

## AI Acceptance and Future Readiness among Postgraduate English Students: Evidence from Online Learning

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### ABSTRACT

**Keywords:** AI in education, Technology acceptance, Learner readiness, online learning

The purpose of this study is to investigate the adoption of artificial intelligence (AI) tools among postgraduate students when they learn online in English and how their experiences impact the use of AI in the future and their readiness to learn independently. Although AI is becoming more and more integrated in the education sector, empirical findings that specifically target postgraduate English learners are sparse. To fill this gap, a mixed-methods approach combining a quantitative survey ( 91 postgraduate students ) through the use of a structured questionnaire and qualitative semi-structured interviews with postgraduate students was carried out to examine relationships existing between perceived benefits, perceived ease of use, AI acceptance, and future readiness. The results indicated high perceived value and acceptance, moderate readiness, and low perceived difficulty. The benefits and ease of use were found to play a significant role in predicting AI acceptance and, subsequently the effect of AI acceptance on the likelihood of a learner to use AI in the future and his willingness to use AI in a more autonomous manner. These findings indicate the effectiveness of positive learning experiences in facilitating the transition of postgraduate learners to long-term and self-sufficient interaction with AI-mediated learning.

### Introduction

The recent integration of artificial intelligence (AI) is transforming pedagogical practices, especially in digitally mediated higher education settings. Technologies such as intelligent tutoring systems and generative language models are increasingly utilized to foster personalized learning and provide instantaneous feedback. These developments in English language teaching (ELT) extend Computer-Assisted Language Learning (CALL), which focuses on using technology to promote interaction, feedback, and learner control (Chapelle, 2001). Furthermore, AI is increasingly viewed as a viable solution to persistent challenges in language teaching, such as the limitations of individualized attention in traditional classroom environments.

Recent literature highlights the growing popularity of generative AI as an essential educational tool in higher education, offering immediate linguistic input and writing support (Baig and Yadegaridehkordi, 2024; Teng, 2024). While scholars suggest that AI integration enhances learning effectiveness, current discourse remains balanced by significant pedagogical and ethical concerns (Batista et al., 2024; Kasneci et al., 2023). However, much existing research examines AI adoption primarily through technology acceptance frameworks, such as the Technology Acceptance Model (TAM) or the Unified Theory of Acceptance and Use of Technology (UTAUT) (Davis, 1989; Venkatesh et al., 2003). While these frameworks offer valuable insights into learner attitudes, they often prioritize adoption outcomes over the intricate learning processes involved in AI integration.

In applied linguistics, language development depends on meaningful engagement, learner agency, and sustained interaction with resources. The effectiveness of digital tools is intrinsically linked to a learner's capacity for self-regulation and critical assessment of technological assistance (Zimmerman, 2002). As a result, AI tools can foster learner autonomy and self-directed learning when managed effectively (Mekheimer, 2025). Despite these advancements, a significant gap remains in the literature regarding postgraduate populations. Most empirical studies focus on undergraduate students or general higher education contexts (Chan and Hu, 2023; Barrett and Pack, 2023). Given the distinct academic requirements and research-intensive nature of postgraduate study, it is essential to investigate how this group perceives and utilizes AI for its pedagogical value. This group has a particular perception of AI and its use, so it is necessary to understand their views and their attempts to apply AI to determine its pedagogical value.

Finally, meaningful AI application requires developing a strategic and critical skill set to navigate concerns about reliability and academic honesty (Sullivan et al., 2023). Nonetheless, most studies rely on international satisfaction or intention measures, which provide little information about whether learners are willing to use AI independently in future learning settings. Together, these constraints signal the need for a context- and process-based understanding of AI-mediated learning among postgraduate students studying online ELT. Rather than considering technology acceptance as the only measure of effectiveness, it is vital to investigate how learners evaluate the value and usefulness of AI and the effects of such evaluations on their willingness to use it autonomously and in the future. This knowledge can inform pedagogical processes and assist in justifying the productive use of AI in postgraduate language learning.

## Literature review

This section synthesizes theoretical and empirical literature on AI-based online English language learning. It matches the pedagogical role of artificial intelligence in online English Language Teaching (ELT), evaluates learner acceptance through the Technology Acceptance Model (TAM), and explores the interaction between future readiness and autonomous use of AI. Crucially, this review examines the autonomous use of AI to understand how self-directed learners leverage these tools to drive their own linguistic development outside formal constraints. This synthesis positions the study within the specific context of Vietnamese postgraduates, an area where empirical evidence remains scarce.

### *AI in Online ELT*

Recent developments in artificial intelligence (AI) have significantly altered the landscape of online learning and online ELT. While online learning encompasses the broader acquisition of

knowledge via digital platforms, online ELT specifically focuses on technology-mediated language-learning environments. Within online ELT, AI-based solutions such as automated writing assistants, chatbots, and language generators can provide learners with real-time feedback and personalized assistance, offering a dynamic alternative to traditional language training. This technological affordance is particularly valuable in web-based learning environments, where a historical lack of real-time interaction and sluggish response times have frequently hindered learner engagement.

Recent studies suggest that AI tools can be deployed strategically to increase learner engagement, expand opportunities for independent language practice, and support self-regulated learning. Generative AI systems allow learners to receive instant explanations, create tailored context examples, and acquire language interactively and nonlinearly (Baig and Yadegaridehkordi, 2024; Teng, 2024). Systematic reviews also demonstrate the capacity of AI to enhance learning effectiveness and academic support, though these benefits must be balanced against pedagogical, ethical, and reliability issues (Batista et al., 2024; Kasneci et al., 2023). Ultimately, the educational value of AI is determined not only by technological capability but also by the learners' inner perceptions and behavioral readiness. Consequently, understanding learner acceptance has become a foundational component in assessing the viability of AI-assisted language methodologies.

#### *Technology Acceptance Model (TAM)*

The Technology Acceptance Model (TAM) serves as a primary conceptual framework to comprehend the adoption of educational technologies among users. The model fundamentally asserts that the perceived usefulness and perceived ease of use are the two major core constructs that determine an individual's overall attitude and subsequent behavioral intention towards a technology (Davis, 1989). Within this framework, perceived usefulness is defined as the degree to which a learner believes a specific tool will improve their overall academic performance, while perceived ease of use represents the degree of cognitive effort believed to be involved in operating the system.

TAM and its theoretical extensions, such as UTAUT, have been widely applied to evaluate AI and digital learning tools in higher education. Substantial empirical evidence shows that learners who perceive AI tools as highly useful for improving performance and easy to operate develop more positive attitudes and stronger intentions to use them long-term (Venkatesh et al., 2003; Venkatesh et al., 2012). In language learning contexts, perceived usefulness aligns directly with the quality of automated feedback, expanded practice opportunities, and increased learning efficiency. Conversely, Perceived Ease of Use strongly relates to increased learner confidence and faster adaptation to digital interfaces. Nevertheless, most research using these TAM constructs has focused on general higher education groups, leaving a distinct gap in the literature regarding advanced language learners in a specialized academic context.

#### *Future Readiness and Autonomous AI Use*

Beyond initial technology acceptance, recent scholarship has increasingly focused on learners' preparedness to utilize AI in their future endeavors. Future readiness can be conceptualized as a combination of learner confidence, perceived long-term value, and the willingness to incorporate AI into ongoing academic or professional processes. In a rapidly evolving digital landscape, this preparedness reflects not only a contemporary mindset but also the capacity for sustained, long-term engagement with emerging technologies.

The studies indicate that the perceived technological effectiveness and positive learning experiences are directly associated with more favorable, future-oriented perceptions of AI's role in academic and professional growth (Chan & Hu, 2023). In language learning settings, AI

tools are also closely linked to higher levels of learner autonomy, enabling students to independently address feedback and actively regulate their own learning process (Mekheimer, 2025).

Consequently, the autonomous, stand-alone application of these tools outside formal coursework serves as a critical behavioral measure of future readiness. Voluntary use of AI tools beyond formal classroom constraints suggests these technologies have been internalized as personalized instruments for lifelong learning. Despite these theoretical connections, empirical research remains scarce on the specific relationships among technology acceptance, future readiness, and autonomous use—particularly among high-achieving academic populations.

### *Postgraduate English Learners in the Vietnamese Context*

Online and blended education has accelerated the integration of digital technologies across higher education institutions in Vietnam. In this environment, AI applications are increasingly adopted as an auxiliary tool to support academic writing, language practice, and information retrieval (Chan and Hu, 2023; Barrett and Pack, 2023). Postgraduate English learners represent a distinct population characterized by advanced academic literacy requirements, research-based tasks, and heightened expectations for self-regulated learning. Notably, a substantial majority of Master's students are either practicing teachers or future educators, and they need to consider not only how useful AI is now but also whether it will be helpful in the future as a pedagogical tool or not. These features underscore the importance of autonomy and self-regulation in postgraduate learning settings (Zimmerman, 2002).

Although empirical studies on AI in higher education have expanded significantly over the past several years, most of this literature still focuses on general undergraduate students (Baig and Yadegaridehkordi, 2024; Batista et al., 2024). Similarly, most research conducted within the Vietnamese context focuses on undergraduate learners or non-language majors, leaving postgraduate English students largely marginalized in current discussions. Given their specialized academic objectives and strong reliance on self-directed learning, this cohort may show distinct patterns of technology acceptance and AI use compared with other learner groups.

To address these gaps, this paper examines AI tool adoption among postgraduate English learners, specifically how perceptions of usefulness and ease of use predict future readiness and autonomous AI use. By examining this specialized cohort within the Vietnamese higher education landscape, this research provides empirical evidence regarding the critical factors that either facilitate or hinder immediate and independent AI integration in postgraduate language acquisition.

### *Research Questions*

To address the purpose of the study, the following research questions were formulated:

RQ1. How do postgraduate students' perceptions of AI usefulness and ease of use influence their acceptance of AI tools in online English learning?

RQ2. To what extent does AI acceptance predict students' readiness for future AI use, and how does this readiness subsequently drive their independent AI use outside the classroom?

Based on the Technology Acceptance Model (TAM) and previous studies on AI-supported learning, the study developed a research framework to examine the relationships among perceived usefulness, perceived ease of use, AI acceptance, and future readiness. The following hypotheses were proposed:

H1. Perceived usefulness of AI tools positively influences postgraduate students' acceptance of AI in online English learning.

H2. Perceived ease of use, reflected in students' reduced difficulty and increased comfort when using AI tools, positively influences AI acceptance.

H3. AI acceptance positively predicts postgraduate students' readiness for future AI-supported learning.

H4. AI readiness is positively associated with students' independent use of AI tools beyond classroom requirements.

## Methods

This section outlines the methodology used to study postgraduate students' adoption of AI tools and their willingness to use AI in the future for online English learning. It describes the research design, study population, instrument development, data collection methods, and data analysis. These steps ensured consistency with the research questions and provided valid evidence to investigate the associations among the main constructs of the proposed model.

### *Pedagogical Setting & Participants*

The study was conducted within the Master of Arts in English (MAE) programs at several higher education institutions in Ho Chi Minh City, Vietnam. These postgraduate courses cater to in-service teachers, future educators, and language professionals seeking advanced academic and pedagogical training. These programs are largely delivered through online or blended learning modalities, *requiring* a high degree of learner autonomy. Students regularly integrate artificial intelligence (AI) applications into their self-directed academic routines, specifically utilizing these digital tools for academic writing, reading comprehension, lesson planning, and research activities.

A total of 91 postgraduate students currently enrolled in the MAE programs participated in the quantitative phase of this study. The study used a convenience sampling strategy, leveraging institutional networks and online academic channels to recruit active participants. Crucially, all participants had extensive prior experience with technology-mediated instruction and a clear understanding of digital tool integration. Given their intensive academic mandates, this cohort represents an ideal population for investigating AI-supported autonomous learning and future technological readiness. For the subsequent qualitative phase, we purposively selected six postgraduate students for follow-up semi-structured interviews. The selection criteria targeted individuals with distinct profiles in experience, confidence, and self-regulation in AI use, ensuring a diverse range of qualitative insights into AI-assisted language learning experiences. Participation was entirely voluntary, anonymous, and free from coercion, and all gathered data were used strictly for research purposes.

### *Design of the Study*

The study used an explanatory mixed-methods design with quantitative and qualitative approaches. This study used a quantitative approach to explore the relationship between the constructs of the extended Technology Acceptance Model (TAM) and to investigate postgraduate students' perceptions of English learning through AI. The study then gathered qualitative data from a sample of respondents through semi-structured interviews to provide further insight into the statistical results. Theoretically, the study was based on the extended

Technology Acceptance Model (TAM) incorporating AI readiness and autonomous AI application. Within this context, the study examined the acceptance of AI tools, future readiness, and independent AI use. For the quantitative component, the study used a cross-sectional correlational design. The analyses focused on the postgraduate students' general attitudes toward AI acceptance, perceived usefulness, perceived ease of use, and future readiness. The study then analyzed the relationships among the variables using structural path analysis and tested the hypotheses. To ensure complete alignment with the study's research questions and underlying hypotheses, the research addressed the following specific objectives:

- **To evaluate** the structural effects of perceived usefulness and perceived ease of use on postgraduate English learners' acceptance of AI tools within the online learning environment (RQ1 / H1, H2).
- **To investigate** the extent to which this initial AI acceptance predicts learners' readiness for future AI-supported learning, and how such readiness subsequently drives their independent and autonomous use of AI tools beyond formal classroom requirements (RQ2 / H3, H4).

The research model was proposed to be a sequential model where perceived usefulness and perceived ease of use act as the predictor variables for AI acceptance, and AI acceptance acts as a predictor variable for future readiness, which subsequently drives the autonomous use of AI. While rooted in the original framework, the study extends the TAM model *to focus on learners' readiness to engage in sustained, self-directed learning experiences with AI support*. It was a natural learning environment with no experimental manipulation. Participants shared their experiences and perceptions of using AI tools and what they learned from them in the context of online English learning. This non-experimental design enabled the researcher to investigate naturally occurring patterns of AI acceptance and autonomous learning among postgraduate students.

### *Data Collection*

Data were collected over 8 months using a Google Form questionnaire. The survey link was sent via email and postgraduate academic networks to contact potential participants. Participants were given an informed consent statement explaining the purpose of the study, that participation was voluntary, and that anonymity and confidentiality would be assured before completing the questionnaire. Participants agreed to the consent statement and then proceeded with the survey. The questionnaire had 30 items with responses ranging from 1 (strongly disagree) to 5 (strongly agree). These items were developed from concepts in the Technology Acceptance Model (TAM) and categorized into three conceptual areas: perceived usefulness and ease of use, AI acceptance, and future readiness for independent AI use. To support the quantitative results, we conducted semi-structured interviews with six Master's students.

The interviews aimed to provide deeper insight into learners' experiences, perceived benefits, challenges, learning autonomy, and plans for using AI to learn English in the future. The interviews lasted about 15-20 minutes and were flexible, allowing interviewees to expand on their experiences when asked questions. With participants' consent, interview responses were recorded and transcribed for analysis. Table 1 presents the organization of questionnaire items by TAM-related themes and constructs.

Table 1.

## Questionnaire Themes and Item Distribution

| Theme                                    | TAM Construct                     | Item Numbers     | Content Focus                                                                                                         |
|------------------------------------------|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------|
| Theme 1: AI Acceptance                   | Perceived Usefulness → Attitude   | Q1–Q10, Q28, Q29 | Interest, motivation, engagement, learning effectiveness, confidence, satisfaction, efficiency                        |
| Theme 2: Adaptation and Ease of Use      | Perceived Ease of Use             | Q11–Q23          | Initial difficulty, technical challenges, need for support, reduced confusion, increased comfort over time            |
| Theme 3: Future Readiness and Actual Use | Behavioral Intention → Actual Use | Q24–Q27, Q30     | Independent use outside class, learning autonomy, identifying weaknesses, recommendation, perceived future importance |

*Data Analysis*

SPSS and AMOS were used to analyze the quantitative data. Descriptive statistics were used to find the overall level of the postgraduate students' acceptance of AI, perceived benefits, perceived difficulty, and future readiness. Cronbach's alpha was used to assess the internal consistency of the measurement scales. Pearson correlation analysis explored relationships among perceived usefulness, perceived ease of use, AI acceptance, and future readiness. To test the predictive power of the variables within the sequential model (RQ1 & RQ2), structural path analysis was then used to explore the impact of perceived usefulness and ease of use on AI acceptance and how AI acceptance subsequently drives future readiness and independent use of AI beyond the classroom. Thematic analysis was used to analyze the qualitative interview data.

The interview transcripts were analyzed in detail to identify patterns and themes in learners' experiences using AI in English learning. The identified themes were then compared with the quantitative data to cross-check and further interpret data from both sources. Several procedural methods were employed to control for common method effects of the self-report data: self-report items were organized into separate thematic sections of the questionnaire, and participation was anonymous and voluntary.

*Methodological Considerations*

To increase the study's rigor and credibility, the researchers considered several methodological issues.

The researchers thoroughly addressed ethical concerns throughout the research process. All participants gave informed consent, and the voluntary nature of the study was explained. The researchers collected answers anonymously to reduce social desirability bias and protect confidentiality. Second, the study relied on self-reported data, which were collected on a single occasion. Therefore, the results reflect participants' perceptions and self-reported experiences, not necessarily actual performance or sustained behavior change. The constructs were clearly distinguished, and the study used a mix of positively and negatively worded items to minimize potential common method bias. Third, despite the relatively small number of interviews for the

qualitative sample, the interviews yielded rich explanatory insights that complemented quantitative findings and added interpretative depth to this study.

The overall credibility of the findings was also enhanced by using qualitative and quantitative data to complement each other in a methodological triangulation. Lastly, the findings might not be generalizable to other educational settings or students because of convenience sampling and the focus on postgraduate English students in Ho Chi Minh City. Therefore, interpret results with caution outside the context of the current study.

## Results/Findings

The results are presented in an integrated analytical progression that combines statistical verification with qualitative insights to explore postgraduate learners' perceptions, experiences, and adaptation to AI in English learning. The analysis begins by assessing the overall quality and reliability of the data, then moves on to examining the perceptions of learners regarding AI application at two levels: descriptive and construct. The relationships among the key variables extracted from the extended Technology Acceptance Model (TAM), such as the perceived benefits, perceived difficulty, and AI acceptance, are then examined by structural path analysis to investigate how these variables relate to learners' future readiness in relation to AI-supported learning. Last, the quantitative results are discussed and triangulated simultaneously with direct quotations from the semi-structured interviews conducted with the learners.

### *Preliminary Analysis and Reliability*

The total number of postgraduate students who completed the online questionnaire was 91. The data were pre-processed before the principal analyses, including checking for completeness, reliability, and suitability for statistical testing. No missing data were identified, as participants had to complete the online questionnaire. There were no invalid or extreme cases in all item responses, as the results were within the range of the five-point Likert scale. Initial analyses also indicated good distributional properties for the constructs, which made the data suitable for parametric analyses. Cronbach's alpha was computed to assess the reliability of the measurement scales. All constructs showed good internal consistency (alpha values were between .88 and .94, as shown in Table 1). The outcomes indicate that the questionnaire items had a coherent dimension of learning English with the support of AI throughout. Most importantly, the descriptive results already show that there is something important happening in learners' perceptions. The overall perceived benefits and readiness for the future were high, as evidenced by mean scores of  $M = 3.89$  ( $SD = 0.62$ ) for Perceived Benefits & Acceptance and  $M = 3.94$  ( $SD = 0.58$ ) for Future Readiness & Self-development. Conversely, learners reported comparatively lower perceived challenges and initial difficulties, with a significantly lower mean score of  $M = 2.74$  ( $SD = 0.65$ ). This imbalance showed that while using AI required cognitive and technical adjustments, post-graduates overall perceived it as more enabling than restrictive.

Table 2

*Descriptive Statistics and Reliability of the Main Constructs (N = 91)*

| Construct                                   | Number of Items | Mean (M) | SD   | Cronbach's Alpha |
|---------------------------------------------|-----------------|----------|------|------------------|
| Perceived Benefits & Acceptance             | 15              | 3.89     | 0.62 | .93              |
| Future Readiness & Self-development         | 7               | 3.94     | 0.58 | .90              |
| Perceived Challenges & Initial Difficulties | 8               | 2.74     | 0.65 | .88              |
| Overall Scale                               | 30              | 3.72     | 0.54 | .94              |

Overall, the preliminary findings indicate that the dataset's statistical reliability and meaningfulness for studying postgraduate learners' interactions with AI-supported English learning met the standard.

### *Learners' Perceptions of AI-supported English Learning*

The descriptive results indicate overall positive views on the use of AI in English learning on most of the constructs. Most mean scores surpassed the scale's midpoints, showing participants' positive views on AI's usefulness, availability, and growing importance in their academic pursuits and future career development. The items related to engagement, motivation, and learning effectiveness received the highest ratings. Participants felt that AI tools contributed to their enjoyment of learning, increased active engagement, and positively impacted learning efficiency, as reflected in the high mean scores for AI Acceptance ( $M = 4.18$ ,  $SD = 0.62$ ) and Perceived Benefits ( $M = 4.26$ ,  $SD = 0.58$ ). The high mean score for AI readiness ( $M = 3.89$ ,  $SD = 0.65$ ) was especially noteworthy, indicating that students not only embraced AI as a current educational resource but also considered it a vital aspect of their future academic and professional journeys. However, the results of self-learning also revealed a more complex picture.

While it can be seen that the participants are confident in using AI alone, support dependency is still prominent, with a moderate mean score ( $M = 3.41$ ,  $SD = 0.78$ ). This indicates that the students' autonomy was still limited or dependent and not free. That is, when presented with new tasks or challenging learning experiences, several postgraduate students were still ready to use instructors or peers for help. Likewise, the perceived difficulty had the lowest mean of the constructs ( $M = 2.87$ ,  $SD = 0.83$ ). It is a positive finding that AI tools were not perceived as overwhelming overall, but it does not mean that there were no difficulties.

The results, however, indicate that learners did not face insurmountable challenges in the adoption process, but rather manageable ones. This relative variability within this construct also suggests that the experiences of the students varied according to their digital literacy, confidence, and prior experience with AI technologies.

Table 3

*Construct-level Descriptive Statistics (N = 91)*

| Construct            | Mean | SD   | Interpretation  |
|----------------------|------|------|-----------------|
| AI Acceptance        | 4.18 | 0.62 | High            |
| Perceived Benefits   | 4.26 | 0.58 | Very high       |
| AI Readiness         | 3.89 | 0.65 | Moderately high |
| Support Dependency   | 3.41 | 0.78 | Moderate        |
| Perceived Difficulty | 2.87 | 0.83 | Low–moderate    |

The overall descriptive results indicated that postgraduate learners generally held a positive view of AI, seeing it as a supportive and future-oriented learning tool. However, the findings of high acceptance and moderate support dependency suggest that autonomous learning with AI support still depends on the learner's confidence, technological skills, and pedagogical support.

### *Relationships among Key Constructs*

Pearson correlation analysis and structural path analysis were used to explore relationships between the five main constructs and to assess the factors that predict AI readiness. The correlation results show that there is a clear pattern that aligns with the assumptions of the technology acceptance model (TAM). Perceived Benefits was found to have high positive correlations with AI Acceptance ( $r = .71, p < .01$ ) and AI Readiness ( $r = .68, p < .01$ ). Likewise, the link between AI Readiness and AI Acceptance was found to be positive ( $r = .64, p < .01$ ). The results indicate that the positive attitude towards AI and the confidence in future use of AI were greater among the learners who perceived higher value in learning through AI. The more negative construct, perceived difficulty, showed negative relationships with the more positive constructs.

Furthermore, Perceived Difficulty was found to have a negative correlation with AI Acceptance and AI Readiness, suggesting that technical or cognitive problems could undermine learners' confidence and readiness to use AI for learning. Support Dependency also had negative correlations with the two other constructs (AI Acceptance and AI Readiness), meaning that those who needed a lot of external support had less learning autonomy. An important result that arose from this positive correlation was the positive relationship between Support Dependency and Perceived Difficulty,  $r = .52, p < .01$ . The relationship between this pattern and the need for external guidance suggests that there is a link between technological confidence and learner autonomy, as learners who faced difficulties were more likely to seek external guidance.

Table 4

*Pearson Correlation Matrix among Constructs (N = 91)*

| Construct               | 1      | 2      | 3      | 4     | 5 |
|-------------------------|--------|--------|--------|-------|---|
| 1. AI Acceptance        | 1      |        |        |       |   |
| 2. Perceived Benefits   | .71**  | 1      |        |       |   |
| 3. AI Readiness         | .64**  | .68**  | 1      |       |   |
| 4. Support Dependency   | -.29** | -.25*  | -.33** | 1     |   |
| 5. Perceived Difficulty | -.41** | -.38** | -.45** | .52** | 1 |

\*Note. \*\* $p < .01$ ;  $p < .05$ .

To examine the predictive relationships, a structural path analysis was conducted with AI Readiness as the dependent variable.

Table 5

*Multiple Regression Analysis Predicting AI Readiness (N = 91)*

| Predictor            | B     | SE   | $\beta$ | t     | p      |
|----------------------|-------|------|---------|-------|--------|
| AI Acceptance        | 0.31  | 0.07 | .38     | 4.42  | < .001 |
| Perceived Benefits   | 0.28  | 0.08 | .32     | 3.51  | .001   |
| Support Dependency   | -0.12 | 0.05 | -.18    | -2.40 | .018   |
| Perceived Difficulty | -0.19 | 0.06 | -.26    | -3.17 | .002   |

Model Summary:  $R^2 = .56$ , Adjusted  $R^2 = .54$ ,  $F(4, 86) = 27.45$ ,  $p < .001$ .

The path model accounted for 56% of the variance in AI Readiness ( $R^2 = .56$ ,  $F(4, 86) = 27.45$ ,  $p < .001$ ), which was a substantial amount of variance. AI Acceptance proved to be the strongest predictor ( $\beta = .38$ ,  $t = 4.42$ ,  $p < .001$ ), followed by Perceived Benefits ( $\beta = .32$ ,  $t = 3.51$ ,  $p = .001$ ). The results support the position that positive learning experiences and educational value are key factors in shaping learners' preparedness for future learning with AI. Concurrently, the negative influence of Perceived Difficulty ( $\beta = -.26$ ,  $t = -3.17$ ,  $p = .002$ ) and Support Dependency ( $\beta = -.18$ ,  $t = -2.40$ ,  $p = .018$ ) indicates that readiness for the future use of AI is not only driven by technology enthusiasm. Instead, learners' preparedness is also determined by their ability to manage challenges independently and think critically about the use of AI. This matters because it suggests that a lack of digital literacy and self-regulatory skills can hinder meaningful, autonomous learning even if AI is accepted. Overall, the quantitative results support all four hypotheses and show a consistent trend: perceived usefulness and ease of use positively affect AI acceptance, which in turn boosts learners' future readiness and their autonomous use of AI-supported English learning.

#### *Qualitative Insights from Semi-structured Interviews*

To supplement the quantitative results, I conducted semi-structured interviews with 6 postgraduate students with experience using AI tools (e.g., ChatGPT) in online English learning. The qualitative results provided more in-depth insight into learners' experiences of learning with AI in authentic educational contexts. Three main themes emerged from the analysis: AI as an accessible and personalized learning partner; the development of learner autonomy in AI-supported learning; and the limitations of AI and the continued need for human guidance.

#### *Theme 1: AI as an Accessible and Personalized Learning Partner*

The majority of the participants described AI as a good and flexible learning tool that offered instant and personalized feedback. Students particularly appreciated the writing, speaking, and self-study activities outside of class time related to AI. Several participants highlighted how AI helped to lower anxiety and boost confidence when practicing English. Participant 1 elaborated on this emotional security, stating:

*"I usually typed random questions or daily situations, and the AI replied naturally like a real conversation. What I liked most was that I did not feel embarrassed when making grammar mistakes."*

Participants 2 and 4 also said instant feedback helped them write more accurately and coherently. Specifically, Participant 2 noted:

*"I submitted my essay and received detailed feedback on grammar, vocabulary, and coherence. What made it particularly effective was the instant response and clear explanations."*

Furthermore, Participant 4 shared a similar experience: *"I used ChatGPT to practice writing emails in English... It was very helpful because I could see my mistakes immediately and learn better ways to express my ideas."* The results corroborate the quantitative analysis findings that people feel good about the benefits of AI and its acceptance. They also found that learners appreciated the use of AI for its efficiency, emotional security, and flexibility in learning a language.

### *Theme 2: Learner Autonomy and Self-directed Learning*

Another prominent trend was using AI to enable self-directed learning. Participants consistently reported using AI to practice English skills, find information, and complete self-learning activities outside of class. Many students connected AI with flexibility, meaning they could learn 'anytime, anywhere'. The participants also reported a greater sense of taking the initiative to study subjects of their own interests and using English outside the classroom. The interviews showed, however, that learner autonomy was not immediate but progressive. Multiple participants confessed that they initially faced challenges, such as writing ineffective prompts or over-relying on AI outputs. As Participant 1 recalled:

*"At first, I depended too much on AI and copied many answers without really understanding them. Sometimes the vocabulary was also too formal for my level. After using it for a while, I learned how to ask simpler questions and use AI more like a study partner instead of just a tool to give answers. Now I focus more on understanding and practicing by myself."*

Similarly, Participant 5 shared:

*"Sometimes I cannot write effective prompts, and the answers I receive are too general. However, over time, I have gradually changed the way I make questions and compared with other AI tools or sources. Thanks to this, I can overcome these challenges and AI has become a learning supportive tool."*

With practice, they became better able to ask more targeted questions, assess AI outputs more critically, and use AI to support their learning process, not to provide pre-made solutions. This is an important addition to the quantitative results.

The survey results showed a high level of readiness and moderate support dependence, while the interview results indicated that meaningful autonomy should be developed gradually through AI literacy, critical thinking, and SRL strategies.

### *Theme 3: Limitations of AI and the Continuing Role of Human Guidance*

Overall, participants had positive attitudes towards AI, but all indicated that AI should assist rather than replace teachers and human interaction. A few students said that teachers are still required for Complex explanations, pronunciation, and important knowledge. Specifically, Participant 6 highlighted that while AI was effective for back-and-forth grammatical corrections, human integration remains essential for holistic language acquisition. Additionally, Participant 2 noted:

*"I usually work independently when using AI because it is convenient and always available. However, I still rely on teachers for more complex explanations or when I need confirmation of important knowledge."*

Several participants also noted that AI still has structural limitations in specific interactions. As Participant 3 shared: *"AI is programmed to postpone the correct answer by answering the question partly."* Last but not least, Participant 5 expressed concerns about the excessive dependence on AI and highlighted the need to leverage AI tools alongside one's own thinking and human intuition. Participant 5 elaborated on this critical integration, stating:

"The key factors influencing my decision are convenience, efficiency... However, I think it's better to combine AI assistance with human thinking and personal knowledge to avoid over-reliance on technology."

In this theme, the focus is on a more analytical and refined view of learning supported by AI. Learners valued the tools they can create with AI and their efficiency, but knew there is still room for pedagogical input and that AI-generated content also has limitations. The results indicated that, in addition to the use of technological media, supporting the use of AI in postgraduate English training also needs AI content analysis and the role of lively human interaction in English learning. Overall, the qualitative results support the quantitative results and reveal enablers and inhibitors of AI-supported learning. The educational effectiveness of AI will rely on digital literacy, critical thinking skills, and learners' ability to appropriately leverage technology for flexibility, engagement, and self-directed learning — while simultaneously bringing in humans.

## Discussion

The findings reveal that, in general, the attitudes of postgraduates towards the use of AI in English learning online are positive. Overall, quantitative results showed high levels of perceived benefits, AI acceptance, and moderately high preparedness for future use of AI. The qualitative results also echoed these trends, as participants often emphasized that AI was flexible, accessible, provided instant feedback, and facilitated independent learning. Overall, these results indicate that postgraduate students see AI as more than just a short-term study tool; they see its potential as a useful long-term learning and professional growth tool. Perceived benefits, AI acceptance, and AI readiness are highly correlated. Confirming that perceived usefulness and ease of use are important determinants of users' attitudes and behavioral intentions to use a system (Venkatesh et al., 2003).

By situating these findings within the broader literature, this study clarifies its theoretical and empirical significance and addresses a critical research gap. While recent studies have heavily highlighted the educational value of generative AI in higher education (Kasneci et al., 2023; Teng, 2024), the vast majority of existing literature remains strictly confined to undergraduate student demographics (Baig & Yadegaridehkordi, 2024; Chan & Hu, 2023). Our study addresses this empirical gap by focusing specifically on postgraduate English learners, a distinct group whose advanced academic needs require highly specialized and critical literacy skills.

In the section on the usefulness of AI for writing, practicing speaking, and getting feedback, those who reported it as more useful were more positive toward AI and more willing to use it in the future. The interview analysis also revealed a gradual trend toward more intentional, self-directed use of AI-enhanced learning activities. The results are also consistent with recent studies that highlight the educational value of generative AI in higher education (Kasneci et al., 2023; Teng, 2024). Many interviewees noted AI's benefits in enhancing writing proficiency, practicing speaking, and editing and improving academic content through multiple iterations.

The experiences align with the previous studies on technology-supported feedback and the development of postgraduate writing (Pham, 2021). However, positive acceptance of AI did not mean total learner autonomy. The quantitative results indicated a moderate degree of dependency on the assistance of AI, while the qualitative results also showed a moderate degree of dependency. For more advanced learning tasks, students also verified AI answers with peers or teachers to receive more authentic feedback.

The results indicate that in addition to having technical access to AI tools, AI literacy, critical thinking, and SRL skills are essential for successful AI-supported learning. The study found a negative correlation between difficulty using AI and AI readiness, highlighting the need to remove obstacles to early AI use. The results suggest the need for pedagogical assistance at the initial phase of implementing AI to ensure that the students are not dealing with superficial engagement or overreliance on using AI-generated answers. Finally, the focus on postgraduate English learners helps enrich the existing body of research on AI use in education, which primarily focuses on undergraduate students (Baig & Yadegaridehkordi, 2024; Chan & Hu, 2023). The results indicate that AI use is associated with students' broader postgraduate learning objectives of academic growth, autonomy, and workforce preparation. Therefore, postgraduate education could benefit from more independent and meaningful use of AI if it is adequately supported in terms of instruction in effective prompting, responsible use of AI, and critical analysis contributes significantly to the field by shifting the educational discourse from superficial AI adoption to long-term pedagogical integration, providing a critical framework for policymakers and educators to design target-specific AI training tailored explicitly for higher-degree programs rather than relying on one-size-fits-all undergraduate models.

## Conclusion

The study investigated how postgraduate students accepted the use of AI tools in online English learning and their readiness for future AI use. Results showed high perceived benefits and high AI acceptance, along with moderately high readiness and relatively low perceived difficulty. The outcomes also found that perceived benefits and ease of use were significantly positive for AI acceptance and learners' confidence and autonomy, while perceived difficulty and dependence on support were significantly negative. Additional analyses showed that AI acceptance and AI perceived benefits were significant factors in explaining AI readiness. Postgraduate students who were more satisfied with the learning experiences from using AI were more likely to feel prepared to use AI on their own and to incorporate it into their future academic work. Overall, the results showed that perceived instructional value and ease of use increased acceptance, which in turn strengthened learners' long-term readiness to use AI independently. The findings emphasize the importance of positive learning experiences in facilitating postgraduate learners' participation in AI technology and their shift towards more independent and future-oriented use of technology in online English learning settings.

Despite these valuable insights, this study possesses certain limitations. First, the sample size was relatively small and limited to a specific group of postgraduate English learners, which may restrict the generalizability of the findings to other higher education contexts. Second, the data relied primarily on self-reported questionnaires and qualitative interviews, which could introduce subjective bias in students' reported AI proficiency and self-regulated learning skills.

Based on these limitations, several suggestions are proposed for future research. Future studies should expand the sample size across multiple universities and disciplines to enhance the external validity of the results. Additionally, integrating longitudinal research designs or

objective data metrics (such as direct tracking of AI tool usage) would provide a deeper, more comprehensive understanding of how postgraduate students' AI readiness and learning autonomy evolve over an extended period.

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## Biodata

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