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# Harnessing Digital Tools An Application for Productive Teaching, Writing, Research, and Reporting

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**ABSTRACT**

This qualitative action research explored teachers' experiences in using artificial intelligence (AI) and digital tools for lesson preparation, academic writing, research, and reporting at Gapok Central Elementary School, Sultan Kudarat, Philippines. The study examined teachers' perceptions of the usefulness of these tools, their influence on instructional and administrative responsibilities, and the benefits and challenges associated with their integration. Sixteen teachers with experience using AI-powered applications participated in the study. Data were gathered through semi-structured interviews, focus group discussions, and classroom observations and were examined using thematic analysis. Six themes emerged: enhanced teaching efficiency and creativity, reduced workload and stress, research support and professional growth, accessibility and inclusive education, challenges in AI adoption, and support and readiness for integration. Participants reported that digital tools facilitated lesson preparation, supported the development of instructional materials, simplified research-related activities, and improved the organization and timeliness of reports. They also described greater confidence in using technology and opportunities to accommodate diverse learning needs. However, unreliable internet connectivity, limited familiarity with AI applications, device constraints, and the need to contextualize generated materials remained significant concerns. Despite these challenges, teachers expressed willingness to strengthen their digital competencies through training and peer collaboration. The findings suggest that AI and digital tools can support teacher productivity and professional development when accompanied by appropriate infrastructure, practical training, and responsible implementation. Strengthening institutional support and promoting collaborative learning may help schools integrate these technologies more effectively into everyday educational practice.

**Keywords:** *Artificial Intelligence in Education, Digital Tools, Elementary Education, Instructional Preparation, Qualitative Action Research, Teacher Productivity, Teacher Workload, Technology Integration*

## INTRODUCTION

The challenges faced by teachers, particularly in preparing lessons while managing multiple responsibilities, reflect the increasing demands placed on educators. Many teachers consider conducting research a challenging and time-consuming task, while analyzing reports alongside instructional and administrative duties may contribute to mental exhaustion and errors. These concerns highlight the need for practical solutions, including the integration of artificial intelligence (AI), to support teachers in managing their workloads and improving efficiency. Chiu et al. (2023) identified several potential applications of AI in teaching and educational administration, demonstrating its relevance to instructional and professional responsibilities. However, further investigation is needed into its practical implementation, particularly in resource-constrained schools where access to technology and professional support may be limited. Globally, digital tools and AI have introduced new approaches to teaching, research, and administrative work, making various tasks more manageable for educators. AI-powered platforms, such as Teach AI and Google Bard, can assist with lesson planning and the development of curriculum-related content, potentially reducing preparation time. Research tools such as Elicit and Scite support literature searches, source evaluation, and the organization of research information, helping teachers manage academic tasks more effectively. Platforms such as Microsoft Teams and Zoom facilitate communication and collaboration, while Grammarly and Turnitin support writing development and academic integrity processes. Ojukwu et al. (2021) discussed the contribution of educational technology to teaching and learning, while Kasneci et al. (2023) examined how AI-based language models can assist educators with instructional content, academic writing, and professional tasks. These developments demonstrate the potential of digital applications to support teacher productivity when used appropriately.

Across the globe, education continues to evolve through digital tools and online platforms that facilitate teaching, learning, research, writing, and collaboration. Teachers and students increasingly use technology to access information, develop educational materials, and communicate more efficiently. However, this digital shift also presents challenges. Many educators and learners, particularly those in developing and remote communities, experience limited access to devices and reliable internet connectivity. Others encounter difficulties because of inadequate training and unfamiliarity with emerging technologies. The extensive availability of online information also creates challenges in evaluating the credibility and accuracy of sources. Concerns about data privacy, plagiarism, cybersecurity, and excessive screen exposure further complicate technology integration. UNESCO (2023) emphasized the importance of ethical safeguards, digital competencies, and human oversight in the responsible use of generative AI, while Kasneci et al. (2023)

identified technological limitations, inaccurate outputs, and unequal access as concerns requiring attention in educational settings.

In the Philippines, the Department of Education (DepEd) recognizes the importance of digital technologies in improving educational delivery and expanding access to learning resources. DepEd and the Commission on Higher Education (CHED) have supported digital transformation through initiatives such as the DepEd Computerization Program, educational technology support mechanisms, and digital learning initiatives. The expansion of blended and technology-supported learning approaches has also increased the need for digital competencies among teachers and students. These developments reflect the broader movement toward integrating technology into educational practice. Chiu et al. (2023) noted that successful AI integration requires attention to institutional conditions and the educational purposes of technology, while UNESCO (2023) emphasized the importance of developing appropriate policies and professional competencies to support responsible implementation. Many public schools continue to face difficulties in meeting the technological demands of contemporary education. Limited access to computers, unstable internet connections, and outdated software can restrict teachers' and learners' opportunities to use digital applications effectively. Educators, particularly those in rural communities, may also experience difficulties adapting to emerging technologies because of differences in digital skills and access to professional development. Inadequate training opportunities, financial constraints, and limited technical support can further affect the maintenance and improvement of school information and communication technology facilities. Some teachers may also hesitate to adopt unfamiliar applications because of concerns about errors, complexity, or insufficient confidence in using them. Kasneci et al. (2023) emphasized the importance of developing teachers' technological competencies, while UNESCO (2023) highlighted the need to address unequal access and institutional readiness when introducing AI into educational environments.

At Gapok Central Elementary School, teachers face challenges in managing their professional responsibilities, particularly in preparing lessons, conducting research, and analyzing reports. AI-powered applications and other digital tools offer potential assistance in addressing these concerns by supporting instructional planning, organizing information, and simplifying selected administrative tasks. Platforms such as Teach AI and Google Bard may help teachers develop curriculum-related materials, although generated content requires careful review to ensure accuracy and suitability for learners. Through appropriate integration, these tools may help educators manage their responsibilities more efficiently and devote greater attention to instruction and professional development. Nevertheless, their usefulness within the school setting depends on teachers' experiences, technological competencies, available resources, and institutional support.

This study therefore examined how teachers at Gapok Central Elementary School perceived and experienced the use of AI tools in their professional responsibilities. Specifically, it explored the perceived effectiveness of AI applications in lesson preparation, research, and reporting; their influence on teaching practices and workload; and the benefits experienced by teachers using these technologies. By examining these experiences within the school context, the study sought to provide insights into the practical integration of digital tools and identify considerations for improving teacher productivity, professional development, and technology-supported educational practices.

**Research Problem**

Teachers at Gapok Central Elementary School face challenges in managing lesson preparation, research activities, and reporting responsibilities alongside their instructional duties. Although artificial intelligence (AI) and digital tools offer potential support in improving productivity, their practical benefits and limitations within the school setting require further examination. Limited technological resources, internet connectivity, and familiarity with digital applications may also affect their effective utilization. This study therefore sought to explore teachers' experiences and perceptions of AI integration, particularly its perceived effectiveness, influence on teaching practices and workload, and benefits in accomplishing professional responsibilities.

**Assumptions of the Study**

This study was guided by the assumption that teachers' experiences and perceptions provide meaningful insights into the integration of artificial intelligence (AI) and digital tools in educational practice. It assumed that teachers who had previously utilized AI-powered applications could describe their perceived usefulness, benefits, and challenges in relation to lesson preparation, research activities, and reporting responsibilities. The study also assumed that teachers' experiences with digital technologies were influenced by their technological competencies, available resources, and institutional support. These assumptions guided the qualitative examination of AI integration without presuming that the applications necessarily improved teaching performance or reduced workload.

**Objectives of the Study**

This study aimed to explore the experiences of teachers at Gapok Central Elementary School in utilizing artificial intelligence (AI) tools and digital applications for teaching, research, and reporting.

Specifically, it sought to:

1. Examine teachers' perceptions of the effectiveness of AI tools in managing lesson preparation, research activities, and reporting responsibilities.

2. Explore how teachers experienced the integration of AI tools in relation to their teaching practices and professional workload.
3. Identify the benefits experienced by teachers in using AI-powered applications at Gapok Central Elementary School.

### Conceptual or Theoretical Framework

This study was guided by the Technology Acceptance Model (TAM) developed by Davis (1989), which explains technology adoption through perceived usefulness and perceived ease of use. The model provides a theoretical basis for understanding teachers' perceptions of AI-powered applications in lesson preparation, research, and reporting. Perceived usefulness relates to the benefits teachers associate with digital tools, while perceived ease of use concerns their experiences in accessing and operating these applications. TAM was used as an interpretive perspective for examining teachers' experiences rather than testing relationships between variables. The conceptual framework focused on teachers' utilization of AI-powered applications for teaching, writing, research, and reporting. It examined their experiences in terms of instructional efficiency, workload management, professional development, accessibility, and challenges in technology adoption. The framework also considered digital competencies, technological resources, and institutional support as contextual factors influencing AI integration. These concepts guided the interpretation of teachers' experiences and the identification of practical considerations for improving digital technology use in elementary education.

## METHODOLOGY

### Research Design

This study employed a qualitative research design, using thematic analysis to explore the experiences of teachers at Gapok Central Elementary School in integrating artificial intelligence (AI) tools into their professional responsibilities. Thematic analysis was selected because of its suitability for identifying, analyzing, and interpreting recurring patterns within qualitative data. According to Braun and Clarke (2022), thematic analysis provides a systematic yet flexible approach to understanding participants' experiences and perspectives. This approach enabled the study to examine how teachers utilized AI-powered applications, the challenges they encountered, and the perceived benefits associated with lesson preparation, research activities, and report generation. Through the identification of recurring themes, the study provided insights into teachers' perceptions of AI integration and its contribution to instructional and administrative responsibilities.

**Research Locale or Study Setting**

The study was conducted at Gapok Central Elementary School, located in the Kulaman II District, Division of Sultan Kudarat, Philippines. The school served as the research setting because the investigation focused on teachers' experiences using AI-powered applications and digital tools in their daily professional activities. The setting provided an opportunity to examine technology integration in an elementary school environment, particularly in relation to lesson preparation, research, reporting, and other instructional responsibilities.

**Participants or Data Sources**

The participants consisted of 16 teachers from Gapok Central Elementary School who had utilized or previously experienced AI-powered tools in their teaching practices. Participants were selected based on their engagement with digital applications for lesson preparation, research, data analysis, and report generation. Their experiences provided relevant information regarding the perceived usefulness, benefits, and challenges associated with AI integration.

**Research Instruments or Materials**

The study utilized semi-structured interview questions and focus group discussions to gather information concerning teachers' experiences with AI applications. The questions focused on the perceived benefits and challenges of AI tools, changes in teaching practices and workload, and the usefulness of digital applications in completing daily professional tasks. Classroom observations were also included in the data collection process to examine the integration of digital tools into teaching activities. These sources of qualitative information provided the basis for identifying recurring patterns in participants' experiences.

**Data Gathering Procedure**

Data were gathered through semi-structured interviews, focus group discussions, and classroom observations to explore teachers' experiences with AI-powered tools. Semi-structured interviews provided information about participants' perceptions of the effectiveness of AI applications in lesson preparation, research activities, and reporting. Focus group discussions supported the exploration of shared experiences, perceived benefits, and challenges associated with technology integration. Classroom observations provided an additional source of information concerning the use of digital tools in instructional practices. These methods were aligned with the study's research questions and supported the examination of teachers' experiences across their professional responsibilities.

### Data Analysis

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' demographic characteristics, reading comprehension performance, and perception ratings. The difference between digital and printed comprehension scores was calculated for each learner.

The Shapiro–Wilk test was used to examine the normality of paired score differences. Because the normality assumption was not satisfied ($W = .943$, $p = .007$), the Wilcoxon signed-rank test was used as the primary inferential procedure to compare comprehension performance across the two formats. A paired-samples t-test was also reported as a supplementary analysis. Statistical significance was evaluated at the .05 level.

### Ethical Considerations

Informed consent was considered in conducting the study to ensure that participants understood its purpose, procedures, and potential implications before agreeing to participate. Teachers were provided with information regarding the voluntary nature of their involvement and their right to withdraw at any time without negative consequences. Participation was based on their willingness to share experiences and perspectives concerning the use of AI-powered applications in their professional responsibilities.

## RESULTS AND DISCUSSION

### Enhanced Teaching Efficiency and Creativity

The findings revealed that AI-powered tools supported teachers in preparing instructional materials and developing creative classroom activities. Participants described how digital applications helped them generate visual resources, organize lesson content, and prepare learning materials appropriate to their students' needs. The use of AI reduced some of the effort associated with manual preparation and provided opportunities to develop more engaging instructional resources. Teachers also recognized the usefulness of these applications in adapting materials to specific subjects and grade levels.

Participant 1 shared:

"*Gamit ko lagi ang Teach AI, kasi ako po sa kinder, mas kailangan talaga ng visual at interactive na materials."* (I always use Teach AI, especially in kindergarten where visual and interactive materials are really needed.) (P1)

*"Mas creative din 'yung lumalabas na outputs. Ang galing ng AI, parang may kasama kang co-teacher."* (The outputs are more creative. AI is amazing it's like having a co-teacher.) (P1)

Similarly, Participant 6 explained:

*"Mas dynamic ngayon ang klase. May timeline generator akong ginagamit, tapos may video summary pa ng mga historical events."* (Classes are more dynamic now. I use a timeline generator and video summaries of historical events.) (P6)

These responses suggest that AI applications helped teachers expand their instructional resources and explore alternative ways of presenting lessons. The findings are consistent with Chiu et al. (2023), who identified instructional support and personalized learning as potential applications of AI in education. Kasneci et al. (2023) likewise discussed the potential of AI language models to assist educators with content preparation and instructional activities. However, the reported benefits represent teachers' experiences rather than independently measured improvements in instructional effectiveness.

**Reduced Workload and Stress**

articipants reported that AI-powered applications helped them manage repetitive instructional and administrative tasks. Digital tools supported document formatting, information organization, lesson planning, and report preparation, allowing teachers to accomplish selected responsibilities more efficiently. Some participants also associated the use of AI with reduced stress, improved time management, and greater opportunities to attend to personal and professional responsibilities.

Participant 1 stated:

*"Number one, less stress. Number two, mas may time ako sa pamilya. Number three, mas naging quality 'yung lesson ko."* (Number one, less stress. Number two, I have more time for my family. Number three, my lessons have improved in quality.) (P1)

Participant 3 explained:

*"Mas organized, mas accurate, at mas madali ko nang maipasa on time."* (It's more organized, accurate, and I can submit it on time more easily.) (P3)

Participant 7 observed:

*"Napansin kong mas na-engage ang teachers ngayon sa professional development. At bumaba rin ang delay sa submission ng reports."* (I noticed that teachers are more engaged in professional development, and delays in report submissions have decreased.) (P7)

These accounts indicate that teachers perceived AI as useful in managing work-related demands, particularly tasks involving documentation and preparation. Chiu et al. (2023) identified administrative efficiency as one of the potential benefits of AI applications in educational settings. Nevertheless, the present findings should be interpreted as perceived changes in workload and stress because the study did not report objective measurements of time savings, stress reduction, or administrative productivity.

### Research Support and Professional Growth

The findings indicated that AI-powered applications supported teachers in managing research-related responsibilities and developing confidence in academic tasks. Participants described how digital tools simplified the process of searching for references, organizing information, and preparing research documents. These experiences were particularly meaningful for teachers who previously considered action research difficult or time-consuming. Participants also associated AI use with increased interest in professional learning and greater confidence in undertaking research activities.

Participant 2 shared:

*"Noon, parang bangungot ang paggawa ng action research. Pero ngayon, ang bilis ko nang makahanap ng references."* (Before, doing action research felt like a nightmare. But now, I can find references quickly.) (P2)

The same participant added:

*"Na-demystify siya dahil sa AI. Parang naging kasangkapan ko na lang siya, hindi na siya hadlang."* (AI has demystified research. It's become a tool rather than a hurdle.) (P2)

Participant 7 stated:

*"Mas na-engage ang teachers ngayon sa professional development."* (Teachers are now more engaged in professional development.) (P7)

These statements suggest that AI applications helped reduce some of the difficulties teachers associated with research and academic writing. Kasneci et al. (2023) discussed the potential of AI language models to assist with information processing, writing, and educational activities. However, UNESCO (2023) emphasized that AI-generated information requires verification and responsible use. Thus, while AI may support teachers' research activities, academic judgment and careful evaluation of sources remain essential.

### 3.4. Accessibility and Inclusive Education

Participants recognized the potential of AI-powered applications to support learners with different abilities and educational needs. Teachers described using text-to-speech functions, visual materials, and adapted instructional content to make lessons more accessible. These applications were perceived as useful in developing differentiated learning resources, particularly for learners experiencing reading difficulties. However, participants also emphasized that AI-generated materials sometimes required modification to reflect learners' linguistic, cultural, and community contexts.

Participant 2 explained:

*"Malaking tulong ang AI para sa mga batang nahihirapan. May text-to-speech at visual aids na bagay sa learners na may learning difficulty."* (AI is a big help for students who struggle. There's text-to-speech and visual aids that suit learners with learning difficulties.) (P2)

Participant 4 stated:

*"Nakakagawa ako ng lesson na akma sa iba't ibang reading levels. Pero minsan kailangan ko pa ring i-localize ang content."* (I can create lessons suited to different reading levels. But sometimes I still need to localize the content.) (P4)

Participant 5 added:

*"Maganda sana ang AI-generated materials, pero kailangan pa ring i-adjust para mas makarelate ang mga bata sa probinsya."* (AI-generated materials are great, but they still need adjustments to be relatable for children in rural areas.) (P5)

These findings indicate that teachers valued the flexibility of AI applications in preparing materials for diverse learners while recognizing the importance of contextualization. Chiu et al. (2023) identified personalized learning as an important area of AI application in education. Similarly, UNESCO (2023) emphasized the need for inclusive and context-sensitive implementation. The participants' experiences suggest that AI-generated resources may support differentiated instruction, provided that teachers evaluate their appropriateness and adapt them to learners' needs.

**Challenges in AI Adoption**

Despite the perceived benefits of AI integration, participants encountered difficulties involving technological resources, unfamiliar applications, and concerns about inaccurate outputs. Unstable internet connectivity and device limitations affected their ability to use digital tools consistently. Some teachers also described uncertainty when navigating AI applications, particularly during their initial experiences. Nevertheless, participants expressed curiosity and interest in learning how to use these technologies more effectively.

Participant 5 shared:

*"Nung una, takot talaga ako gumamit ng AI. Baka mali ang ilabas o baka hindi ko kaya i-navigate."* (At first, I was really afraid to use AI. I was worried it might produce errors or that I wouldn't be able to navigate it.) (P5)

Participant 4 explained:

*"Kahit gusto mong gamitin, minsan mabagal ang internet o hindi compatible ang gadget."* (Even if you want to use it, sometimes the internet is slow or your gadget isn't compatible.) (P4)

Participant 3 stated:

*"Noong una, parang overwhelming kasi ang daming features. Pero nakaka-excite din siyang matutunan."* (At first, it was overwhelming because there were so many features. But it was also exciting to learn.) (P3)

These accounts demonstrate that teachers' willingness to adopt AI does not necessarily eliminate practical difficulties associated with its use. Kasneci et al. (2023) identified technological limitations and concerns about AI-generated information as challenges in educational applications. UNESCO (2023) also highlighted the importance of digital competencies, equitable access, and institutional safeguards. The findings suggest that improving technological resources and providing practical training may help address the difficulties experienced by teachers at Gapok Central Elementary School.

**Support and Readiness for Integration**

The findings revealed that teachers expressed willingness to strengthen their AI competencies despite differences in technological experience. Participants recognized the importance of professional training, peer collaboration, and administrative support in developing confidence and improving the use of digital applications. Their responses also indicated an interest in sharing knowledge with colleagues and establishing supportive learning environments within the school.

Participant 6 stated:

*"Baguhan pa lang ako, pero gusto ko talagang matutunan. Kahit mahirap, tinutulungan din ako ng mga kasama ko."* (I'm still a beginner, but I really want to learn. Even if it's hard, my colleagues help me.) (P6)

Participant 7 explained:

*"Gusto naming matuto ng AI. Sana may formal training aming para mas maging confident kami."* (We want to learn AI. Hopefully, there will be formal training so we can be more confident.) (P7)

Participant 3 added:

*"Handa kaming ibahagi 'yung alam aming sa iba. Kung lahat matuto, mas madali ang transition."* (We're willing to share what we know with others. If everyone learns, the transition will be easier.) (P3)

These responses indicate that teachers considered professional learning and collaboration important for successful technology integration. Chiu et al. (2023) identified teacher preparation and institutional support as relevant considerations in educational AI implementation. UNESCO (2023) likewise emphasized the importance of developing

educators' competencies and establishing appropriate institutional guidance. The findings suggest that school-based training, peer mentoring, and technical assistance may help teachers integrate AI applications more confidently and responsibly into their professional practices.

## GENERAL DISCUSSION

This study explored the experiences of teachers at Gapok Central Elementary School in utilizing artificial intelligence (AI) and digital tools for teaching, writing, research, and reporting. The findings revealed that participants perceived these applications as useful in improving instructional preparation, developing creative learning materials, organizing research activities, and managing administrative responsibilities. Teachers also reported reduced workload-related stress, greater confidence in using digital applications, and opportunities to support learners with diverse educational needs. Despite these benefits, challenges involving unstable internet connectivity, limited technological resources, unfamiliar AI features, and the need to contextualize generated materials affected technology integration. Nevertheless, participants demonstrated willingness to strengthen their digital competencies through professional training and peer collaboration. The findings suggest that AI-powered applications can support teacher productivity and professional development when accompanied by appropriate technological resources, institutional assistance, and responsible implementation. However, these conclusions reflect teachers' reported experiences rather than independently measured improvements in instructional performance or workload.

Based on the findings, the study recommends that school administrators and the Department of Education provide regular professional development activities focused on the practical and responsible use of AI applications for lesson preparation, research, writing, and reporting. Improving internet connectivity, maintaining functional digital devices, and providing accessible technological resources should also be considered to address the difficulties experienced by teachers. Teachers are encouraged to evaluate and contextualize AI-generated instructional materials according to learners' abilities, language, and cultural backgrounds. School administrators may also establish peer mentoring activities and collaborative learning groups where teachers can exchange experiences, share effective practices, and assist colleagues in navigating digital applications. Teacher education institutions may consider strengthening AI literacy and responsible technology use within professional preparation programs. Further research involving other school settings and additional sources of evidence is recommended to examine the longer-term implications of AI integration for teaching practices, workload management, and professional development.

## REFERENCES

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE Publications.

Chiu, T. K. F., Xia, Q., Zhou, X., Chai, C. S., & Cheng, M. (2023). Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education. *Computers and Education: Artificial Intelligence, 4*, Article 100118. https://doi.org/10.1016/j.caeai.2022.100118

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., Stadler, M., Weller, J., Kuhn, J., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences, 103*, Article 102274. https://doi.org/10.1016/j.lindif.2023.102274

Miao, F., & Holmes, W. (2023). *Guidance for generative AI in education and research*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000386693

Ojukwu, N.-N. C., Chukwuyere, A. E., & Catherine, A. (2021). Educational technology for teaching and learning in the post COVID-19 era: A case study of tertiary institutions in Imo State, Nigeria. *International Journal of Research and Review, 8*(7), 90–98. https://doi.org/10.52403/ijrr.20210713

Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning, 12*, Article 22. https://doi.org/10.1186/s41039-017-0062-8

Tan, X., Cheng, G., & Ling, M. H. (2025). Artificial intelligence in teaching and teacher professional development: A systematic review. *Computers and Education: Artificial Intelligence, 8*, Article 100355. https://doi.org/10.1016/j.caeai.2024.100355

Wang, X., Zainuddin, Z., & Chin, H. L. (2025). Generative artificial intelligence in pedagogical practices: A systematic review of empirical studies (2022–2024). *Cogent Education, 12*(1), Article 2485499. https://doi.org/10.1080/2331186X.2025.2485499