



Exploring different aspects of lesson planning for basic education that can be enhanced through the integration of ChatGPT and challenges

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ABSTRACT

The increasing integration of artificial intelligence (AI) tools in education has reshaped instructional planning practices, particularly in lesson design and resource development. This descriptive phenomenological study explored the experiences of basic education teachers at Divine Word College of Laoag in integrating ChatGPT into lesson planning. Data were collected through open-ended questionnaires, followed by a focused group discussion via video conferencing with teachers. Using thematic analysis following Braun and Clarke's framework, findings reveal that ChatGPT supports lesson planning by enhancing logical content organization, generating aligned instructional examples and activities, improving planning efficiency, and suggesting diverse teaching strategies. However, participants also reported challenges, including the generic nature of AI-generated content, limited contextual relevance to local curricula and learner needs, insufficient AI-related training, and concerns regarding over-dependence and loss of pedagogical autonomy. This study highlights teachers' experiences using generative AI for lesson planning and emphasizes the need for teacher mediation, clear institutional guidelines, targeted training, and ethical use to ensure AI supports—not replaces—professional judgment.

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Introduction

Artificial intelligence (AI) technologies are increasingly transforming education, particularly in enhancing instructional planning and resource development. AI tools like ChatGPT can support teachers by facilitating lesson design, organizing content, and generating instructional materials, thereby reducing cognitive load and improving planning efficiency (Chen & Xie, 2022; Lu et al., 2023). This technological support is crucial for helping educators manage complex curriculum demands and diverse learner needs in today's classrooms.

Despite the growing adoption of AI-driven educational tools globally, their integration remains uneven, particularly in basic education settings. Teachers often face challenges related to time constraints, limited resources, and a lack of tailored AI solutions that address their specific curricular and contextual needs (König et al., 2020; OECD, 2021). Moreover, there is increasing concern about AI-generated content's generic nature and limited alignment with local educational standards and learner diversity (Holmes et al., 2021).

Current research predominantly focuses on AI applications in higher education or large-scale educational systems, with limited empirical evidence on teachers' experiences and perceptions of generative AI tools such as ChatGPT (Zawacki-Richter et al., 2020; Lu et al., 2023). Additionally, concerns about potential over-reliance on AI and the resulting impact on teacher autonomy and professional judgment remain underexplored in these contexts (Selwyn, 2021). Key factors influencing the effective integration of AI in lesson planning include teachers' digital literacy, availability of professional development, institutional support, and the cultural/contextual relevance of AI-generated content (OECD, 2021; König et al., 2020).

Recent literature underscores the growing role of AI in supporting lesson planning efficiency and instructional innovation. However, there remains a notable gap in empirical studies examining teachers' lived experiences with generative AI tools in basic education, particularly in private school contexts. Most existing studies focus on higher education or large-scale systems, leaving small-school and basic education perspectives underrepresented (Zhai, 2022; Holmes et al., 2022). This gap justifies the present descriptive phenomenological study, which seeks to capture teachers' perceptions of ChatGPT's roles and challenges in lesson planning.

Review of related literature

This part of the study reviews recent literature on the use of ChatGPT in lesson planning for basic education. It focuses on the aspects of lesson planning enhanced by ChatGPT and the challenges teachers encounter when using it, providing the theoretical basis for the study.

Lesson planning in basic education

Recent studies continue to emphasize lesson planning as a core pedagogical practice that supports instructional coherence, learner engagement, and curriculum alignment in basic education (Darling-Hammond et al., 2020; Farrell, 2021). In the context of increasing accountability and diversified learner needs, lesson planning has evolved from a procedural task into a reflective process that requires adaptability and responsiveness to classroom realities (OECD, 2020). Teachers are now expected to integrate varied instructional strategies while meeting curriculum standards, which has intensified planning demands, particularly in resource-constrained school settings.

Technological shifts in instructional planning

The post-2020 period has seen accelerated integration of digital technologies in education, primarily influenced by global shifts toward remote and blended learning. Research indicates that digital tools support efficiency in lesson preparation by enabling access to instructional resources, multimedia

materials, and collaborative platforms (Whalen, 2020; König et al., 2020). However, scholars note that technology integration remains uneven and is strongly influenced by teachers' digital competence and institutional support (OECD, 2021).

Artificial Intelligence and enhanced aspects of lesson planning

Recent literature highlights artificial intelligence as a transformative force in instructional planning. AI-powered tools have been shown to assist teachers in organizing lesson content, generating examples and activities, and supporting differentiated instruction (Chen et al., 2022; Kasneci et al., 2023). Generative AI models, such as ChatGPT, enable rapid production of lesson outlines and instructional prompts, thereby reducing teachers' cognitive load and enhancing planning efficiency (Zhai, 2022; Lu et al., 2023). Studies further suggest that AI-supported planning encourages pedagogical creativity by exposing teachers to alternative instructional strategies and perspectives (Kasneci et al., 2023).

Benefits of using AI in lesson planning

Recent research highlights several key benefits of integrating AI in lesson planning. First, AI tools can significantly reduce the time and effort required for lesson preparation, enabling teachers to focus more on instructional delivery and student interaction (Lee & Jung, 2021; Lu et al., 2023). Second, AI facilitates access to diverse and up-to-date instructional resources, helping teachers stay current with educational trends and standards (Chen et al., 2022). Third, AI's ability to generate differentiated materials supports inclusive education by addressing varied learning styles and needs within a single classroom (Kasneci et al., 2023; Heffernan et al., 2021). Finally, AI-driven analytics and feedback can help teachers reflect on the effectiveness of their lessons and adjust their planning accordingly (Woolf et al., 2020).

Challenges in using AI for lesson planning

Despite these benefits, recent studies caution against the uncritical adoption of AI in education. One prominent challenge is the lack of contextual and cultural sensitivity in AI-generated content, which may not fully align with local curricula or learner diversity (Zawacki-Richter et al., 2020; Holmes et al., 2022). Teachers are therefore required to exercise professional judgment in evaluating and modifying AI outputs to ensure instructional relevance and ethical use. Another challenge concerns teachers' preparedness to use AI effectively. Research indicates that insufficient training and limited AI literacy hinder meaningful integration, particularly in basic education contexts (König et al., 2020; OECD, 2021). Additionally, concerns regarding over-reliance on AI and potential erosion of teacher autonomy have been raised, with scholars emphasizing the need to maintain human agency and reflective practice in AI-assisted teaching (Selwyn, 2021; Kasneci et al., 2023).

Statement of the problems

This study explored the experiences of basic education teachers at the basic education department of Divine Word College of Laoag (DWCL) on how they integrate ChatGPT into lesson planning. Specifically, the study sought to answer the following questions:

- 1. Which aspects of lesson planning are enhanced through the integration of ChatGPT?**

2. What challenges do teachers face in using ChatGPT in lesson planning?

Research methodology

Research design

This study employed a descriptive phenomenological research design to examine the experiences of basic education teachers as they integrate ChatGPT into lesson planning. Descriptive phenomenology is appropriate for exploring how individuals make sense of a shared phenomenon while minimizing theoretical imposition, allowing participants' meanings to emerge authentically (Creswell & Poth, 2018). In the context of rapidly evolving educational technologies, this approach enabled an in-depth understanding of how teachers perceive, negotiate, and critically engage with generative AI tools in their professional practice.

Locale of the study

The study was conducted at Divine Word College of Laoag, a private educational institution in Ilocos Norte, Philippines, offering basic education programs. This private educational institution offers basic education programs, providing a relevant context for examining the integration of AI tools such as ChatGPT into lesson planning in a localized Philippine setting.

Population and sampling

Teachers from the Basic Education Department were purposively selected based on their direct experience using ChatGPT for lesson planning. Inclusion criteria required participants to have actively used ChatGPT to prepare lesson plans in the past six months and to be willing to share detailed reflections on their experiences. Purposive sampling was employed to ensure information-rich cases, consistent with phenomenological inquiry, where depth of experience is prioritized over sample size (Patton, 2015). While the sample is modest, it aligns with qualitative research standards that emphasize data saturation and experiential depth, particularly in phenomenological studies of shared professional practices.

Data gathering instrument

Data were gathered through open-ended questionnaires, supplemented by a follow-up focused group discussion conducted via video conferencing to clarify responses and probe emerging meanings. This two-stage process enhanced data richness and allowed participants to reflect deeply on their experiences. The interview guide was reviewed by educational experts to establish content validity and piloted with teachers outside the study population to refine clarity and relevance.

Data gathering procedure

The researcher secured permission from the school administration before data collection commenced. The open-ended questionnaire was distributed physically within the school premises to the selected teachers, who were given two weeks to complete and submit their responses thoughtfully. To ensure the richness and accuracy of the data, follow-up video calls via Google Meet were conducted when necessary to clarify or elaborate on ambiguous or incomplete answers. This enabled further probing and validation of participants' responses, contributing to data depth and trustworthiness.

Data were analyzed using thematic analysis following Braun and Clarke’s (2006) six-phase framework. This involved familiarization with the data, initial coding, theme development, review, and refinement to ensure internal coherence and alignment with the research questions. The analytic process was iterative and reflexive, enabling movement between data and emerging interpretations to capture the essence of teachers’ lived experiences.

Ethical considerations

Ethical standards were rigorously upheld throughout the study. Participants provided informed consent after being fully briefed on the study’s purpose, procedures, and their rights, including voluntary participation and withdrawal without penalty. Confidentiality was maintained by anonymizing data and securely storing all information. The researcher ensured that participants’ identities were protected and that data were used exclusively for academic research.

Results

This section presents the key themes from the interviews with ten basic education teachers at Divine Word College of Laoag. The findings focus on the lesson planning aspects improved by ChatGPT and the challenges teachers face when using it.

Problem 1: Which aspects of lesson planning are enhanced through the integration of ChatGPT?

Table 1 presents the key themes, categories, and representative statements from respondents regarding the aspects of lesson planning enhanced by ChatGPT.

Table 1. Aspects of lesson planning are enhanced through the integration of ChatGPT

Theme	Category
Lesson design	Organizing content logically
	Creating examples and exercises
	Drafting discussion questions
Planning efficiency	Streamlining planning process
	Reduce cognitive load
Resource generation	Suggesting diverse teaching methods
	Instructional material support

Source: Mateo, 2025

The responses from basic education teachers at Divine World College, Laoag, indicate that integrating ChatGPT into lesson planning positively influences several critical domains. Within the *lesson design* theme, participants emphasized the tool’s capacity to enhance the logical organization of lesson content. One respondent noted, “It is a good tool for organizing content logically and ensuring I cover all

important points without missing anything,” highlighting the AI’s role in promoting comprehensive coverage. Additionally, ChatGPT aids in generating relevant examples and exercises aligned with lesson objectives, as reflected in the statement, *“I find it useful for creating examples and exercises that match the lesson objectives, making my plans more student-friendly.”* The platform further supports educators in drafting thought-provoking discussion questions that foster critical engagement among students, with a participant stating, *“The platform helps me draft engaging discussion questions and prompts that encourage critical thinking.”*

Regarding *planning efficiency*, respondents reported that ChatGPT streamlines the lesson-planning process by providing a clear starting framework, alleviating feelings of overwhelm. As one teacher expressed, *“It streamlines my lesson planning process by giving me a clear starting point, reducing the feeling of overwhelm.”* Moreover, the tool helps reduce cognitive load by facilitating quick lesson outlines, particularly beneficial under time constraints, as noted: *“Helps me quickly outline my lessons, especially when I am pressed for time.”*

In terms of *resource generation*, the AI contributes to pedagogical diversity by suggesting various teaching strategies tailored to different learning styles, as one respondent observed, *“It helps me diversify my teaching methods by suggesting different activities or approaches tailored to various learning styles.”* The tool also supports the creation of instructional materials, including examples and exercises, thereby enriching lesson content: *“Useful for creating examples and exercises that match the lesson objectives.”*

Collectively, these findings suggest that ChatGPT functions as an effective adjunct to traditional lesson planning, enhancing efficiency, content organization, and resource availability. This integration can potentially elevate instructional quality and responsiveness to diverse learner needs in the basic education context. (Kasneci et al., 2023; Lu & Churchill, 2023; UNESCO, 2023).

Problem 2: What challenges do teachers face in using ChatGPT in lesson planning?

Table 2 presents the key themes, categories, and representative statements from respondents regarding teachers' challenges in using ChatGPT for lesson planning.

Table 2. Challenges teachers face when using ChatGPT in lesson planning.

Theme	Category
Content quality and relevance	Generic content needing editing
	AI’s limited understanding of context
	Verifying accuracy

User competency and support	Lack of training/guidelines
	Digital literacy and learning curve
Pedagogical control and integrity	Over-dependence on AI and loss of personal touch
	Content Quality Control

Source: Mateo, 2025

The responses from basic education teachers at Divine World College, Laoag, reveal several challenges associated with integrating ChatGPT into lesson planning.

The first theme, *content quality and relevance*, underscores concern regarding the suitability and accuracy of AI-generated instructional materials. Participants noted that the content produced by ChatGPT is often overly generic and requires substantial modification to align with the specific needs of their classrooms. As one respondent articulated, *“Sometimes the content it generates is too generic and needs a lot of editing to fit my class.”* Furthermore, the limited contextual understanding of the AI, particularly regarding students’ unique needs and local educational contexts, necessitates continued reliance on the educator’s professional judgment. This sentiment was echoed by a participant who stated, *“The AI does not fully understand our students’ unique needs and local context, so human judgment is still essential.”* The challenge of verifying the accuracy of the AI’s information was also highlighted: *“It can be tricky to verify the accuracy of all information, especially for specific topics.”*

The second theme, *user competency and support*, reflects the need for enhanced teacher training and clear operational guidelines to integrate ChatGPT into instructional planning effectively. One teacher remarked, *“There is a lack of training or official guidelines on how to integrate ChatGPT into lesson planning best.”* Moreover, varying levels of digital literacy among educators present a barrier to seamless adoption, with a respondent noting, *“Not all teachers are tech-savvy, so it takes time to learn how to use ChatGPT effectively.”*

The third theme, *pedagogical control and integrity*, addresses concerns about preserving teacher autonomy and the quality of instructional design. Respondents expressed apprehension that over-dependence on AI could diminish the personal and pedagogical nuances critical to effective teaching. As one participant commented, *“I worry about becoming too dependent on AI and losing my personal touch in lesson creation.”* Additionally, the necessity to rigorously evaluate AI-generated content to ensure instructional accuracy and appropriateness was emphasized, reaffirming the central role of the teacher in maintaining content integrity: *“It can be tricky to verify the accuracy of all information, especially for specific topics.”*

Collectively, these findings highlight that while ChatGPT presents promising opportunities to support lesson planning, successful integration requires addressing content-quality concerns, enhancing teachers’

Results and discussion

This study explored the aspects of integrating ChatGPT into lesson planning among basic education teachers, highlighting both the enhancements and challenges associated with its use. The findings reveal that ChatGPT positively influences key areas of lesson planning, notably in lesson design, planning efficiency, and resource generation. Teachers reported that the tool aids in organizing lesson content logically, generating relevant examples and exercises, and drafting engaging discussion questions that foster critical thinking. These findings align with Lu and Churchill (2023), who noted that AI supports educators in systematically structuring content and providing diverse learning materials tailored to students' needs.

Additionally, the ability to create thought-provoking questions contributes to active learning, a central tenet in effective pedagogy (Bower, 2019). In terms of planning efficiency, ChatGPT was found to streamline the process by providing a clear framework that reduces teacher overwhelm, particularly when under time constraints. This supports Chen et al.'s (2022) observations that AI-assisted planning enhances instructional productivity and workload management. Furthermore, ChatGPT's role in resource generation was recognized in its capacity to suggest varied teaching methods and supply instructional materials that accommodate diverse learning styles, resonating with the work of Holmes et al. (2021), who emphasized AI's potential to enrich pedagogical diversity and inclusivity. Collectively, these enhancements support the notion that AI can serve as a valuable adjunct to traditional lesson planning when integrated thoughtfully (Luckin et al., 2016).

However, despite these advantages, several challenges were also identified. Concerns about content quality and relevance were prominent, with teachers noting that AI-generated materials are often generic and require substantial adaptation to fit specific classroom contexts. This is consistent with warnings by Zawacki-Richter et al. (2019) and Selwyn (2020) that AI tools lack contextual understanding and must be supplemented by human judgment to ensure appropriateness and accuracy. The need for increased teacher competency and support was another significant theme; respondents highlighted insufficient training and digital literacy barriers that could hinder the effective use of ChatGPT. This echoes the findings of the OECD (2021), which stress the importance of developing educators' digital skills to fully leverage AI in education. Finally, issues related to pedagogical control and integrity emerged, reflecting teachers' apprehension that over-reliance on AI could erode their autonomy and the personalized nature of teaching. Williamson and Piattoeva (2022) argue that maintaining a human-centered approach is essential to preserve pedagogical quality, and Selwyn and Facer (2013) emphasize the need for careful evaluation of AI-generated content to uphold ethical and instructional standards.

The findings of this study show that integrating ChatGPT into lesson planning has important theoretical and practical implications for Philippine basic education. From a theoretical perspective, the results support human-centered and sociotechnical views in educational technology that view generative AI as a support tool that enhances teachers' thinking and instructional work rather than replacing professional

judgment (Luckin et al., 2016; Williamson & Piattoeva, 2022). This view is consistent with the Department of Education's K–12 framework and the MATATAG Curriculum, which emphasize teacher agency, contextualized teaching, and learner-centered instruction as key elements of quality education (DepEd, 2023). In practice, ChatGPT may help Filipino teachers manage heavy workloads, reduce lesson planning time, and create more varied instructional materials. However, its effective use requires proper teacher training, clear ethical guidelines, and strong institutional support to ensure alignment with curriculum standards and classroom realities (OECD, 2021; UNESCO, 2023). Despite these contributions, the study is limited by its reliance on self-reported data and its focus on lesson planning rather than on actual classroom teaching or student outcomes, which may affect the generalizability of the findings. Future research in the Philippine context should use mixed or longitudinal methods to examine how AI-assisted lesson planning influences teaching practices and student learning across different school settings.

Conclusion

This study examined the integration of ChatGPT in lesson planning and found that it offers clear benefits in improving lesson design, planning efficiency, and resource generation. Teachers appreciated its support in organizing lesson content, generating examples, and suggesting varied teaching strategies. At the same time, the study identified important challenges, including the production of generic content, limited contextual understanding, inadequate training, and concerns about maintaining pedagogical control. These findings highlight the need for teachers to critically review and adapt AI-generated materials to ensure alignment with learners' needs, classroom contexts, and curriculum standards. Consistent with Vygotsky's sociocultural theory, the results affirm that effective learning remains grounded in human interaction, contextual understanding, and teacher expertise, underscoring that AI should function as a supportive tool rather than a replacement for educators. The study contributes empirical evidence on teachers' perceptions of AI-assisted lesson planning and offers practical guidance for policymakers and school leaders. In particular, it emphasizes the importance of content-quality assurance, continuous professional development, and the protection of teacher autonomy when integrating AI in basic education. To optimize the responsible use of AI, educational institutions should provide targeted training programs and establish clear guidelines that strengthen teachers' digital competence and ethical awareness. Future research is recommended to explore the development of culturally responsive AI tools and to examine the long-term effects of AI-supported lesson planning on teaching practices and student learning outcomes. Balancing technological innovation with human-centered pedagogy remains essential to improving instructional quality and educational outcomes.

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