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Exploring EFL Learners' Perceptions of Generative AI through the Technology Acceptance Model: Insights from an AI Literacy Program

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Abstract: This study investigates how English as a Foreign Language (EFL) learners perceive the use of generative AI (GenAI) tools in their language learning, using the Technology Acceptance Model (TAM) as an analytical framework. Drawing on final reports from 41 Japanese university students who participated in a four-week AI literacy program, this study qualitatively analyzed their reflections based on TAM constructs. The analysis revealed that students experienced a wide range of benefits from using GenAI, including support for all four English skills. Notably, 83% of the sentences in the behavioral intention category expressed a positive intention to use GenAI. In the attitude construct, critical perspectives were predominant, including concerns about over-reliance, ethical risks, and privacy. Furthermore, two subcategories, namely *Selective Use of GenAI* and *Expectations for Technological Advancement*, emerged beyond the TAM framework. These reflect learners' critical engagement and developing agency in deciding when and how to integrate GenAI tools into their studies. Additionally, students' prior frequency of GenAI use influenced their behavioral intentions. Despite perceiving GenAI as effective during the program, those with less prior use often showed lower willingness to continue using it, citing psychological concerns or feelings of guilt. This study underscores the importance of pedagogical interventions to help learners use GenAI ethically and effectively, with an understanding of its underlying mechanisms. It also proposes extending the TAM framework to incorporate critical and reflective dimensions of technology use.

Keywords: Generative AI, AI literacy, technology acceptance model, EFL learning

1. Introduction

Generative artificial intelligence (hereafter, GenAI), exemplified by ChatGPT, has rapidly gained widespread adoption in recent years due to advances in large language models (LLMs). Built on LLMs and powered by natural language processing technologies, these tools are capable of performing sophisticated language tasks such as translation, summarization, and text revision. In the first 10 weeks following the release of ChatGPT, educators were initially reluctant to adopt the technology, primarily due to concerns about potential student misuse (Alm & Ohashi, 2024). However, research on AI in language teaching and learning has since accelerated, with publications in this field skyrocketing. In this context, Law (2024) conducted a literature review of studies on GenAI in language education published between 2017 and 2023 and found that 98% of the reviewed publications appeared in 2023. The review also indicated that most studies focused on writing and that GenAI has been found to positively influence both learners' psychological states, such as motivation, and their language learning outcomes, owing to its immediacy and personalized support.

Although most studies reviewed by Law (2024) exhibited positive attitudes toward the implementation of GenAI, recent studies have shown that both teachers and learners express mixed feelings. While they acknowledged the benefits of GenAI, including prompt feedback,

individualized learning support, and help with brainstorming, they also expressed concerns about its potential risks related to academic integrity, accuracy, privacy, and ethics (Chan & Hu, 2023; Chukhno, 2024). Given the widespread impact of GenAI on education, Trust et al. (2023) argued that the most effective way to address its misuse is not through exclusion but through thoughtful inclusion. In this regard, Chan and Tsi (2024) emphasized the importance of developing AI literacy in order to effectively integrate GenAI into teaching and learning practices, and to address practical issues such as ethics and privacy.

1.1 AI Literacy and Language Learning

Significant efforts have been made over the past five years to define AI literacy (Zhao et al., 2024). Building on prior definitions, Long and Magerko (2020) described AI literacy as a set of competencies that enable individuals to critically assess AI, interact effectively with it, and apply it in various settings such as online, at home, and in the workplace. Expanding on this foundation, Zhao et al. (2024) proposed a definition of GenAI literacy comprising five core competencies: pragmatic use and critical evaluation of AI tools, awareness of safety and privacy risks, reflection on AI's impact on learning, understanding of socio-ethical implications, and appropriate, transparent use in context. In the context of English language learning, AI literacy entails understanding how to use AI tools effectively, recognizing their strengths and limitations, and critically integrating them to enhance language acquisition and communication skills (Alzubi, 2024).

Research on the impact of AI literacy on English as a Foreign Language (EFL) learning has recently gained attention. In the area of communication, Zhang et al. (2025) examined the relationship between AI literacy and psychological factors and showed that AI literacy positively influenced learners' self-efficacy and reduced foreign language anxiety. In the area of writing, Alzubi (2024) investigated factors affecting university students' GenAI literacy in EFL contexts and found that GPA and mastery in using GenAI tools as significant predictors. These findings underscore the importance of integrating AI literacy into EFL curricula.

Furthermore, studies indicate that individuals' perceptions of GenAI are shaped by their familiarity with and frequency of using such tools. For example, Chan and Hu (2023) found that students with greater knowledge and experience of GenAI were more likely to continue using it. Similarly, Tossell et al. (2024) reported that students' perceptions shifted from viewing GenAI as a tool for cheating to one of collaboration following usage. Bailey et al. (2021) also found that participation rates and self-rated L2 proficiency were positively correlated. Collectively, these findings suggest a need to explore how fostering AI literacy may influence the perceptions of learners who use GenAI less frequently.

1.2 Technology Acceptance Model

To analyze learners' perceptions of using new technologies, the Technology Acceptance Model (TAM) has been widely utilized. TAM is a theoretical framework proposed by Davis (1989) to predict users' acceptance of information technology. It comprises several constructs, including perceived usefulness (PU), perceived ease of use (PEU), attitude (AT), behavioral intention (BI), and actual use (AU). According to the model, AU is predicted by BI, which is, in turn, influenced by AT (Goh & Wen, 2020). Furthermore, AT is shaped by two key factors: PU, defined as the degree to which an individual believes that using a particular technology will enhance their performance, and PEU, defined as the degree to which they believe that using the technology will require minimal effort (Goh & Wen, 2020). Prior research has shown that PEU positively predicts PU, and that PU directly influences BI (Goh & Wen, 2020).

Researchers have also applied TAM in EFL learning studies involving various technologies, including GenAI. For example, studies introducing GenAI into EFL learning environments have shown that PEU positively predicts PU (Liu et al., 2023; Liu & Ma, 2023; Zou et al., 2024); PU positively predicts AT (Liu & Ma, 2023; Zou et al., 2024); PEU positively predicts AT (Liu & Ma, 2023); AT positively predicts BI (Liu & Ma, 2023; Zou et al., 2024); and BI positively predicts AU (Liu et al., 2023; Liu & Ma, 2023). While these studies have examined the relationships among TAM constructs in the context of GenAI use in EFL learning, few have

explored how EFL learners perceive GenAI from the perspective of these constructs. Investigating students' perceptions through the lens of TAM may offer valuable pedagogical insights into the strengths and limitations of implementing GenAI in EFL teaching and learning.

1.3 Research Purpose

Therefore, the purpose of this study is to gain insights that support the integration of GenAI into EFL teaching and learning by qualitatively examining learners' perceptions through the lens of TAM constructs. Specifically, this study examines learners who studied AI literacy in the EFL context. It also considers how the frequency of GenAI use influences learners' perceptions. This study is guided by the following research questions:

RQ1: How do EFL learners who studied AI literacy in the EFL context perceive the use of GenAI, including perceptions that align with or extend beyond the constructs of TAM?

RQ2: How does the frequency of GenAI use influence EFL learners' perceptions of GenAI, as interpreted through the TAM framework?

2. Methodology

2.1 Participants

This study was conducted at a private university located in eastern Japan. The participants were third- and fourth-year Japanese university students majoring in English who were enrolled in the course described in the *Procedure* section. Data were collected from the final reports submitted by the participants at the end of the course. Of the 43 reports submitted, two were excluded from the analysis because they did not sufficiently describe the use of GenAI. As a result, 41 reports were included in the analysis.

2.2 Instruments

In the pre-survey, participants were asked demographic questions, including their year in school, gender, and frequency of AI use. Frequency of AI use was measured using a self-reported five-point Likert scale ranging from 1 (Never) to 5 (Always), following the scale used by Chan and Hu (2023).

2.3 Procedure

The program consisted of four 100-minute sessions (see Table 1), conducted during the second half of a 14-week course during the fall semester of the 2024 academic year. The aim of the program was to develop students' AI literacy in the context of EFL learning by fostering their understanding of GenAI's characteristics and mechanisms—including its strengths, limitations, and ethical and safety considerations—and to promote the effective use of GenAI in their English studies.

In the second and third sessions, students were assigned follow-up tasks that required them to actively use GenAI for EFL-related activities. They were encouraged to make extensive use of GenAI tools in their English learning. Students applied GenAI for various tasks, such as sentence correction, grammar checking, and vocabulary test creation.

Before the program began, a pre-survey was administered. After the completion of the four sessions, students responded to the following two prompts as part of their final reports:

- What were your impressions of using GenAI in your English learning? Please describe any benefits and drawbacks you experienced, including specific examples.
- Do you intend to continue using GenAI in your English learning? Please explain your reasons in detail.

Students were informed of the study's purpose, and that anonymized data might be used for research purposes prior to completing the survey and report. They were also assured

that participation was voluntary and that non-participation would not affect their grades. Regarding the report, students who did not wish to participate were instructed to indicate their refusal in the report or to contact the instructor via email.

Table 1. *Overview of the Program*

Session	Topics and Activities
Week 1	Types of generative AI; how ChatGPT generates text; exploring ChatGPT (e.g., investigating functions, creating an account, and using it freely)
Week 2	Comparing GenAI tools; introduction of prompts for English learning using ChatGPT (e.g., comparing outputs from different GenAI tools; trying sample prompts provided by the instructor, including speaking practice, sentence correction, grammar checking, and vocabulary test creation)
Week 3	How to create effective prompts for English learning (e.g., sharing follow-up tasks, analyzing good/bad prompts, creating and testing prompts)
Week 4	Ethical and safety issues in GenAI use (e.g., sharing follow-up tasks, discussing ethical and safety concerns related to using GenAI)

2.4 Data Analysis

To investigate RQ1, content analysis was conducted using students' reports from the perspective of TAM. First, each report was segmented into individual meaning-preserving sentences, which were then classified according to the revised definitions of TAM constructs proposed by Liu and Ma (2023) to assess EFL learners' behavioral use of ChatGPT. This study further elaborated on their framework by incorporating additional details to better suit the research context, considering both positive and negative aspects (see Table 2). For example, the sentence "I plan to continue using GenAI for foreign language learning. The reason is that GenAI is effective in reducing study time, which is a great help in a busy student life" was divided into two parts: the first sentence and the second sentence. These were then categorized individually as BI for the former sentence and PU for the latter sentence, respectively. The first author initially categorized all segmented sentences, and the second author, who has expertise in English education and educational psychology, independently classified five reports (12.2% of the total) using the same segmented data. Cohen's kappa coefficients were calculated to assess inter-rater reliability, and the mean kappa value indicated an acceptable level of agreement (κ = .66). When discrepancies occurred between the two authors, they discussed the differences until reaching a consensus. The first author then revised the initial classifications where necessary, based on these discussions and with reference to the TAM definitions.

Table 2. *Definitions of the TAM constructs*

TAM Constructs	Definitions
Perceived Ease of Use (PEU)	The extent to which a learner perceives that using GenAI for English learning requires little effort (Positive) or substantial effort (Negative).
Perceived Usefulness (PU)	The extent to which a learner perceives GenAI as highly useful and as facilitating their English learning (Positive) or as not useful and not contributing to their English learning (Negative).
Attitude (AT)	The extent to which a learner is interested in using GenAI for English learning and evaluates its use positively (Positive) or evaluates the use of GenAI for English learning negatively (Negative).
Behavioral Intention (BI)	The extent to which a learner intends to use GenAI for English learning (Positive) or intends not to use it (Negative).
Actual Use (AU)	The extent to which a learner autonomously uses GenAI in their English learning (Positive) or does not use it (Negative).

Finally, the first author inductively grouped sentences with similar meanings within each TAM

construct and labeled them as subcategories.

For RQ2, Fisher's exact test was conducted to compare the number of students whose responses included sentences falling into each subcategory between low- and high-frequency GenAI use groups. Students who selected 1 to 3 on the pre-survey item measuring AI use frequency were categorized as the low-frequency group (n = 15), and those who selected 4 or 5 as the high-frequency group (n = 23). Of the 41 participants, three did not report their frequency of AI use and were therefore excluded from the analysis. The test was conducted using js-STAR XR+ (release 2.1.3, Japanese version).

3. Result

To explore RQ1, results of qualitative analysis of learners' perceptions based on TAM constructs are discussed. For RQ2, differences of subcategories between the low- and high-frequency groups are compared.

3.1 Learners' Perceptions of GenAI Use in EFL Learning

Table 3 presents the subcategories of PEU. Four subcategories were identified, encompassing both positive and negative postures, with a total of 32 sentences: 19 positive and 13 negative. The positive subcategories reflected students' experiences of ease in terms of accessibility and the conversational format of GenAI. In contrast, the negative subcategories highlighted difficulties with generating intended outputs and the complexity of prompt creation.

Table 4 shows the subcategories of PU, which had the highest number of categorized sentences. Seventeen subcategories were identified, encompassing both positive and negative postures, with a total of 283 sentences: 225 positive and 58 negative. Students perceived GenAI as functionally useful, particularly for receiving immediate feedback and enabling personalized learning. They also regarded GenAI as a valuable tool for supporting the development of English language skills, including reading, writing, speaking, and listening. In addition, students used it as a conversation partner and as a tutor for suggesting corrections and improving the grammar in their English compositions. However, they also experienced output errors and expressed concerns about incorrect or unnatural outputs in both spoken and written forms.

Table 5 outlines the subcategories of AT. Eleven subcategories were identified, encompassing critical, positive, and negative postures, with a total of 130 sentences: 108 critical, 21 positive, and one negative. Critical responses reflected thoughtful consideration regarding the use of GenAI, rather than clearly positive or negative views. These responses revealed students' awareness of ethical and safety concerns, accuracy issues, and the risks of over-reliance. Positive responses described GenAI as a learning partner and noted that it enhances motivation through immediate feedback. The sole negative response expressed a sense of guilt about using GenAI for English learning.

Table 6 presents the subcategories of BI. Three subcategories were identified, encompassing positive, critical, and negative postures, with a total of 72 sentences: 60 positive, five critical, and seven negative. Of the sentences categorized under the BI construct, 83.3% expressed a willingness to continue using GenAI, while 9.7% indicated reluctance.

Table 7 presents the subcategories of AU. Two subcategories were identified, encompassing positive, and negative postures, with a total of three sentences: two positive and one negative. Although few sentences were categorized here, they indicated both active use and non-use of GenAI in EFL learning.

Table 8 shows the subcategories beyond the TAM constructs. Two subcategories were identified, encompassing both critical and positive postures, with a total of 19 sentences: 14 critical and five positive. One major theme, reflecting a critical posture, was the selective use of GenAI, in which students described the importance of determining which parts of the learning process should involve GenAI and which should be conducted through other methods. Some students also expressed expectations for technological advancement to improve the functionality and accuracy of GenAI in the future.

Table 3. *Subcategory of Perceived Ease of Use (PEU)*

Subcategory	Posture	Frequency	Excerpt
Accessibility anytime anywhere	Pos.	13	“I can practice as much as I want, whenever I want, without worrying about time or the other person’s availability.”
Ease of use via conversational input	Pos.	6	“Because it (GenAI) is in a conversational format, I can respond to the answers I receive, and the replies come back as if continuing a conversation.”
Unintended output	Neg.	12	“When I asked for listening advice, GenAI gave general suggestions like watching subtitled movies, but not specific feedback based on my level or pronunciation issues.”
Complexity of prompt creation	Neg.	1	“To get responses close to what I want, I need to include a lot of information in the prompt.”

Note. Pos. = positive; Neg. = negative (gray highlight). Parentheses added by the author. Excerpts were translated from Japanese student reports by the author.

Table 4. *Subcategory of Perceived Usefulness (PU)*

Subcategory	Posture	Frequency	Excerpt
Immediacy and Efficiency	Pos.	36	“It’s helpful that AI provides instant feedback and corrections, allowing me to resolve questions on the spot.”
Personalized and Goal-Oriented Use	Pos.	30	“Since it (GenAI) suggests English expressions tailored to my level and learning goals, it (GenAI) allows for more practical learning.”
Vocabulary and Expression Enhancement	Pos.	28	“It (GenAI) also suggested alternative grammar and expressions, which provided a good opportunity to learn English phrases I wouldn’t have come up with on my own.”
Writing Correction and Grammar Improvement	Pos.	27	“When I wrote an English composition, it (GenAI) pointed out grammatical and vocabulary mistakes, which helped me revise my writing to sound more natural.”
Conversation Practice	Pos.	24	"In particular, for conversation practice, it (GenAI) allows for practical training by setting specific situations and engaging in dialogue-based learning."
Quiz and Material Generation	Pos.	23	"When I asked GenAI to create TOEIC questions and specified the part, format, score range, and number of questions to practice, I found that the output was nearly identical to the actual test."
General Responses	Pos.	20	“GenAI is a highly beneficial tool for foreign language learning and using it appropriately can enhance the quality of learning.”
Importance of Prompts	Pos.	12	"Customized prompts, such as table-formatted corrections, made learning more effective."
Idea Generation	Pos.	6	"ChatGPT is useful for generating ideas and sometimes offers suggestions from perspectives I hadn’t considered."
Well-Structured Output	Pos.	6	“It (GenAI) created a table that summarized the meanings, usage, example sentences, and differences of each word.”
Citation & Source Suggestion	Pos.	4	“Since many of the responses are search-based, they are easy to understand with specific examples and sources.”
Translation & Summary	Pos.	4	“GenAI also provided answers about slang, which machine translation could never handle.”
Listening Skill Improvement	Pos.	3	“By entering English text and using the text-to-speech function, I can learn correct pronunciation and intonation.”
Multilingual Support	Pos.	2	“I also found it impressive that GenAI supports multiple languages and can explain the nuances between them.”
Output errors and bias	Neg.	30	“When I wrote long texts, there were sometimes grammatically incorrect parts or expressions that sounded unnatural in meaning.”
Unnatural Output (Speaking)	Neg.	16	“Since the conversation partner is AI, I noticed a drawback that its responses sometimes became repetitive and emotionally flat during interactions.”

Unnatural Output (General)	Neg.	12	“For expressions involving humor or emotion, the suggestions made by AI were sometimes unnatural or did not fit the context.”

Note. Pos. = positive; Neg. = negative (gray highlight). Parentheses added by the author. Excerpts were translated from Japanese student reports by the author.

Table 5. *Subcategory of Attitude (AT)*

Subcategory	Posture	Frequency	Excerpt
GenAI as a supportive tool for humans	Critical	37	“I feel that by using AI as a supplementary tool, I can continue learning while compensating for its limitations.”
Over-reliance and Cognitive Risk	Critical	35	"Relying too much on AI may undermine the learner’s ability to think and express ideas independently."
Verifying information reliability	Critical	20	"Therefore, I felt it was important not to use AI-generated text as it is, but to carefully review it myself."
Understanding GenAI mechanisms	Critical	8	"Since GenAI produces output based on past information, we must understand how it works in order to effectively apply it to language learning."
Security and safety	Critical	8	"Once personal information is entered into GenAI, it may be learned by the system and could lead to a privacy breach if accessed by a third party."
GenAI as a learning partner	Pos.	7	"I hope to use AI not just as a supplementary tool, but as a partner that supports my learning, and to establish a well-balanced approach to language study."
Learning motivation	Pos.	5	"By receiving quick responses, I was able to resolve my questions immediately, which helped me stay motivated in my learning."
Free access	Pos.	4	"There are many advantages, such as being able to do a fair amount without spending any money."
No human consideration needed	Pos.	3	"Because it (GenAI) has no emotions, I can use it without worrying about what others think."
Being supported by GenAI	Pos.	2	"Looking back, I realized that I have often been supported by GenAI in my foreign language learning."
GenAI use guilt	Neg.	1	"The sense of guilt I feel about using it frequently has not changed since before taking the course."

Note. Pos. = positive; Neg. = negative (gray highlight). Parentheses added by the author. Excerpts were translated from Japanese student reports by the author.

Table 6. *Subcategory of Behavioral Intention (BI)*

Subcategory	Posture	Frequency	Excerpt
Willingness to Use	Pos.	60	"Therefore, I would like to continue actively using GenAI in my foreign language learning."
Cautious Use	Critical	5	"I would like to use it appropriately without overreliance, while fully recognizing its limitations."
Reluctance to Use	Neg.	7	"While I benefited from the course, I am personally not inclined to actively use GenAI in my future language learning."

Note. Pos. = positive; Neg. = negative (gray highlight). Excerpts were translated from Japanese student reports by the author.

Table 7. *Subcategory of Actual Use (AU)*

Subcategory	Posture	Frequency	Excerpt
Using	Pos.	2	"This course served as a turning point for me to begin actively using generative AI in my English learning."

Not Using	Neg.	1	"Since ChatGPT is rarely permitted in university classes, I did not use it before the course."

Note. Pos. = positive; Neg. = negative (gray highlight). Excerpts were translated from Japanese student reports by the author.

Table 8. *Subcategory Beyond the Scope of TAM Constructs*

Subcategory	Posture	Frequency	Excerpt
Selective Use of GenAI (Delegation vs. Other Methods)	Critical	14	"I felt that if learners are not consciously aware of which parts of the learning process they are delegating to GenAI, it ceases to be meaningful learning and simply becomes a shortcut."
Expectations for Technological Advancement	Pos.	5	"I believe that as GenAI continues to improve in accuracy and functionality, current issues such as the provision of inaccurate information and incorrect answers are likely to be resolved."

Note. Pos. = positive. Excerpts were translated from Japanese student reports by the author.

3.2 Frequency of GenAI Use and EFL Learners' Perceptions of GenAI

To examine differences in subcategories between low- and high-frequency GenAI use groups, Fisher's exact test was conducted. Significant differences were found in two BI subcategories: *Willingness to Use* and *Reluctance to Use*. No significant differences were observed in the remaining subcategories, including those under PEU, PU, AT, AU, and *Cautious Use* in BI. In the *Willingness to Use* subcategory, 11 of 15 students in the low-frequency group and all 23 students in the high-frequency group provided relevant responses (p = .0185, Φ = .337). In contrast, *Reluctance to Use* was expressed by 4 of 15 students in the low-frequency group, compared to none in the high-frequency group (p = .0185, Φ = .337). These results suggest that prior GenAI usage frequency significantly influenced students' behavioral intentions.

4. Discussion

Based on RQ1, this study examined how learners who studied AI literacy in the EFL context perceive GenAI for English learning, using TAM constructs. Three key findings emerged from the analysis.

First, students experienced a variety of functional benefits from using GenAI in their English learning, including not only personalized and immediate learning support highlighted in prior studies, but also support for all four English skills: speaking, writing, reading, and listening (see Table 4). This may help explain why most students expressed a positive intention to use GenAI in their English learning within the BI construct, despite perceiving both positive and negative aspects in the PEU and PU constructs. This suggests that although students encountered challenges in using GenAI, they were still willing to continue its use—possibly because they perceived the benefits as outweighing the drawbacks. This finding differs slightly from previous studies, which reported that AI tools are predominantly used for translation and grammar correction in academic contexts (Hossain et al., 2025). Hossain et al. (2025) pointed out that this was because students tend to use AI as a translator rather than as a tool to support their writing. These findings suggest the need for pedagogical intervention to guide learners in using GenAI as a tool for learning support rather than as a means of academic dishonesty. This study contributes to the existing literature by demonstrating that, when appropriately guided, learners can integrate GenAI across diverse aspects of English learning and recognize it as an effective tool for supporting language development.

Second, 108 out of 130 sentences, which were classified into five subcategories within the AT construct, were associated with critical perspectives. These subcategories include human-AI interaction, concerns about over-reliance, ethical and moral considerations, security and safety issues, and the importance of understanding GenAI's mechanisms. Hossain et al.

(2025) reported that while Turkish university students were familiar with GenAI, they lacked technical proficiency and a clear understanding of its underlying mechanisms. Their study suggested that such understanding cannot be acquired through use alone. The findings of the current study indicate that developing an awareness of how GenAI works, including both its benefits and limitations, may help nurture a more critical mindset among students. Therefore, explicitly addressing these aspects in instruction may help prevent over-reliance and foster ethical and reflective use of GenAI in English language learning.

Finally, this study identified two subcategories that did not fall within the traditional TAM constructs: *Selective Use of GenAI* and *Expectations for Technical Advancement*. While Section 1.2 outlined the internal constructs of TAM, the model also allows for external variables that influence these internal factors. Previous studies have proposed various external variables, such as emotions, motivational factors, social influence, and facilitating conditions (i.e., the perceived availability of necessary resources) (Liu & Wu, 2025). The subcategory *Expectations for Technical Advancement* reflects learners' anticipation of improved GenAI functionality as a potential external factor influencing future acceptance. In contrast, *Selective Use of GenAI* may appear to fall under BI, as it involves learners' decisions about when and how to use GenAI. However, this subcategory represents a more nuanced and critical intention—not merely a willingness or reluctance to use GenAI, but a deliberate effort to determine which aspects of learning should involve GenAI and which should not. This reflective stance suggests the emergence of learner agency in balancing technological support with active engagement, thereby promoting more effective language learning. It also aligns with one of the key components of GenAI literacy, namely *pragmatic understanding*, as proposed by Zhao et al. (2024). According to Zhao et al. (2024), *pragmatic understanding* refers to an individual's ability to effectively use GenAI by selecting the appropriate tool for a given task and applying it efficiently. These findings suggest that, in the context of GenAI-supported language learning, the conceptual scope of BI may need to be extended to incorporate this critical mindset.

For RQ2, the results showed that both low- and high-frequency groups perceived GenAI as equally useful and easy to use, and they demonstrated similar attitudes toward its use in English learning. However, the low-frequency group exhibited significantly less willingness to use GenAI compared to the high-frequency group. This suggests that, even though both groups perceived the benefits and drawbacks of GenAI similarly throughout the program, students with less prior experience were still more reluctant to adopt GenAI use after the program. Some students attributed their hesitation to feelings of guilt or concerns that GenAI might be "too effective," potentially undermining their own learning efforts. These findings indicate that regardless of perceived usefulness, some learners may selectively avoid using GenAI due to psychological or ethical reservations.

5. Conclusion

This study examined how EFL learners who studied AI literacy in the EFL context perceive the use of GenAI through the lens of TAM, and explored how the frequency of GenAI use influenced their perceptions. The findings demonstrated that participation in the AI literacy program enabled students to experience a variety of functional benefits and challenges associated with GenAI, while also fostering a critical mindset toward its use in English learning. These results highlight the need for pedagogical interventions that support learners in using GenAI as an effective learning tool and in developing an understanding of its underlying mechanisms, thereby promoting ethical and reflective engagement. Furthermore, the study suggests that in the context of GenAI-supported language learning, the conceptual scope of the TAM's BI construct may need to be extended to incorporate learners' critical and selective decision-making. Future studies may explore the relationships among the TAM constructs, including an extended definition of BI that incorporates critical and reflective dimensions of technology use. The primary limitation of this study is its small sample size, drawn from a single private university in Japan. Therefore, the findings may have limited generalizability to broader EFL populations and educational contexts.

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