CHAPTER I
INTRODUCTION

1.1. Background

Writing is the act of using graphic symbols to represent a language that can be comprehended and read by individuals who are familiar with both the graphic symbols and the language itself (Setlight et al., 2023). Mastering writing is crucial among the four language skills, particularly in English. Utami et al. (2023) assert that developing writing skills is essential due to its fundamental role in language proficiency. According to Setlight et al. (2023), writing skills are highly intricate among the skills of hearing, reading, speaking, and writing. Setlight's viewpoint aligns with that of Bhandari (2020), who posits that written language skills are intricate abilities. Among the different components of English, writing is particularly challenging for English Language Learners (ELLs) due to its intricate nature (Nurmatova, 2023).

Although writing skills are important to master, however previous research shows that several countries still have low skills, such as Brazil and Portugal (Veiga Simão et al., 2016), Chile (Agencia de la Calidad en Educación, 2016; Bañales et al., 2020), Australia (Australian Curriculum & Assessment and Reporting Authority (ACARA), 2021; Thomas, 2020), even Indonesia (Inayah & Nanda, 2016). The consequences are fatal if students' writing skills are low, which can have an impact on student learning achievement, low literacy levels, and can lead to the emergence of plagiarism practices (Elmunsyah et al., 2018; Graham, 2019; Sureda Jaune, Comas Rubén, 2015). Therefore, students must learn to write. Writing is a mandatory skill for all pupils in Indonesia, even those in high school (Utami et al., 2023). Because writing skills are complex language skills and difficult to learn (Setlight et al., 2023; Bhandari, 2020; Nurmatova, 2023), so that good teachers who can understand these skills well are needed (Hadi et al., 2021). With this, the author sees that many prospective teachers lack confidence in their competence in teaching writing. One thing that can help prospective teachers in teaching writing is the implementation of technology. Teachers' performance will be better with the support of technology for teaching (Hadi et al., 2021), one of this technology is AI (Artificial Intelligence).

Artificial Intelligence or what is usually abbreviated as AI has become a huge phenomenon currently throughout the world, where currently Artificial Intelligence (AI) has become the latest technological discovery that is almost discussed throughout the world and almost all industrial and educational sectors have applied AI technology to inside. Artificial Intelligence can be defined as a machine that can understand and learn logic like humans (Tiara Nur Fitria, 2021). In education, Artificial Intelligence has had a major impact, such as increased efficiency, global learning, smarter content, personalized or customized learning, and increased efficiency and effectiveness in educational administration (Timms, 2016). AI in language education can also develop students' four language skills, namely reading, speaking, listening and writing (Rusmiyanto et al., 2023). Especially in writing classes, AI technology has been used to teach writing skills. Several previous studies show that AI can improve writing skills (Mediyawati et al., 2021), improve the quality of students' written products (Tira Nur Fitria, 2021b), and help the writing process (Kangasharju et al., 2022). Although the role of AI can make it easier for pre-service teachers to teach writing, Pedró (2019) said it's difficult to prepare pre-service teachers for AI-based teaching.

In overcoming these challenges, high self-efficacy is needed by teachers in using this technology. Self-efficacy is the belief that one can take action to achieve goals that will have an influence on one's life (Albert Bandura, 1994). Self-efficacy can impact and elevate an individual's performance when fulfilling a condition's requirements (Lianto, 2019). An individual's trust in their own ability to finish a task rises with their level of self-efficacy (Lianto, 2019). If someone has low self-efficacy in using technology then that person is less likely to use technology, usually older people have low self-efficacy because they do not have substantial prior learning and training experience (Chung et al., 2010; Czaja et al., 2006).

The teacher's level of self-efficacy will have an impact on the Technology Acceptance Model (TAM), particularly on the intention to use the technology. According to Surendran (2012), the Technology Acceptance Model (TAM), developed by Davis (1989), is a widely used research model that predicts how users will use and embrace technology and information systems. The Technology Acceptance Model (TAM) is employed to comprehend user behavior and

preferences when employing a technological instrument (Lucyanda et al., 2010). It has been shown that TAM can accurately portray how people behave when utilizing technology, with individuals readily accepting its use when it suits their needs (Antonenko & Abramowitz, 2023; Lucyanda et al., 2010). Behavioral intention refers to the inclination to persist in adopting a technology, as defined by Davis (1989). An individual's proficiency in computer technology can be deduced based on their level of attentiveness towards the gadget. TAM posits that perceived utility and ease of use act as mediators between behavioral intention and usage intention, providing a protective barrier against the influence of external variables (Tao, 2008). The Technology Acceptance Model (TAM) posits that behavioral intention is formed as a result of conscious decision-making processes (Venkatesh et al., 2003). According to Davis et al. (1989), the Technology Acceptance Model (TAM) suggests that users' intention to use the system, known as behavioural intention to use (BIU), is influenced by their attitude towards using it and their evaluation of its ease of use and usefulness. This intention ultimately determines whether or not the system is actually utilized.

Presently, there is a substantial amount of research being conducted on the utilization of artificial intelligence (AI) in the field of writing instruction. Tira Nur Fitria (2021a) did a qualitative descriptive research study on 40 students at SMA Dharma Karya UT in Indonesia. This paper aims to offer EFL students a comprehensive introduction to "Grammarly," an AI-driven English writing help. The results suggest that the student achieved a score of 34 out of 100 on the test before utilizing Grammarly. The student's text performance score, following the use of Grammarly, was 77 out of 100. This score indicates the enhancement in the caliber of writing in this piece. In addition, a qualitative investigation carried out by Marzuki et al., (2023) analyzed four teachers of English as a Foreign Language (EFL) at three separate universities in Indonesia. The main aim of this study was to investigate the variety of Artificial Intelligence (AI) writing tools that are now accessible and evaluate the opinions of English as a Foreign Language (EFL) teachers on their impact on students' writing, specifically in relation to structure and content. The study's findings suggest that the use of AI writing tools can improve

the caliber of writing produced by students who are studying English as a second language.

Third, there is research from Utami et al. (2023) who conducted quantitative and qualitative research on 58 students from three high schools in Semarang, Indonesia. The purpose of this study is to map perceptions, barriers, and suggestions for maximizing the use of AI in Indonesian academic writing instruction. The results indicate that: (1) AI-based learning tools support students in conducting academic research, particularly during the planning and drafting stages when they must identify and develop topics; (2) despite their limitations, AI-based learning tools are considered flexible in terms of accessibility; and (3) students are eager to use AI technology in academic writing classes to make the learning process more engaging. Fourth, there is research from Shahriar and Laboni (2023) who conducted convergent mixed research design research on 55 students enrolled in various undergraduate programs at Daffodil International University, Bangladesh. The goal of the study is to find out how Bangladeshi students feel about using Grammarly in their writing in order to examine the possibility of AI in teaching English writing effectively. The study concludes that after using Grammarly, those who currently use it or have used it in the past have improved their writing abilities. The research's findings clearly show how successful it may be to learn English writing by utilizing "Grammarly," an artificial intelligence.

Furthermore, Utami et al. (2023) conducted a comprehensive study involving both quantitative and qualitative research methods. The study focused on a sample of 58 students from three high schools located in Semarang, Indonesia. The objective of this study is to chart the perspectives, obstacles, and recommendations for optimizing the utilization of artificial intelligence in the context of academic writing teaching in Indonesia. The findings suggest that: (1) AI-powered educational tools assist students in carrying out scholarly research, especially during the initial stages of planning and drafting, when they need to identify and refine topics; (2) although they have some constraints, AI-powered educational tools are perceived as adaptable in terms of accessibility; and (3) students are enthusiastic about incorporating AI technology into academic writing courses to enhance the learning experience. Additionally, Shahriar and Laboni

(2023) did a convergent mixed research design study including 55 students who were enrolled in different undergraduate programs at Daffodil International University in Bangladesh. The objective of the study is to ascertain the sentiments of Bangladeshi students about the utilization of Grammarly in their writing, with the aim of evaluating the potential of artificial intelligence in efficiently teaching English writing. The study suggests that individuals who have utilized Grammarly, either presently or previously, have experienced enhancements in their writing skills. The research findings unequivocally demonstrate the efficacy of using "Grammarly," an artificial intelligence, for learning English writing.

Due to the limited amount of research on the relationship between English teachers' self-efficacy and their intention to use AI for teaching writing skills, researchers aim to investigate the impact of pre-service English teachers' self-efficacy in using AI on their intentions to use AI for teaching writing skills. Previous studies have explored the application of AI in writing instruction and the impact of self-efficacy on technology adoption. However, further research is required to gain a comprehensive understanding of the specific requirements and objectives of English teachers in deploying AI for teaching writing skills. This study intends to address the gap in knowledge by investigating the impact of preservice English teachers' self-efficacy in utilizing artificial intelligence (AI) on their intention to teach writing skills with the help of AI. This study is unique because it examines how self-efficacy affects the intention to utilize AI in teaching writing skills, a topic that has not been previously investigated in the literature.

Identification of the Problem

Artificial Intelligence has been introduced into the field of education, prompting teachers and aspiring educators to use AI into their instructional practices. Sumakul et al. (2022) did a study investigating teachers' perceptions regarding the utilization of artificial intelligence (AI) in English as a Foreign Language (EFL) classes. Four English as a Foreign Language (EFL) instructors at an Indonesian institution, who had specialized knowledge in integrating Artificial Intelligence (AI) into their lesson plans, were interviewed to collect the data. The data indicate that all teachers expressed a positive view regarding the utilization of AI in the classroom. The educators unanimously concurred that AI had the potential

to enhance instruction and facilitate student learning. In addition, An et al. (2023) conducted a survey in a designated district in China that showcases AI education, in order to collect data for their study. The objective of this study is to examine the beliefs, understanding, and plans of English as a Foreign Language (EFL) instructors on the use of Artificial Intelligence (AI) for teaching English in secondary schools. The constructs that satisfied the requirements for reliability and validity in this study were Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), AI language technological knowledge (AIL-TK), AI technological pedagogical knowledge (AI-TPK), AI-TPACK, and Behavioral Intention (BI). Based on the measured characteristics, the results indicate that the EFL teachers possess a favorable attitude. The variables PE, SI, AIL-TK, and AI-TPACK demonstrated a high level of predictive power for favorable outcomes on BI. In addition, EE, FC, and AI-TPK had indirect impacts on BI. In addition, Aljohani (2021) conducted a quantitative research study with a sample of 5 teachers and 16 students at the Yanbu University College Female Campus (YUCF) in Saudi Arabia. The aim of the study is to determine the attitudes of Saudi English as a Foreign Language (EFL) teachers and students towards the use of artificial intelligence (AI) to enhance English language instruction. The results revealed that both educators and students held positive opinions regarding the integration of artificial intelligence (AI) in English language instruction in Saudi Arabia. In their study, Ulla et al. (2023) conducted a qualitative descriptive (QD) research, which involved 17 English as a Foreign Language (EFL) instructors employed at Thai universities. This study investigates the viewpoints of English as a foreign language (EFL) instructors at a Thai institution regarding the utilization of ChatGPT as an instructional aid. The results suggest that the participants had favorable opinions on ChatGPT and shown a good understanding of its various uses, such as developing language activities and lesson plans.

However, it is worth noting that the use of technology in education is heavily influenced by TAM, particularly in terms of behavioral intentions. TAM, in turn, is driven by self-efficacy. Extensive research has been conducted on this subject. Holden & Rada (2011) conducted a survey among K-12 teachers in two rural school districts in Virginia, and received responses from 99 instructors. This study

examines the correlation between teachers' embrace of technology and their judgments of its utility and self-efficacy. According to this study, the TAM was more positively influenced by teachers' technical self-efficacy (TSE) compared to their computer self-efficacy (CSE). Kukul (2023) conducted a two-stage study, where the validation of the instrument was performed first, followed by testing the correlations between specific elements using structural equation modeling. 384 pre-service teachers participated in the instrument validation phase, while 790 pre-service teachers participated in the model testing phase. The objective of this study is to determine the correlation between the adoption of technology, self-confidence in using technology, and training in integrating technology. Initially, the findings indicated that the scale is a legitimate and consistent tool. Furthermore, the extent of technology integration training that pre-service teachers receive is a reliable indicator of their perception of usefulness, self-confidence, and simplicity of utilization.

Therefore, all of these indicators predict their intention to embrace technology. Alternatively, Joo et al. (2018) did a study to investigate the connections between TPACK, teacher self-efficacy, perceived ease of use, and perceived benefits for future teachers who plan to utilize technology. The study was based on the Technology Acceptance Model (TAM) and focused on investigating the structural relationships between these variables. Analyzed were a total of 296 replies from the Faculty of Education at three Korean universities using the structural equation modeling method. The results indicated that the self-confidence of teachers and their perception of how easy it is to use technology were greatly influenced by the Technological Pedagogical Content Knowledge (TPACK) of preservice teachers. The teachers' perception of the technology's ease of use and usefulness in the classroom were positively influenced by their Technological Pedagogical Content Knowledge (TPACK). Finally, the instructors' decision to adopt technology was influenced by their confidence in their ability to use it effectively, their perception of how valuable it would be, and how easy it would be to use. Nevertheless, their decision to utilize the technology was not directly impacted by TPACK. Peng et al. (2023) conducted a study in Henan province, China, where they employed partial least squares structural equation modeling

(PLS-SEM) to analyze data from 685 serving instructors. The objective of this study was to identify innovative methods for determining the factors that influence the utilization of technology by Chinese in-service teachers, particularly in relation to the integration of information and communication technology (ICT). The integration of ICT among in-service teachers is determined by four key factors: attitudes, digital proficiency, self-confidence, and utilization of digital technologies. The study's results using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method indicated that all four factors have a substantial impact on the integration of Information and Communication Technology (ICT) and intercommunication among in-service instructors. Attitudes, digital competence, and the utilization of digital tools are found to have a mediating function in this research. The study also examined the impact of gender, age, and teaching experience on influencing factors and the incorporation of ICT.

Nevertheless, the aforementioned research fails to extensively address the impact of teacher self-efficacy on the Technology Acceptance Model (TAM), particularly in relation to the purpose of utilizing artificial intelligence (AI) for teaching writing skills. Accurate knowledge is crucial, given the current widespread interest in utilizing artificial intelligence to enhance teaching abilities. Hence, the present study aimed to fill this void by investigating the influence of English teachers' self-efficacy in utilizing artificial intelligence (AI) on their inclination to employ AI for teaching writing skills.

1.2. Research Questions

1. What is the impact of preservice English teachers' self-efficacy in using AI towards their intentions to teach writing skills using AI?

1.3. Research Objectives

1. To find out the impact of preservice English teachers' self-efficacy in using AI on their intentions to teach writing skills using AI.

1.4. Research Significances

A. Theoretical

1. The researcher expects that this research will provide more knowledge about the impacts of preservice English teachers' self-efficacy of using AI towards their intentions of teaching writing skills using AI

B. Practically

a. For preservice teachers

Preservice teachers can find out the impact of preservice English teachers' self-efficacy in using AI on their intentions to teach writing skills using AI.

b. For school

Provide contributions in the form of ideas and thoughts to schools to improve the quality of students and teachers in learning English.

c. For future research

Can be used as a reference for further research in the future.

1.5. Research Limitation

In this research, the author only focuses on the impact of EFL pre-service teachers' self-efficacy at Ganesha Education University in using AI on their intention to teach writing skills using AI.

1.6. Conceptual and Operational Variables

a. Behavioral Intention

The inclination to use technology in a particular way is known as behavioral intention (Davis, 1989). Teachers' intentions of using AI to teach writing is the teachers' subjective probability that they will use AI to teach writing which will be measured using questionnaire that develop by the researcher.

a. To design learning and instruction

(BI1): I will use AI to design learning and teaching when I do writing skills teaching.

(BI2): I will use AI to help me design writing materials for my students.

(BI3): I will use AI to check my grammar when I design writing materials for my students.

(BI4): I will use AI to generate ideas for writing activities.

(BI5): I will use AI to create writing prompt for my students' writing tasks.

(BI6): I intend to incorporate AI tools to provide personalized feedback on my students' writing assignments.

(BI7): I plan to explore AI-based techniques to assess and analyze the creativity in my students' writing.

(BI8): I am inclined to adopt AI for generating real-time performance analytics to enhance my teaching strategies for writing skills.

b. Self-efficacy

In conceptual terms, self-efficacy is a person's belief in their ability to complete something (Albert Bandura, 1994). Teachers' self-efficacy of using AI is the teachers' levels of self-efficacy in using AI to teach writing which will be measured using questionnaire that develop by the researcher. Self-efficacy will be measured using a questionnaire using 5 items based on researcher-made instrument. Indicators in self-efficacy include:

(SE1): I am confident in my ability to use AI tools effectively to improve writing teaching skills.

(SE2): I am confident that I have the necessary skills and knowledge to use AI tools to improve writing teaching skills.

(SE3): I have experience using AI tools for improving writing teaching skills.

(SE4): I believe that I can learn to use AI tools for improving writing teaching skills effectively.

(SE5): I believe that using AI tools to improve my writing skills can increase my confidence in my writing teaching abilities.

(SE6): I feel assured in my capability to troubleshoot and overcome challenges while integrating AI tools into my writing instruction.

(SE7): I am confident in my ability to adapt and learn new features and updates to AI tools to continually improve my writing teaching skills.

(SE8): I am self-assured in my ability to guide and support my students in effectively utilizing AI tools for improving their writing abilities.