THE DYNAMICS OF SENIOR AND YOUNG TEACHERS' EXPERIENCES IN COPING WITH THE DIGITAL TRANSFORMATION OF EDUCATION

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Abstract

This study aims to analyze the dynamics of senior and junior teachers' experiences in responding to digital transformation in elementary school learning. Using a qualitative phenomenological approach, data were collected through in-depth interviews and observations involving 10 teachers (5 senior and 5 junior) in public elementary schools. The findings reveal differences in adaptation patterns, technological confidence, and pedagogical integration strategies. Senior teachers tend to rely on pedagogical experience but face technological anxiety, while junior teachers demonstrate higher digital fluency yet require classroom management strengthening.

Keywords: Teacher experience; digital transformation; elementary school; digital pedagogy; professional adaptation

INTRODUCTION

Digital transformation in education is inevitable in the era of the Fourth Industrial Revolution and Society 5.0. The integration of digital technology into learning not only changes the medium but also the pedagogical paradigm, the role of teachers, and student-teacher interactions. (Ratulangi 2025). The technology-based teacher competency model, grounded in the Technological Pedagogical Content Knowledge (TPACK) framework, posits that teachers must simultaneously integrate technological knowledge, pedagogy, and content. (Yulihartati and Veri 2025). This framework positions technology not merely as a tool but as an integral component of meaningful learning design. (Anasari and Soekarno 2025)

Recent developments indicate that digital transformation is being accelerated by global changes, including disruptions caused by the COVID-19 pandemic, which has driven massive remote learning. Teachers' digital readiness is a key determinant of the quality of online learning (Kurniawan and Wanto 2023). In line with this, (UNESCO 2021), through the ICT Competency Framework for Teachers, emphasizes that teachers' digital competencies encompass pedagogical, professional, social, and ethical dimensions in the use of technology. This means that digital transformation is not merely a matter of technical skills but also a shift in teachers' professional culture.

However, teachers' readiness to face digital transformation is not homogeneous. Generational differences influence attitudes, self-confidence, and adaptation strategies toward technology. Senior teachers who have been teaching for a long time tend to have strengths in pedagogical experience, classroom management, and understanding of student characteristics. However, some of them face challenges in digital literacy, particularly in using online learning platforms, interactive applications, and learning management systems. Conversely, younger teachers are relatively more adaptable to technology and possess better digital literacy, but are still developing pedagogical maturity, learning reflection, and instructional differentiation skills (Afnani, Nichla, and Attalina 2025).

In the Indonesian context, the digital transformation policy through the Merdeka Belajar program initiated by Nadiem Makarim further underscores the urgency of strengthening teachers' capacity in integrating learning technology. The implementation of platforms such as Rumah Belajar and various Learning Management Systems (LMS) in elementary schools

demonstrates that digital transformation has tangibly entered the classroom. However, its implementation in the field reveals varying levels of readiness and adaptation among teachers (Rahma et al. 2025)

This phenomenon raises important questions: what are the dynamics of the experiences of senior and young teachers in facing the digital transformation of learning in elementary schools? Are there different patterns of adaptation? How can cross-generational interaction and collaboration serve as strategies to strengthen sustainable digital transformation?

This research is significant because elementary schools form the foundation of formal education, shaping students' basic literacy skills and character. The success or failure of digital transformation at this level will have systemic implications for the quality of national education. By understanding the dynamics of teachers' experiences across generations, this study is expected to provide conceptual and practical contributions to the development of policies and collaborative models for professional teacher mentoring.

METHOD

This study employs a qualitative approach with a phenomenological design to understand the subjective experiences of senior and young teachers in navigating the digital transformation of learning in elementary schools. This approach was chosen because the study focuses on the meaning of teachers' lived experiences in the context of changes in technology-based learning practices, rather than on the quantitative measurement of specific variables (Anasari and Soekarno 2025)

The research was conducted during the odd semester of the 2024/2025 academic year for approximately three months (September–November 2024) at three public elementary schools in Serang City that had implemented digital-based learning. Schools were selected through purposive sampling based on the following criteria: (1) they had been using digital devices or a Learning Management System (LMS) in instruction, and (2) they had teachers with a diverse range of years of service (Izazi and Fudhla n.d.)

The study population consisted of all teachers at these three schools, totaling 28 individuals. The research sample was determined using purposive sampling, taking into account generational representation and teaching experience. The research subjects consisted of 10 teachers, comprising 5 senior teachers (with over 20 years of service) and 5 young teachers (with less than 5 years of service). Inclusion criteria included: actively teaching during the research year, being involved in the use of digital technology, and being willing to participate in the study (Farah et al. 2025)

Research instruments included: (1) A semi-structured interview guide designed to explore teachers' perceptions, experiences, challenges, and adaptation strategies regarding digital transformation. (2) An observation sheet for digital learning practices to document technology integration, teacher-student interactions, and digital classroom management (3) Documentation in the form of instructional materials (lesson modules/lesson plans), digital media used, and school policies related to digitization (Santoso A 2024)

Data validity is ensured through source triangulation (comparison of data from senior and junior teachers), methodological triangulation (interviews, observations, documentation), and member checking by asking participants to verify summaries of interview results. To maintain consistency in interpretation, peer debriefing was conducted. Since this study is qualitative, reliability is understood as dependability and is ensured through data trail audits (field notes and interview transcripts are well-documented) (Syamsuri et al. n.d.)

The research procedures included the preparation stage (instrument development and obtaining permissions), the data collection stage (interviews and observations), and the data analysis and verification stage (Murniyati 2025). Each interview lasted 45–60 minutes and

was recorded with the participants' consent. Observations were conducted at least twice for each subject to obtain a consistent picture of learning practices.
Data analysis utilized the interactive analysis model developed by Matthew B. Miles and A. Michael Huberman, which comprises three stages: data reduction, data presentation, and conclusion drawing/verification. The analysis process was conducted simultaneously from the start of data collection until stable thematic patterns emerged. Categories and themes were developed inductively based on the emergence of data in the field (Syamsuri et al. n.d.)
The scope of this study is limited to the experiences of teachers at three elementary schools within a single urban area; therefore, the findings are not intended to be statistically generalized but rather to provide a deep contextual understanding. The relatively small number of subjects also constitutes a limitation of the study. Nevertheless, the depth of the data obtained allows readers to evaluate the research process and opens opportunities for replication or the development of follow-up studies in broader contexts.

RESULT AND DISCUSSION

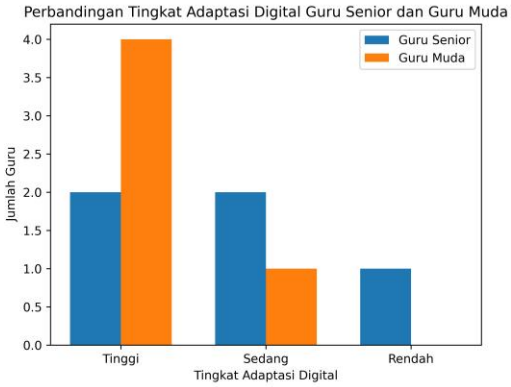
This section presents research findings on the dynamics of the experiences of senior and young teachers in navigating the digital transformation of learning in elementary schools. Data were collected through in-depth interviews, observations of digital learning practices, and documentation of teaching materials.
1. Research Participants' Profiles:
The following are the characteristics of the research participants based on years of service and involvement in digital learning:
Table 1. Characteristics of Research Participants

Kode Guru	Kategori	Masa Kerja	Penggunaan LMS	Media Digital yang Digunakan
GS1	Senior	25 tahun	Ya	PowerPoint, WhatsApp
GS2	Senior	28 tahun	Ya	Video YouTube, PPT
GS3	Senior	22 tahun	Terbatas	PPT
GS4	Senior	30 tahun	Ya	LMS Sekolah
GS5	Senior	24 tahun	Terbatas	PPT
GM1	Muda	3 tahun	Ya	LMS, Canva, Quizizz
GM2	Muda	2 tahun	Ya	Google Classroom
GM3	Muda	4 tahun	Ya	LMS, Video Interaktif
GM4	Muda	1 tahun	Ya	Canva, Wordwall
GM5	Muda	3 tahun	Ya	LMS, PowerPoint Interaktif

Source: Adapted from research data, 2024. Table 1 shows that all young teachers actively use the LMS, whereas among senior teachers there is variation in the level of technology use.
1. Adaptation Patterns of Senior Teachers
Interview results indicate that senior teachers possess strong pedagogical experience in classroom planning and management. However, regarding the use of digital technology, some teachers stated that they still require technical support.
Based on observations, senior teachers tend to use technology primarily as a tool for presenting content, rather than as a means for two-way interaction. Learning Management Systems (LMS) are used mainly for assigning tasks, not for online discussions or digital assessments.

2. Adaptation Patterns of Young Teachers
Young teachers demonstrate a high level of confidence in using digital learning applications. They utilize interactive features such as online quizzes, interactive videos, and engaging visual content design.
Observations indicate that lessons conducted by young teachers are more varied and actively engage students through digital media. However, in some cases, challenges were identified regarding time management and classroom control when students became overly focused on their devices.
3. Comparison of Digital Adaptation Dynamics
A comparison of technology adaptation levels between senior and young teachers can be seen in Figure 1.

Figure 1. Comparison of Digital Adaptation Levels Among Senior and Young Teachers



Source: Adapted from Research Data, 2024.
Figure 1 shows that the majority of young teachers fall into the category of high adaptability to digital technology, while senior teachers exhibit a more varied distribution.
1. Patterns of Intergenerational Collaboration
Interview results indicate that two out of three schools have implemented informal discussions among teachers regarding technology use. Younger teachers often assist senior teachers with the technical aspects of using applications, while senior teachers provide input on classroom management strategies and pedagogical approaches.
These findings suggest a complementary relationship between generations in the process of digital transformation in learning.

DISCUSSION

This study aims to analyze the dynamics of the experiences of senior and novice teachers in navigating the digital transformation of learning in elementary schools. Based on the research findings, differences were identified in adaptation patterns, levels of confidence in technology, and digital integration strategies in teaching practices. These findings address the research question that teachers' readiness for digital transformation is not homogeneous but is influenced by generational factors, teaching experience, and the school's professional environment.
First, senior teachers demonstrate strengths in pedagogical content knowledge, particularly in lesson planning, classroom management, and understanding the characteristics of elementary

school students. However, in the integration of digital technology, its use tends to be substitutive—limited to presentation tools or task distribution. These findings align with the Technological Pedagogical Content Knowledge (TPACK) framework developed by Punya Mishra and Matthew J. Koehler, which emphasizes that meaningful technology integration requires a balance between pedagogical, content, and technological knowledge. Among senior teachers, the technological knowledge dimension remains an area for improvement (Rahma et al. 2025)

Second, young teachers demonstrate a higher level of digital adaptation, as evidenced by the dominance of the "high adaptation" category in the research results graph. They utilize LMS, interactive quiz applications, and digital visual media to enhance student participation (Yulihartati and Veri 2025). These findings reinforce the concept of the "digital native" introduced by Prensky (2001), suggesting that individuals raised in the technological era tend to be more responsive to digital innovations. However, observational results indicate that pedagogical competencies and digital classroom management still require further development. This implies that digital literacy does not automatically correlate with pedagogical maturity (Ratulangi 2025)

Third, this study identified a complementary cross-generational collaboration pattern. Younger teachers assist senior teachers with the technical aspects of technology use, while senior teachers provide support for pedagogical strategies and classroom management. This pattern indicates that effective digital transformation is not an individual process, but a collective one. This finding is consistent with the report (Yulihartati and Veri 2025), which emphasizes the importance of professional learning communities in supporting teachers' adaptation to educational innovations. Similarly, (UNESCO 2021), through the ICT Competency Framework for Teachers, underscores that the development of digital competencies must be integrated into the school's collaborative culture.

In terms of novelty, this study contributes to understanding the dynamics of digital transformation at the elementary school level from a cross-generational perspective. While previous research has largely focused on teachers' digital competencies in general, this study specifically highlights the complementary relationship between senior and young teachers as a strategic strength in digital transformation. Thus, digital transformation is not positioned as a arena of generational gaps, but as a space for intergenerational collaboration (Anasari and Soekarno 2025)

The theoretical implications of this study reinforce the relevance of the TPACK framework in the context of digital transformation in elementary education. Meanwhile, the practical implications point to the need for professional development programs based on reciprocal mentoring, where senior and young teachers serve as mentors to one another according to their respective strengths. Schools also need to build a digital learning ecosystem that not only provides infrastructure but also spaces for reflection and professional collaboration (Rahma et al. 2025)

The limitations of this study lie in the limited number of participants and the specific regional context, meaning the findings are contextual and not intended for broad generalization. Additionally, the ever-evolving dynamics of digital transformation allow for changes in teachers' adaptation patterns over different time periods.

Given these limitations, further research is recommended to involve a larger number of participants and a more diverse range of regions, as well as to combine qualitative and quantitative approaches (mixed methods) to obtain a more comprehensive picture. Future studies could also explore the direct impact of intergenerational collaboration on student learning outcomes as an indicator of the success of digital learning transformation.

CONCLUSION

This study confirms that the digital transformation of learning in elementary schools is a dynamic process influenced by generational differences among teachers. Senior teachers demonstrate strengths in pedagogical experience and classroom management, but still require improvement in digital literacy and the integration of digital technology. Conversely, young teachers exhibit a higher level of digital adaptability and are more exploratory in their use of learning applications, but still need to deepen their pedagogical reflection and digital classroom management skills. These findings indicate that readiness for digital transformation is not determined by age alone, but rather by a balance between pedagogical and technological competencies.

This study is significant because it offers an intergenerational perspective on understanding digital transformation at the elementary school level, which has traditionally been studied primarily from the perspective of individual teacher competencies. Empirical evidence from the research indicates that intergenerational collaboration—through the practice of sharing pedagogical experiences and digital skills—is an effective strategy for strengthening the sustainable integration of learning technologies. Thus, digital transformation should be viewed as a collective process rooted in a professional learning community, rather than merely an individual challenge.

Nevertheless, this study has not yet deeply explored the direct impact of these collaborative dynamics on student learning outcomes or on long-term changes in school culture. Therefore, the findings of this study serve as a foundation for further research examining the effectiveness of intergenerational collaboration models in improving the quality of digital learning in elementary schools and in supporting broader educational transformation policies.

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