

CHAPTER II

LITERATURE REVIEW

A. Theoretical Foundation

1. Definition and Concept of Teacher Readiness

In this study, teacher readiness is conceptualized as a combination of psychological conditions, knowledge, skills, and professional attitudes that enable educators to appropriately adopt, evaluate, and utilize Artificial Intelligence (AI) technologies in English language teaching. This readiness extends beyond mere technical proficiency in operating digital tools; it also encompasses the capacity to comprehend the benefits, potential risks, and pedagogical implications of incorporating technology into the instructional process. Consequently, teacher readiness serves as a critical determinant dictating the success of technology integration within educational environments.

Generally, the concept of readiness denotes an individual's state of possessing the capacity to execute a specific action or respond to a particular change. Within the educational realm, readiness is frequently associated with an individual's capability to confront new demands, adapt to systemic shifts, and develop the competencies required to perform tasks effectively. Such readiness does not emerge instantaneously; rather, it is forged through an accumulated process of experience, learning, training, and adaptive interaction with the professional work environment. In the context of rapid digital technology advancements, teacher readiness has become an increasingly pivotal issue, as educators are compelled to adapt to continuously evolving innovations. The emergence of AI in education introduces novel opportunities alongside complex challenges that necessitate adequate preparation. Teachers are required not only to understand the underlying mechanisms of these technologies but also to discern how they can be effectively deployed to support instructional objectives. Thus, teacher readiness constitutes a fundamental prerequisite for the successful implementation of AI in teaching and learning activities.

Theoretically, the concept of teacher readiness can be elucidated through the Technology Readiness framework. Parasuraman defines technology readiness as an individual's propensity to embrace and employ new technologies to accomplish specific goals in both professional and daily life (Parasuraman, 2000). This definition underscores that technology acceptance is driven not solely by external stimulants, such as the availability of infrastructure or institutional policies, but also by personal characteristics encompassing optimism, innovativeness, discomfort, and insecurity regarding technology utilization. Parasuraman's perspective is highly contextual to the reality of AI adoption by educators. Even when educational institutions provide abundant access to various AI applications, teachers exhibit uneven levels of readiness in exploring them. Some educators may display high enthusiasm, viewing AI as a catalyst to enhance instructional effectiveness, whereas others demonstrate hesitation or resistance due to limited knowledge, a lack of experience, or underlying anxieties regarding the disruptive impacts of the technology.

Therefore, teacher readiness must be understood as a multidimensional construct integrating conceptual knowledge, affective attitudes, and practical skills. In this study, teacher readiness is positioned as a determinant factor influencing educators' capacity to integrate AI into English language instruction. Teachers with a high level of readiness tend to exhibit greater flexibility toward innovation, possess stronger self-confidence in operating technology, and are more adept at leveraging AI to enhance student learning processes. Conversely, educators with low readiness levels are prone to encountering significant barriers when adopting new systems, resulting in suboptimal and superficial utilization of AI tools. Drawing from the perspective of educational psychology, individual readiness universally comprises three primary dimensions: cognitive, affective, and psychomotor domains. These three aspects are interrelated and operate simultaneously to form a comprehensive profile of readiness when confronting changes and innovations. Within the scope of this research, these fundamental dimensions are utilized as the theoretical

basis to measure and map the readiness of English teachers toward AI integration in instruction.

a) Cognitive Readiness

Cognitive readiness refers to the degree of knowledge, depth of understanding, and critical awareness of teachers regarding AI technology and its potential implementation within pedagogical contexts. This dimension reflects the intellectual capacity of educators to comprehend the fundamental concepts of AI, discern the functional characteristics of various AI tools, map their benefits, and anticipate challenges that may arise during operation. Teachers who possess robust cognitive readiness do not merely know about the existence of various AI applications; they master the underlying architecture and operational logic of the technology. This conceptual mastery includes the ability to identify AI features, analyze their inherent strengths and limitations, and evaluate the alignment of AI tools with the intended instructional objectives. Such knowledge is crucial because effective technology utilization demands sound conceptual understanding rather than simple mechanical proficiency in running applications.

In the domain of teaching English as a Foreign Language (EFL), cognitive readiness is manifested through teachers' understanding of leveraging AI to develop the four language skills: speaking, listening, reading, and writing. For instance, teachers comprehend how interactive AI-based chatbots can be utilized for conversation practice, how speech recognition applications can assist with student pronunciation, or how generative AI can be explored to design diverse and contextual instructional materials. Furthermore, cognitive readiness encompasses an understanding of the ethical aspects of AI utilization. Teachers must grasp critical issues such as digital plagiarism, the accuracy of AI-generated information, algorithmic transparency, data security, and the preservation of academic integrity. Equipped with this literacy,

educators can act as mentors who guide students to operate AI responsibly and in alignment with educational standards. Consequently, the cognitive dimension serves as the primary foundation in the technology adoption process, as it governs the quality of instructional decisions made by teachers in the classroom.

b) Affective Readiness

Affective readiness centers on the domain of attitudes, personal interests, intrinsic motivation, perceptions, self confidence, and the openness of educators toward using AI in instruction. This dimension captures the spectrum of emotional responses and psychological stability of teachers when confronting novel technologies. Evidence suggests that even if an educator possesses superior knowledge, the integration of technology is prone to failure unless accompanied by a positive attitude from within the individual. In the educational reality, teachers who develop a positive perception toward AI view this technology as a visionary assistant capable of increasing teaching efficiency, reducing administrative burdens, and enriching student centered learning experiences. In contrast, educators with negative sentiments tend to identify AI as a disruption threatening the teaching profession, a trigger for degrading students' learning independence, or a complex system that burdens their workload. The affective aspect also measures the degree of teacher self-confidence in interacting with the AI ecosystem. Educators with high self-confidence are more adaptive in exploring new features, courageous in initiating instructional experiments, and resilient in seeking independent solutions when encountering technical malfunctions.

Conversely, low self confidence has the potential to trigger technology anxiety, which acts as a mental block in the diffusion of innovation. Moreover, the motivation to continuously engage in professional development of digital competencies is a core pillar of affective readiness. Given that the acceleration of artificial intelligence moves exponentially, teachers are required to possess the psychological willingness to continuously upgrade their capacities. Based on this, affective readiness acts as a psychological anchor securing the successful utilization of AI in English language learning.

c) Psychomotor Readiness or Technical Skills

Readiness emphasizes the practical proficiency and tactical skills of teachers in operating and leveraging the AI ecosystem to support instructional activities. This domain measures the tangible performance demonstrated by teachers when controlling hardware, running software applications, or navigating digital platforms based on artificial intelligence. Technical proficiency holds a vital role since the successful execution of AI in the field relies not only on knowledge and positive attitudes but heavily rests on the dexterity of teachers in applying the system directly in the classroom. Educators equipped with sound psychomotor skills will be more tactical and precise in transforming AI technology into effective and efficient learning solutions. In the implementation of English language teaching, this psychomotor indicator is manifested through teachers' skills in exploring instruments such as grammar checkers, speech recognition systems, conversation-based chatbots, automated feedback systems, and adaptive learning tools. Additionally, teachers are required to possess dexterity in formulating precise text commands (prompt engineering) so that

the AI system can generate accurate outputs relevant to instructional needs.

Furthermore, this psychomotor capability includes the critical skill to evaluate the quality of AI outputs, cross-verify data validity, and modify the products generated by AI before distributing them to students. This filtering process is highly crucial because AI processing is not immune to data hallucinations, meaning the controlling function of the teacher as a professional authority remains irreplaceable. Thus, the teacher acts as the primary operator ensuring that AI utilization remains aligned with instructional targets and student characteristics. In addition to operational dexterity, psychomotor readiness encompasses the expertise to integrate AI designs into instructional planning documents, manage the learning process, and administer the evaluation of learning outcomes.

Teachers with high psychomotor maturity are capable of converting AI technology from ordinary digital tools into interactive learning resources that foster an innovative, engaging, and fully student-centered learning climate. Reviewing the entire discussion, it can be concluded that teacher readiness is a multidimensional variable constructed by cognitive, affective, and psychomotor readiness. These three dimensional pillars work synergistically to construct educators' capacity to accept, internalize, and productively apply AI technology in English language instruction. Therefore, these three domains of competence are raised as the primary indicators to measure and evaluate the degree of English teacher readiness toward the Artificial Intelligence integration agenda in this study.

2. Artificial Intelligence (AI) in Education

a) Definition and Evolution of Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to computer systems designed to perform tasks that typically require human intelligence,

such as learning, reasoning, problem-solving, language processing, and decision-making. Recent developments in AI have significantly expanded its applications across various sectors, including education. According to Wang et al. (2024), AI has evolved from rule-based systems into more advanced technologies capable of generating content, analyzing large amounts of data, and supporting personalized learning experiences. These developments have increased the accessibility and practicality of AI for educational purposes. In recent years, the emergence of generative AI has transformed the educational landscape.

Generative AI refers to AI systems that can create new content, including text, images, audio, and learning materials based on user input. Applications such as ChatGPT, Gemini, Microsoft Copilot, and other AI-powered platforms have become increasingly popular among educators and students. According to Kasneci et al. (2023), generative AI offers substantial potential to support teaching and learning by providing instant feedback, assisting with content creation, facilitating personalized learning, and improving access to educational resources.

Within the field of education, Artificial Intelligence has developed into a key component of Artificial Intelligence in Education (AIEd). Chiu et al. (2023) explain that AI can support educational processes through adaptive learning systems, intelligent tutoring systems, automated assessment, learning analytics, and personalized instructional support. These technologies enable teachers to enhance instructional efficiency while providing students with learning experiences that are more responsive to their individual needs and abilities. In the context of English Language Teaching (ELT), AI technologies have increasingly been utilized to support language learning activities, including writing assistance, grammar correction, speaking

practice, pronunciation improvement, vocabulary development, and automated feedback.

Tai and Chen (2024) found that AI applications can enhance student engagement and support language acquisition when integrated appropriately into instructional practices. However, the successful implementation of AI in education depends largely on teachers' readiness to understand, evaluate, and utilize these technologies effectively and responsibly. Based on the discussion above, Artificial Intelligence in this study is defined as educational technology that supports teaching and learning processes through intelligent systems capable of generating content, providing feedback, facilitating personalized learning, and assisting instructional activities. Therefore, understanding the development and educational applications of AI is essential for examining English teachers' readiness toward AI integration in senior high school English classes.

b) AI Tools in English Language Teaching

The discussion of AI tools in this study is grounded in the Artificial Intelligence in Education (AIEd) framework proposed by Holmes, Bialik, and Fadel (2019), which explains how AI technologies can support teaching and learning through personalized learning, intelligent assistance, and automated feedback. The use of AI tools in education is also supported by Digital Literacy Theory (Gilster, 1997), which emphasizes individuals' ability to effectively access, evaluate, and utilize digital technologies. In educational settings, AI tools are increasingly used to support instructional activities, enhance learning experiences, and improve teaching efficiency.

Therefore, understanding the functions and educational applications of AI tools is important for examining teachers' readiness toward AI integration in English language teaching. Various AI tools have been increasingly utilized in English

Language Teaching (ELT) to support both teachers and students. One of the most widely used categories is generative AI, including applications such as ChatGPT, Gemini, and Microsoft Copilot. These tools can assist teachers in preparing lesson plans, generating learning materials, designing classroom activities, and providing explanations of language concepts.

Students may also use these tools to support writing, reading, and language practice. In addition to generative AI, AI-powered writing assistants such as Grammarly and QuillBot are commonly used to improve writing quality through automated feedback on grammar, vocabulary, spelling, and sentence structure. Speech recognition technologies can also support speaking and pronunciation practice by providing immediate feedback on learners' oral performance. Furthermore, AI-based learning platforms may offer adaptive learning experiences tailored to students' individual needs and learning progress. Although AI tools provide various benefits for English language teaching, their effective implementation depends on teachers' digital literacy and readiness to use them appropriately. Therefore, understanding the functions, benefits, and limitations of AI tools is an important aspect of teachers' readiness for AI integration in educational settings.

Types of AI Tools in English Language Teaching

1. Generative AI Tools (ChatGPT, Gemini, Microsoft Copilot)
2. AI Writing and Grammar Assistants (Grammarly, QuillBot)
3. Speech Recognition and Pronunciation Tools
4. AI-Based Learning Platforms
5. Automated Feedback Tools

c) Benefits and Challenges of AI Integration in Education

The integration of Artificial Intelligence (AI) in education offers various benefits that can enhance teaching and learning processes. AI technologies enable personalized learning by

adapting instructional content to students' individual needs, learning pace, and academic performance. In addition, AI can support teachers in preparing learning materials, managing classroom activities, and providing timely feedback to students. AI has significant potential to improve learning effectiveness and increase student engagement in educational settings (Chiu et al., 2023).

Furthermore, AI technologies facilitate adaptive learning and data-driven instructional decision-making that contribute to more effective learning outcomes (Wang et al., 2024). In the context of English Language Teaching (ELT), AI technologies provide opportunities to improve language learning through various educational applications. Tools such as ChatGPT, Grammarly, and speech recognition systems can assist students in developing writing, reading, speaking, and pronunciation skills. AI-assisted language learning can positively contribute to language acquisition and learner engagement when integrated appropriately into instructional practices (Tai & Chen, 2024).

In addition, generative AI tools can support both teachers and learners by facilitating content creation, language practice, and interactive learning experiences (Kohnke et al., 2023). Despite its potential benefits, the implementation of AI in education also presents several challenges. One of the major concerns is academic integrity, as students may misuse AI generated content without proper critical evaluation or attribution. The use of AI in educational settings requires careful consideration of ethical and pedagogical implications (Kasneci et al., 2023).

Furthermore, concerns regarding transparency, privacy protection, and the ethical use of AI-generated content continue to receive considerable attention from educational stakeholders (UNESCO, 2023). Another challenge involves teachers' preparedness to effectively utilize AI technologies in educational

settings. Limited digital literacy, insufficient professional development opportunities, inadequate technological infrastructure, and a lack of institutional support may hinder the successful integration of AI into classroom instruction. Teachers' readiness, technological competence, and access to training are among the most important factors influencing AI adoption in education (Granström & Oppi, 2025). Similarly, teachers' knowledge, confidence, and previous experience with technology significantly affect their readiness to implement AI in teaching and learning activities (Ayanwale et al., 2022).

B. Previous Studies

Previous studies play an important role in providing empirical evidence regarding the implementation of Artificial Intelligence (AI) in education and teachers' readiness to adopt emerging technologies. Reviewing previous research helps identify existing findings, methodological approaches, and research gaps that justify the necessity of the present study. In recent years, the increasing integration of AI into educational settings has attracted considerable attention from researchers due to its potential to transform teaching and learning processes. Various studies have investigated teachers' perceptions, acceptance, competence, and readiness toward AI adoption in different educational contexts. The findings consistently indicate that AI can support instructional effectiveness, learner engagement, and personalized learning experiences. However, the successful implementation of AI remains highly dependent on teachers' readiness to utilize the technology appropriately and effectively. Therefore, this section discusses several relevant studies related to AI integration, English language teaching, and teacher readiness as the foundation for the present research.

Wang et al (2023), in their study entitled *Preparing for AI Enhanced Education: Conceptualizing and Empirically Examining Teachers' AI Readiness*, published in *Computers in Human Behavior*, aimed to conceptualize and empirically examine teachers' readiness for AI-enhanced education. The researchers employed a quantitative approach to develop and validate a framework of AI readiness that included cognitive, ability, vision, and ethical dimensions. The

findings revealed that teacher readiness is a multidimensional construct encompassing technological understanding, implementation competence, future-oriented perspectives, and ethical awareness regarding AI use. Furthermore, the study demonstrated that higher levels of readiness contribute positively to successful AI integration in educational settings. This study is relevant to the present research because both focus on teacher readiness toward AI integration. However, Wang et al. (2023) examined teachers from a general educational perspective without focusing on a specific subject area. In contrast, the present study specifically investigates English teachers in senior high schools. The limitation of the previous study lies in its lack of attention to the pedagogical characteristics of language teaching. Therefore, the current research seeks to extend the findings by examining AI readiness within the context of English language teaching.

Granström & Oppi (2025), through their study entitled *Assessing Teachers' Readiness and Perceived Usefulness of AI in Education: An Estonian Perspective*, published in *Frontiers in Education*, investigated teachers' readiness and perceptions regarding the usefulness of AI in education. Using a quantitative survey involving 3,848 teachers from different educational levels, the study found that teachers generally viewed AI as beneficial for enhancing instructional efficiency and assessment practices. Nevertheless, their readiness levels varied significantly according to digital competence, prior technological experience, and institutional support. The study shares similarities with the present research because both examine teacher readiness toward AI integration. However, Granström et al. (2025) focused on teachers from various disciplines and educational levels, whereas the present study specifically examines English teachers at the senior high school level. In addition, the previous study was conducted in Estonia, which has different technological and educational conditions compared to Indonesia. Consequently, the present study contributes by providing a more contextualized understanding of AI readiness among Indonesian English teachers.

Kohnke et al (2024) undertook a research titled *Exploring Generative Artificial Intelligence Competency in Language Teacher Education: A Competency Framework for Teachers in the journal System*. The objectives of this study were to

identify the competencies that are needed by language teachers in order to effectively use generative AI in the educational setting. It was pointed out in this study that effective AI use needs teachers to have technological competence, AI competencies, and pedagogy competence to ensure that the AI technologies are used appropriately in the language teaching process. The results of this study revealed the need for teachers to be prepared through competency development and professional learning experiences. This research is relevant to the current study since both studies concentrate on teacher preparedness in the use of AI in language teaching. Nevertheless, the previous study focused on the development of an AI competency framework for language teachers while the current study examines the readiness of English teachers through cognitive, affective, and psychomotor aspects in senior high schools.

Mabuan (2024), in a study entitled *ChatGPT and ELT: Exploring Teachers' Voices*, published in the *International Journal of Technology in Education*, explored English teachers' perspectives on the use of ChatGPT in language teaching. The study employed a qualitative design using interviews and reflective narratives from language teachers. The findings showed that ChatGPT was perceived as a useful tool for lesson preparation, writing instruction, vocabulary development, and student engagement.

Nevertheless, teachers also expressed concerns regarding information accuracy, learner dependency, and academic integrity issues. This study is relevant to the present research because both investigate AI use in English language teaching contexts. However, Mabuan (2024) focused primarily on teachers' perceptions of ChatGPT, whereas the present study examines readiness toward broader AI integration. Furthermore, the previous study did not assess readiness as a multidimensional construct involving knowledge, skills, attitudes, and pedagogical preparedness. Therefore, the current study extends previous research by providing a more comprehensive analysis of teacher readiness.

Lin (2022), through the study entitled *Influences of Artificial Intelligence in Education on Teaching Effectiveness: The Mediating Effect of Teachers' Perceptions of Educational Technology*, published in the *International Journal of Emerging Technologies in Learning*, investigated the influence of AI on teaching

effectiveness with teachers' perceptions of educational technology serving as a mediating variable. The study employed a quantitative approach and structural equation modeling to examine relationships among variables. The findings revealed that AI-assisted teaching, assessment, and evaluation positively influenced teaching effectiveness.

In addition, positive perceptions toward educational technology strengthened the effectiveness of AI implementation in instructional settings. The study shares similarities with the present research because both explore the relationship between AI and teacher-related factors. However, Lin (2022) focused on teaching effectiveness as the dependent variable, whereas the present study focuses on teacher readiness. Moreover, the previous study was not conducted within an English language teaching context. Consequently, the present research contributes by examining readiness as a key factor influencing successful AI integration in English language classrooms.

Islam (2024) conducted a study entitled *EFL Teachers' Perceptions of AI's Impact on Academic Integrity and Pedagogy in Bangladeshi Universities*, published in *Language Literacy: Journal of Linguistics, Literature, and Language Teaching*. The study aimed to investigate EFL teachers' perceptions of AI in relation to academic integrity and pedagogical practices. Using a quantitative survey involving 115 EFL lecturers from private universities in Bangladesh, the researchers found that while participants acknowledged the instructional benefits of AI, they also expressed concerns regarding plagiarism, misuse of technology, and inadequate institutional policies.

This study is relevant to the present research because both examine AI in English language teaching contexts. However, the study focused on higher education, whereas the present research examines secondary education. As a result, the findings may not fully reflect the realities faced by senior high school teachers. Therefore, the present study seeks to broaden the literature by exploring AI readiness among English teachers in secondary schools.

Apoko (2025) conducted a study entitled *Generative Artificial Intelligence in English Instruction: Indonesian EFL Vocational High School Teachers' Perspectives*, published in *JOLLT Journal of*

Languages and Language Teaching. The purpose of the study was to investigate Indonesian vocational high school English teachers' perceptions of generative AI in English instruction. The study adopted a mixed-methods design involving 37 EFL teachers from vocational schools in Jakarta. The findings indicated that teachers generally viewed generative AI positively because it enhanced instructional efficiency, facilitated material development, and supported creativity in teaching.

However, participants also reported challenges related to limited professional training, insufficient technological infrastructure, and inadequate institutional support. This study is particularly relevant because it was conducted within the Indonesian educational context and focused on English language teaching. Nevertheless, it emphasized teachers' perceptions rather than readiness as a measurable construct. Furthermore, the study was conducted in vocational schools rather than general senior high schools. Therefore, the present study contributes by examining English teachers' readiness for AI integration specifically within senior high school English classrooms.

Based on the seven previous studies, it can be concluded that Artificial Intelligence has significant potential to improve instructional effectiveness, personalized learning, assessment practices, and educational innovation. Most studies reported positive teacher perceptions toward AI and highlighted its capacity to support teaching and learning processes. At the same time, researchers consistently identified several challenges, including insufficient digital competence, limited professional training, ethical concerns, academic integrity issues, and inadequate institutional support. These findings collectively suggest that teacher readiness plays a crucial role in determining whether AI can be successfully integrated into educational settings.

Despite the growing body of literature, several research gaps remain. First, most previous studies have examined AI readiness from a general educational perspective without focusing specifically on English teachers at the senior high school level. Second, a considerable number of studies have focused on pre-service teachers, university lecturers, or vocational school teachers, leaving the context of senior high school English teachers relatively underexplored. Third, many studies

have concentrated on teachers' perceptions, attitudes, or acceptance of AI rather than investigating readiness as a multidimensional construct encompassing digital literacy, cognitive readiness, affective readiness, psychomotor readiness, and challenges related to AI integration. Fourth, empirical studies conducted within the Indonesian context remain limited, particularly those addressing English teachers' readiness for AI integration in secondary education.

Furthermore, previous studies have largely examined AI readiness as a general educational issue without sufficiently considering the unique pedagogical demands of English language teaching, such as communicative competence, classroom interaction, language production, and the integration of listening, speaking, reading, and writing skills. The specific challenges faced by English teachers when integrating AI into language instruction remain underexplored, particularly in senior high school settings. Therefore, investigating teacher readiness within the context of English language classrooms is necessary to provide a more contextualized understanding of AI integration in language education.

Based on the findings of previous studies, teacher readiness appears to be influenced by teachers' understanding of AI, familiarity with AI tools, perceptions of AI benefits, technological competence, and pedagogical preparedness. These factors are highly relevant to the implementation of AI in English language teaching, where technology must be integrated in ways that support communicative and meaningful language learning. Consequently, the present study seeks to contribute to the existing literature by providing empirical evidence regarding the readiness of English teachers for AI integration in high school English classes, particularly within the Indonesian educational context. This study is expected to enrich the literature on AI integration and teacher readiness while providing practical insights for policymakers, schools, and educators in preparing for the future of AI-enhanced language education.

