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ELEMENTARY SCHOOL TEACHERS' PERSPECTIVES ON USING CHATGPT IN EDUCATION

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ABSTRACT
The rapid development of Artificial Intelligence (AI) technology has introduced new opportunities in education, one of which is the use of ChatGPT. This application is believed to support teachers in designing lesson plans, developing test items, and providing more creative variations in the learning process. However, its utilization at the elementary school level still raises concerns, particularly regarding teachers' readiness, infrastructural limitations, and ethical considerations. Therefore, this study aims to explore elementary school teachers' perspectives on the use of ChatGPT, with a particular focus on Tomohon City.
The objective of this research is to describe the benefits, challenges, and expectations of teachers in employing ChatGPT as part of the teaching and learning process. A descriptive qualitative method was applied, involving all elementary school teachers in Tomohon City, totaling 192 teachers from 32 schools. Data were collected through open-ended questionnaires, in-depth interviews, and documentation, and analyzed using thematic analysis with the interactive model of Miles, Huberman, and Saldaña. The findings indicate that most teachers hold a positive perception of ChatGPT, especially in enhancing the efficiency of lesson plan preparation and the development of instructional materials. Nevertheless, teachers still face challenges such as limited digital literacy, inadequate internet access, and concerns regarding information accuracy and ethical use. Teachers also emphasize the importance of digital literacy training and ethical guidelines to ensure more effective utilization of ChatGPT. These findings contribute to the academic discourse by broadening the understanding of generative AI adoption in elementary education while highlighting the need for policy support, infrastructure improvement, and teacher capacity-building.

INTRODUCTION

The rapid development of Artificial Intelligence (AI) technology has increasingly penetrated various aspects of life, including education. One of the most widely discussed forms of generative AI is ChatGPT, a language model

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capable of generating text in an interactive and adaptive manner (OpenAI, 2023). In the context of elementary education, teachers are ideally expected to utilize ChatGPT to enrich learning materials, design lesson plans, create diverse assessment items, and support students' digital literacy. The use of this technology is believed to help teachers teach more creatively and efficiently while preparing students to face the challenges of the digital era (Kasneci et al., 2023). Therefore, it is important to investigate how elementary school teachers perceive the use of ChatGPT in teaching and learning, so that the potential of this technology can be optimized in accordance with the needs of primary education.

However, this ideal condition remains far from reality, particularly in elementary schools in Tomohon. Preliminary observations indicate that most teachers have not yet fully understood the functions and potential of ChatGPT in supporting the teaching and learning process. The use of digital technology is still limited to basic presentation media or simple online information searches (Yuliani & Sari, 2022). Some teachers even remain hesitant to adopt AI due to limited digital literacy, concerns about the accuracy of generated information, and the absence of formal policies or guidelines from schools or the government (Susanti, 2023). This reveals a gap between the potential use of ChatGPT and the actual practices of classroom teaching.

To bridge this gap, this study seeks to map teachers' perspectives on the use of ChatGPT in the learning process. By understanding teachers' views, needs, and challenges, more targeted mentoring and training strategies can be developed. This research does not merely describe teachers' attitudes but also aims to identify opportunities for the practical implementation of ChatGPT in elementary schools. The findings are expected to serve as a foundation for policymakers at both school and local government levels in designing digital literacy programs and AI utilization strategies that are relevant to the context of primary education in Tomohon (Rahmawati & Anshori, 2022).

Several previous studies have highlighted the positive impacts of AI utilization in education. For instance, research at the higher education level found that ChatGPT could assist students in writing essays, developing research ideas, and accelerating access to information (Smutny & Schreiberova, 2023). Other studies revealed that teachers could use ChatGPT as a virtual assistant in preparing teaching materials, thus making lesson preparation more efficient (Kasneci et al., 2023). Nevertheless, most existing research has focused on secondary and higher education, while studies at the elementary school level remain very limited (Dwivedi et al., 2023).

Moreover, previous research has tended to emphasize the technical and practical benefits of ChatGPT, while paying less attention to teachers' perceptions—particularly at the elementary level—when facing this new technology. In fact, teachers' perspectives are a key factor in determining whether a pedagogical innovation can be sustainably adopted (Alam, 2023). Therefore, this study offers a new contribution by exploring in depth the perspectives of elementary school teachers on the use of ChatGPT, including its perceived benefits, challenges, and expectations. In this way, the research aims to provide a more comprehensive understanding and open opportunities for the more promising utilization of ChatGPT in elementary education.

RESEARCH METHOD

This study employed a descriptive qualitative approach with the aim of exploring and describing elementary school teachers' perspectives on the use of ChatGPT in teaching and learning. A qualitative approach was selected because this research focuses on gaining an in-depth understanding of teachers' views, experiences, and expectations regarding the use of artificial intelligence technologies in the context of primary education (Creswell & Poth, 2018).

The research subjects consisted of all elementary school teachers in Tomohon City. According to data from the Tomohon City Education Office in 2024, the city has 32 elementary schools with a total of 192 teachers across several districts. Considering the relatively large number of subjects, this study applied purposive sampling, in which informants were selected based on specific criteria, such as teachers who had heard of or tried using ChatGPT, teachers actively using digital technologies in teaching, and teachers willing to participate as respondents.

Data were collected through: (1) open-ended questionnaires to capture teachers' general views on the benefits, challenges, and expectations related to ChatGPT; and (2) in-depth interviews to further explore teachers'

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personal experiences and perceptions. In addition, documentation was conducted to gather data on the number of schools, number of teachers, and policies related to educational technology utilization in Tomohon City.

The collected data were analyzed using thematic analysis, which consisted of the following stages: (1) data reduction through coding, (2) categorization of data into main themes, and (3) drawing conclusions based on emerging patterns. The analysis process was carried out iteratively, referring to the interactive analysis model of Miles, Huberman, and Saldaña (2018), which emphasizes the interconnectedness of data reduction, data display, and conclusion drawing.

To ensure the trustworthiness of the data, triangulation techniques were applied, including source triangulation (comparing information from different teachers), method triangulation (combining questionnaires, interviews, and documentation), and theoretical triangulation (comparing the findings with existing theories and previous studies). These measures were taken to enhance the credibility and dependability of the research results.

RESULTS OF RESEARCH

This study was conducted in 32 elementary schools in Tomohon City with a total of 192 teachers as research subjects. Of these, 150 teachers (78.1%) agreed to complete the open-ended questionnaire, and 30 of them were further interviewed. The analysis revealed that teachers' perspectives on the use of ChatGPT in teaching and learning were categorized into three main themes: benefits, challenges, and expectations.

a. Benefits

Most teachers considered ChatGPT to be a useful tool in preparing teaching materials. A total of 102 teachers (68%) stated that ChatGPT facilitated the development of lesson plans, particularly in formulating learning objectives, instructional content, and sample questions. Furthermore, 78 teachers (54%) believed that ChatGPT could inspire more varied literacy and numeracy strategies. Several teachers also reported that ChatGPT served as a quick and flexible source of ideas for adapting materials to students' needs. Interview findings reinforced this result, as teachers admitted that ChatGPT was often used as an "initial assistant" to generate teaching ideas before adjusting them to their classroom contexts.

b. Challenges

Despite its benefits, teachers still faced several challenges in using ChatGPT. A total of 117 teachers (61%) expressed doubts about the accuracy of ChatGPT's responses, fearing that the information might not fully align with the elementary school curriculum. Additionally, 90 teachers (47%) reported difficulties in integrating AI-based technologies into daily teaching practices due to limited digital literacy. Interviews also revealed ethical concerns, with teachers worrying that students might use ChatGPT to complete assignments without truly understanding the underlying concepts. Technical barriers, such as poor internet connectivity in some schools on the outskirts, further complicated ChatGPT's implementation.

c. Expectations

The majority of teachers highlighted the need for official support to ensure more effective use of ChatGPT. A total of 138 teachers (72%) hoped for digital literacy training programs specifically designed to equip them with the skills needed to use ChatGPT in supporting classroom instruction. Moreover, 125 teachers (65%) stressed the importance of ethical guidelines and clear policies from schools and the education office to prevent overreliance on ChatGPT by both teachers and students. Teachers also expressed expectations that ChatGPT could be contextualized to support creative learning based on Tomohon's local culture and environment, such as integrating cultural literacy and environmental awareness into learning materials.

Overall, the findings demonstrate that elementary school teachers in Tomohon perceive ChatGPT as having great potential to enhance teaching efficiency and bring innovation into the learning process. However, these benefits are overshadowed by challenges related to digital literacy, information accuracy, and ethical considerations. The empirical evidence of this study emphasizes the need for continuous digital literacy training and clear policies to ensure that AI technologies such as ChatGPT can be used responsibly and effectively in elementary education.

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DISCUSSION

The findings of this study reveal that most elementary school teachers in Tomohon perceive ChatGPT as beneficial in teaching and learning, particularly in assisting lesson plan preparation, test development, and providing creative ideas for instructional content. These results are in line with Alharbi (2024), who found that K–12 teachers in the United States viewed ChatGPT as a pedagogical tool that could enhance efficiency and creativity, especially in lesson planning. Similarly, teachers in Tomohon who considered ChatGPT a time-saving resource echoed the findings of Özkara and Baysal (2024) in Turkey, who confirmed that ChatGPT has the potential to enrich learning activities and provide convenient access to learning resources.

Nonetheless, the study also identified several challenges. Approximately 61% of teachers doubted the accuracy of ChatGPT-generated information, and 47% reported difficulties in integrating it directly into classroom instruction. These results align with the Technology Acceptance Model (TAM), which emphasizes that trust, perceived usefulness, and perceived ease of use are critical factors influencing technology acceptance (Venkatesh et al., 2021). Concerns about accuracy and ethical use were also highlighted in Özkara and Baysal's (2024) study, which reported that Turkish teachers were hesitant to use ChatGPT due to the risk of misinformation. Similarly, Alharbi (2024) found that some teachers remained worried about potential misuse of ChatGPT by students for plagiarism and academic dishonesty.

The local context of Tomohon reveals additional challenges that differ from those reported in other countries, particularly teachers' limited digital literacy and uneven internet access in certain schools. This finding suggests that technology adoption is not solely determined by perceived usefulness but also by facilitating conditions, such as infrastructure and institutional support (Venkatesh et al., 2021). Thus, while ChatGPT is conceptually perceived as beneficial, external and contextual factors pose significant barriers to its adoption in elementary education.

On the other hand, most teachers (72%) expressed the need for digital literacy training, while 65% emphasized the importance of ethical guidelines for ChatGPT use in classrooms. These expectations are consistent with Özkara and Baysal (2024), who found that teachers required guidance and training to use ChatGPT effectively and responsibly. Similarly, Alharbi (2024) noted that increased teacher comfort and competence in using generative AI correlates with a stronger perception of its benefits and reduced concerns. These findings also support Rogers' (2003) diffusion of innovation theory, which highlights that the successful adoption of educational innovations is more likely when supported by adequate training, regulations, and institutional backing.

By comparing the results of this study with previous research, it is evident that teachers' perspectives in Tomohon are relatively consistent with global trends: they recognize ChatGPT's potential to support teaching but remain challenged by issues of accuracy, ethics, digital literacy, and infrastructure. The novelty of this study lies in its local context, providing empirical insights into the perspectives of elementary school teachers in Tomohon—a context that has been underexplored in the literature. Therefore, this research contributes to the global understanding of generative AI adoption in elementary education while underscoring the importance of context-specific intervention strategies.

CONCLUSION AND IMPLICATIONS

This study aimed to describe the perspectives of elementary school teachers in Tomohon City regarding the use of ChatGPT in teaching and learning. Based on findings from 32 schools with 192 teachers, it was revealed that the majority of teachers hold positive views toward ChatGPT, particularly in terms of its effectiveness in preparing lesson plans, developing assessment items, and enhancing instructional creativity. These results indicate that ChatGPT is perceived as a relevant tool to support teachers' roles in the digital era.

Nevertheless, the study also uncovered several challenges. Teachers expressed doubts about the accuracy of ChatGPT-generated information, faced limitations in digital literacy, and encountered uneven internet access. These findings support the Technology Acceptance Model (Venkatesh et al., 2021), which emphasizes that perceived

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usefulness, ease of use, and facilitating conditions significantly influence technology adoption. Concerns about potential misinformation and plagiarism, as also reported in previous studies (Alharbi, 2024; Özkara & Baysal, 2024), further underline the need for clear ethical guidelines and regulatory frameworks in the use of ChatGPT in education.

Furthermore, teachers in Tomohon expressed expectations for digital literacy training and the development of ethical guidelines for ChatGPT integration in classrooms. This aligns with Rogers' (2003) diffusion of innovation theory, which stresses the importance of institutional support, training, and regulations in accelerating the adoption of educational innovations. Thus, while ChatGPT holds significant potential to enhance elementary education, its success largely depends on teacher readiness, infrastructural support, and educational policy frameworks.

From an academic standpoint, this study contributes to the literature by presenting a local context of elementary school teachers' perspectives in Tomohon, which has been underexplored in previous research. These findings broaden the global understanding of generative AI adoption in primary education while offering strategic directions in the form of teacher capacity-building and the establishment of more comprehensive regulations to ensure that ChatGPT utilization is optimal, ethical, and sustainable.

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