

Artificial Intelligence and Administrative Workload in Remote Educational Services: A Qualitative Study in South Papua

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ABSTRACT

Teachers in remote areas often face substantial administrative workloads that limit their focus on instructional activities and educational quality. In recent years, artificial intelligence (AI) has been introduced as a potential support tool to assist teachers in managing routine administrative tasks. This study explores teachers' perspectives on the use of artificial intelligence (ChatGPT, Gemini, Canva AI and etc) in managing administrative workload in remote educational services in South Papua using a qualitative approach. Data were collected through semi-structured interviews with 6 teachers and 1 school administrators, complemented by document analysis of instructional and administrative records. The data were analyzed thematically to identify recurring patterns, perceptions, and contextual factors related to AI utilization. The findings indicate that AI is perceived as a supportive tool that helps reduce time spent on repetitive administrative tasks, such as lesson planning documentation and reporting. However, the effectiveness of AI utilization is strongly influenced by digital literacy, infrastructure availability, and contextual adaptation to local conditions in remote areas. Teachers emphasize that AI does not replace professional judgment but rather complements their administrative practices. This study highlights the importance of context-sensitive AI integration and provides practical insights for policymakers and educational administrators in designing strategies to support teachers in remote educational settings. The findings contribute to the growing discourse on educational management and technology by presenting empirical evidence from an underrepresented region.

Keywords: Artificial intelligence; administrative workload; educational services; teachers; remote areas

A. Introduction

The increasing integration of artificial intelligence (AI) into education has transformed various aspects of teaching and learning, including efforts to alleviate administrative workloads that traditionally consume

significant teacher time and energy.

Administrative tasks—such as documentation, reporting, and record-keeping—often detract from instructional activities (Ridhaningtyas, 2025; Ginola et al, 2025), reducing

teacher focus on core pedagogical functions (Yohanes et al., 2025).

Research shows that AI tools can reduce administrative burden by automating routine tasks and enabling teachers to allocate more time toward meaningful educational engagement (Pesántez, 2025; Rushidi et al., 2025). Despite emerging empirical evidence on AI's potential to enhance administrative efficiency in higher education and well-resourced contexts, the literature reveals a notable gap in studies addressing teacher experiences with AI support in remote and under-resourced educational settings.

Most existing research predominantly examines AI adoption in urban or higher education environments, where infrastructural and human resource conditions differ markedly from those in remote regions (Anam et al., 2025; Zulfikar et al., 2026). Moreover, systematic reviews on AI in educational administration highlight its capacity to manage data, support decision making, and streamline workflow processes, but also emphasize the need to consider contextual adaptation to ensure sustainable implementation (Suhardi,

2025; Hutami et al., 2024; Yohanes et al., 2024)

Furthermore, literature on AI in education highlights constraints such as digital literacy, infrastructure readiness, and ethical considerations that influence effective adoption and utility of technology in schooling environments (Paramita et al., 2025; Dolah et al., 2025)

Within remote regions like South Papua, where limited connectivity and resource challenges are prevalent, there is a pressing need for research that captures teachers' lived experiences and contextual adaptations of AI for administrative support. This study addresses this gap by exploring how AI is perceived and used to manage administrative workload, providing insights that are essential for developing context-sensitive educational management strategies.

B. Method

This study employed a qualitative descriptive approach to explore teachers' perspectives on the use of artificial intelligence (ChatGPT, Gemini, Canva AI and etc) in managing administrative workload within remote educational services in

South Papua. A qualitative approach was considered appropriate as it enables an in-depth understanding of participants' experiences, perceptions, and contextual conditions related to AI utilization, which cannot be adequately captured through quantitative measurement alone (Creswell & Poth, 2018).

The participants of this study consisted of 6 teachers and 1 school administrators working in remote schools in the Muting district of Merauke Regency (Indonesia – Papua New Guinea border) in South Papua Province. involved in routine administrative tasks related to instructional activities, and having experience using or being exposed to artificial intelligence or AI-assisted digital tools (ChatGPT, Gemini, Canva AI and etc) for administrative purposes (lesson plan, learning media, learning evaluation, etc)

Participants were selected using purposive sampling to ensure relevance to the research focus. Data were collected through semi-structured interviews, allowing participants to freely express their views while maintaining alignment with the research objectives (Guest et al., 2014).

Data analysis followed a thematic analysis procedure, involving familiarization with the data, initial coding, theme development, and interpretation (Braun & Clarke, 2006). This process enabled the identification of recurring patterns and key themes related to AI utilization, perceived benefits, and contextual challenges in remote educational settings. To enhance the trustworthiness of the findings, credibility was ensured through source triangulation and member checking, while transparency was maintained through systematic documentation of the analytical process (Lincoln & Guba, 1985),

C. Result And Discussions

The analysis of interview data and administrative documents revealed several key themes related to the use of artificial intelligence in managing teachers' administrative workload in remote educational services in South Papua. The findings are presented thematically to reflect teachers' perspectives and contextual experiences.

AI as a Supportive Tool for Administrative Tasks

Participants consistently perceived artificial intelligence as a supportive tool that assists in completing routine administrative tasks, such as lesson plan documentation, report preparation, and instructional records. Teachers reported that AI-enabled tools helped simplify repetitive work and reduce the time required to complete administrative obligations. However, AI was not viewed as a replacement for teachers' professional judgment but rather as an aid that complements existing administrative practices. as conveyed by the participants : *"For me, artificial intelligence is more like a tool that helps with administrative work. I usually use it to prepare lesson plan documents and draft reports. It makes the process faster, especially for repetitive tasks."* (Teacher 1).

"Using AI really helps simplify routine paperwork. Tasks like preparing instructional records used to take a lot of time, but now I can finish them more efficiently. Still, I always review and adjust the content myself."(Teacher 2).

"The main benefit of AI is reducing the time spent on administrative tasks (such as lesson planned, made learning media and etc). However, it

cannot fully understand our local conditions, so we still need to adapt the output based on our experience."

(Teacher 5)

Overall, the interview findings show that teachers view artificial intelligence as a supportive tool that helps manage routine administrative tasks without replacing professional judgment. AI is perceived as effective when used adaptively and contextually alongside existing administrative practices.

Perceived Reduction of Administrative Time Pressure

Teachers described a perceived reduction in time pressure associated with administrative responsibilities. The use of AI tools allowed them to allocate more time to instructional preparation and student engagement. This perceived benefit was particularly significant in remote schools, where teachers often manage multiple roles simultaneously due to limited human resources.

"AI helps reduce the burden of paperwork. I can spend more time thinking about teaching strategies and engaging with students instead of focusing on reports." (Teacher 2)

"Because we have limited staff, administrative duties often pile up. AI

does not remove all the work, but it helps reduce the pressure and allows me to balance teaching and administration better.” (Teacher 5)
“Before using AI, administrative work took up most of my time. Now, I feel less pressured because some tasks can be completed faster (matters relating to correspondence, announcement and etc), so I have more time to prepare for other work.”(School Administrator)

“Because we have limited staff, administrative duties often pile up. AI does not remove all the work, but it helps reduce the pressure and allows me to balance teaching and administration better.”(Teacher 5)

teachers perceived that the use of AI helped alleviate time pressure related to administrative responsibilities, enabling them to allocate more time to instructional preparation and student engagement. This benefit was particularly meaningful in remote school contexts, where teachers are required to manage multiple roles due to limited human resources.

Contextual Challenges in AI Utilization

Despite its perceived benefits, participants identified several challenges affecting AI utilization. Limited internet connectivity, inadequate digital infrastructure, and varying levels of digital literacy were reported as major constraints. These contextual factors influenced how effectively AI could be integrated into daily administrative work.

“AI can be helpful, but in our context (rural areas), we still face technical limitations (internet signal). Without proper support, it cannot be used consistently”. (Teacher 4).

participants emphasized that while AI offers potential administrative benefits, its effective utilization is constrained by contextual challenges such as limited internet connectivity, inadequate digital infrastructure, and varying levels of digital literacy. These conditions shape how AI is integrated into daily administrative practices in remote educational settings.

Adaptive Practices and Local Context

Teachers demonstrated adaptive strategies in using AI tools according to local conditions. Some participants relied on offline or semi-digital approaches, while others selectively

used AI for specific tasks that were compatible with available resources. These adaptations highlight the importance of context-sensitive implementation of AI in remote educational settings, as expressed by the participants

"I only use AI (Chat GPT) for certain administrative tasks, such as drafting lesson plans. For other tasks, I still rely on manual preparation." (Teacher 2)

"Because of limited facilities, we combine digital and manual work. AI helps at certain stages, but the final document is still adjusted by us." (Teacher 3)

"AI is helpful, but we must adapt it to our local conditions. Not every tool works effectively in a remote area like ours." (Teacher 4)

"In our school, we cannot depend fully on AI. We use it selectively for tasks that match the available resources." (Teacher 2)

Overall teachers demonstrated adaptive and selective strategies in utilizing AI tools according to local conditions and available resources. These practices underline the importance of context-sensitive implementation, ensuring that AI functions as a flexible administrative support tool within remote educational

settings rather than as a rigid technological solution.

E. Conclusion

This study reveals that artificial intelligence (AI) has the potential to alleviate teachers' administrative workload in remote educational services in South Papua by supporting routine tasks such as lesson planning, reporting, and instructional documentation, thereby enabling teachers to devote more time to instructional preparation and student engagement. Nevertheless, the effective utilization of AI remains contingent upon contextual factors, including internet accessibility, digital infrastructure, and teachers' digital literacy. In response to these challenges, teachers demonstrate adaptive and selective practices that align AI use with local conditions and available resources. These findings highlight that AI should be positioned not as a replacement for teachers' professional judgment, but as a complementary tool that enhances administrative efficiency. Therefore, educational policymakers and school leaders should prioritize context-sensitive AI integration through infrastructure development, digital

capacity building, and sustainable support systems. Future research is encouraged to examine the long-term implications of AI adoption across diverse educational contexts and its potential influence on teacher performance, instructional quality, and educational service effectiveness.

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