

## **CHAPTER II**

### **REVIEW OF LITERATURE**

This chapter consists of previous study, some pertinent ideas, and conceptual framework.

#### **2.1. Previous Study**

Previous research aims to obtain comparison and reference materials. In addition, to avoid the assumption of similarities with this study, the researchers include the results of previous studies as follows:

From the research conducted by Limna et al(2022) they conducted a research under the title “A Review of Artificial Intelligence (AI) in Education during the Digital Era”. The findings highlight the ubiquitous presence of AI in education, emphasizing its strategic and critical role in the developmental landscape of education. AI has evolved into a digital assistant, aiding both teachers and students in diverse ways. Notably, it facilitates personalized learning experiences by providing students access to a diverse array of educational materials tailored to their specific needs and subjects. Despite these positive contributions, the study identifies inherent risks associated with AI advancements, including concerns related to safety, security, and privacy. The study concludes that AI technologies wield both positive and negative impacts on education. Acknowledging the dual nature of these effects, it underscores the importance of prioritizing AI in education and implementing tailored strategies to address the needs and expectations of both

teachers and students. By doing so, the study posits that academic performance can be elevated to excellence. To deepen the understanding of the nuanced relationship between AI and educational performance, the study recommends future research endeavors employing qualitative methods, such as interviews, or quantitative analyses, such as online questionnaires. These research approaches aim to provide more explicit findings that can be applied to school administrators, teachers, and students. The implications of such research findings can inform the development and implementation of strategies geared towards optimizing educational performance through the integration of AI technologies.

The following research was conducted by Seters (2020) under the title "Advancing Education through Artificial Intelligence: A Review of Current Research and Future Directions" This paper utilizes a literature review method to provide an overview of the current state of research on Artificial Intelligence in Education (AIED) and to identify future research directions. The paper synthesizes information from recent articles, books, and conference papers related to AI, machine learning, intelligent tutoring systems, and educational technology. It discusses the vision, challenges, roles, and potential applications of AI in educational settings, highlighting the rapid advancement of AI technologies. The roles of AI in education, including serving as an intelligent tutor, tutee, learning tool/partner, and policy-making advisor, are identified. The paper outlines 10 important research topics in the field of AIED, including the development of AI-based learning models, evaluation of student performance with AI systems, and the use of big data analytics for large-scale learning systems. It also emphasizes the

need to reexamine educational theories, propose innovative AI-supported learning strategies, and develop ethical principles and practices for employing AI technologies in education. In conclusion, this review paper provides a comprehensive overview of the current state of research on AI in Education and identifies key areas for future exploration. The introduction of the new open-access journal, *Computers & Education: Artificial Intelligence*, reflects the growing interest in advancing the state-of-the-art in AI in Education.

The next study titled "Human-centered artificial intelligence in education: Seeing the invisible through the visible" by Yang et al., (2021). The study utilizes a variety of methods, including automatic question generation, natural language processing technology for text summarization, deep learning technology for short-answer grading, and precision education analysis involving diagnosis, prediction, treatment, and prevention. Additionally, the research incorporates learning analytics, assessment methods, and data visualization for precision education. This study examines the evolving landscape of artificial intelligence (AI) in education, with a focus on human-centered AI (HAI) and its implications for ethical considerations, smart learning environments, and sustainable development. The research explores the societal impact of AI as both an enabler and inhibitor, emphasizing the need for sustainable AI. It delves into the concept of precision education and the significance of ethics and norms in smart learning environments. The study also highlights the importance of explainable AI and interpretable machine learning to mitigate algorithmic bias and misuse of AI. Additionally, it addresses the impact of AI on education, particularly in the realms of smart learning

analytics and smart assessment, while emphasizing the potential dangers and ethical considerations of AI. The study advocates for a human-centered approach to AI research and development, recognizing the irreplaceable role of human characteristics and emotions in education. This research is supported by the Ministry of Science and Technology, Taiwan.

The next study by Subiyantoro et al., (2023) examines the impact of artificial intelligence (AI) on teaching English language in higher education. The results indicate that the use of AI has created opportunities and challenges in teaching English language. English language educators utilize various types of AI for various purposes, such as checking grammar errors, detecting plagiarism, and providing personalized feedback. However, the use of AI also presents challenges, such as the lack of accuracy in information from ChatGPT. The study also highlights the need for digital literacy skills for English language educators to prepare for a future where AI may potentially take over the profession of teaching English language. The integration of artificial intelligence (AI) in teaching English language in higher education in Indonesia creates opportunities and challenges. AI has the potential to enhance learning and teaching experiences, but also poses the challenge of potentially replacing language teachers in the future. It is important for language educators to improve their digital literacy and embrace AI to meet the needs and desires of students in the future.

The last previous study by Pabubung (2021) under the title “Epistemologi Kecerdasan Buatan (AI) dan Pentingnya Ilmu Etika dalam Pendidikan Interdisipliner” The study utilized a qualitative method through literature analysis,

drawing data from journals, books, and articles related to epistemology, ethics, artificial intelligence, and interdisciplinary education within the last ten years. The analysis focused on the role of AI as the material object and epistemology as the formal object of study. This approach allowed for a comprehensive exploration of the interdisciplinary importance of AI and ethics in education from a humanistic perspective. This study highlights the need for interdisciplinary education that includes AI and ethics, emphasizing the potential positive and negative impacts of AI on human life. It also underscores the importance of collaboration between AI experts and ethicists to develop beneficial and ethical AI technologies. The study recommends the incorporation of basic AI and ethics education in vocational schools and university programs to address the cultural implications of AI and its impact on society.

Based on the five studies above, there is a similarities and differences with this research. The researcher found similarities with the research that all of studies discussed about AI. While the difference is of the five studies above, all of it are literature review, while this research concerned with subjective experience and involves working collaboratively with the participants. The previous study aims to review the AI adoption in learning and teaching during the digital era, provide an overview of the current state of research on Artificial Intelligence in education, examines the evolving landscape of artificial intelligence (AI) in education, opportunities and challenges, and interdisciplinary importance of AI and ethics in education from a humanistic perspective. While in this study focused on the impact that caused by AI on students learning Process based on the students' experience.

## **2.2. Some Pertinent Idea**

### **A. EFL**

According to Northwest Career College English as a Foreign Language (EFL) refers to the study of English by non-native speakers who live in a country where English is not the official language. EFL learners typically study English in a non-English-speaking context and are motivated by academic or personal reasons to gain fluency in the language, such as wanting to attend university or read literature in its original language form. EFL is taught in a non-English-speaking region, and the study can occur either in the student's home country as part of the normal school curriculum or in an anglophone country that they visit as a sort of educational tourist (Nordquist, 2020). EFL learners often study English to pass exams as a necessary part of their education, for career progression while working for an organization or business with an international focus, or to improve their chances of being hired by an English-speaking company.

EFL is often used interchangeably with ESL (English as a Second Language), but they are actually different. While EFL refers to the study of English in a country where English is not the dominant language or second language, ESL refers to the study of English in a country where it is (but may not be the native language of a majority of the population) (Nair, 2022).

Learning English as a foreign language can provide numerous benefits, such as increased employability, better communication skills, and access to a wealth of information and resources in the English language. Alongside with the benefits, there are also challenges when it comes to learning a language. One of the

challenges for EFL teachers is finding English models that work for their students, as many instructors are either non-native English speakers or are native English speakers who don't speak the local language (Nair, 2022).

## **B. Artificial Intelligence (AI)**

Artificial Intelligence (AI) is the science and engineering of making intelligent machines. It involves the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context in an uncertain, ever-varying world. AI encompasses the development of systems that can learn, at least somewhat like human beings do, and can be broadly categorized into narrow AI, which is intelligent systems for one particular thing, and Artificial General Intelligence (AGI), which seeks broadly intelligent, context-aware machines. Human-Centered Artificial Intelligence is another aspect of AI that seeks to augment the abilities of, address the societal needs of, and draw inspiration from human beings. The applications of AI are diverse, ranging from speech and facial recognition to human-robot interaction and societal needs (Manning, 2020).

Artificial Intelligence (AI) refers to the field of computer science dedicated to creating systems that can perform tasks typically requiring human intelligence. AI encompasses a spectrum of capabilities, from Narrow AI, designed for specific tasks like speech recognition or image classification, to the theoretical concept of General AI, which would possess human-like intelligence across various domains. AI finds applications in diverse fields, impacting industries like healthcare, finance, and robotics. As AI evolves, ethical considerations and societal implications become crucial factors in its development and deployment (Tecuci, 2012).

Artificial Intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence, such as learning, problem-solving, and decision-making. In the context of education, AI has the potential to influence teaching and learning in various ways, including personalized learning, adaptive learning systems, intelligent tutoring systems, and language learning tools.

AI has the potential to revolutionize education by providing personalized learning experiences, improving teaching efficiency, and enhancing the learning experience for students. However, it is important to address concerns about bias, discrimination, and the ethical use of AI in education to ensure that it complements, rather than replaces, human educators (Perez, 2023).

### **C. AI in EFL Learning**

Machine Learning (ML) is a subset of AI, employing algorithms to enable systems to improve performance through data-driven learning. Deep Learning, a form of ML, involves complex neural networks for hierarchical feature learning. Natural Language Processing (NLP) focuses on enabling computers to understand and generate human-like text, while Computer Vision allows machines to interpret visual data (Tecuci, 2012).

Kind of AI Tools Suitable for English Learning:

1. Chatbots: Chatbots can be used to practice conversation skills by simulating real-life conversations with native speakers, improving fluency and confidence in speaking English (English, L., 2023).



2. Grammar Checkers: Tools like Grammarly and LanguageTool can provide feedback on grammar and spelling, helping learners improve their writing skills (Jones, 2023).
3. Language Learning Programs: AI-powered language learning programs use natural language processing and machine learning algorithms to provide personalized learning experiences, improving language skills in speaking, reading, writing, and listening (Portakal, 2023).

There are several AI based tools that often used by students that study English as a second language, such as:

1. ChatGPT

works for a variety of tasks, such as answering questions, providing information, composing creative texts, translating languages, and more.

2. Grammarly

Grammarly is a tool that often use to fixed the writing issues such as grammatical error.

3. Quillbot

QuillBot is an online paraphrasing tool that allows users to rewrite sentences, paragraphs, or entire articles. It comprehends the input text and rewords it while maintaining the original meaning using artificial intelligence. QuillBot is frequently used by users to produce different versions of their content, such as variations for various purposes or to prevent plagiarism.

4. Duolingo

This popular language learning app uses AI to adapt to learners' strengths and weaknesses, providing personalized learning experiences.

5. Mondly

This app uses AI to provide learners with interactive language lessons, including speech recognition and chatbot features.

6. Zeno Assistant

This AI-powered writing assistant provides learners with feedback on their writing, including grammar, vocabulary, and sentence structure

7. Ling

This app uses AI to provide learners with personalized language learning experiences, including real-time feedback on pronunciation and grammar.

These language learning applications use AI to provide learners with personalized, interactive, and engaging language learning experiences. They offer features such as real-time feedback, speech recognition, and chatbot interactions, making language learning more accessible and enjoyable for learners

#### **D. The Impact of AI on EFL Students' Learning**

Impact can have different meanings depending on the context. Generally, impact refers to a sudden and powerful effect that something has on a situation, process, or person. It can also refer to the action of one object hitting another, or the force with which one object hits another (Collins dictionary). In the context of development interventions, impact implies changes in people's lives, which might include changes in knowledge, skill, behavior, health, or living conditions for children, adults, families, or communities. Such changes are positive or negative

long-term effects on identifiable population groups produced by a development intervention, directly or indirectly, intended or unintended. Impact can be intentional or non-intentional, direct or indirect, positive or negative, short-term or long-term.

AI has the potential to enhance language learning by providing intelligent teaching systems, self-regulated learning, virtual reality, immersive virtual environment, and natural language processing in teaching English as a foreign language classroom(Alhalangy & Abdalgane, 2023). AI can also help teachers teach and students learn, and improve the adaptivity of learning resources to students' strengths and needs(Cardona et al., 2023). However, there are also concerns that AI may have unwanted consequences, such as widening achievement gaps or producing unexpected results due to poor theories or biased assumptions about learning(Cardona et al., 2023). It is important to ensure that AI is integrated into educational settings in an ethical and responsible manner(Alhalangy & Abdalgane, 2023). Providing students with access to AI education can help close opportunity gaps, ensure they have the skills and knowledge to compete in the global workforce, and create a more diverse pool of talent in AI and related fields(George, 2023).

The impact of AI on EFL (English as a Foreign Language) students' learning has been significant, as AI technologies have the potential to enhance language learning experiences and improve students' motivation, self-confidence, and interest in learning(Jiang, 2022). Here some of the key areas where AI has made a positive impact on EFL students' learning include:

1. Personalized Learning: AI can adapt to each student's learning process, providing tailored support for a range of skills and needs among English learners(Cardona et al., 2023).
2. Automatic Evaluation Systems: AI tools can assess students' language proficiency more accurately and efficiently than traditional methods, providing valuable feedback for improvement(Jiang, 2022).
3. Intelligent Tutoring Systems (ITSs): AI-driven ITSs can provide personalized feedback and guidance to students, helping them learn more effectively. AI can be integrated into ITSs to provide emotional support and motivation to students, fostering a more engaging learning experience.
4. Intelligent Virtual Environment: AI-based virtual environments can provide immersive and interactive learning experiences, allowing students to practice their language skills in a realistic context.
5. Language Learning Tools: AI tools such as chatbots, grammar checkers, and language learning programs can help individuals improve their English skills by providing practice, feedback, and personalized learning experiences. And enhance their understanding of the target language.

However, there are also challenges and concerns associated with the use of AI in EFL education. Some of these challenges include the need for better integration of AI into educational settings, the potential for boredom and lack of desire to learn and teach due to overreliance on AI, and the importance of educators and students being aware of the new applications and tools that have emerged in the field of AI(Sumakul et al., 2022). Despite these challenges, AI has the potential to

revolutionize EFL education and should be seen as a valuable tool that complements and enhances the teaching and learning process (Cohen, 2023).

### **2.3. Theoretical Framework**

Finding suitable learning models that work for EFL students is a challenge for the teachers and the students as many instructors are either non-native English speakers or are native English speakers who don't speak the local language. That's why a lot of students utilize AI as their learning tools.

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. It encompasses a variety of technologies and techniques that enable machines to perform tasks that typically require human intelligence. These tasks include visual perception, speech recognition, decision-making, language translation, and problem-solving.

The use of AI in the learning Process might have an Impact to the students, it can be a positive or negative Impact. Related to that, this research is conducted to find out what are the impact of AI based on the students' experience.