

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

The emergence of generative AI like ChatGPT has changed many parts of education, including how future teachers build their skills (Bozkurt et al., 2023). According to Feuerriegel et al. (2024), generative AI able to create text, designing learning materials, also providing quick feedback, which makes it a potential tool in teacher training. As technology will grow and have a big potential to change education, it's important to see how ChatGPT can support pre-service teachers to achieve more effective and relevant learning in the digital age (Akour & Alenezi, 2022)

Based on this idea, ChatGPT become more popular due to its wide functionality and usefulness for teachers (Usman Hadi et al., 2024). For example, a study from Limna et al. (2022) mention that ChatGPT system can assist teachers in generating lesson plans, a variety of learning materials as per their needs and subjects, and it also offers immediate interactive feedback. That makes it a valuable tool for preservice teachers who are still developing their technological, pedagogical, and content knowledge, or known as TPACK (Mishra et al., 2023). With AI tools becoming more common in education, ChatGPT will be a big potential to help pre-service teachers in guiding them through the challenges of developing their teaching skills (Lee & Zhai, 2024). Thus, it's important to see how

tools like ChatGPT can support future teachers to ensure they are maintaining both technological and pedagogical challenges in their teaching practice.

To better understand how ChatGPT can support pre-service teacher in developing their pedagogy skill using technology, it is necessary to well known about TPACK framework (Ridha & Fithriani, 2023). According to Koehler et al. (2013), the TPACK framework includes a blend of technology, pedagogy, and content knowledge, has become a very important model for teacher education. They discuss that the TPACK framework contain of seven dimensions, such as Content Knowledge (CK), Pedagogical Knowledge (PK), Technology Knowledge (TK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK). These dimensions support teacher to use technology effectively into teaching by balancing subject knowledge, pedagogy skill, and technological tools to create meaningful and engaging learning experiences. Understanding these dimensions is important for preparing future teachers to effectively apply technology into their teaching. According to Mariette (2022), as ChatGPT become important in field of education, such as facilitating creative lesson planning, generating content and pedagogical resources, and adapting specific modules based on student needs, its role in supporting pre-service teachers' TPACK development raises important questions about how technology can enhance teaching while maintaining academic integrity.

These ethical considerations are central to teaching practice, as they promote values of honesty, trust, fairness, and responsibility in the real time

teaching and learning process Hafizha (2022). According to Khasawneh (2024), valuing academic integrity is essential to maintaining trust in education, it helps to foster the values of honesty and originality, which are needed to be an effective teacher. Their study also found that as pre-service teachers prepare to become future educators, they must understand and model ethical behavior in their use of AI-assisted tools like ChatGPT. However, ChatGPT gives a lot of benefits to solving pedagogical challenges; it may also concern plagiarism or over depending on ChatGPT (Mariette, 2022). According to Lee and Zhai (2024) over reliance use AI can slow down the ability of teaching, critical thinking, and pedagogical decision-making. Therefore, it is vital to explore how pre-service teachers perceive and solve these ethical challenges while integrating ChatGPT into their TPACK development.

On the other hand, the industry has responded to that challenge with tools such as Turnitin AI, which claims to be able to detect new academic integrity caused by the use of GenAI like ChatGPT (Wulff et al., 2023). But, according to Pembelajaran et al. (2024), of course, there are various ways to still be able to utilize GenAI, such as using GenAI only as a research tool, not a content creator, the title and body of the paper should be rewritten by own language, maintaining a personal style, and avoiding the application of automatic paraphrasing. the structure of the paper should be clear, including an introduction, correct citations, and a conclusion, also, avoid typical GenAI terms and use detection tools to ensure the originality of the writing. This will be very helpful, especially for pre-service teachers who still need AI to help them develop into professional teachers. Particularly, to support their learning and teaching skills by a variety of ideas to develop their pedagogy and content knowledge skills (Lee & Zhai, 2024).

As pre-service teachers will be growing to be professional educators, they are already well educated by their universities in using basic educational technologies (Pozas & Letzel, 2023). However, they may lack experience in effectively combining advanced technology like ChatGPT with pedagogical and content knowledge, which can raise concerns related to academic integrity (Karkoulian et al., 2025). For example, a study from Mariette (2022) finds that lot of beginning teachers never received formal training on ChatGPT in real classroom settings. It makes pre-service teachers begin experimenting using ChatGPT during their practicum to create lesson plans, design materials, and manage learning activities, which makes potential for them to compromise academic integrity (van den Berg & du Plessis, 2023). Therefore, investigating their perceptions and practices regarding ChatGPT use in TPACK development during their teaching practicum can give a valuable insight for future teachers in the right way and responsible integrate AI in the classroom. As technology keeps changing education, it's important to see how tools like ChatGPT can support future teachers in their learning (Information, 2023).

Despite the usefulness of ChatGPT in education, there is limited empirical research on how EFL preservice teachers use ChatGPT to develop their TPACK while addressing ethical considerations (Baskara & Mukarto, 2023). This study will explore how EFL pre-service teachers at the English Study Program of Ganesha University use ChatGPT to support their TPACK development, especially during their teaching practicum. By focusing on their real teaching experiences, this research highlights how pre-service teachers adapt to new technology and make ethical decisions, even with limited guidance. The findings will help improve

teacher education programs at Ganesha University and offer useful insights for other institutions on how to support the responsible and effective use of ChatGPT in teacher training.

## **1.2 Problem Identification**

With the advancement of technology, it requires the self-development of pre-service teachers in teaching with digital AI tools such as ChatGPT (Khasawneh, 2024). Research by Mishra et al. (2023) shows how ChatGPT can improve teacher technological, pedagogical, and content knowledge (TPACK), such as creating lesson plans, offering personalized learning experiences, and helping teachers create more engaging and inclusive lessons. In particular, ChatGPT can help with language teaching in areas like writing, speaking, reading, and listening, and can also encourage creativity in lesson planning. However, many pre-service teachers still struggle to effectively use AI in a way that combines technology, teaching methods, and content. For example, research by Nguyen (2023) shows that while ChatGPT is well-received by EFL teachers, pre-service teachers struggle with its integration due to a lack of training and concerns about over-reliance, which may affect critical thinking and originality. While there is some research on how ChatGPT impacts education, there is not enough information on how teachers can specifically use AI to develop their TPACK and support their ongoing professional development. This is a key gap in the research, as it is unclear how pre-service teachers can use AI tools like ChatGPT to build their TPACK and grow as professionals.

Moreover, the easiest access by AI tools like ChatGPT may raises concerns

about academic integrity, such as plagiarism and over reliance on AI created content. The study by Choudhary et al. (2024), suggests the need clear policies and training for pre-service teachers to ensure that ChatGPT is used responsibly. ChatGPT should be used to support creativity and lesson planning, but still maintaining and keep the originality of the teacher's role in creating and evaluating pedagogical content (Cotton et al., 2024). These challenges led the researcher to ask questions about whether ChatGPT can be used to improve the TPACK skill of pre-service teachers without compromising academic integrity. Understanding pre-service teachers' perceptions of ChatGPT's role in improving their TPACK skills and how they navigate academic integrity challenges is critical. Therefore, exploring the ways in which pre-service teachers improve their TPACK skills and maintain academic integrity by using ChatGPT is the aim of this study. To accomplish this, this study use mix method approach. Quantitative data helps reveal overall patterns and trends across the student population, while qualitative data captures teachers' personal experiences and the specific ways they use AI. Thus, this study offers a fuller understanding that neither numbers nor words could provide on their own.

### 1.3 Research Question

1. In what ways do EFL preservice teachers use ChatGPT for their Technological Pedagogical Content Knowledge (TPACK) skills development?
2. To what extent do EFL preservice teachers perceive that ChatGPT can be used in their TPACK skills development without compromising

academic integrity?

#### **1.4 Purpose of the Study**

1. To investigate the ways in which EFL preservice teachers use ChatGPT to support the development of their Technological Pedagogical Content Knowledge (TPACK) skills.
2. To explore EFL preservice teachers' perceptions of ChatGPT's role in their TPACK skills development, specifically in relation to maintaining academic integrity.

#### **1.5 Scope of the Study**

This study concentrations on exploring how pre-service EFL teachers use ChatGPT in developing their TPACK skills and their perceptions of its ethical implications, particularly in the context of academic integrity. The scope of this study includes an examination of the detailed ways in which pre-service teachers using ChatGPT to improve their technological, pedagogical, and content knowledge, as well as an exploration of their interpretations on the ethical use of AI or ChatGPT as tools in education.

Pre-service EFL instructors enrolled in Ganesha University of Education's English Education Study Program (Undiksha) who have actively used AI-based tools like ChatGPT in their academic and professional endeavors are the study's subjects. The scope of this study is restricted to comprehending pre-service teachers' experiences, difficulties, and methods for striking a balance between the use of cutting-edge technology and moral issues when putting their teaching

programs into practice.

## **1.6 Significances of the Study**

### **1.6.1 Theoretical Significances**

This study is expected to provide an important contribution to understanding how AI-based tools, particularly ChatGPT, can improve the development of TPACK skills in prospective English teacher students. This study expands the theoretical framework surrounding the integration of AI in education by investigating the application of ChatGPT in lesson planning, language skill improvement, and customized teaching methodologies.

In addition, the ethical implications of utilizing AI in teacher education are also covered in this paper, particularly with regard to academic integrity. The findings of this study are anticipated to deepen our understanding of how generative AI tools like ChatGPT might assist teacher professional development in the age of AI-based education by examining the perspectives and experiences of pre-service teachers.

### **1.6.2 Practical Significances**

This study offers practical benefits for multiple stakeholders:

a. For Parents:

Although the study primarily focuses on EFL preservice teachers, it has indirect implications for parents, as better teaching practices developed through AI tools like ChatGPT can result in a better learning experience for their children. By

improving teacher preparation, this research helps to ensure that children benefit from personalized, engaging, and effective teaching. Parents can also gain a better understanding of how technology is being used in their children's education, fostering a collaborative relationship between home and school.

b. For Teachers:

This study provides pre-service teachers with practical guidance on how to use ChatGPT effectively for lesson planning, classroom management, and addressing diverse student needs. ChatGPT's ability to offer tailored suggestions and real-time feedback empowers teachers to create more interactive and personalized lessons, enhancing student engagement and learning outcomes. By exploring the academic integrity of AI use, the study equips teachers with the knowledge and skills necessary to maintain originality, critical thinking, and academic integrity in their teaching practices. The study also encourages teachers to reflect on their professional responsibilities and adopt a balanced approach to technology use, integrating AI as a supportive tool rather than a replacement for their expertise.

c. For Schools and Educational Institutions:

This study wishing to include AI tools into their educational programs. The study advises organizations to create explicit policies and guidelines for the ethical use of AI by outlining the advantages and difficulties of utilizing ChatGPT in teacher education. These findings can be used by schools to offer workshops and training sessions that give educators the tools they need to employ AI in a responsible and efficient manner. Additionally, the study highlights how crucial it

is to promote an innovative culture and encourage educational institutions to use AI as a tool to enhance student learning results, improve teaching methods, and meet a variety of classroom demands.

d. For Researchers:

This study serves as a foundation for future research on the use of AI tools in education, particularly in the context of teacher training and their TPACK skills development. This study offers valuable insights into how AI tools such as ChatGPT can be utilized to improve teaching practices while keeping ethical considerations in mind. Researchers can use this study to explore other dimensions of AI integration, such as its impact on students' motivation, engagement, and long-term learning outcomes. In addition, the findings of this study may inspire further investigation into strategies to minimize the risks related to the use of AI, such as plagiarism and over-reliance, and maximize its potential to support creativity, critical thinking, and professional development

