CHAPTER II

LITERATURE REVIEW

This chapter outlines the conceptual foundations that form the basis of this research. It provides Grand Theory, English Learning, English as A Foreign Language, Definition of Artificial Intelligence, Overview of AI in education, Definition of AI-Assisted Learning Media, The role of AI in personalized learning, The impact of Artificial Intelligence on language learning, advantages and disadvantages of Artificial Intelligence in student competencies and perceived and previous studies.

A Grand Theory: Constructivist Learning Theory

Constructivist Learning Theory serves as the primary theoretical foundation of this study. Constructivism, as proposed by Piaget (1970) and further developed by Vygotsky (2012), assumes that learners actively construct their understanding through interactive engagement, practical experience, and reflective processes, rather than simply passively absorbing information. Learning is viewed as a dynamic process in which individuals build new understanding based on prior knowledge and social interaction.

Vygotsky's concept of the Zone of Proximal Development (ZPD) highlights the importance of guidance and scaffolding in facilitating learning. In this perspective, tools and social interaction play a crucial role in helping learners move from their current level of competence to a higher level of understanding. Within the context of AI-assisted learning media, artificial intelligence functions as a form of digital scaffolding. AI-based applications provide immediate feedback, adaptive support, and interactive practice that assist learners in constructing knowledge independently.

Constructivism aligns closely with the integration of AI in English language learning. AI-assisted learning media create interactive environments where students engage actively in listening, speaking, reading, and writing tasks. Through continuous feedback and adaptive instruction, learners are encouraged to reflect, revise, and refine their language use. Thus, Constructivist Learning Theory offers a robust conceptual framework for analyzing how EFL learners leverage AI-assisted learning media to enhance their English proficiency.

B English Learning

In today's era of globalization, English plays a crucial role as a global language that bridges communication among nations (Atasheva, 2024). It is widely used as a medium of instruction, diplomacy, science, and technology in many countries. Therefore, mastering English has become an essential skill for students to participate effectively in the global community. In Indonesia, English has long been recognized as an important foreign language that must be taught and learned to prepare students for international communication and academic advancement (Andayani, 2022).

Education is one of the main channels through which English learning is developed systematically. The Indonesian government has made continuous efforts to integrate English instruction into the national curriculum. English was first introduced formally in the 1994 Basic Education Curriculum as a local content subject for elementary school students starting from the fourth grade (Rahmah, 2023). This policy aimed to expose students to English at an early age, allowing them to build familiarity and self-efficacy in language utilization. Although the 2013 Curriculum later removed English as a compulsory subject at the elementary level, many schools continue to include it through extracurricular activities and enrichment programs, recognizing its importance for students' future academic and professional success (Kosasih & Apriliyanti, 2020).

According to Krashen's (1984) *Second Language Acquisition* theory, effective language learning occurs when students experience the language directly in meaningful contexts rather than focusing solely on formal grammar instruction. In line with this view, Indonesian educators emphasize creating interactive and communicative learning environments that allow students to use English naturally in authentic situations. These methods promote linguistic proficiency and communicative effectiveness, enabling learners to apply English appropriately and efficiently in a variety of situational contexts.

Sukarno & Jinabe (2024) further explains that early exposure to English instruction is a form of readiness for students to face rapid technological and informational developments in the modern world. English serves as a

gateway to access global knowledge and innovation, helping students stay connected to the international academic community. As a result, schools at various levels, from elementary to tertiary education, have placed increasing attention on enhancing students' English proficiency. This educational focus not only supports academic achievement but also develops students' confidence, creativity, and cross-cultural understanding.

In sum, English learning in education is not merely about mastering linguistic structures, but about equipping students with the communicative and cognitive tools needed to participate in the globalized world. The integration of English into formal and informal education reflects Indonesia's commitment to preparing its younger generation for international collaboration, global competition, and lifelong learning in the 21st century.

C English as A Foreign Language

Learning a foreign language involves the process of acquiring linguistic competence through exposure, imitation, practice, and reinforcement (Moller, 2015). Factors such as biological, cognitive, and social development, along with instructional elements in the teaching process, play crucial roles in determining successful language acquisition. Anderson (2004) identifies eight essential characteristics of language: it is a system, vocal in nature, composed of arbitrary symbols, unique to each community, habit-based, communicative, culturally bound, and constantly evolving.

English as a Foreign Language (EFL) refers to the study of English in contexts where it is not the native or dominant language. EFL students are those who learn English in countries such as Indonesia or Lebanon, where daily communication primarily occurs in another language. According to Patel and Jain (2008), a foreign language is one used outside the learner's immediate linguistic environment, while Gebhard (1996) defines EFL as learning English in a non-English-speaking country.

In many EFL educational systems, English instruction has traditionally focused on preparing students for academic purposes, such as passing entrance examinations, instead of building practical communication skills. However, in

the current digital and global era, English learning increasingly emphasizes communication, fluency, and authentic language use. With the integration of Artificial Intelligence (AI) technologies, EFL learners can now access interactive tools that promote active engagement, personalized learning, and real-life language practice, bridging the gap between theoretical knowledge and communicative proficiency. This shift highlights the relevance of AI-assisted learning media in supporting EFL students to enhance their English skills effectively and autonomously.

D Definition of Artificial Intelligence (AI)

Artificial Intelligence (AI) can be defined as the capability of machines to perform tasks that typically require human intelligence, such as adapting to new conditions, solving problems, answering questions, planning, and making decisions (Chen et al., 2020; Coppin, as cited in Chen et al., 2020). Over time, human innovation has advanced to the point where machines are not only capable of executing labor-intensive work but are also designed to simulate human cognitive processes. This ongoing pursuit stems from the desire to increase productivity and explore the potential of replicating human reasoning through machines (Jiang et al., 2022).

AI has undergone significant progress both in theory and practical implementation over the last six decades. Wazani (2024) highlight that AI is now considered an essential technological skill for the future, with the global AI market projected to reach approximately $190 billion by 2025, growing at a rate of more than 36% annually from 2018 to 2025.

In today's context, the term "Artificial Intelligence" encompasses a broad range of applications across various domains. According to Cao (2022), the development of AI is closely linked with fields such as system engineering, neuroscience, psychology, cognitive science, mathematics, and computer science. Data visualization using the VOS Viewer further illustrates that the most prominent AI research focuses on areas such as neural networks, classification, prediction, and system-based applications. These diverse fields

collectively contribute to AI's role as a multidisciplinary science that integrates technology and human cognition.

From a theoretical standpoint, the use of AI in education aligns with the Constructivist Learning Theory (Piaget, 1970; Vygotsky, 2012), which emphasizes that learners actively construct knowledge through interaction and experience. AI technologies support this constructivist principle by creating adaptive and interactive environments that encourage learners to explore, respond, and learn autonomously.

E Overview of AI in Education

Artificial Intelligence (AI) has rapidly evolved across various fields, including medicine, business, and education. In these sectors, AI operates through human-created algorithms designed to perform tasks that simulate human intelligence, such as decision-making, problem-solving, and language processing (Abdulrahman M, 2024). Within education, AI has been developed to enhance learning through adaptive systems that analyze student performance and provide personalized learning experiences. In Europe and other regions, this development has been supported by Natural Language Processing (NLP), which enables machines to evaluate learners' linguistic abilities and offer feedback accordingly (Bauer et al., 2023).

In English language education, AI plays a significant role in improving students' proficiency across the four core skills: writing, listening, speaking, and reading. Various AI-powered applications have been developed to support these areas, allowing students to learn interactively and autonomously.

1. AI for Writing

   Artificial Intelligence (AI) plays a significant role in enhancing students' writing skills. AI-powered systems assist learners by identifying grammatical errors, suggesting vocabulary improvements, and enhancing sentence structure and coherence. Through automated feedback mechanisms, students are able to revise and refine their written work more effectively. Many researchers agree that AI-assisted writing support can positively influence students' writing performance by

improving accuracy, clarity, and organization (Al-Bukhrani et al., 2025; Chen & Gong, 2025; Fitria, 2024; Song & Song, 2023).

In addition, AI systems can generate language suggestions, provide model texts, and offer idea development support, enabling learners to engage in deeper revision processes (Alqahtani et al., 2023a). Continuous feedback allows students to reflect on their mistakes and gradually develop better control of grammar, vocabulary, and discourse structure. From a constructivist perspective, this process encourages active knowledge construction through interaction and self-correction.

2. AI for Listening

Artificial Intelligence (AI) also plays an important role in supporting the development of students' listening skills. AI-powered systems provide adaptive audio materials that are adjusted to learners' proficiency levels, allowing students to engage with listening tasks that match their abilities (Raza et al., 2024; Z. Zhang, 2025). Through automated analysis, these systems can generate comprehension questions, provide immediate feedback, and identify areas that require improvement.

In addition, AI technologies may incorporate features such as speech speed control, replay options, and transcript assistance to enhance listening comprehension (Xiao, 2025b). These functions enable learners to repeat difficult segments, clarify meaning, and gradually improve their auditory discrimination skills. Continuous feedback supports learners in identifying misunderstandings and refining their comprehension strategies. From a constructivist perspective, this interactive process encourages active engagement and reflection, allowing learners to construct meaning through guided listening practice.

3. AI for Speaking

AI technology also supports the development of listening and speaking skills through speech recognition, pronunciation assessment, and interactive dialogue systems. According to Jegede (2024). AI-based platforms create personalized environments where students can practice

oral communication and receive instant feedback on pronunciation and fluency. Applications such as ELSA Speak, Duolingo, and HelloTalk provide learners with interactive speaking exercises, pronunciation correction, and opportunities to communicate with native speakers (Augie et al., 2025; G‘ulomjon qizi, 2025; Sabrina et al., 2025). These tools help students overcome common challenges in speaking English by simulating real-life conversation and fostering confidence in language use.

AI technology also contributes significantly to the improvement of speaking skills. AI-based systems utilize speech recognition and pronunciation analysis to evaluate learners’ spoken input and provide corrective feedback on pronunciation, fluency, and intonation (Jegede, 2024). This automated feedback allows students to recognize errors and adjust their speech production in real time.

Moreover, AI creates interactive communication environments where learners can practice speaking in simulated conversational contexts. Such environments reduce anxiety and promote repeated practice, which is essential for oral language development. Through consistent feedback and structured speaking tasks, learners gradually build confidence and communicative competence in English (Augie et al., 2025; Sabrina et al., 2025). In line with Constructivist Learning Theory, AI functions as digital scaffolding that supports learners in progressing from their current speaking ability toward greater accuracy and fluency.

4. AI for Reading

Reading, as a fundamental component of language learning, has also benefited from AI integration. AI-based systems utilize adaptive learning mechanisms to adjust reading materials and vocabulary tasks according to learners’ proficiency levels. These technologies support comprehension by offering instant definitions of unfamiliar words, generating comprehension questions, and

recommending appropriate reading texts (Akparjonovna, 2024; Nagy, 2000).

Additionally, text-to-speech technologies enable learners to combine visual and auditory input, supporting pronunciation development and reading fluency (Fitria, 2022). By integrating interactive vocabulary exercises and personalized reading support, AI enhances learners' engagement and comprehension processes (Topal, 2025).

Overall, AI serves as a transformative force in education by enabling human-like interaction between learners and digital systems. As Petrovic (2018) explain, AI represents a digital effort to simulate human-level intelligence through advanced computational methods. It involves processes of perception, reasoning, learning, and language understanding that allow machines to act intelligently. In the context of English Language Teaching (ELT), AI offers innovative approaches to overcome linguistic challenges faced by EFL learners (Kovalenko & Baranivska, 2024). With the integration of machine learning, intelligent search systems, and natural language processing, AI continues to enhance teaching effectiveness and learning efficiency in modern classrooms (Alqahtani et al., 2023b; Manoharan & Nagar, 2024).

Overall, Artificial Intelligence (AI) serves as a transformative force in education by enabling intelligent interaction between learners and digital systems. As Petrovic (2018) explains, AI represents a digital effort to simulate human-level intelligence through advanced computational processes involving perception, reasoning, learning, and language understanding. In the context of English Language Teaching (ELT), AI provides innovative approaches to addressing linguistic challenges encountered by EFL learners (Kovalenko & Baranivska, 2024). Through the integration of machine learning and natural language processing technologies, AI enhances instructional effectiveness and promotes more efficient and personalized learning experiences in modern classrooms (Alqahtani et al., 2023b; Manoharan & Nagar, 2024). Consequently, AI-assisted learning media offer meaningful support for the development of

English language skills by facilitating interactive and adaptive learning environments.

F Definition of AI-Assisted Learning Media

AI-assisted learning media refer to digital platforms that integrate artificial intelligence to support and enhance the learning process (Luo & Hsiao-Chin, 2023). These systems utilize technologies such as natural language processing, machine learning, and speech recognition to provide adaptive feedback and personalized learning experiences (Dwivedi et al., 2021).

From a constructivist perspective, AI-assisted learning media function as digital scaffolding tools that facilitate active knowledge construction. In line with Piaget's view of learning as an active cognitive process and Vygotsky's concept of the Zone of Proximal Development (1978), AI applications provide immediate feedback and guided practice that help learners progress from their current level of understanding to a higher level of competence. Through interaction and reflection, learners actively construct language knowledge rather than passively receiving information.

In the EFL context, AI-assisted learning media support listening, speaking, reading, and writing practice in interactive and adaptive ways (Sahito et al., 2025). These tools create opportunities for autonomous learning while still offering structured guidance, aligning with the principles of constructivist learning theory.

G The Role of Al in Personalized Learning

Artificial Intelligence (AI) plays a significant role in shaping personalized learning experiences that accommodate students' individual abilities, interests, and learning pace (Zailani et al., 2024). AI systems are designed to simulate aspects of human intelligence, enabling them to analyze learning patterns, provide tailored feedback, and adjust instructional content according to learners' needs (J. Zhang & Zhang, 2025). In educational settings, AI supports adaptive learning environments where students can receive

immediate responses and customized learning pathways that promote deeper engagement (Shaik et al., 2022).

From a theoretical perspective, AI-driven personalized learning aligns with Constructivism, as proposed by Piaget (1970)and further developed by Vygotsky (2012). Constructivist theory emphasizes that learners actively construct knowledge through interaction and experience. AI-based systems facilitate this process by allowing students to explore content independently, receive formative feedback, and refine their understanding through continuous interaction. In particular, Vygotsky's concept of the Zone of Proximal Development (ZPD) can be reflected in AI adaptive systems that provide scaffolding according to learners' current competence levels.

Student perception is another important factor influencing the effectiveness of AI-supported personalized learning. According to the Technology Acceptance Model (TAM) (Davis et al.,1989), users' perceived usefulness and perceived ease of use significantly affect their acceptance of technology. Similarly, Biggs' 3P Model (Presage–Process–Product) explains that students' perceptions of the learning environment influence their learning approaches and outcomes (Kanashiro et al., 2020). When learners perceive AI tools as supportive and beneficial, they are more likely to engage actively and adopt meaningful learning strategies.

Despite its advantages, the integration of AI in personalized learning also presents certain challenges. Issues related to academic integrity, overreliance on automated feedback, and ethical use of AI-generated content require careful consideration (Miao et al., 2024; Pudasaini et al., 2024). Therefore, clear guidelines and responsible implementation are necessary to ensure that AI functions as a supportive tool rather than a replacement for critical thinking and teacher guidance.

Overall, AI enhances personalized learning by providing adaptive feedback, data-driven insights, and flexible learning pathways. While AI technologies offer transformative potential in improving learning effectiveness and accessibility, human interaction and pedagogical supervision remain

essential components in maintaining balanced and meaningful educational experiences.

H The Impact of Artificial Intelligence on language learning

In the current digital era, students are expected to develop a sense of discipline, autonomy, and responsibility in managing their own learning, especially in mastering English as a global language (Chekhratova et al., 2022). The increasing enthusiasm for learning English and the demand for more effective learning methods have prompted significant changes in educational approaches. English competence generally encompasses four major skills, listening, reading, speaking, and writing,, which are interrelated and form the foundation for communicative competence. With the rapid advancement of digital technologies, Artificial Intelligence (AI) has emerged as a transformative innovation that significantly reshapes the process of learning and teaching English (X. Zhang & Umeanowai, 2025).

AI technology, often defined as the ability of machines or systems to perform intelligent tasks that typically require human cognition, has brought new dimensions to language education. Zhao (2003) emphasized that technology continually opens up new possibilities for language learning, while Sarnovska et al. (2024) noted that foreign language teaching has increasingly relied on AI technologies to overcome traditional classroom constraints such as limited teaching time, monotonous materials, and one-size-fits-all instructional methods. Similarly, Verma & Singhal (2023) described AI as a multifaceted system capable of solving problems dynamically, simulating human reasoning and decision-making processes. This dynamic capability allows AI not only to perform cognitive tasks but also to support personalized, lifelong learning experiences (Nakade et al., 2024; Poquet & de Laat, 2021).

Artificial Intelligence influences language learning in various ways, from personalizing learning paths to providing adaptive feedback and immersive practice environments. Several key impacts of AI on language learning can be elaborated as follows:

1. Personalized Learning

   AI-powered learning platforms have the ability to assess students' proficiency levels, cognitive patterns, and learning preferences to design personalized learning experiences. Through continuous data analysis, these systems can recommend suitable exercises, track individual progress, and adjust materials according to learners' needs. This personalization promotes learner autonomy, as students can learn at their own pace and revisit concepts as needed. Moreover, such tailored learning pathways help minimize frustration and increase motivation by ensuring that each learner receives content aligned with their ability level and interests (Alamri et al., 2020).

2. Improved Language Acquisition Ability

   Another major impact of AI is its role in enhancing the process of language acquisition. AI applications can provide immediate feedback on pronunciation, grammar, and vocabulary usage, enabling learners to identify and correct errors in real-time. This feedback loop accelerates language mastery and enhances self-awareness in communication. According to Jegede (2024), the immediacy and precision of AI feedback allow learners to refine their linguistic output faster than in traditional classroom environments. In this sense, AI serves as a supportive language tutor that offers consistent practice opportunities and individualized error correction.

3. Expanded Access to Language Resources

   AI has revolutionized access to English learning resources, eliminating geographical and socioeconomic barriers. Learners can now engage with vast repositories of interactive exercises, video lessons, simulations, and digital texts from any location. Online platforms empowered by AI provide constant access to up-to-date learning materials, enabling students to practice listening, reading, and writing skills independently. This accessibility not only democratizes education but also encourages continuous learning beyond the classroom setting (Ordóñez Procel et al., 2024).

4. Adaptive Learning Platforms

   AI-based adaptive learning systems monitor students' progress and dynamically modify the difficulty level of activities. When a learner demonstrates mastery of certain linguistic elements, the system introduces more complex tasks; conversely, if a student struggles, it provides simplified exercises or additional explanations. This constant calibration ensures that learners remain challenged without feeling overwhelmed, resulting in sustained engagement and improved retention. Adaptive learning fosters a responsive environment where instruction evolves based on learners' performance, thereby optimizing the overall learning experience (Strielkowski et al., 2025a).

5. Language Practice and Immersion

   AI-powered tools also enable immersive language practice by simulating authentic communication contexts. Through conversational agents, virtual role-plays, and interactive dialogues, learners can practice English in scenarios resembling real-life communication. These systems promote fluency, confidence, and pragmatic competence by encouraging spontaneous use of the language. For example, chatbots like ChatGPT allow students to practice conversational English while receiving meaningful feedback, creating opportunities for situated and contextual learning (Foroughi et al., 2024). Such immersive environments strengthen learners' communicative competence through experiential engagement.

6. Teacher Support and Development

   AI not only benefits students but also assists teachers in evaluating performance, identifying weaknesses, and providing targeted interventions. Intelligent analytic systems can process large amounts of student data to generate performance summaries, helping teachers tailor instruction and feedback. As a result, teachers can focus more on mentoring, creative pedagogy, and individualized instruction rather than repetitive administrative tasks. This collaboration between AI and

teachers enhances instructional quality and creates a more student-centered classroom dynamic (Bhardwaj et al., 2025).

7. Language Translation and Interpretation

Finally, AI-driven translation and interpretation tools, such as Google Translate and DeepL, have broadened learners' exposure to global English content. These tools facilitate comprehension of authentic materials and support intercultural communication. By bridging linguistic gaps, AI enhances students' ability to access global knowledge, participate in cross-cultural interactions, and develop a broader world view. Moreover, translation technologies aid learners in understanding idiomatic expressions, cultural nuances, and linguistic variations, thereby fostering deeper linguistic and cultural competence (Vishwakarma, 2023).

I Advantages and Disadvantages of Artificial Intelligence in Student Competencies

The integration of Artificial Intelligence (AI) into education has brought both promising opportunities and emerging challenges for students and educators alike (Lampou, 2023). As AI continues to evolve, its influence on the development of student competencies becomes increasingly significant. Through intelligent systems, students are able to engage in more personalized, efficient, and data-driven learning processes that enhance their linguistic and cognitive skills. However, the adoption of AI-based technologies also raises several pedagogical, ethical, and social concerns that must be addressed to ensure balanced and meaningful learning experiences. Therefore, it is important to examine both the advantages and disadvantages of Artificial Intelligence in student competencies to understand its potential contributions and limitations in the context of English language learning.

1. Advantages of Artificial Intelligence in Student Competencies

Artificial Intelligence (AI) has brought significant transformation in the field of education, particularly in enhancing student competencies and learning outcomes. According to Strielkowski et al.

(2025b), AI-based educational programs play a vital role in improving the quality of English learning by providing a structured, data-driven, and adaptive learning experience. AI technologies allow students to learn based on their individual needs, enabling personalized learning experiences where students can progress at their own pace and focus on areas requiring additional attention. This individualized approach promotes learner autonomy and increases overall learning efficiency. Roozafzai (2024) adds that through continuous interaction and brain stimulation, AI tools enhance cognitive processes that are essential for mastering English skills, as they facilitate analytical thinking, problem-solving, and the ability to apply linguistic knowledge in practical contexts.

Another major advantage of AI in education is its ability to improve accessibility. AI-powered systems enable learners from diverse social and geographical backgrounds to access high-quality learning materials and digital classrooms, bridging the educational gap between urban and rural learners (Ahmed, 2024). Through AI-driven platforms, students can obtain global exposure to English language input, regardless of their physical location or institutional limitations. Furthermore, AI provides instant feedback and performance evaluation, helping students identify their weaknesses and strengths in real time. This feedback mechanism motivates learners to make timely adjustments, reinforcing self-assessment and reflective learning practices.

AI has also introduced a variety of advanced learning tools, such as intelligent tutoring systems, interactive simulations, and virtual reality environments, which make learning more engaging and effective (Lin et al., 2023). These tools support multisensory learning and enhance conceptual understanding by immersing students in real-world situations where English is actively used. Teachers can also use AI-generated data insights to monitor student progress and adjust their instructional methods accordingly (Chopra & Arora, 2023). Thus, when properly integrated, AI not only strengthens linguistic competence but also fosters digital literacy, creativity, and adaptability among learners (Muawanah et al., 2024). Overall, the

implementation of AI in education contributes to a more inclusive, efficient, and innovative learning ecosystem that enhances both cognitive and linguistic competencies.

2. Disadvantages of Artificial Intelligence in Student Competencies

Despite its numerous benefits, the integration of AI in education also presents several drawbacks that need careful consideration. One of the most common concerns is overdependence on technology. When students rely excessively on AI tools for guidance and correction, they may gradually lose critical thinking and independent problem-solving abilities (Szmyd & Mitera, 2024). This dependency can result in a passive learning attitude where learners depend on automated responses rather than engaging in deeper intellectual exploration. Similarly, Akintayo et al. (2024) emphasizes that while AI can enhance learning efficiency, it cannot replace the reflective and emotional aspects of human intelligence essential for holistic education.

Another limitation lies in privacy and data security concerns. AI systems collect, store, and analyze vast amounts of student data to personalize learning experiences (Khan, 2024). However, this process raises ethical issues regarding the protection of sensitive information. Without strict data governance and regulatory frameworks, there is a risk of unauthorized data access or misuse, potentially compromising students' privacy (Klimova & Pikhart, 2025). Moreover, technological barriers continue to affect equitable access to AI-based education. Not all students possess the same level of digital access or device availability, particularly in developing regions. Limited internet connectivity and insufficient digital infrastructure can widen the digital divide and hinder the equitable development of student competencies (Afzal et al., 2023).

Additionally, the reduction of human interaction in AI-driven learning environments poses another challenge. The presence of teachers and peer collaboration plays a crucial role in developing communication, empathy, and teamwork skills. When AI substitutes human engagement,

students may experience social isolation and reduced emotional connection in learning (Crawford et al., 2024). Lastly, there are ongoing ethical concerns associated with AI applications in education. Biases embedded within AI algorithms may influence learning outcomes, perpetuating stereotypes or inequalities. Therefore, educators must remain vigilant in ensuring that AI tools are used ethically and inclusively, aligning with the principles of fairness, equity, and human-centered learning.

In conclusion, while AI offers transformative opportunities for improving student competencies in English learning, it must be integrated thoughtfully and responsibly. The benefits of personalization, accessibility, and innovation should be balanced with the need for ethical oversight, digital inclusion, and continued human involvement to create an education system that supports both technological and emotional intelligence.

J Previous Studies

In recent years, numerous studies have investigated the integration of Artificial Intelligence (AI)-assisted learning media in English as a Foreign Language (EFL) context. These studies commonly report that AI tools such as ChatGPT, Grammarly, ELSA Speak, and Duolingo contribute positively to students' language development by providing immediate feedback, adaptive learning pathways, and increased learning motivation. However, most previous research has focused on specific tools or single language skills rather than examining how students comprehensively use various AI-assisted learning media across different English skills.

Several studies have explored the role of AI in supporting writing skills. Harunasari (2023) and Song and Song (2023) found that AI-based writing assistants improved students' grammatical accuracy, coherence, vocabulary use, and revision processes. Similarly, Foroughi et al. (2024) reported that ChatGPT facilitated collaborative writing, idea generation, and reflective revision. While these findings demonstrate the pedagogical benefits of AI in writing, they also reveal challenges such as overreliance, lack of critical evaluation, and concerns about originality. These studies primarily concentrate

on writing and do not extensively explore how students strategically regulate their AI use across multiple language skills.

In the area of speaking and pronunciation, Indrayani et al. (2025) and Sa'diyah et al. (2025) highlighted the effectiveness of ELSA Speak in improving pronunciation accuracy, fluency, and learner confidence through real-time feedback and self-paced practice. Students appreciated the flexibility and interactive features of AI-based speaking platforms. However, issues such as limited premium access, unstable internet connectivity, and low self-regulation were also identified. These findings indicate that while AI supports oral proficiency, effective use still requires guidance and learner autonomy.

For vocabulary and grammar development, Santi et al. (2023) reported that Duolingo significantly enhanced vocabulary mastery and learning motivation. Other studies also confirm that AI-powered tools can assist students in practicing reading and grammar through adaptive exercises and gamified features. Nevertheless, research examining how students integrate these tools simultaneously to develop reading, writing, listening, and speaking skills remains limited.

Within the Indonesian context, Syuhra et al. (2025) reviewed the use of AI tools among university students and found improvements in fluency, linguistic accuracy, and engagement. However, they also identified infrastructural and pedagogical challenges, including limited institutional support and insufficient teacher training in AI integration. Raharjo and Rohmadi (2025) further discussed ethical concerns such as plagiarism, data privacy, and student dependency on AI-generated content. Similarly, Putri et al. (2025) revealed that while students perceived ChatGPT as helpful and efficient for writing tasks, they were also aware of risks related to factual inaccuracies and academic integrity. These findings suggest that responsible and strategic use of AI remains a crucial issue in higher education.

In Islamic educational settings, Amriani et al. (2023) emphasized the importance of integrating ethical and religious values in technology use. Although their study did not specifically focus on AI in English learning, it highlights the significance of moral awareness and responsible digital behavior

in Islamic universities. This perspective is particularly relevant for contexts such as UIN Syekh Wasil Kediri, where institutional and cultural values may influence students' engagement with AI-assisted learning media.

Taken together, previous studies demonstrate that AI-assisted learning media can enhance specific English language skills and increase learner motivation. However, several research gaps remain. First, most studies focus on particular tools or individual language skills, especially writing or speaking, rather than examining how students comprehensively use various AI-assisted learning media across all four English language skills simultaneously. Second, many previous studies mainly discussed students' perceptions of AI rather than their actual experiences, challenges, and strategies in using AI-assisted learning media, leaving a limited understanding of how students genuinely engage with these media in their learning process. Third, research conducted in Islamic higher education contexts remains limited, even though cultural, educational, and ethical values may influence how students use AI technologies in their learning activities, particularly at UIN Syekh Wasil Kediri.

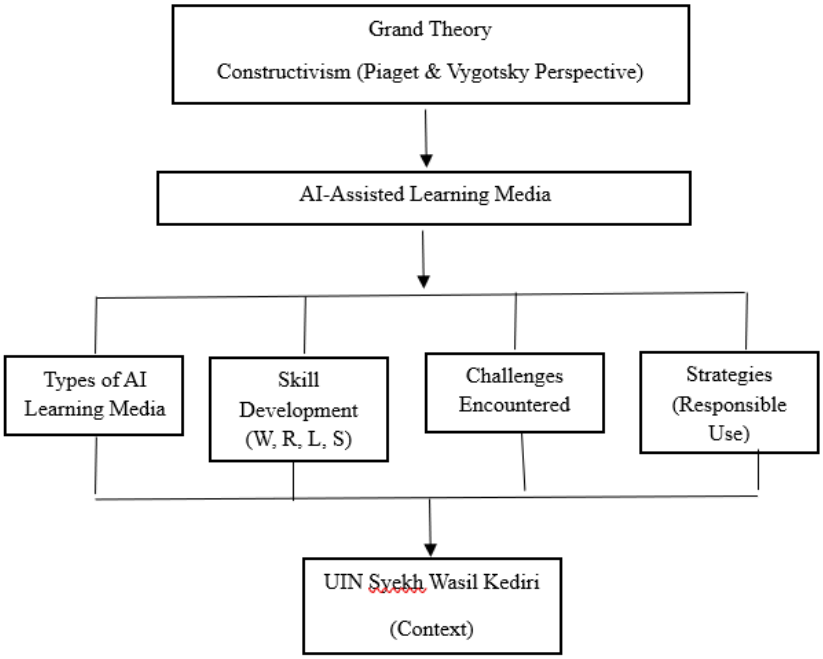
Therefore, this study aims to address these gaps by exploring (1) the types of AI-assisted learning media used by English Education Department students at UIN Syekh Wasil Kediri, (2) how these media support the development of their English language skills, (3) the challenges they encounter, and (4) the strategies they employ to use AI-assisted learning media effectively and responsibly in their learning process.

K Conceptual Framework

This study is based on Constructivism theory, proposed by Piaget (1970) and further developed by Vygotsky (2012), which emphasizes that learners actively construct knowledge through interaction, experience, and social engagement. In the context of learning supported by artificial intelligence, learners do not simply receive information passively; instead, they interact with intelligent digital devices that provide feedback, guidance, and adaptive learning support. Through continuous interaction with these devices, learners build their understanding and improve their English skills.

Based on this theoretical foundation, the conceptual framework of this study describes how artificial intelligence (AI)-supported learning media functions as an intermediary tool that supports students' language development. This framework also identifies the various types of AI tools used, the obstacles encountered, and the strategies applied by students in integrating AI responsibly and effectively into their learning process at UIN Syekh Wasil Kediri.

Figure 2.1 presents the conceptual framework of this study



As shown in the diagram, Constructivism serves as the main theory underlying this research. This theory provides a theoretical framework for understanding the interaction between learners and learning media supported by artificial intelligence (AI). Within this conceptual framework, AI-assisted learning media acts as a learning mediator that facilitates knowledge construction through personalized feedback, adaptive content, and interactive engagement.

This framework identifies four main components derived from the research problem formulation. First, this framework analyzes various types of learning media supported by artificial intelligence (AI) used by students.

Second, this framework analyzes how these media support the development of four English language skills, namely writing, reading, listening, and speaking. Third, this framework considers the challenges faced by students, which include technical, ethical, and academic aspects. Fourth, this framework evaluates the strategies implemented by students in utilizing AI effectively and responsibly, which reflect their self-regulation and critical awareness abilities.

All of these components exist within the unique institutional and cultural context of UIN Syekh Wasil Kediri. This context has the potential to influence students' perceptions in accepting, applying, and controlling the use of artificial intelligence-based learning media. Therefore, the conceptual framework presented offers a comprehensive framework for analyzing the reciprocal relationship between artificial intelligence technology, student development processes, various challenges faced, and engagement strategies from a constructivist perspective.