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The Hidden Effects of AI Over-Reliance in English Language Learning

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ABSTRACT

This study analyzed the students' perspective of their over-reliance on AI as well as its impact on their cognitive and affective domain. Mix-method then chose as a design. This study collected the data from 49 EFL students with 4-scale Likert questionnaire. It was also used semi-structured interview to gain depth information. The findings showed that EFL students had high reliance of AI. This reliance impacted to their cognitive and affective domains. Cognitively, students tended to be passive receiver of the information given by AI. The process of rechecking, reviewing, and paraphrasing the information were skipped. Affectively, AI caused anxiety, particularly when the task required independent completion. This finding indicates that AI no longer function as an aid, but rather as a key tool in the learning process. Therefore, this study recommends a thoughtful approach in integrating AI in English language learning.

Key words: Artificial Intelligence; Over-Reliance; English Learning

INTRODUCTION

Artificial Intelligent has become a part in today's digital era. AI itself refers to the system or machine that can imitate the intelligent of human behaviour, including learning, reasoning, and problem solving (Mureșan, 2023). In the case of learning, systems are designed to learn from the data, pattern, and experiences. The systems are also able to use available information to make a logical decision and solve complex problem. Then, by their specific algorithm and method, the system can find out optimal solution. In short, AI operates by mimicking human intelligence to perform task efficiently and intelligently in various real-world context.

In education context, AI offers benefits for both the teacher and the students. For teachers, it personalizes the material based on the students' individual needs (Mureșan, 2023; Ou, 2024; Robert et al., 2024), creates interactive lesson plans and

automates feedback (Oseremi Onesi-Ozigagun et al., 2024; Saha & Kumar, 2024). In grading, it mechanically assesses students' work in multiple choice tests, grammar correction, or essay evaluation. It also provides the detail of students' performance and identifying the area needing more attention (Singh & Mishra, 2021). This certainly enables the teacher to save time.

AI provides English foreign students with an access to resourceful information (Mureșan, 2023; Winarti et al., 2025). Students can use tools like Chat GPT or Gemini to learn about their course material. AI also helps students improve their speaking skill (Seyedi et al., 2024;Eliott, 2023). Siri and Google Voice can encourage them to communicate effectively in English (Fathi et al., 2024; Underwood, 2017; Zou et al., 2023). AI facilitates realistic language practice and effective communication (Jeon, 2024; Kim et al., 2021) improving students' fluency and pronunciation (Aryanti & Santosa, 2024; Makhlouf, 2021; Qassrawi et al., 2024). In writing, AI enhances grammar, sentence structure, paraphrasing, vocabulary, and topic generation (Rafida et al., 2024; Losi et al., 2024). AI translation machine, like DeepL and Google Translate, can foster autonomous writing skill, grammatical and vocabulary precision (Rafida et al., 2024). Meanwhile, AI-based writing assistance, help students to reduce cognitive barrier when producing written text (Gayed et al., 2022). Overall, AI offer promising opportunities for EFL students by supporting the improvement in language skill.

While AI offer benefits, concern related to over-reliance on AI have emerged. In many cases, students are using AI as primary tool during the learning, exam, and daily task. This suggests a shift in how students learn, which can impact their cognitive and affective domain. Some studies have explored this issue. Unfortunately, most of them tend to focus on the cognitive one, such as critical thinking. Another aspect, such as affective, has not been studied empirically. As such, there is an important gap to be explored further. Therefore, this study intends to explore students' reliance on AI, and their perspective on the effect of AI on their cognitive and affective domain.

LITERATURE REVIEW

Recent studies have identified the variety of AI tool used by EFL students. Tools such as ChatGpt, Gemini, MetaAI, DeepSeek are frequently used to seek quick information related to the learned material(Mureșan, 2023; Winarti et al., 2025). These generative AI offer fast, concise and structured responses that support students' understanding of the material learned. In speaking skill development, voice-based AI assistant, such as Siri, Google Voice, and Orai, are often used to practice oral communication ((Underwood, 2017; Zou et al., 2023), in which they can check their pronunciation and intonation of their speaking. For writing, students often rely on AI-based writing tools like Quiltbolt, Grammarly, Google Translate, or DeepL. They use it to correct the grammar, improve the structure, rephrase sentences or translate the language. Despite the advantages that has been discussed in the previous part, numerous studies expressed concern about over-reliance on AI

tools. Adiyono et al. (2025) found that 70% students used AI in their exam. Bermeo et al.(2025) even discovered that most of students rely on AI to complete their academic task. Regarding this, Abuzar et al. (2025) note that students' generally trust AI for its efficiency and quick access of information.

This reliance has raised a concern. Zhai et al., (2024) mention that this dependency can negatively impact students' cognitive ability, including critical thinking, analytical reasoning, and decision-making skill. When the students excessively lean on AI, they may struggle to develop their own insight (Abd-alrazaq et al., 2023). Additionally, they may lack the ability to analyse information, make a logical argument, or integrate information from various sources (Koos & Wachsmann, 2023; Santiago et al., 2023) provide a concise example of students' dependency on AI in writing classes. They note that while students trust the improvement of writing quality made by AI, they have less effort to write well-structured sentences, follow grammar ruler, and verify the information. This finally can weaken their analysis and critical ability. Moreover, Duhaylungsod & Chavez (2023) assert that excessive reliance on AI can reduce students' creativity and innovation. When the students consistently turn on AI for looking the idea, they indirectly become a passive thinker. This can hinder them to explore their own idea. Over time, this habit may restrain their creative an imaginative thinking, which often involve trail-error, brainstorm, and critical reflection. Over-reliance on AI also can impact on students' confidence and anxiety Zou et al. (2023) highlight that when the students depend so much on AI to complete their task, they may lose trust on their ability to think and solve the problem individually. This gradually can reduce their self-confidence. In some cases, it can increase anxiety, especially when they have to perform without AI support (Bermeo et al., 2025). This emotional dependency consequently can hinder students from becoming autonomous and resilient language users.

METHOD

Design and Samples

A mix-method design was employed to comprehensively analyse the EFL students' perspective of artificial intelligence's (AI) influence on their cognitive and affective domains. The study involved 49 EFL students from various study programs at universities in Bandung. These students actively utilized AI in their learning processes, encompassing writing, speaking, translation, and comprehension of English materials.

Instrument and Procedure

The study used a questionnaire and a semi-structured interview to collect data. The questionnaire assessed students' dependency on AI and its impact on cognitive, and affective domains. The Likert-scale questionnaire, adapted from previous research, ranged from 1 to 4. A semi-structured interview with ten selected subjects enhanced

the questionnaire's validity. The interview focused on students' AI usage in English learning, its influence on cognitive and affective aspects.

Data Analysis

Descriptive and thematic analysis were employed. The descriptive analysis was utilized to analyse the questionnaire data by calculating the mean score of students' responses in each item. The mean score was then classified based on the determined classification below:

Table 1. Mean Score Classification

1 – 1.75	Very Low
1.76 – 2.5	Low
2.6 – 3.25	High
3.26 – 4	Very High

Conversely, the thematic analysis was applied to examine the interview result. All of the recorded interviews were transcribed and coded based on the focus on the study. The similar codes were then grouped into themes and reviewed. The result of descriptive and thematic analysis was then triangulated and interpreted.

RESULT AND DISUSSION

This section presents the result of the studies on EFL students' dependency on the use of AI in English learning as well as its impact on the three domains: cognitive and affective. Data were gained through a Likert Scale questionnaire filled out by 49 students and reinforced by semi-structure interview involving 10 selected students. The presentation of the finding is divided into four subsections, starting from the respondent profile and the pattern of AI use, followed by the level of dependency, and its impact on each domain.

Respondents Profile and the Habit of Using AI

In this study, 49 English Language Foundation (EFL) students, comprising 13 males and 36 females, participated. The students ranged in age from 18 to 23 years and were enrolled in various study programs at Bandung University, including business management, marketing management, architecture, and engineering technology. All students were required to take an English course as part of their curriculum.

The majority of students indicated that they had utilized artificial intelligence (AI) in their learning process. Approximately 29 students used AI three to four times per week, while more than 20 students used it more than five times per week. The types of AI tools employed were diverse, including ChatGPT, Gemini, Google Translate, and DeepL. Some students also mentioned using additional tools such as Mansus, DeepSeek, and MetaAI. They used it for various academic purposes, including

looking for writing ideas, translating, completing assignments, checking grammar, and answering exercise questions given by lecturers.

Students' Reliance on AI

To illustrate students' reliance on AI in English language learning, several items were compiled into a Likert scale questionnaire. The statements are designed to assess the extent to which students depend on AI tools. The summary of students' students' responses is presented in Table 2.

Table 2. Students' Reliance on AI

No	Statements	Mean Score
1	I regularly use AI tools (such as ChatGPT, Gemini, or Google Translate) as part of my English learning routine.	3.10
2	AI is usually the first platform I open when I receive an English assignment.	2.92
3	I tend to use AI even when the English task is simple or already familiar to me.	2.73
4	I rely on AI to help me complete most of my English exercises and assignments.	3.12
5	I often skip reading or reviewing learning materials and directly ask AI for explanations.	2.84
6	I feel uneasy when doing English tasks without the help of AI.	2.63
7	I use AI not only when I struggle, but also when I simply want to finish tasks more quickly.	2.55
8	I realize that I've become quite dependent on AI in my English learning process.	2.63
Overall Mean Score		**2.82**

The table presents that over all mean score at 2.81, indicating a moderately high level of reliance on AI in learning English. The highest score occurs in statement 4 and 1, indicating students' familiarity in using AI, and rely on them to complete most of the English task. Statement 2 and 5 imply that students tend to use AI over books or note. Statement 3 suggests that the use of AI is not only limited to complex task, but also simple one. Moreover, statement 6 reveals students' challenge when completing an English task without AI assistance. Statement 8 reflects students' awareness of their dependency on AI. The result of questionnaire is supported by the data of in-depth interview. Students express varying level of dependency, which are presented in Table 3.

Table 3. The Analysis of The Interview Result on Students' Reliance

Respondent	The Pattern of Students' Answer
1, 5, 6, 9, 10	· AI is used in almost every English language learning. · AI becomes the main tool, not the complement. · The main motivations: lack of confidence, lack of vocabulary, and fear of being wrong
2, 3, 7	· AI is used when experiencing specific difficulties, such as understanding instructions, or, limited idea in writing or speaking, lack of vocabulary. · AI is used as a trigger or helper when it comes to deadlocks.
4, 8	· AI is only used when it is completely down or after personal efforts have been made. · Students prefer to ask a friend or reread the material. · AI is positioned as a final or complementary tool, rather than the primary source.

The interview reveals varying level of dependence on AI in English learning. There are some determined factors, such as self-confidence, English and vocabulary mastery, material comprehension, and learning strategies. Five students show high dependency on AI. They use it in almost in everyday English task. They perceive AI as the main tool to support the learning process. The main reason is due to lack of self-confidence, limited vocabulary, and difficulty in understanding the instruction or material. Statement like "*I use almost in every lesson because I'm not good in English, I'm not confidence*", "*I use almost in English class because I have limited vocabulary*", or "*I use it because I do not understand what I should write"*, illustrated this pattern. Three students show moderate dependency. They use AI selectively, only when encountering difficulty in learning, such as fail to grasp the instruction or lack of idea. The statement "I *rarely use it. I use it only if I do not understand the instruction*", "*Quite often, I usually use Google Translate because the limitation in my vocabulary"*, or "*I often use if I do not get any idea about what I have to write or speak*", represent their perspective. Another two students have low dependency. They use AI as secondary tool, only when necessary. The statement "*I rarely use it. I try to complete the task by myself, if I'm stuck, I use it*" and "*Not often. I will ask my friend first. If I am still confused, I use it*" depict their habit. To sum up, the questionnaire and interview results revels the students' reliance on AI, even though the level was varied. Students with high dependency use AI as the primary source for their learning. On the contrary, those with low dependency apply it only for support their learning process.

The Impact of AI Reliance on Students' Cognitive Domain

Cognitive ability deals with the capacity of brain to acquire, process and use the information. This ability encompasses the problem-solving, learning, and reasoning

skill. Related to the impact of AI on students' cognitive ability, the result of questionnaire reveals the following:

Table 4. Impact of AI on Students' Cognitive Domain

No	Statements	Mean Score
1	I often accept explanations from AI without processing or reflecting on them deeply.	2.78
2	When facing difficult English tasks, I tend to ask AI for answers instead of trying to solve them on my own.	2.92
3	I seldom try to rephrase or explain AI-generated information in my own words.	2.78
4	I notice it is harder to organise my own thoughts about English topics because I often copy AI explanations.	2.61
5	I check whether AI answers follow the logic or rules I have learned in class.	2.33
6	I rely more on the way AI presents ideas than on developing my own thoughts when learning English.	2.67
Overall Mean Score		**2.68**

Table 4 demonstrates that the impact of AI on students' cognitive domain is relatively high, with an overall mean score of 2.68. The highest score corresponds to statement number 2, which suggests students' preference for AI over utilizing their critical thinking or problem-solving skills. This indicates a decline in their cognitive initiative to address learning difficulties. Statements 1 and 3 emphasize students' tendency to passively receive information provided by AI. In fact, rephrasing is an essential component of the cognitive process that enhances long-term comprehension. Statement 6 indicates that students begin to replace their own thinking process with AI, which can negatively impact their creativity. Statement 4 highlights that students' dependency on AI has diminished their cognitive abilities. Although statement 5 obtained the lowest mean score, it supports statements 1 and 3, which indicate that students become passive learners when utilizing AI.

The above result corroborates the interview result. Although there were various tendencies in processing information obtained from AI, the result indicates that AI has an effect on their way of thinking and absorb the information in English learning. Below is the result:

Table 5. The Analysis of Interview Result on Students' Cognitive Process

Respondent	The Pattern of Students' Answer
1, 5, 6, 9	· Immediately copy-paste the information
	· Lack of reflection

2,3,7,10	· Occasionally, checks or modification attempts
4, 8	· Always check the information, rephrase into own words

The results shows that three students with low cognitive processing tend to receive the answer given by AI without checking the correctness of the information. Statements such as "*I just use it", "I rarely check it",* and "*I just copy-paste it"* indicate a passive learning pattern. In this case, AI is used as the main as well as the final source. Four students use AI more situationally and diligently. There is an attempt to recheck and modify the given information although it depends on the situation. This can be seen from the statement, such as "*Sometime I change the words so they do not look too visible from AI*" and " *If I have enough time, I recheck the answer"*. Meanwhile, some other students are more critical. They claim always recheck the information given by AI and adjust it into their own words. Expression such as "*I always double check it, sometimes the information is misleading*" and "yes*, I will recheck the answer and use my own word*" show that students process the information given by AI only to develop their personal understanding. Overall, both data shows that AI has direct impact on students' thinking process, both in understand, evaluate and reproduce information. High level of dependency tends to accept all the given information without reflective thinking process, while low level of dependency uses AI strategically to support their cognitive development.

The Impact of AI Reliance on Students' Affective Domain

Affective domain is related to the emotion, feeling or attitude. In foreign language learning, affective factor can be emotion, self-confidence, self-esteem, anxiety or motivation. Concerning the effect of AI reliance on students' affective domain, the questionnaire data shows the following results:

Table 6. Impact of AI on Students' Affective Domain

No	Statements	Mean Score
1	I feel more motivated to learn English when using AI.	2.55
2	AI boosts my confidence in learning English.	2.86
3	I feel doubtful when I have to complete assignments without AI assistance.	2.98
4	I feel worried when I have to complete tasks without AI assistance.	2.67
5	I feel anxious when I have to perform in English assignments without AI support.	2.59
6	I feel frustrated when I have to do English assignments without AI.	2.61
7	I panic when AI content is inaccessible.	2.67
Overall Mean Score		**2.70**

Table 6 depicts that the impact of AI on students' affective domain is relatively high, with the overall mean score 2.70. The highest score was in statement 3. It was then followed by statement 2. These two statements reflect students' emotional dependency on AI as a support for their security and confidence in the learning process. Statement 4, 7, 5 and 6 represent students' emotional distress when they have to complete the task without AI support. In this case, AI serves as sedative and supporting psychological comfort in learning. Even though statement 1 gets the lower score compared to the other, it directly indicates that AI has a contribution to students' motivation in learning English.

The findings are consistent with the data from the interview. The pattern is presented below:

Table 7. The Analysis of Interview Result on Students' Affective Domain

Respondents	**The Pattern of Students' Answer**
1, 5, 6, 9, 10	· Panic and frustration when AI is not available
	· Not confidence in one's own ability without AI
2,3,7	· Relying on AI to boost confidence.
	· Viewing AI as safety net to avoid mistakes
4, 8	· Increasing motivation as AI facilitate comprehension

The interview results reveal that students' dependency on AI has an impact on their affective domain, including self-confidence, anxiety, motivation and psychological comfort in learning process. The results uncovers that there are 5 students experience anxiety, panic, even frustration when AI is not available. They also feel insecure to complete the task independently without AI support. This implies that AI can give them the piece on their mind. Statement such as "*I feel panic if I cannot access AI*", "I *need to check my answer on AI because I am not sure*", and "*I feel frustrated if I have to quickly finish the assignment without AI*" reflect a high level of emotional impact of AI. Three students admitted that AI is used to boost their confidence in answering the assignment. They tend to use AI as supporting technological tool that can minimize the error on their assignment. The statement "*I more confidence if I use AI*" and "*I feel more save when I use AI*" manifest their answers. On the contrary, the other two students asserts that they only use AI to increase their motivation in learning. In this case, they feel that AI helps them to simplify and clarify the material. This shows in the statement "*I feel motivated to learn as AI help me increase the understanding of learned material*" and "*I feel AI help me to explain the difficult material in English*". This indicates that they use AI as a means to accelerate the understanding of concepts, instead of replace personal learning efforts. In general, the findings demonstrate that AI has become part of students' psychological comfort in learning English, even though in some parts it can also increase students' motivation.

To sum up the result of the study reveals that EFL students' reliance on AI is relatively high. Most of them argues to use AI not only for completing the complex tasks, but also the simple one. This is similar to "spoon feeding effect" by Abuzar et al. (2025), where answer is easily provided by AI without much effort. Some even state they skip the process of reading and immediately look for answers through AI. This clearly indicates their lack willingness to think and analyze the answer by their own.

In cognitive domain, AI has considerably impact. Students admitted to directly copy the information given by AI without double-checking the accuracy or rephrasing the words. This finding is in line with the studies conducted by Zhai et al. (2024) and Duhaylungsod & Chavez (2023). They assert that dependency on AI can reduce students critical and analytical ability, which are parts of cognitive skill. In this case, "the spoon-feeding effect" given by AI make students lazy and less creative, as they are no longer needed to process or produced the information themselves. This also force them to have less accustomed to check and understand the information.

The impact of AI on students' affective domain is also high. While AI can make students more motivated in learning, there are also negative impacts. Students become anxious, panic and frustrated if AI inaccessible. At this point, they consider AI as psychological support that provides sense of security when learning English. This is reinforced the study conducted by Klimova & Pikhart (2025) and Rodríguez Bermeo et al. (2025). They confirm that dependence on AI have negative impact on students' emotional abilities, even causing anxiety.

These findings suggests that AI is no longer used as an aid, but also as a main tool in learning process. Cognitively, the ease of answer given by AI reduces students' critical thinking, processing information, and generating knowledge on their own. Affectively, this dependency has potential to decrease students' confidence to complete the task independently, and increase their tension if AI is not available. This show that reliance on AI not only impact on the way the students' think, but also on their emotional health. Therefore, the use of AI in English leaning need to be directed wisely. Lecture can integrate AI as a reflective tool rather than an instant answerer. For example, the teacher can lead the students to reflect, verify or redevelop the information given form AI. Additionally, it is important to provide an understanding to students about the limitation of AI, so that they remain confident to their learning process and mot completely dependent on technology.

CONCLUSION

This study examines EFL students' reliance on AI and its impact on their cognitive and affective domains. The findings reveal moderate to high reliance on AI as a primary learning source, especially for English tasks. This over-reliance negatively affects their cognitive abilities, reducing critical thinking, information processing, and knowledge generation. Students become passive recipients of AI-generated information, lacking verification and paraphrasing skills. Emotionally, AI fosters

dependence, causing anxiety when tasks require independent completion, leading to decreased confidence. To address these issues, a thoughtful approach to integrating AI in English learning is essential. Students should understand AI as a supportive tool rather than the primary one. Additionally, they should be aware of AI limitations to maintain confidence in their abilities. This study explored the cognitive and affective impact of AI on students. Further research should investigate the impact of AI reliance on students' proficiency levels, as its effects may vary. Additionally, future studies should focus on teachers' roles and strategies in guiding responsible AI use.

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