CHAPTER II
LITERATURE REVIEW

This chapter presents a brief explanation of some theories that support the study. The theories are related to the negative impact of artificial intelligence on English language learning.

A. Technological Determinism Theory

Technological Determinism is a theoretical perspective that posits technology as the primary driver of social, cultural, and behavioral change. McLuhan (1964) argues that technological advancements function as extensions of human capacities, influencing not only what people do but also how they think, communicate, and perceive the world. In this view, technology is not a neutral tool; instead, it actively restructures human actions, social relationships, and patterns of interaction. Supported by Berondo (2025) technology, particularly AI, actively transforms human actions, relationships, and societal structures, rather than being a neutral tool. As technology evolves, it shapes the behaviors and norms of society, often in ways that operate independently of human intentions. This theoretical stance highlights the powerful and inevitable role of technology in shaping the direction of human development, including within educational contexts.

Technological Determinism becomes particularly relevant in understanding the rapid integration of digital tools and artificial intelligence (AI) in modern education. As AI is increasingly embedded in learning environments, it transforms how students access information, complete academic tasks, and engage with learning materials. Scholars such as Marcela et al. (2023) have noted that digital transitions, especially during the shift to online learning, may produce unintended consequences such as reduced academic accountability and changes in learning motivation. Similarly, Connell (2016) emphasizes that although technology enhances efficiency, it may also

alter students' values and behaviors, particularly those related to academic integrity. These perspectives align with McLuhan's view that technology inherently restructures human practices and cognitive processes, offering a relevant theoretical foundation for examining students' perceptions of AI use in English language learning.

With this understanding of technology's influence in education, the following section highlights the specific principles of Technological Determinism applied in this research. Four principles derived from McLuhan's framework are employed: (1) technology shapes learning behavior, (2) technology transforms cognitive processes, (3) technology creates ethical implications, and (4) technology generates dependence. These principles guide the analysis of how AI influences students' learning activities, motivation, cognitive engagement, integrity, and autonomy. Each principle reflects a specific dimension of technological influence that is closely linked to the research context.

The first principle, technology shapes learning behavior, asserts that the presence of new technologies alters how individuals act and carry out tasks. In educational contexts, this principle explains how AI tools can influence students' study habits, assignment completion strategies, and overall engagement with learning materials. Swanson (2015) technology influences daily routines by introducing new norms of behavior. In English language learning, the convenience offered by AI tools may lead students to prioritize speed over deep comprehension, shifting their behavior toward shortcuts rather than process-oriented learning. According to Ulfa (2023) stated that while AI tools enhance English language learning through personalized paths and real-time feedback, there is a concern that such convenience may encourage students to prioritize speed over deep comprehension. This shift could lead to a reliance on shortcuts rather than fostering a thorough understanding of the language. This behavioral transformation aligns with McLuhan's notion that technology reshapes

patterns of action, making it a crucial principle for understanding students' experiences with AI.

The second principle, technology transforms cognitive processes, emphasizes that technology changes how individuals think, analyze, and process information. McLuhan (1964) argues that media influence the structure of human thought, not merely its content. According to Radkowitsch et al. (2020) found that reliance on automated tools can reduce cognitive engagement and diminish opportunities for deep thinking. In the context of EFL learning, AI tools can make tasks such as reading comprehension or writing much easier, which may weaken students' critical thinking abilities and reduce their capacity to construct meaning independently. Furthermore, Yavich (2025) stated that overreliance on AI tools for tasks such as reading comprehension and writing can weaken students' critical thinking abilities, reduce cognitive effort, and diminish their motivation for independent meaning-making. This principle informs the study's exploration of students' perceptions of reduced cognitive engagement when using AI.

The third principle, technology creates ethical implications, suggests that technology shapes value systems and influences individuals' ethical decision-making. In the academic context, this principle addresses issues of originality, plagiarism, and integrity in the use of AI. Connell (2016) notes that technological tools such as paraphrasing software and translation applications enable students to bypass academic standards, increasing the potential for dishonest practices. Susanti et al. (2020) further reports that AI may undermine educational goals when students rely on it to complete assignments without a genuine understanding. This principle is especially relevant to the study because it provides a lens for examining how AI may contribute to ethical dilemmas in students' learning experiences.

The final principle, technology generates dependence, posits that repeated exposure to technological solutions can lead individuals to become reliant on AI,

reducing self-confidence. Watkins et al. (2024) state that excessive dependence on automated tools can slowly take away students' sense of control, making them feel less capable and less confident in their abilities. This dependency reflects McLuhan's concept of technological dominance, where technology shapes individuals' sense of capability and influences their overall academic behavior. This principle is particularly important for understanding how students perceive AI as both a tool and a crutch in their learning process.

This research employs Technological Determinism Theory because it offers a clear and relevant framework for understanding how technology, particularly artificial intelligence, influences students' learning experiences. The theory is considered appropriate for this research as it explains how technological developments can shape learning behavior, affect cognitive processes, raise ethical concerns, and create dependencies that are closely related to the focus of this study on the negative impacts of AI in English language learning. In this research, the principles of Technological Determinism were used to analyze the data and address the research question of students' perceptions of the negative impact of artificial intelligence on English language learning.

B. Artificial Intelligence in Higher Education

Artificial intelligence (AI) is broadly defined as the capability of computer systems to perform tasks that usually require human intelligence, such as reasoning, learning, perception, and language understanding (Russell & Norvig, 2020). According to Chaudhary et al. (2024) AI encompasses computational models that emulate human intelligence and behavior through algorithms. (Haenlein et al., 2018) further describe AI as a system's ability to interpret external data correctly, learn from such data, and use those learnings to achieve specific goals through flexible adaptation. In the educational field, Chakraborty (2025) emphasizes that AI technologies indeed enable automated decision-making and intelligent feedback based on learner behavior.

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Meanwhile, Sadiku et al. (2021) define AI in education refers to digital systems that simulate human teaching by offering personalized guidance, feedback, and assessment tools.

According to Zawacki-Richter et al. (2019), AI applications in education can be categorized into three primary areas: profiling and prediction, assessment and evaluation, and adaptive systems and personalization. Profiling and prediction refer to the use of AI to analyze students' learning patterns, identify potential difficulties, and forecast future performance based on their academic behavior. Meanwhile, assessment and evaluation use AI tools to automate grading, provide immediate feedback, and assist educators in monitoring student progress more efficiently. Lastly, adaptive systems and personalization include technologies that tailor learning materials, tasks, and difficulty levels to suit individual students' needs, allowing learners to engage with content that matches their abilities and learning pace. These three categories illustrate how AI functions not only as a supportive tool but also as an integrated system that shapes the entire learning process. These innovations have changed conventional teaching strategies by advertising personalized learning experiences, immediate feedback, and data-driven experiences in student performance.

1. **AI Development and Capabilities**

The development of artificial intelligence has progressed rapidly over the past decade, mainly driven by advances in machine learning, deep learning, and natural language processing. Lecun et al. (2016) explain that the emergence of deep neural networks has enabled AI systems to recognize patterns, classify information, and learn from large datasets with increasing accuracy, marking a significant shift from earlier rule-based systems. These breakthroughs laid the foundation for modern AI technologies, including sophisticated language models such as GPT, which are capable of generating coherent, human-like text and performing complex linguistic tasks (Brown et al., 2020)

As AI technologies continue to evolve, their capabilities have expanded into various domains, such as prediction, automation, decision-making, and real-time data analysis. Haenlein et al. (2018) note that AI systems today can interpret external data, adapt to new information, and autonomously refine their performance. In the field of education, AI enables personalized learning by offering adaptive feedback, automating content delivery, and supporting intelligent tutoring, which collectively enhance student engagement and performance while also increasing teacher efficiency through data-driven insights (Deckker et al., 2025). Such developments highlight AI's growing role as a versatile tool that can simulate aspects of human cognition and assist with complex academic tasks. Popenici and Kerr (2017) emphasized that AI technology can significantly improve personalized learning by tailoring educational interventions to individual student needs, thereby enhancing their learning and increasing access to academic resources. This is evident in EFL classrooms where AI-powered tools such as Duolingo automatically adjust task difficulty based on student performance. When learners struggle with certain grammar patterns, the system provides more targeted practice, while those who perform well receive more advanced tasks. These adaptive adjustments ensure that each learner follows a pathway suited to their proficiency level and progress. In short, AI enables a more individualized learning experience that responds directly to students' needs and abilities.

2. The Impact of AI in Learning Process

The integration of AI into education has significant suggestions for how students engage with learning materials and develop academic skills. According to Popenici and Kerr (2017) AI tools can fundamentally modify cognitive processes by automating tasks that traditionally require critical thinking and problem-solving. While this computerization can enhance efficiency, it may also reduce opportunities to develop higher-order thinking skills.

Within the context of language learning, the use of AI as a cognitive shortcut presents a serious risk to students' cognitive engagement and long-term language development. Chun et al. (2016) argue that AI tools can function as cognitive shortcuts that interrupt essential learning processes. The central concern is that when students rely on automated support, they may skip the cognitive effort needed to build long-term proficiency. According to Yavich (2025) overreliance on AI-driven tools may reduce students' motivation for self-directed analysis, diminish cognitive effort, and ultimately weaken critical thinking skills, hindering their long-term proficiency and independent cognitive development in educational settings. For example, instead of engaging with complex reading passages by analyzing structure, inferring meaning, or practicing contextual guessing, many learners immediately turn to machine translation tools. This reliance reduces the amount of mental processing involved in understanding the text, which is critical for vocabulary retention and reading development.

This phenomenon aligns with what Kasneci et al. (2023) described as the outsourcing of cognition, where students hand over progressively complex cognitive assignments to AI systems. The researchers noted that this trend may lead to certain academic skills falling apart due to a lack of practice and overreliance on technological assistance.

However, the quick advancement of AI capabilities raises significant concerns. Roll and Wylie (2016) warn that while AI tools offer capable support for learning, they may incidentally create conditions that weaken the improvement of significant cognitive skills. This can be especially important in language learning, where over-reliance on translation tools may obstruct the natural acquisition process and limit students' ability to think within the target language.

3. Ethical Implications and Academic Integrity

The ethical dimensions of AI use in education extend beyond individual learning outcomes to questions of academic integrity and educational values. According to Elaine et al. (2020) the increasing advancement of AI writing tools presents unprecedented challenges to traditional conceptions of authorship and originality in academic work. Their research indicates that AI-generated content can be challenging to detect using conventional plagiarism-detection software, creating new forms of academic misconduct that are harder to identify and address. Therefore, this condition calls for a more critical and responsible approach to AI use in education, where academic institutions and educators must not only update integrity policies but also guide students in understanding ethical boundaries, authorship responsibility, and the importance of intellectual effort in academic work.

In the Indonesian context specifically, Susanti et al. (2020) found that the adoption of AI tools in higher education has intensified concerns about academic integrity, particularly in Jakarta's Smart City environment, where digital technologies are increasingly prevalent. Their study reported frequent cases of AI-assisted plagiarism, where students used digital tools to generate academic texts and submitted them with little understanding. Lecturers involved in the study also noted an increase in assignments that showed similar structures, unnatural language patterns, and a decline in originality, indicating a heavy reliance on automated systems. These findings suggest that generative AI tools such as ChatGPT can encourage students to complete assignments without engaging with fundamental learning objectives, thereby undermining independent thinking and academic effort.

These concerns, particularly those related to academic integrity, reduced authentic language practice, and overreliance on AI, are especially relevant to

language learning, where the boundary between legitimate assistance and unethical shortcuts can be especially blurred. Sabili et al. (2024) observed that AI tools enhance personalized learning experiences, but they also cannot fully duplicate the authentic interactions necessary for complete educational development. Evidence suggests that learners who rely heavily on technological interfaces are likely to experience significant deficiencies in terms of cultural recognition and the development of interpersonal communication skills.

C. Study of the Relevant Research

Studies on the influence of AI in education reveal a complex relationship between its advantages and challenges. One prominent area of concern is its impact on students' motivation. Marcela et al. (2023) reported that reliance on AI tools during online learning environments often diminishes students' engagement and discourages self-driven learning behaviors. These findings underscore a potential trade-off between the benefits of streamlined learning processes and the risks of fostering dependency on AI-driven systems.

Ahmad et al. (2023) discuss the negative behavioral and ethical implications of AI in education. Their findings suggest that the use of AI can degrade students' decision-making abilities and increase reliance on automated solutions, resulting in laziness and decreased motivation for independent study. Furthermore, the study emphasizes growing concerns about privacy and security, as the use of AI in educational settings frequently exposes users to the risks connected with data breaches and personal information misuse. These observations highlight the need to address ethical concerns and to implement responsible AI methods in educational settings.

Another significant trend in the literature is the role of AI in academic misconduct. As AI tools like paraphrasing software, automated essay generators, and translation apps become widely available, they have facilitated practices that

compromise academic integrity. Connell (2016) emphasized that while technology provides efficiency, it also introduces ethical dilemmas, particularly in assessment and evaluation. During the pandemic, Marcela et al. (2023) observed a sharp increase in academic dishonesty in digital learning environments, where students misused AI tools to bypass academic standards. These studies highlight the growing need for addressing ethical challenges associated with AI integration in education.

From a technological perspective, AI's transformative potential aligns with the principles of technological determinism. According to Jan et al. (2020) asserts that technological advancements not only enhance efficiency but also redefine cultural norms and societal structures. This is evident in AI's impact on education, where it has restructured how students access information and approach learning tasks. However, Radkowitsch et al. (2020) warned that these advancements often have unintended consequences, such as diminished agency and over-reliance on automated solutions, which can negatively affect students' critical thinking and decision-making skills.

Although these studies provide valuable insights, most research has focused on Western educational contexts, with limited exploration of AI's effects in non-Western settings like Indonesia. Furthermore, the existing literature tends to emphasize the benefits of AI while underexamining its negative impacts, particularly from the perspective of students in higher education.