
Empowering Educators: Uncovering the Transformative Role of ChatGPT in EFL Pre-Service Teacher Development

Filemon Sihombing
Universitas Pendidikan Ganesha
filemon@undiksha.ac.id

I Putu Indra Kusuma
Universitas Pendidikan Ganesha
indra.kusuma@undiksha.ac.id

Kadek Sintya Dewi
Universitas Pendidikan Ganesha
sintyadewi@undiksha.ac.id

Abstract

This qualitative descriptive research investigates the influence of ChatGPT on the professional development of pre-service teachers specializing in English as a Foreign Language (EFL), with a specific focus on pedagogical innovations. The study, conducted using a phenomenological research approach, involved seven participants enrolled in the "Teaching Campus" program at Ganesha University of Education. The primary objective was to explore the experiences of EFL pre-service teachers in utilizing ChatGPT to enhance their professional growth, particularly in the development of pedagogical innovations. The participants reported notable advancements in pedagogical innovations, encompassing enhancements in the preparation of teaching materials, generation of engaging learning ideas, implementation of diverse teaching strategies, formulation of lesson plans, and increased time efficiency. The study concludes that while ChatGPT positively impacts pedagogical creativity, its implementation requires thorough evaluation and adjustments to align with specific teaching contexts and cater to the needs of students, ensuring its effectiveness in fostering the professional growth of pre-service teachers.

Keywords: EFL; ChatGPT; Teacher Development; Transformative Education

INTRODUCTION

In the ever-evolving landscape of education, the integration of technology has become an influential force, transforming the way educators prepare for their roles and enhance their instructional skills. The overarching goal of teacher education is to cultivate qualified educators capable of translating theories into effective classroom practices. However, a prevalent imbalance has been observed, particularly in English as a Foreign Language (EFL) teacher education programs. These programs often prioritize theoretical understanding over the development of practical skills, creating a significant gap between pedagogical theory and the reality of classroom teaching (Mukrimaa et al., 2016).

Recognizing the pivotal role of practical experiences in teacher development, teaching practicums have emerged as a crucial component of teacher education programs. These immersive opportunities allow future educators to receive direct training while working under the guidance of experienced mentors. Teaching practicums aim to bridge the gap between

theoretical knowledge gained in teacher preparation courses and the application of that knowledge in actual classrooms (Darling-Hammond, 2017). This real-world experience helps aspiring teachers develop essential skills, such as lesson planning, classroom management, feedback delivery, and monitoring student progress (Ingersoll et al., 2011).

In the realm of EFL education, where fluent English communication holds global significance, the importance of robust teaching practicum experiences cannot be overstated (Ortaçtepe & Akyel, 2015). EFL educators play a critical role in fostering excellent English language skills, making the refinement of their knowledge and teaching abilities paramount (Zein, 2017). The classroom serves as a laboratory for theories to solidify into teaching artistry, and teaching practicums empower prospective educators to navigate the challenges of the ever-changing educational environment (Pourhosein Gilakjani et al., 2013).

As we transition into the digital age, technology emerges as a powerful catalyst in the educational journey, offering innovative tools to enhance teaching and learning experiences. One such breakthrough is ChatGPT, an advanced AI-driven language model with the potential to revolutionize professional development in education (Mukrimaa et al., 2016). ChatGPT, fueled by natural language processing capabilities, provides interactive discussions that can significantly impact the instructional skills of EFL teachers (Kasneci et al., 2023).

This article delves into the transformative role of ChatGPT in EFL pre-service teacher development, focusing on its integration during teaching practicums. The primary objective of this study is to explore the experiences of EFL pre-service teachers in utilizing ChatGPT to enhance their professional growth, particularly in the development of pedagogical innovations. This study explores how pre-service EFL teachers' experiences with ChatGPT shed light on the potential of AI to enhance pedagogical creativity in English instruction. Investigating ChatGPT's impact during teaching practicums provides insights into the intersection of technology and teacher development, offering a nuanced understanding of its benefits and challenges in EFL education.

METHODS

In this study, the researcher employed qualitative research with the approach phenomenology research design because it is suited for the aims of the study, which are to explore the EFL Pre-service Teachers' experiences of using ChatGPT in supporting their professionalism. Phenomenologists focus on describing what all participants in a phenomenon have in common. van Manen, (2016) defines phenomenology as "the reduction of individual experiences with a phenomenon to a description of the universal essence." The inquirer then gathers information from individuals who have witnessed the event and creates a composite account of the essence of the experience for all of the participants. This description includes "what" they experienced and "how" they experienced it (Mathotaarachchi & Thilakarathna, 2021). The researcher utilized "Thematic Analysis" as a method for in-depth data analysis. Thematic analysis is a qualitative research method employed to analyze and identify themes or patterns in a dataset, typically consisting of textual data such as interview transcripts, survey responses, or written materials. This method involves systematically organizing and classifying data to uncover recurring themes, concepts, or patterns, facilitating researchers in gaining insights into the study's issue or topic of interest. Thematic analysis is a versatile and widely used method applicable across various research domains, particularly prominent in psychology and social sciences (Lochmiller, 2021).

Initially, researchers invited ten students from Ganesha University's English language education program. The researcher explained to the participants about this research, including the risks and benefits of participating in this research. All participants were 5th-semester students (7 female and 3 male) completing teaching practice at an independent campus program, namely "Teaching Campus 6". Unfortunately, three participants (2

female and 1 male) withdrew in the middle of the study because they were unable to follow the researcher's instructions. So the fixed number of participants in this study was seven, including five females and two male. Data was collected from a variety of sources, including online interviews, notes and documentation as well as data triangulation to assure the results' validity (Farmer et al., 2006; Farquhar et al., 2020).

The researcher monitored the participants' advancements by engaging in communication and dialogues through the WhatsApp group established at the initiation of the research. The primary objective of creating this group was to facilitate the exchange of crucial information and discussions. On a weekly basis, inquiries were made regarding the participants' experiences and progress in utilizing ChatGPT as an instructional tool in the classroom. This systematic approach allowed the researcher to gauge the extent of progress for each participant, discerning the tangible impact, if any, that ChatGPT had on their teaching methodologies. An interview protocol was created to collect data from student instructors, a six-question interview strategy was created to obtain data from participants as pre-service teachers.

As previously stated, the researcher conducted virtual observations through a WhatsApp group, established for participants to facilitate information dissemination, coordination, and to obtain specific data. Additionally, online meetings, including interviews with seven participants via Zoom meetings, were organized to gather comprehensive insights. Due to the limited participant count, group interviews were adopted as an expedient time-saving measure. Conducted in Indonesian, these interviews were tailored to each participant's unique circumstances, ensuring precise and detailed data collection. Throughout the approximately 90-minute interviews, participants adeptly responded to inquiries based on their individual experiences. The Zoom platform was employed to promptly record the interviews, ensuring accurate data recapitulation in subsequent analysis.

The researcher-initiated data collection by utilizing a WhatsApp group for participant interaction and conducting online meetings, including Zoom interviews with seven participants. The primary aim of these interviews was to directly comprehend the significant experiences of participants while integrating ChatGPT into their teaching practices. The researcher sought to investigate the impact of ChatGPT on participants' professional career growth and its role in fostering pedagogical innovation in the classroom. During the interviews, the researcher focused on aspects such as changes in teaching methods and improvements in learning effectiveness resulting from ChatGPT utilization. This interview process provided in-depth insights into the participants' progress post-implementation of ChatGPT, complementing previous data analysis findings.

After data collection, transcription, and coding, the researcher identified themes, patterns, and categories, organizing them into larger themes. The researcher also continued the analysis by reading all of the coding and identifying probable themes through inductive thematic analysis, which emerged throughout the analysis (Braun et al., 2017). The subsequent interpretation of findings involved exploring relationships and patterns, providing a detailed understanding of ChatGPT's influence on the teaching context. To ensure reliability, the researcher utilized validation from peers and triangulation, reinforcing findings with direct participant quotes. The synthesis of these insights resulted in a systematic research report, presenting clear and comprehensive findings, and relating them to the initial research questions and objectives.

FINDINGS & DISCUSSIONS

Table 10 displays the themes and sub-themes determined by the results of thematic analysis based on interviews with participants, followed by statements made by each participant regarding the participants' pedagogical innovations evolved when prospective instructors used ChatGPT as a teaching tool in the classroom during teaching practice.

Table 1 Themes and Sub-themes

Theme	Sub-themes	Participants
Introduction of ChatGPT as a Teaching Aid	Advantages of Using ChatGPT	7
	Weaknesses in Using ChatGPT	2
Benefits of ChatGPT in Creating Lesson Plans and Alternative Teaching Methods	Benefits of ChatGPT in Creating Lesson Plans	2
	Adjustment and Evaluation of ChatGPT Lesson Plans.	3
Influence on Creativity and Teaching Variation	Inspiration for Creativity and Teaching Variation	3
	Changes in Teaching Methods and Awareness of Limitations	2
Unleashing ChatGPT's Creative Teaching Potency	Exploring Creative Teaching Avenues	3
	Evaluation and Adjustment of Teaching with ChatGPT	2
Gratitude for Significant Assistance from ChatGPT	Perception of ChatGPT's Effectiveness in Improving Professionalism	7

Introduction of ChatGPT as a Teaching Aid

This theme contains various phenomena that are organized into sub-themes, including 1) Advantages of Using ChatGPT, 2) Weaknesses in using ChatGPT. For the first sub-themes, all seven participants stated that ChatGPT was a highly beneficial tool for their teaching, particularly for preparing material, generating exciting learning ideas, and many more. The following are the statements from each participant:

"After utilizing ChatGPT in my teaching, I felt a slight change in my teaching approach, which used to be too monotonous. Over time, it has started to evolve because ChatGPT has helped provide me with many interesting activities within it." (P1)

"From my experience, ChatGPT has certainly helped enhance creativity and variation in teaching methods." (P2)

"So, in terms of obtaining teaching methods and strategies, ChatGPT is very helpful. Secondly, in terms of material creation, such as generating questions, it is also very helpful." (P3)

"In my opinion, ChatGPT is significant in time efficiency and provides comprehensive, varied, and follow-up answers. I believe the results are more innovative and creative." (P4)

"Additionally, the benefits of ChatGPT in teaching include assisting in creating various questions or quizzes, helping in developing teaching materials, and aiding in lesson planning." (P5)

"According to my experience, ChatGPT greatly helps improve creativity and variation in

teaching methods. ChatGPT provides creative and varied ideas for teaching students." (P6)

"I get various creative and interesting ideas and how to apply these ideas in the classroom. As a result, I have successfully created a more active, responsive, and enthusiastic learning environment, leading to increased student engagement." (P7)

The second sub-theme emphasizes the weaknesses of ChatGPT that participants discovered when utilizing it as a teaching aid in class. Two participants stated that there were several weaknesses of ChatGPT, the following are the statements from each participant:

"In my opinion, I'm not 100 percent sure that the lesson plan covers all the necessary aspects because the use of ChatGPT still has limitations. Therefore, the lesson plans generated by ChatGPT may not necessarily align with the characteristics and needs of students in the classroom..." (P1)

"I'm not very confident in the results from ChatGPT because, in my view, they are incomplete, not specific enough, and, well... not in line with the classroom needs. Each class has different characteristics, ranging from the number of students, students' learning styles, to the available facilities in the classroom. So, in my opinion, ChatGPT seems to generalize in creating lesson plans..." (P3)

Benefits of ChatGPT in Creating Lesson Plans and Alternative Teaching Methods

This theme contains various phenomena that are organized into sub-themes, including

1) Benefits of ChatGPT in Creating Lesson Plans, 2) Adjustment and Evaluation of ChatGPT Lesson Plans. Two participants highlighted ChatGPT's ability to generate lesson plans. The following are the statements from each participant:

"ChatGPT has assisted me in preparing and organizing teaching materials that I would typically present in class." (P1)

"As for my experience in using ChatGPT and whether there have been changes in the use of this technology, there certainly have been. Firstly, it helps me in preparing lesson plans." (P2)

The second sub-themes emphasize there are 3 participants explained that ChatGPT's lesson plans must be thoroughly reviewed to ensure that they are appropriate for the characteristics and needs of the students in the class. The following are the statements from each participant:

"In my opinion, the essence is crucial to be reassessed, and the core aspects that I believe need reevaluation are two: the teaching method and the time allocation." (P4)

"So, in my view, it is very important to review the lesson plans (RPP) obtained from ChatGPT because we also need to align them with the applied curriculum that we teach. Not all schools implement the same curriculum." (P7)

"I agree with the others that ChatGPT needs to be reassessed. I fully agree because we, as teachers, are the ones who understand the real needs and situations in the classroom. Therefore, when seeking references from ChatGPT, we should reassess them according to our school's situation and conditions." (P3)

Influence on Creativity and Teaching Variation

This theme contains various phenomena that are organized into sub-themes, including 1) Inspiration for Creativity and Teaching Variation, 2) Changes in Teaching Methods and Awareness of Limitations. In the first sub-theme there are three participants explained that ChatGPT had a big impact on their teaching after using it as a teaching aid in class, both in terms of creativity and variety of learning. The following are the statements from each participant:

"From my experience, ChatGPT has certainly helped enhance creativity and variation in teaching methods." (P2)

"Perhaps the most significant aspect for me is when a teacher suddenly asks us to teach because they have urgent matters, and I don't have any references. Still, I seek help from ChatGPT to create the material. So, in terms of urgency, ChatGPT is very helpful." (P3)

"In my opinion, ChatGPT is significant in time efficiency and provides comprehensive, varied, and follow-up answers. I believe the results are more innovative and creative." (P4)

The second sub-themes emphasize that two participants noted that their learning methods had changed, and they also recognized limitations in ChatGPT. The following are the statements from each participant:

"For ChatGPT responses, perhaps we need to inquire again to expand on the given answers. Sometimes, the responses provided are brief, but what we need is a more comprehensive answer. At times, it can be the other way around..." (P2)

"So when we want to seek references from ChatGPT, we should also reassess them according to our school's situation and conditions. This is to prevent misconceptions when teaching in the classroom..." (P3)

Unleashing ChatGPT's Creative Teaching Potency

This theme contains various phenomena that are organized into sub-themes, including 1) Exploring Creative Teaching Avenues, 2) Evaluation and Adjustment of Teaching with ChatGPT. The first sub-theme above, 3 participants stated that ChatGPT is highly useful in enhancing their pedagogical innovation to make their teaching more creative and interesting. The following are the statements from each participant:

"I use ChatGPT as a tool to find ideas for my teaching. So, when teaching a particular topic, especially in last week's Knowledge Sharing, where we taught across all grade levels, there might be instances where we didn't think about teaching this topic in this class and what activities would be suitable. So, I use ChatGPT, and I find it quite helpful..." (P4)

"From my own experience, an example I can provide is more towards a collaboration of learning while playing. I usually engage students in games like quizzes or give them puzzle questions. So, the quiz questions, I search for them with the help of ChatGPT. That's all from me, thank you." (P1)

"According to my experience, ChatGPT greatly helps improve creativity and variation in teaching methods. ChatGPT provides creative and varied ideas for teaching students." (P6)

Despite the benefits provided by ChatGPT for participant teaching as indicated in the first sub-theme above, the second sub-theme below reveals that two participants explained that it was important to analyze and adjust their teaching with ChatGPT. The following are the statements from each participant:

"In my opinion, the ideas and lesson plans (RPP) provided by ChatGPT align with the theories given by my lecturer. So, if executed correctly and in accordance with the characteristics of the students, it will definitely achieve the learning objectives..." (P4)

"We also need to adjust the teaching techniques suggested by ChatGPT to the students' needs. So, if the students' needs do not align with the lesson plans generated by ChatGPT, we can modify them based on our observations of the students' needs..." (P7)

Gratitude for Significant Assistance from ChatGPT

This theme contains various phenomena that are organized into one sub-themes only, that is 1) Perception of ChatGPT's Effectiveness in Improving Professionalism. In the first sub-theme above, all participants said that ChatGPT has proven beneficial in supporting their professional growth as prospective teachers. The following are the statements from each participant:

"Positive impacts that I see after implementing ChatGPT in teaching are, as we know, ChatGPT can provide information quickly, and it can also assist us in various tasks such as creating assignments, papers, lesson plans, and more..." (P5)

"For me, ChatGPT is quite helpful in providing interesting teaching ideas, allowing me to teach with different variations. ChatGPT facilitates me in finding information, teaching materials, and more, making the learning activities more engaging than before. Consequently, there is a change in my teaching approach." (P7)

"In my opinion, after using ChatGPT, I feel that my knowledge of teaching methods has become more diverse, especially since I apply it directly in the classroom..." (P4)

"Perhaps the most significant aspect for me is when a teacher suddenly asks us to teach because they have urgent matters or need to attend a meeting elsewhere. I don't have any references, but I seek help from ChatGPT to create the material. So, in terms of urgency, ChatGPT is very helpful..." (P3)

"All right, thank you. The most significant positive impact I feel is that problem-solving is very quick with varied answers..." (P2)

"All right, thank you. From my perspective, the most significant positive impact I have seen after implementing ChatGPT in the classroom is that ChatGPT has helped me prepare and organize teaching materials that I would typically present in class. Additionally, ChatGPT has assisted me in preparing quiz questions and has suggested some interesting activities for students during the learning process..." (P1)

"According to my experience, ChatGPT greatly helps improve creativity and variation in teaching methods. ChatGPT provides creative and varied ideas for teaching students..." (P6)

The outcomes of the thematic analysis, as elucidated in Table 6, aim to elucidate the progression of participants' pedagogical innovations when integrating ChatGPT as an instructional tool during teaching practice. This advancement is attributed to ChatGPT's provision of engaging learning concepts, diverse pedagogical strategies, and expeditious creation of compelling teaching materials. As a result, participants reported heightened interest in their classroom instruction, rendering it more engaging and alleviating monotony. Furthermore, participants underscored the substantial assistance rendered by ChatGPT in expediting the preparation of teaching materials, consequently reducing the requisite time for instructional material preparation.

According to the results of interviews with participants, all participants stated that they felt helped by the presence of ChatGPT, both in terms of finding teaching materials and providing interesting learning innovations, offering various teaching strategies, and many more. This finding is supported (Dempere et al., 2023) research findings that discovered similar results which states that ChatGPT helps teachers with various things, including preparing teaching materials, providing interesting learning ideas, using various teaching strategies and techniques, as well as delivering information and solutions quickly.

This situation is compatible with the findings of the previous studies by Halaweh (2023), which emphasizes that when utilizing ChatGPT as a teaching tool, teachers must still provide training on how artificial intelligence tools work, as well as how to evaluate and use them effectively. So, when we look at it in terms of benefits and compare it to previous studies, it appears that the findings of this study are somewhat consistent with earlier studies. (Montenegro-Rueda et al., 2023 ; Dempere et al., 2023), these two previous studies also stated that ChatGPT provided highly useful support for teachers in classroom teaching, starting with the preparation of teaching materials, providing interesting learning ideas, employing various teaching styles and techniques, and promptly delivering information and solutions. As a result, the findings of this study support prior studies claiming that ChatGPT has numerous benefits and positive impacts on learning and instruction.

Moreover, it also supported Rahman & Watanobe (2023), research findings that discovered similar results. These previous study found that ChatGPT is useful to supports programming learning and teaching. To address the second research question, according to this study's findings it is possible to conclude that the participants' pedagogical innovation in their teaching improved significantly after utilizing ChatGPT during teaching practice. ChatGPT was introduced as a source of teaching ideas and instructional materials, time efficiency, responsiveness, teaching variations, and increased students' interest.

However, This study's findings also supported what had been reported by previous studies that ChatGPT is extremely helpful in supporting teachers pedagogical innovations and also to support their professional growth. (Ali et al., 2023; Lo, 2023; Cheong & Hong, 2023; Mukarto, 2023; Kohnke et al., 2023). These previous studies also found that ChatGPT is helpful for teachers with their classroom instruction, whether it is in the preparation of teaching materials, the provision of interesting learning ideas, the use of various teaching strategies and techniques, or the fast delivery of information and solutions.

As a result this study's findings implies that the ChatGPT experience had a significant impact on the growth of participants' pedagogical creativity, which will support their professional growth as pre-service teachers; however, it must still be evaluated and adjusted to ensure alignment with the teaching context and student needs.

CONCLUSION

The integration of ChatGPT wielded a notable influence on the pedagogical innovation of participants, fostering creativity and diverse teaching methodologies. However, an excessive reliance on ChatGPT without meticulous scrutiny resulted in lesson plans that inconsistently

met the classroom and student needs. Despite these challenges, participants acknowledged the merits of ChatGPT, particularly its facilitation of easy access to teaching ideas.

The participants' pedagogical ingenuity witnessed a substantial enhancement following the incorporation of ChatGPT during teaching practice. ChatGPT was introduced as a resource for providing teaching ideas, instructional materials, ensuring time efficiency, responsiveness, varied teaching methodologies, and heightened student interest. These elements proved efficacious in constructing lesson plans and introducing diversity to teaching approaches. Moreover, this deduction posits that the ChatGPT experience exerted a considerable influence on participants' pedagogical creativity, contributing to their professional development as pre-service teachers. Nevertheless, this impact necessitates ongoing evaluation and adjustment to ensure congruence with the teaching context and student requirements.

In conclusion, ChatGPT positively contributes to the pedagogical innovation and professional growth of participants as pre-service teachers. The extant issues underscore the importance of active engagement and critical appraisal for the seamless integration of ChatGPT into teaching practice. Hence, sustained engagement, consistency, and thorough review emerge as pivotal facets when assimilating ChatGPT outcomes into the teaching milieu. The understanding prevails that ChatGPT can serve as an effective tool if employed judiciously and subjected to a rigorous review process.

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