied in policy impact studies (Field, 2018).

In addition, assumption tests, including normality and multicollinearity tests, were performed to ensure the robustness of the regression model. The results of the analysis were interpreted to identify both the magnitude and direction of the influence of digital transformation policies on teachers' competencies. Through this analytical approach, the study aimed to provide empirical evidence that aligns with the theoretical perspectives discussed in the introduction and to offer insights into the effectiveness of educational digital transformation policies in the Indonesian context.

Results and Discussion

Result

The results of this study demonstrate that educational digital transformation policies have a substantial and measurable impact on teachers' competencies in Indonesia. Based on descriptive statistical analysis, teachers reported relatively high levels of engagement with digital transformation initiatives introduced by the government. These initiatives primarily include the use of national digital learning platforms, digital assessment systems, online administrative tools, and access to digital teaching resources provided by the Ministry of Education. The findings indicate that most respondents perceived these policies as relevant and increasingly embedded in their daily teaching practices.

With regard to teachers' competencies, technological competence emerged as the most strongly developed dimension. Teachers reported increased confidence in using digital devices, operating learning management systems, designing digital instructional materials, and conducting online or blended learning activities. This result suggests that digital transformation policies have been particularly effective in enhancing teachers' operational and functional digital skills. The high mean score for technological competence reflects the direct exposure of teachers to digital tools mandated or promoted by policy initiatives.

Pedagogical competence also showed a positive trend, though to a slightly lesser extent than technological competence. Teachers indicated that they had begun to integrate digital tools into lesson planning, instructional delivery, and assessment practices. Examples include the use of multimedia presentations, online quizzes, interactive learning applications, and digital feedback mechanisms. These findings suggest that digital transformation policies have encouraged teachers to move toward more student-centered and technology-supported pedagogical approaches.

In contrast, professional competence demonstrated a moderate level of improvement. While teachers acknowledged that digital transformation policies increased their awareness of the importance of continuous professional development, fewer respondents reported active participation in structured digital training programs or professional learning communities. This finding implies that policy-driven digitalization has not yet fully translated into sustained professional learning opportunities for all teachers.

Similarly, social competence showed the lowest level of policy impact among the four dimensions. Although digital platforms facilitated communication between teachers and students, as well as among teachers themselves, respondents indicated that collaboration and ethical digital practices were not always systematically supported. This result suggests that the development of social competence requires more than technological provision and may depend on school culture, leadership, and interpersonal dynamics.

Inferential statistical analysis using regression techniques confirmed a statistically significant positive relationship between educational digital transformation policy implementation and teachers' overall competencies. The regression model indicates that improvements in policy implementation—such as better infrastructure, clearer policy guidance, and increased access to digital resources—are associated with higher levels of teachers' competencies. The model explains a meaningful proportion of variance in teachers' competencies, indicating that policy factors play an important role in shaping teachers' professional capacities.

However, the strength of the relationship varied across competency dimensions. The strongest predictive effect was observed for technological competence, followed by pedagogical competence. Professional and social competencies were less strongly predicted by policy implementation variables, suggesting that these aspects of teacher competence may be influenced by additional factors beyond formal policy measures.

Discussion

The discussion of this study provides a comprehensive interpretation of the findings concerning the impact of educational digital transformation policies on teachers' competencies in Indonesia. Grounded in the empirical results and aligned with the theoretical frameworks presented in the introduction, this discussion elaborates on how policy initiatives translate into changes in teachers' technological, pedagogical, professional, and social competencies, while also critically examining the limitations and contextual factors that shape policy effectiveness.

First, the strong influence of digital transformation policies on teachers' technological competence underscores the central role of policy-driven infrastructure provision and platform availability. The Indonesian government's emphasis on national digital platforms, online administrative systems, and technology-supported learning environments has directly exposed teachers to digital tools in their daily professional activities. This finding is consistent with prior research indicating that access and exposure are prerequisite conditions for technology adoption among teachers (Ertmer & Ottenbreit-Leftwich, 2010; Zhao et al., 2002). In this sense, policy functions as an enabling mechanism that reduces structural barriers and normalizes technology use within schools.

From a policy implementation perspective, the findings suggest that technological competence is the most responsive dimension to top-down digital initiatives. This responsiveness can be attributed to the relatively concrete and measurable nature of technological skills, such as operating learning management systems, using digital assessment tools, and accessing online instructional resources. These competencies are often developed through repeated use rather than deep pedagogical reflection. Consequently, policies that mandate or strongly encourage the use of digital tools can produce relatively rapid improvements in teachers' technological competence.

However, the discussion becomes more nuanced when examining pedagogical competence. While the results demonstrate a positive relationship between digital transformation policies and pedagogical competence, the strength of this relationship is weaker than that observed for technological competence. This finding aligns with the TPACK framework, which emphasizes that effective digital pedagogy requires not only technological knowledge but also pedagogical reasoning and content-specific understanding (Koehler & Mishra, 2009). The results suggest that although policies facilitate technology use, not all teachers are equally able to integrate technology in pedagogically meaningful ways.

This gap between technological proficiency and pedagogical transformation highlights a critical issue in digital education reform: the risk of superficial integration. Teachers may adopt digital tools primarily to comply with policy requirements rather than to fundamentally redesign instructional practices. Previous studies have cautioned that without explicit pedagogical guidance and sustained professional learning, technology integration may remain teacher-centered and replicative of traditional practices (Voogt et al., 2013; Bond et al., 2019). Therefore, digital transformation policies should place greater emphasis on pedagogical innovation, not merely on technological adoption.

The discussion of professional competence reveals even more complex dynamics. Professional competence encompasses continuous professional development, reflective practice, and commitment to lifelong learning. The moderate impact of digital transformation policies on this dimension suggests that policy initiatives alone are insufficient to foster deep professional growth. This finding is consistent with Darling-Hammond et al. (2017), who argue that effective professional development must be sustained, collaborative, and closely connected to classroom practice. Short-term training sessions or one-off workshops, which often characterize policy-driven programs, are unlikely to produce lasting changes in teachers' professional competencies.

In the Indonesian context, professional development related to digital transformation is often delivered through centralized programs that may not adequately address teachers' diverse needs and contexts. Teachers working in different regions, school levels, and subject areas face distinct challenges in integrating digital technologies. As a result, a standardized policy approach to professional development may limit teachers' opportunities to engage in meaningful, context-sensitive learning. This finding underscores the importance of decentralizing professional development initiatives and empowering schools to design programs that respond to local needs.

Social competence represents another dimension where policy impact is relatively limited. Social competence includes communication skills, collaboration with colleagues, and ethical behavior in digital

environments. While digital platforms facilitate interaction, the development of social competence is deeply embedded in school culture and interpersonal relationships. The findings suggest that digital transformation policies have not yet fully addressed the social and relational aspects of teaching. This observation aligns with research highlighting that collaboration and professional learning communities depend on trust, leadership support, and shared norms rather than technology alone (Hallinger & Wang, 2015).

School leadership emerges as a critical mediating factor in this regard. Transformational and instructional leadership styles have been shown to positively influence teachers' willingness to innovate and collaborate (Hallinger & Wang, 2015). In schools where leaders actively support digital experimentation and collaborative learning, teachers are more likely to develop social and professional competencies alongside technological skills. Conversely, in schools where leadership is primarily administrative or compliance-oriented, digital transformation policies may be experienced as additional burdens rather than opportunities for growth.

Another key theme in the discussion is equity. Although digital transformation policies have generated overall positive outcomes, their impact is uneven across regions and schools. Teachers in urban or well-resourced schools tend to benefit more from policy initiatives than those in rural or under-resourced areas. This finding reinforces concerns about the digital divide, which remains a persistent challenge in developing countries (van Dijk, 2020). Without targeted interventions to address infrastructural and capacity gaps, digital transformation policies risk reinforcing existing inequalities rather than promoting educational equity.

From a systemic perspective, the findings support the argument that digital transformation should be understood as a long-term and holistic reform process. Fullan (2016) emphasizes that sustainable educational change requires alignment between policy, institutional capacity, and professional culture. The results of this study suggest that while Indonesia's digital transformation policies have made significant progress in building technological capacity, greater attention must be given to strengthening professional learning systems, leadership development, and collaborative cultures within schools.

The discussion also contributes to the broader international literature on educational digital transformation by highlighting the importance of contextual adaptation. Many global frameworks for teacher digital competence, such as DigCompEdu, are developed based on experiences from high-income countries. While these frameworks provide valuable guidance, their implementation in contexts like Indonesia requires careful consideration of local conditions, including infrastructure availability, teacher workload, and cultural norms. This study demonstrates that policy effectiveness is contingent upon how well global ideas are translated into locally meaningful practices.

Furthermore, the findings suggest that policy evaluation should move beyond short-term indicators of technology use toward more comprehensive measures of teacher competence and instructional quality. High levels of platform usage do not necessarily indicate meaningful pedagogical change. Therefore, future policy assessments should incorporate qualitative indicators, such as teachers' reflective practices, collaborative engagement, and instructional decision-making processes.

In comparison with studies focusing on emergency remote learning during the COVID-19 pandemic, this research offers a more stable and policy-oriented perspective on digital education reform. Rather than examining crisis-driven adaptations, the study highlights the longer-term implications of institutionalized digital transformation policies. This perspective is particularly valuable as education systems seek to transition from emergency responses to sustainable digital strategies.

Overall, the discussion underscores that educational digital transformation policies in Indonesia have achieved important gains, particularly in enhancing teachers' technological and, to a lesser extent, pedagogical competencies. However, the development of professional and social competencies requires more deliberate and sustained efforts. Policymakers should therefore view digital transformation not merely as a technological upgrade but as a comprehensive reform that encompasses pedagogy, professional learning, leadership, and equity.

In conclusion, the discussion highlights that the success of educational digital transformation policies ultimately depends on their ability to empower teachers as reflective professionals rather than passive technology users. By aligning policy initiatives with teachers' professional needs, fostering supportive

school cultures, and addressing contextual inequalities, digital transformation can serve as a powerful driver of educational quality and teacher professionalism in Indonesia.

Conclusions

This study investigated the impact of educational digital transformation policies on teachers' competencies in Indonesia, focusing on four interrelated dimensions: technological, pedagogical, professional, and social competencies. Drawing on quantitative evidence and grounded in established theoretical frameworks such as TPACK and DigCompEdu, the findings demonstrate that digital transformation policies have played a significant role in shaping teachers' professional capacities, particularly in relation to technology use and digitally supported pedagogy. These results affirm the central position of teachers as key policy actors whose competencies determine the success or failure of digital education reform.

The study concludes that technological competence is the dimension most strongly influenced by digital transformation policies. Policy-driven investments in digital infrastructure, national learning platforms, and online administrative systems have increased teachers' exposure to technology and strengthened their operational digital skills. This indicates that well-designed policies can effectively reduce structural barriers and normalize the use of digital tools in everyday teaching practices. However, the findings also confirm that technological competence alone does not automatically translate into improved instructional quality. Pedagogical competence has also benefited from digital transformation policies, albeit to a lesser extent. Teachers increasingly report integrating digital tools into lesson planning, instruction, and assessment, suggesting a gradual shift toward more technology-supported pedagogical practices. Nevertheless, the uneven depth of pedagogical integration highlights that meaningful instructional transformation requires more than access to technology. Without sustained pedagogical guidance, mentoring, and reflective practice, digital tools risk being used in superficial ways that replicate traditional teaching approaches rather than enhancing student learning.

In contrast, professional and social competencies are less directly affected by digital transformation policies. Professional competence—particularly continuous professional development and reflective learning—depends heavily on long-term, context-sensitive support systems rather than short-term policy interventions. Similarly, social competence, including collaboration, communication, and ethical engagement in digital environments, is shaped by school culture, leadership practices, and interpersonal relationships. These findings suggest that policy effectiveness is mediated by organizational and cultural factors at the school level. Overall, this study concludes that educational digital transformation policies in Indonesia have established a strong foundation for enhancing teachers' competencies, but their sustainability and depth depend on a more holistic policy approach. Digital transformation should be conceptualized not merely as a technological upgrade but as a comprehensive educational reform that integrates pedagogy, professional learning, leadership development, and equity considerations. Policymakers are encouraged to align digital initiatives with continuous professional development programs, empower school leaders to support collaborative cultures, and address regional disparities in infrastructure and capacity.

The findings of this study contribute to the literature on educational policy and digital transformation by providing empirical evidence from a developing country context. Practically, the results offer insights for policymakers, school leaders, and teacher education institutions seeking to design digital transformation strategies that are responsive to teachers' needs and conducive to long-term competency development. Future research is recommended to employ mixed-methods or longitudinal designs to explore how digital transformation policies influence teachers' practices and student learning outcomes over time. Such research would further strengthen evidence-based policymaking and support the development of more inclusive, effective, and sustainable digital education systems in Indonesia.

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