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越南學生使用以人工智慧為基礎

的行動英語學習應用程式的因素探討

Factors of Vietnamese Students' Engagement
with AI-Based English Learning Applications

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Abstract

This study investigates the key factors influencing Vietnamese students' engagement with AI-based English learning applications. Focusing on three dimensions—Feedback Mechanism, Personalized Learning, and Social Media Integration—the research aims to understand how these technological features impact learner motivation and sustained usage. A quantitative approach was employed, with data collected from 147 qualified Vietnamese users of popular AI-powered English learning apps such as Duolingo, ELSA Speak, and CAKE. Multiple linear regression analysis revealed that Feedback Mechanism had the strongest positive influence on user engagement, followed by Personalized Learning and Social Media Integration. These findings highlight the importance of delivering timely, personalized feedback and fostering community interaction in enhancing digital learning experiences. The study contributes to the growing trend of research on AI in education, offering both theoretical insights and practical implications for app developers, educators, and policymakers aiming to improve student engagement in technology-assisted language learning.

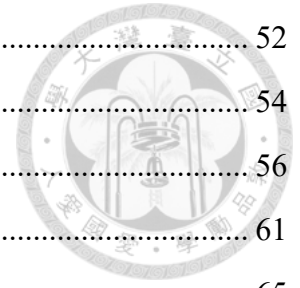
Keywords: engagement, AI, mobile, English learning applications, Vietnamese.

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1. Introduction



1.1 Background of the Study

1.1.1 English Learning Trends and Policy in Vietnam

English has emerged as the dominant global language, spoken by approximately 400 million people in English-speaking nations such as Britain and the United States, and by billions more in non-English-speaking countries, particularly in Asia (Guo & Beckett, 2007).

Recognizing the importance of foreign language proficiency for its economic and political integration, Vietnam began prioritizing language education in the 1990s as part of its open-door policy (Doi Moi). This commitment was further solidified in September 2008 with the launch of the National Foreign Language 2020 Project by the Ministry of Education and Training (MOET). The project aimed to equip Vietnamese youth graduating from vocational schools, colleges, and universities with the ability to use a foreign language, primarily English, independently by 2020. To achieve this, reforms were implemented, including expanded teaching hours, updated textbooks, English-medium instruction programs, and enhanced teacher training (Hamid & Nguyen, 2016) .

Vietnam's economic reforms in 1986, which opened the country to global trade and investment, along with its subsequent membership in ASEAN and the World Trade Organization, further amplified the demand for English proficiency. This growing emphasis on English reflects its perceived value not only in academia but also in broader societal and regional contexts (Doan & Hamid, 2021).

Meanwhile, technological advancements over the past few decades have revolutionized education, with mobile learning platforms emerging as a transformative innovation. Leveraging the widespread use of smartphones and tablets, these platforms have redefined traditional learning by offering unparalleled flexibility and accessibility. The significance of mobile learning was

further highlighted during the COVID-19 pandemic, which accelerated the shift from in-person to online education (Zainuddin et al., 2022).



1.1.2 Benefits of Mobile English Learning Apps

Numerous mobile apps are available for learning English on both the Apple App Store and Google Play, offering learners unprecedented flexibility to integrate study into daily routines. Smartphone-enabled “microlearning” sessions, focused activities during commutes or breaks, support consistent practice and reinforce long-term retention. For example, research on Duolingo, an AI-powered application, demonstrates significant positive effects on learner engagement across affective, cognitive, and behavioral dimensions, underscoring its beneficial impact on sustaining motivation and enhancing overall engagement (Ouyang et al., 2024).

Beyond convenience, these apps employ gamification and adaptive algorithms to bolster motivation and personalize instruction. Points, badges, and streaks transform repetitive drills into rewarding challenges, while performance-driven adjustments ensure exercises match each learner’s proficiency level. A study of ELLA, an English Language Learning App, revealed generally neutral to positive perceptions among EFL learners, who found the app particularly effective for vocabulary acquisition and enjoyable enough to maintain regular (Metruk, 2021). Such tailored feedback loops accelerate progress by focusing on areas of difficulty and preventing frustration or boredom from one-size-fits-all materials.

Finally, these platforms contextualize lessons within real-world scenarios, ordering food, asking for directions, or conducting business conversations, deepening semantic encoding and easing transfer to authentic communication (Sürüç Sen, 2021) . Many apps also foster social learning through peer challenges and discussion forums, providing both accountability and opportunities for meaningful interaction (Zolfaghari et al., 2025). Additionally, the multimodal

nature of app-based tasks (combining text, audio, and interactive prompts) enhances metacognitive skills, encouraging learners to monitor progress and reflect on strategies, while bolstering overall cognitive capacity (Shortt et al., 2023). Together, these features underscore the powerful role of mobile apps in democratizing English education and empowering autonomous, effective learning.

1.1.3 Growth of the English Learning App Market in Vietnam

Vietnam's English-language learning market has expanded rapidly in recent years, underpinned by a demographic profile and investment climate highly favorable to mobile and AI-driven solutions. As of 2023, Vietnam's population reached approximately 100.35 million, positioning it as the third most populous country in the Association of Southeast Asian Nations (ASEAN), following Indonesia and the Philippines (World Bank, 2023).

The country's Education Technology sector has attracted strong interest from domestic and international investors, particularly in foreign-language platforms that leverage artificial intelligence for personalized instruction. In May 2023, for example, the AI-powered pronunciation and feedback app ELSA Speak secured a US \$20 million funding round to enhance its adaptive learning capabilities (Nguyen & Phan, 2024). Such investments underscore confidence in the efficacy of AI-based feedback mechanisms and tailored content—features central to sustained learner engagement.

Real-world usage statistics further illustrate Vietnam's prominence in the mobile English-learning landscape. A study of over 53,000 active users ranked Vietnam among the top seven countries by active user count, confirming both high penetration and enduring engagement (Pham et al., 2018). These demographic, financial, and adoption trends set the stage for examining the specific factors namely feedback mechanisms, personalization, and social media integration that drive Vietnamese learners' engagement with mobile English-learning applications.

1.1.4 Emerging Technologies in English Learning Apps

Research has shown that integrating VR technology into mobile applications can enhance language acquisition, particularly in developing speaking proficiency because of its ability to maintain learner engagement, boost motivation, and equip users with stronger communication skills within simulated settings highlights its potential as a transformative tool in language education (Viswanathan et al., 2017).

Another technology that is commonly applied is AI. Research indicates that AI provides an effective learning environment for English language acquisition. It possesses significant potential to create a personalized atmosphere where learners can engage multiple senses to simultaneously practice English skills tailored to their current proficiency level, professional requirements, or personal interests (Fitria, 2021).

There are several AI-powered language learning apps that help learners develop essential skills such as pronunciation, grammar, vocabulary, and other linguistic competencies. Notable examples include Lingvist, Duolingo, and Quizlet. These platforms offer key advantages, such as adapting to individual student needs, delivering personalized learning experiences, providing instant feedback, eliminating the fear of failure, redefining the role of teachers, and fostering deeper engagement in the learning process (Zanyar Nathir et al., 2023).

1.2 Research Problem

With the growing importance of English proficiency in academic, professional, and global communication contexts, many Vietnamese learners are turning to digital platforms to supplement their English learning. In particular, AI-based English learning applications such as Duolingo, ELSA Speak, Cake, and others have gained popularity due to their accessibility, personalized features, and real-time feedback. These apps are increasingly recognized for their potential to

improve learning outcomes and support learner autonomy.

However, despite the widespread adoption of such applications, there is a limited understanding of what factors actually drive sustained engagement among Vietnamese students. Engagement is a critical component of effective learning, encompassing cognitive, emotional, and behavioral dimensions, yet many learners fail to consistently use these tools over time. This disconnect suggests that simply having access to AI-powered apps is not enough; understanding the underlying factors that influence engagement is essential.

Moreover, Vietnamese learners face unique challenges that influence how they engage with educational technology. Many students experience anxiety when speaking English due to large class sizes and fear of judgment, making real-time, non-judgmental AI feedback on pronunciation (as offered by apps like ELSA Speak) especially valuable in reducing fear and encouraging speaking practice (Pham et al., 2023; NguyenThach & Khau, 2025). Additionally, writing skills are often affected by grammar-translation teaching methods (Pham & Le, 2024), where learners think in Vietnamese and translate directly into English, a habit that AI-based grammar correction and error explanation tools can help reframe through immediate, personalized feedback.

Culturally, Vietnam's exam-centric educational environment tends to push learners toward standardized test performance rather than real-world communication (Pham & Le, 2024; Thuy Nhu Thi et al., 2024). In this context, personalized learning paths that support career, travel, or everyday English needs, rather than just TOEIC or IELTS preparation, may enhance motivation and emotional engagement. Similarly, social media integration in learning apps (e.g., sharing milestones or joining challenges) helps reframe English learning as a socially supported, enjoyable experience, rather than a high-stakes academic obligation.

While global studies have examined engagement in mobile and AI-enhanced learning environments, few have focused specifically on Vietnamese learners, whose preferences, digital habits, and cultural context play a critical role in shaping their interaction with technology. Furthermore, features such as feedback mechanisms, personalized learning, and social media integration have been widely acknowledged in EdTech literature but remain underexplored in relation to engagement among Vietnamese students.

Thus, there is a pressing need to investigate how these specific features of AI-based English learning apps affect learner engagement among Vietnamese students. Identifying these factors can help educators, app developers, and policymakers design more effective and culturally responsive digital learning tools that support long-term language development in Vietnam.

1.3 Research Aims and Objectives

This study aims to investigate the key factors that influence Vietnamese students' engagement with AI-based English learning applications. Specifically, it examines how three core features which are feedback mechanism, personalized learning, and social media integration affect learners' cognitive, emotional, and behavioral engagement.

The primary objectives of the study are to analyze how real-time feedback mechanisms contribute to learner motivation, confidence, and continued app usage; to explore the role of personalized learning in promoting learner autonomy, content relevance, and sustained interest; and to examine the impact of social media integration on emotional and behavioral engagement through peer interaction and public recognition. By achieving these objectives, the study seeks to provide evidence-based recommendations for app developers and educators to enhance the effectiveness and cultural relevance of AI-powered English learning tools in Vietnam.

1.4 Importance and Significance of the Study

This study holds significant importance for multiple stakeholders within Vietnam's evolving educational and technological landscape. As English proficiency continues to serve as a gateway to academic, professional, and global opportunities, understanding how Vietnamese learners engage with AI-based English learning applications becomes critical to enhancing language acquisition outcomes.

First, this research addresses a timely and relevant gap in the literature. While previous studies have explored general mobile learning engagement, few have specifically examined how features like personalized learning, feedback mechanism, and social media integration influence Vietnamese students' cognitive, emotional, and behavioral engagement with AI-powered apps. By focusing on these underexplored yet impactful factors, the study offers nuanced insights into how learners interact with technology-driven platforms within a uniquely Vietnamese context.

Second, the findings will provide valuable implications for app developers, EdTech companies, and instructional designers aiming to improve user engagement and learning effectiveness. As the Vietnamese EdTech market rapidly expands, fueled by smartphone penetration and strong interest in AI-powered tools, there is an urgent need for user-centered design strategies that resonate with local learners' needs, preferences, and cultural behaviors. This research will support developers in refining app features that sustain motivation, foster learner autonomy, and promote long-term usage.

Third, educators and policymakers can benefit from the study's insights into digital learning behaviors. As AI-enhanced applications increasingly supplement or even replace traditional classroom instruction, understanding how to foster meaningful engagement is essential for designing effective hybrid or technology-integrated curricula. The study may guide decisions

around digital resource adoption and inform teacher training programs that incorporate AI-based tools into language instruction.

Finally, this research contributes to broader academic discussions in the fields of mobile-assisted language learning (MALL), educational technology, and learner engagement. By centering the experiences of Vietnamese university students, a demographic that represents a large, digitally literate, and highly motivated learner population, the study brings forward voices that are often underrepresented in global EdTech discourse.

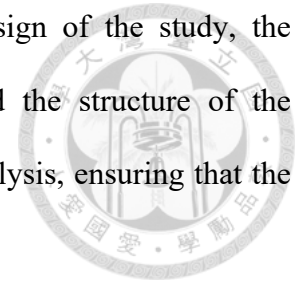
In sum, this research is both contextually significant and practically relevant. It not only enriches the theoretical understanding of engagement in AI-supported language learning but also provides concrete recommendations for enhancing digital English education in Vietnam.

1.5 Structure of the Thesis

This thesis is organized into six chapters, each building upon the previous to provide a cohesive and comprehensive exploration of Vietnamese students' engagement with AI-based English learning applications. Chapter 1 introduces the study by presenting the research background, identifying the problem statement, outlining research objectives, and highlighting the study's significance.

Chapter 2 offers a detailed literature review, synthesizing prior studies related to mobile-assisted language learning (MALL), learner engagement, and AI-enhanced educational tools. It critically analyzes both global and Vietnamese research contexts, develops the theoretical framework, and identifies existing gaps in the literature that this thesis aims to address. It also provides a review of the key technological features examined namely feedback mechanisms, personalized learning, and social media integration which form the foundation of the investigation.

Chapter 3 outlines the research methodology, including the design of the study, the demographic characteristics of participants, the sampling method, and the structure of the questionnaire. It also describes the procedures for data collection and analysis, ensuring that the study meets standards of reliability and validity.



Chapter 4 presents the results derived from quantitative analysis. This includes descriptive statistics, Spearman's correlation, and multiple linear regression used to assess the impact of the selected technological features on cognitive, emotional, and behavioral engagement. The findings are systematically reported and interpreted to reflect patterns in learner responses.

Chapter 5 provides a critical discussion of the findings, comparing them with existing literature and theoretical perspectives. It reflects on the implications of the results within the context of Vietnam's EdTech landscape and elaborates on how features such as personalization and feedback contribute to sustained learner engagement.

Finally, Chapter 6 concludes the thesis by summarizing key insights, acknowledging the study's limitations, and proposing recommendations for future research and practice. It offers guidance for EdTech developers, educators, and policymakers aiming to improve the effectiveness of AI-based English learning applications in Vietnam and beyond.

2. Literature Review

The aim of this chapter is to review and analyze existing literature. It seeks to examine key studies on the subject and develop a comprehensive understanding of the relationships among these variables.



2.1 English learning app and its importance in the world and Vietnam

2.1.1 English learning apps & its importance in the world

An English learning app is a mobile or web-based software application designed to facilitate the acquisition and enhancement of English language skills, including reading, writing, listening, speaking, vocabulary, and grammar (Almousawi, 2021; Ameri, 2020; Fei Victor Lim & Weimin Toh, 2024). These apps leverage mobile technology to deliver structured lessons, practice exercises, and interactive activities, often enabling self-paced and flexible learning tailored to individual needs (Godwin-Jones, 2017; Loewen et al., 2020).

Meanwhile, AI-powered English learning apps are digital platforms that use artificial intelligence techniques (e.g., speech recognition, adaptive learning algorithms) to personalize language instruction, provide feedback, and improve learner outcomes. Examples include Duolingo and ELSA Speak (Lan, 2022; L. Wei, 2023).

While both types offer comprehensive language learning features, AI-powered apps enhance the learning experience through adaptive learning and personalized feedback. For example, early versions of Duolingo offer corrections based on individual mistakes but with AI integration, the app now can analyze users' error patterns and provide tailored practice activities to address recurring challenges. This personalized approach helps learners improve their English effectively (Cui & Sachan, 2023; Lehman et al., 2020).

Research indicates that specific types of apps effectively support vocabulary acquisition

and grammar learning. For instance, a systematic review highlighted that quiz apps enhance vocabulary retention, while puzzle apps contribute to both vocabulary and grammar development (Fei Victor Lim & Weimin Toh, 2024). Mobile apps have been also shown to bolster learner autonomy by enabling self-directed study, thereby increasing motivation. A study exploring mobile apps in English learning found that these tools enhance cognitive capacity and motivate learners in both formal and informal settings, fostering a sense of independence and confidence (Fan et al., 2023).

Beyond vocabulary and grammar, English learning apps facilitate the improvement of various language skills. For example, research has demonstrated that students frequently utilize apps related to grammar, speaking, reading, and vocabulary, indicating a comprehensive approach to language development (Fei V. Lim & Weimin Toh, 2024).

Learners' perceptions of mobile apps are generally positive, with many acknowledging improvements in pronunciation, intonation, sentence building, and oral comprehension. These insights suggest that mobile apps are valuable tools in enhancing various aspects of language proficiency (Niño, 2015).

Recent research highlights the growing popularity and adoption of AI-powered English learning apps worldwide. Studies have documented how AI-powered platforms employ AI-driven personalization, adaptive feedback, and speech recognition to improve learning outcomes and maintain user engagement (Bicknell et al., 2023; Ouyang et al., 2024). Large-scale analyses have shown these apps achieving millions of downloads and active users globally, reflecting strong learner interest in AI-enhanced features that support flexible, self-directed study (Huynh & Iida, 2017; Ravenor, 2024). This demonstrates that AI integration is not only a technological trend but also a pedagogical development reshaping mobile-assisted language learning (MALL).

However, despite this documented popularity, existing studies have often focused on users in specific regions or contexts, such as North America, Europe, or East Asia (Burstion, 2015; Stockwell & Hubbard, 2013). These studies typically examine user experiences, learning gains, or design features without fully addressing diverse cultural, educational, and technological environments that may influence app use. As a result, their findings may not be entirely generalizable to contexts like Vietnam, where differences in learner expectations, digital literacy, and language learning goals may shape engagement with AI-powered apps in unique ways. This research aims to address that gap by investigating Vietnamese students' engagement with AI-based English learning applications, contributing contextually grounded insights that can inform both local educational practices and the broader understanding of AI integration in language learning.

2.1.2 English learning app in Vietnam

Vietnam's educational technology sector has experienced significant growth, propelled by national digital transformation initiatives and the widespread adoption of digital tools across various educational levels. Government policies, such as the "Program for National Digital Transformation by 2025 with orientations towards 2030," have laid the groundwork for integrating digital technologies into education, aiming to enhance teaching and learning outcomes (Tran, 2023).

The COVID-19 pandemic acted as a catalyst, accelerating the shift towards online learning platforms and digital resources. Research highlights the rapid digital transformation in Vietnam's education sector, emphasizing the need for comprehensive strategies to sustain this momentum (Van, 2024). Furthermore, the integration of Industry 4.0 technologies, such as artificial intelligence and big data analytics, is reshaping educational practices, necessitating reforms in curriculum design and teacher training to meet evolving demands (Do et al., 2023).

Vietnamese students have increasingly embraced smartphone applications to enhance their English proficiency. A study involving 123 English as a Foreign Language (EFL) students from various universities in Southern Vietnam revealed that learners utilized Smartphone English Language Learning Apps (SELLA) to practice and improve all language systems and skills. The participants expressed positive attitudes toward these apps, indicating a favorable reception and a willingness to integrate technology into their learning routines (Bui et al., 2023).

An experimental study assessed the role of pronunciation-focused English learning applications in Vietnam. The findings suggested that such apps, when combined with appropriate pedagogical strategies, significantly improved learners' pronunciation skills, highlighting the potential of technology to address specific linguistic challenges (Khoa et al., 2021).

Among these apps, AI-powered platforms such as Duolingo, ELSA Speak, and Prep.VN are gaining popularity in Vietnam. Their ability to deliver adaptive learning, personalized feedback, and goal tracking makes them particularly attractive to students seeking flexible and engaging English learning solutions.

The advent of artificial intelligence has introduced new dimensions to language learning in Vietnam. A recent study investigated factors influencing students' intentions to use AI-assisted learning applications in English courses. The research highlighted that benefits derived from using AI learning apps positively impact perceived enjoyment levels, which in turn influence students' intention to use these applications. This underscores the potential of AI to enhance user engagement and learning outcomes (Khoa & Tran, 2024).

English learning apps have become essential to language education in Vietnam, offering flexibility, personalized learning experiences, and opportunities for skill enhancement. The reception and demonstrated benefits of these apps suggest a promising avenue for advancing

English proficiency among Vietnamese learners. Embracing emerging technologies, such as AI, could further enrich the language learning landscape, provided that implementation strategies are thoughtfully designed to address existing challenges.



2.2 The Impact of User Engagement on English learning app success

User engagement in English learning apps can be defined as the multifaceted experience of learners actively interacting with app features to achieve language learning goals. It includes behavioral aspects (frequency and duration of app use), cognitive aspects (attention, investment in learning tasks), and emotional aspects (interest, enjoyment, and motivation). Engaged users typically participate more consistently, respond to adaptive feedback, and achieve better learning outcomes (Baumel et al., 2019; Ikwunne et al., 2022). User engagement is a critical determinant of mobile application success, influencing metrics such as user retention, satisfaction, and overall app performance (O'Brien & Toms, 2008).

In the mobile app context, low switching costs and effort make it challenging to sustain user engagement. Research has emphasized the complexity and importance of engagement, highlighting the need for a holistic understanding of its drivers, outcomes, and measurement (Ho & Chung, 2020).

User engagement is commonly defined across three dimensions: cognitive, emotional, and behavioral. Cognitive engagement involves users' attention and mental effort, emotional engagement relates to enjoyment and positive feelings toward the app, and behavioral engagement refers to actions such as frequency of use, feature interaction, or consistency in learning. This framework is widely used in educational technology research and provides a strong basis for analyzing learner behavior (Ilin, 2022; O'Brien & Toms, 2008).

To strengthen this conceptual understanding, Self-Determination Theory (SDT) offers a

useful lens to explain the underlying motivational drivers of user engagement. SDT posits that engagement and sustained motivation are fostered when three basic psychological needs are met: autonomy, competence, and relatedness (Deci & Ryan, 2013; Ryan & Deci, 2000). In the context of AI-powered English learning apps, these needs can be addressed through personalized learning paths (autonomy), adaptive feedback and skill development (competence), and social features such as sharing achievements or participating in challenges (relatedness). Applying SDT helps interpret user engagement not just as frequency of use, but as a multidimensional experience shaped by how well the app satisfies these psychological needs (Deci & Ryan, 2000). This theoretical perspective supports the study's focus on feedback mechanisms, personalization, and social integration as key engagement factors.

Additionally, high levels of user engagement are positively correlated with increased user retention and satisfaction. Engaged users are more likely to continue using the app, provide positive feedback, and recommend it to others, thereby contributing to the app's success (Krebs & Duncan, 2015). User participation during app development is moderately correlated with system quality and user satisfaction. Involving users in the development process ensures that the app meets their needs, enhancing its success upon release (Hwang & Thorn, 1999).

Moreover, research has shown that customer engagement plays an important role in retention rates (Viswanathan et al., 2017) and active customer engagement contributes significantly to customer satisfaction and brand affinity (Sudirjo et al., 2024).

Engaged users tend to explore more features, invest time consistently, and respond positively to feedback mechanisms. According to Ilin (2022), user engagement is a key factor influencing the effectiveness of English learning applications. Engaged users are more likely to persist in their learning endeavors, achieve higher proficiency levels, and exhibit greater

satisfaction with the learning process.

In the context of AI-powered English learning apps, engagement takes on additional significance. These applications often rely on user input and interaction to adapt content, provide feedback, and personalize the learning path. Therefore, higher engagement not only improves user satisfaction but also enables the AI system to better tailor learning experiences (Arini et al., 2022).

To fully understand and optimize these apps, it is essential to explore the factors that drive and sustain user engagement, especially in specific educational and cultural contexts like Vietnam, where cultural, technological, and educational expectations may influence how students interact with mobile learning apps. This sets the stage for examining individual features of AI-based English learning apps and their influence on Vietnamese students' engagement.

2.3 Factors of user engagement

User engagement in mobile learning applications is shaped by a diverse range of factors, many of which are context-dependent and influenced by both technological and learner-related elements. In the field of educational technology, various scholars have explored the drivers of engagement through different lenses, including cognitive psychology, instructional design, and human-computer interaction. As a result, engagement factors are often categorized in different ways depending on the research focus, whether it be platform usability, content delivery, learner motivation, or social interaction (Ho & Chung, 2020; Ilin, 2022; O'Brien & Toms, 2008).

In the specific context of AI-based English learning applications, engagement is not only dependent on learner characteristics but also on how the technology itself interacts with and responds to user behavior. AI-driven features such as adaptive learning paths, personalized feedback, and interactive speech tools play a significant role in shaping learners' emotional, behavioral, and cognitive involvement (Arini et al., 2022; Ouyang et al., 2024). Moreover, the

social elements embedded within many of these apps, including progress sharing and gamified challenges, further enhance user commitment and retention (Sudirjo et al., 2024).

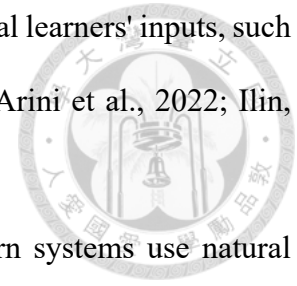
To enhance clarity and organization, this study categorizes engagement-related factors into three overarching groups, as informed by the reviewed literature. The first category is App Design and Experience, which encompasses features such as feedback mechanisms, personalized learning, and user interface/user experience (UX/UI) design. These elements are central to how users interact with the app and perceive its usability, adaptability, and educational value. The second category is Social and Community Influence. This includes elements like social media integration and peer interaction, which contribute to a sense of connectedness, competition, or support among users, potentially enhancing motivation and sustained engagement. The third category is Engagement Mechanics, referring to motivational tools such as gamification and push notifications. These features are designed to sustain user interest and encourage consistent usage through rewards, challenges, and timely reminders.

While previous studies have explored a wide range of these features, this research focuses on a subset of factors that are both underexplored and highly relevant to AI-powered English learning apps and the Vietnamese educational context. Specifically, the study will examine the impact of feedback mechanisms, personalized learning, and social media integration on student engagement.

2.3.1 Feedback Mechanisms

Feedback is a critical element in language learning, serving as a bridge between instruction and learner performance. In traditional classrooms, teachers provide feedback to help students identify errors, reflect, and improve their language skills. In digital environments, feedback is delivered through automated mechanisms, especially in AI-based English learning applications.

These systems offer immediate, personalized responses tailored to individual learners' inputs, such as pronunciation correction, grammar suggestions, or progress tracking (Arini et al., 2022; Ilin, 2022).



Feedback in AI-based apps goes beyond static correction. Modern systems use natural language processing (NLP) and machine learning to generate real-time, adaptive feedback. For instance, a pronunciation-focused app may analyze a learner's voice input and provide precise articulation feedback, while a writing module may highlight grammatical errors and suggest alternatives based on the learner's history and level (Fitria, 2021; Zanyar Nathir et al., 2023)

Feedback is essential in promoting student engagement, especially behavioral and cognitive engagement. According to Ilin (2022), effective feedback increases learners' awareness of their performance, provides a sense of progression, and encourages consistent interaction with the app. This continuous reinforcement fosters motivation and supports deeper learning.

Immediate feedback also reduces learners' frustration by correcting misunderstandings as they occur, helping maintain emotional engagement (Arini et al., 2022). This is particularly valuable in self-paced, app-based learning environments where there is no teacher present to clarify confusion.

A study by Arini et al. (2022) on AI-based mobile English learning platforms highlighted that students appreciated the responsiveness and individualization of automated feedback. Learners felt more confident and motivated when they could track their own progress and receive support tailored to their needs.

Similarly, personalized feedback contributes to a sense of control and competence, both of which are core components of engagement under Self-Determination Theory (Ryan & Deci, 2000). In the absence of human instructors, well-designed AI feedback systems play a vital role in

sustaining learner autonomy and satisfaction.

In the context of Vietnamese learners, where fear of speaking English is prevalent due to large class sizes and limited oral practice in traditional classrooms, AI-powered feedback mechanisms serve as a low-pressure, judgment-free space for pronunciation improvement. Apps such as ELSA Speak provide real-time, personalized feedback on sound accuracy, which helps reduce learners' anxiety and encourages repeated speaking practice. This is especially impactful in Vietnam, where students often hesitate to speak for fear of making mistakes in front of others (Thach & Khau, 2025).

Vietnamese learners frequently struggle with English pronunciation due to differences in the Vietnamese sound system. Common issues include omitting final consonants (e.g., /s/, /z/), confusing similar sounds (e.g., /f/ with /s/), or adding extra sounds unnecessarily, which can significantly hinder spoken communication (Ha, 2005). AI-based English learning apps help address these challenges by providing immediate, tailored feedback that supports learners in identifying and correcting mistakes effectively, thus improving accuracy while boosting confidence.

Additionally, many Vietnamese students face difficulties in writing due to the influence of grammar-translation teaching methods, where English sentences are often constructed following Vietnamese logic. This can result in awkward or ungrammatical phrasing. AI-based feedback systems that highlight such errors and explain corrections help learners develop more natural and accurate English grammar and sentence structure (Pham & Le, 2024). These forms of feedback not only promote cognitive engagement through clearer understanding, but also enhance learners' motivation by providing tangible progress.

In summary, feedback mechanisms in AI-based English learning apps serve not only to

correct errors but also to enhance motivation, sustain user attention, and guide progress. Their ability to provide timely, personalized responses makes them a powerful factor in user engagement, particularly in self-regulated learning environments like mobile language apps.



2.3.2 Personalized Learning

Personalized learning refers to the process of tailoring learning content, pace, and support to the specific needs, preferences, and progress of individual learners. In AI-based English learning applications, personalization is typically powered by algorithms that adapt content difficulty, recommend tasks, and provide feedback based on the learner's behavior, performance, and goals (Fitria, 2021; Ouyang et al., 2024)

AI technologies enable apps to deliver a more customized experience by tracking user interactions and offering dynamic adjustments. For example, if a student consistently struggles with listening comprehension, the app may recommend easier audio exercises or increase repetition for that skill area. This individualized support reflects the shift from one-size-fits-all models to learner-centered instruction (Zanyar Nathir et al., 2023).

Ouyang et al. (2024) examined the impact of Duolingo, an AI-integrated app, and found that adaptive features improved students' willingness to communicate and boosted their engagement. Learners were more motivated when they felt that the content was aligned with their ability and progression.

In mobile-assisted language learning (MALL), personalization plays an important role in reducing learner frustration. When tasks are too difficult or too easy, students are likely to disengage. AI-based personalization helps maintain an optimal learning zone by adjusting task difficulty and offering reinforcement where needed (Ouyang et al., 2024; Ryan & Deci, 2000).

In Vietnam, where learners differ significantly in both proficiency levels and learning

preferences, personalized AI features present a more effective and engaging alternative to traditional, static learning platforms. Pham and Le (2024) found that Vietnamese students particularly appreciated the adaptability of EdTech tools, especially when these tools enabled them to concentrate on the skills, they deemed most relevant. This customization not only enhances the learning experience but also fosters greater emotional and behavioral engagement by giving learners a stronger sense of control and ownership over their progress.

Similarly, personalized apps can support self-paced learning outside the classroom, which is increasingly important in Vietnam's digitally connected, exam-driven education system. By giving students control over their learning path, these tools can enhance both emotional and behavioral engagement (Pham & Le, 2024; Thuy Nhu Thi et al., 2024).

Moreover, personalized learning plays an important role in breaking away from Vietnam's exam-centric, one-size-fits-all instruction model. The country's education system heavily emphasizes standardized tests like TOEIC and IELTS, which are often used as university exit requirements and job qualifications, especially in urban areas (Nguyen & Gu, 2020). This exam-oriented focus tends to narrow learners' goals to test performance and can reduce intrinsic motivation to use English for real-world purposes (Ngo, 2024).

AI-powered English learning applications offer personalized learning paths based on user goals, performance, and preferences. These tools allow Vietnamese learners to shift focus from test preparation to meaningful, functional English usage in work, travel, and daily communication. For example, Khoa and Tran (2024) found that students who used AI-assisted apps like Duolingo and ELSA Speak reported higher motivation and perceived improvement in communication skills, thanks to features that matched their individual needs and learning styles.

The study further highlighted that students favored content tailored to practical language

use over standardized exam-oriented formats. This preference underscores the value of personalized learning paths that accommodate individual goals and needs. These insights are consistent with Self-Determination Theory (Ryan & Deci, 2000), which stresses the importance of autonomy and competence in maintaining long-term motivation. By offering tailored, relevant experiences, personalized AI-driven English learning apps can better support Vietnamese learners, making the process more meaningful and enjoyable, and ultimately encouraging continued use.

In summary, personalized learning is a key feature of AI-driven English learning apps, enabling them to meet diverse learner needs. Through content adaptation, progress tracking, and skill-specific support, personalization fosters learner autonomy and motivation — both of which are essential for sustained engagement (Ouyang et al., 2024; Ryan & Deci, 2000).

2.3.3 Social Media Integration

Vietnam ranks among the countries with the highest number of social media users globally (Statista, 2024). As of the third quarter of 2023, the penetration rates of leading social media platforms among Vietnamese Generation Z, individuals born roughly from the mid-to-late 1990s to early 2010s, are notably high: Facebook leads with 95%, followed by Zalo (90%), YouTube (87%), and TikTok (81%) (Statista, 2023). These figures highlight how deeply embedded social media is in the everyday lives of Vietnamese students, many of whom also use their smartphones for educational purposes.

In the context of English learning applications, social media integration typically includes features such as sharing learning milestones, competing in challenges, inviting friends to join, or posting achievements directly to platforms like Facebook or TikTok. These functions are designed to extend the learning experience beyond the app and into users' social environments, fostering motivation and engagement through visibility and social interaction (Hwang & Chang, 2016;

Manca, 2020).

One example is Duolingo, a popular AI-powered language learning app, which encourages users to share progress, such as reaching a 200-day learning streak, on social media platforms. This sharing of personal milestones is particularly effective, as praise and recognition from peers serve as motivational tools, enhancing self-esteem and reinforcing engagement (Hwang & Chang, 2016; Kearsley & Shneiderman, 1998).

Research supports the idea that social interaction enhances educational engagement. According to Manca (2020), when learners share progress or participate in community discussions online, they are more likely to maintain motivation and persist in learning. These interactions can create a sense of accountability and belonging, both of which are critical to sustaining user engagement in digital learning environments.

Additionally, sharing achievements publicly can stimulate peer competition, increase motivation, and foster positive attitudes toward learning. Hwang and Chang (2016) found that gamified social elements, like leaderboards and public recognition, promote engagement and self-directed learning in mobile-assisted environments.

These features also support emotional engagement by giving learners opportunities to feel seen and supported. Socially engaged learners often show higher satisfaction and return to apps more frequently, especially when their progress is recognized by others (Manca, 2020; Sudirjo et al., 2024).

Social media integration aligns well with Engagement Theory, which emphasizes learning through meaningful, participatory, and collaborative tasks (Kearsley & Shneiderman, 1998). When students interact socially around their learning experience, they activate not only behavioral but also emotional and cognitive engagement.

In Vietnam's highly exam-driven academic culture, English learning is often viewed as a high-stakes, stress-inducing activity (Pham et al., 2023). However, social media integration in AI-based apps introduces a layer of informal learning that reintroduces joy and meaning to English study (Khoa & Tran, 2024). According to Lan et al. (2024), when learners share their progress or celebrate learning milestones on platforms like Facebook or TikTok, they receive encouragement and recognition from peers. This positive reinforcement helps reposition English learning as a social, engaging experience, not just an academic obligation (Le, 2020). As a result, social features in these apps can boost learners' emotional engagement and transform their perception of English from "something to pass" to "something to enjoy."

In summary, social media integration is a strategic and pedagogical tool that extends user engagement beyond the app interface. By encouraging sharing, recognition, and interaction, it taps into powerful social motivators, particularly relevant for Vietnamese students who are digitally connected and socially driven in their learning behaviors (Hwang & Chang, 2016; Manca, 2020; Statista, 2023).

2.3.4 Summary

This section has reviewed the key factors influencing user engagement in AI-based English learning apps, including feedback mechanisms, personalized learning, and social media integration. These factors are critical in shaping learners' experiences, motivation, and sustained interaction with the app.

While much research has been conducted on factors like gamification and push notifications, which are widely explored in mobile learning and EdTech studies, they fall outside the scope of this study. These factors, although important, are well-documented in the literature, and their direct impact on engagement has been sufficiently explored in many contexts.

The research gap addressed in this study lies in the underexplored impact of feedback mechanisms, personalized learning, and social media integration specifically within the context of Vietnamese students using AI-based learning applications. While there is existing research on mobile learning in Vietnam, few studies focus on how these specific engagement factors contribute to Vietnamese learners' interaction with AI-powered platforms. This gap highlights the need for research that directly links these engagement factors to the educational outcomes and learning behaviors of Vietnamese students, providing critical insights for app developers and educators.

2.4. Research question, hypothesis, and model

This study is grounded in the premise that specific features embedded within AI-based English learning applications significantly influence student engagement. Drawing from the literature on mobile-assisted language learning (MALL), educational psychology, and human-computer interaction, three core features have been identified as potentially influential: feedback mechanisms, personalized learning, and social media integration. These are hypothesized to affect learners' cognitive, emotional, and behavioral engagement.

2.5.1 Feedback Mechanisms

Effective feedback is essential in fostering engagement by helping learners monitor their progress, correct mistakes, and stay motivated. In AI-based apps, real-time, adaptive feedback enhances learner autonomy and supports sustained use (Arini et al., 2022; Ilin, 2022). Research suggests that immediate and personalized responses contribute to deeper cognitive and emotional involvement in language learning.

Hypothesis 1 (H1): Feedback mechanisms positively influence Vietnamese students' engagement with AI-based English learning applications.

2.5.2 Personalized Learning

Personalized learning systems adjust the difficulty, pace, and type of content to suit individual learners' needs and preferences. AI-powered applications use learner data to create adaptive learning paths, which increases a sense of control and competence — key motivators for sustained engagement (Ouyang et al., 2024; Ryan & Deci, 2000).

Hypothesis 2 (H2): Personalized learning positively influences Vietnamese students' engagement with AI-based English learning applications.

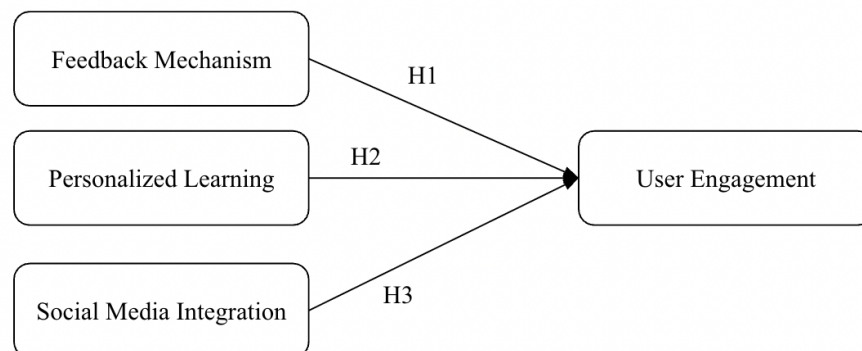
2.5.3 Social Media Integration

Social features, such as sharing achievements, interacting with peers, and participating in learning challenges, have been shown to increase emotional and behavioral engagement. These functions provide social accountability, recognition, and motivation — particularly relevant for Vietnamese students who are active on digital platforms (Manca, 2020; Statista, 2023).

Hypothesis 3 (H3): Social media integration positively influences Vietnamese students' engagement with AI-based English learning applications.

Together, these hypotheses reflect the proposed conceptual model, which posits that targeted design features in AI-enhanced language learning applications play a critical role in shaping learner engagement across multiple dimensions.

Figure 1 Conceptual framework



This framework explores how Feedback Mechanisms, Personalized Learning, and Social Media Integration, and influence learner engagement in AI-based English learning apps for Vietnamese students (EN).

Feedback Mechanisms: Providing real-time corrections and personalized recommendations increases cognitive engagement by reinforcing progress and addressing areas of difficulty (Arini et al., 2022).

Personalized Learning: Tailoring the learning experience to individual students, adapting content based on their needs, and providing specific recommendations, can improve autonomy and motivation, key drivers of engagement (Ryan & Deci, 2000).

Social Media Integration: Allowing learners to share achievements and engage with peers through platforms like Facebook or TikTok fosters social accountability and peer motivation, enhancing emotional engagement (Hwang & Chang, 2016).

Together, these factors influence cognitive, emotional, and behavioral engagement, all of which are essential for sustaining long-term motivation and improving learning outcomes in AI-based language apps for Vietnamese learners.

3. Methods

This study adopts a quantitative research design using a close-ended questionnaire to examine the influence of personalized learning, feedback mechanisms, and social media integration on the engagement of Vietnamese students with AI-based English learning applications. A survey approach is selected due to its effectiveness in collecting standardized data from a large sample, allowing for statistical analysis and comparison.

3.1 Participants

3.1.1 Population Demographics

The target population for this study comprises Vietnamese students who are currently using or have recently used AI-based English learning applications, such as Duolingo, ELSA Speak, Cake, or other similar apps. The selected demographic reflects learners who are actively engaged in self-directed English learning and familiar with mobile educational technology. The target demographic is broadly representative, encompassing diverse age groups, gender identities, educational backgrounds, and varying levels of English proficiency, united by their common goal of enhancing language skills through technological mediums.

Target audience characteristics can be categorized into age, gender, educational background, and English proficiency level. First, the study mainly targets learners aged 18–30 years. This age range is considered most active in adopting technology-driven language learning solutions (Pham et al., 2023). Second, the research targets a comprehensive gender distribution, reflecting the general demographic trend of language learners within Vietnam (Bui et al., 2023). Third, participants primarily include high school students, university undergraduates, and graduates. This group consistently exhibits strong motivations toward achieving higher English proficiency for academic and professional advancement (Nguyen & Teng, 2022). Fourth, the

targeted audience includes a spectrum of English proficiency, ranging from beginner to advanced levels. Capturing this range allows comprehensive analysis of user engagement patterns across different learning stages (Wang et al., 2022).



3.1.2 Sampling Method

This research employed a convenience sampling approach to collect data from the target population of Vietnamese students who actively use AI-based English learning applications. Convenience sampling was selected due to its practicality, cost-effectiveness, and efficiency in accessing a substantial number of participants within a limited time frame. Data collection was conducted online from 1 May to 15 May 2025, with most respondents based in Vietnam.

The survey was distributed electronically via popular social media platforms such as Facebook, Threads, and Instagram frequented by Vietnamese students and young professionals. This method facilitated rapid distribution of the Google Forms, encouraging voluntary participation among individuals who met the inclusion criteria of being active users of AI-driven language learning apps.

To enhance representativeness, the recruitment messages clearly stated the research objectives and inclusion criteria, explicitly requesting responses only from students who had experience using relevant applications. Additionally, participants were asked to share the survey link within their personal and academic networks, employing snowball sampling techniques to further expand the participant base.

3.1.3 Unit of Analysis

Demographic Information

Each participant provided demographic information, enabling a comprehensive understanding of the sample profile. Demographic characteristics analyzed include age, gender,

educational background, and self-assessed English proficiency.

The demographic characteristics of respondents are summarized in Table 1. These characteristics provide context for understanding the variability and representativeness of the sample in relation to the broader population targeted by this study.



Table 1 Demographic information of participants (N=147)

Variable	Category	Frequency	Percentage (%)
Age	Under 18	15	10.20%
	18–24	98	66.67%
	25–30	29	19.73%
	31–40	5	3.40%
Gender	Female	106	72.11%
	Male	36	24.49%
	Not to disclose	5	3.40%
Education	High school student	17	11.56%
	Undergraduate	116	78.91%
	Graduate	14	9.52%
English Proficiency	Beginner	8	5.44%
	Intermediate	72	48.98%
	Upper-intermediate	53	36.05%
	Advanced	14	9.52%

The demographic data reveals that the majority of participants (66.67%) were aged between 18–24 years, which aligns closely with the target audience of young learners who are most likely to engage with AI-based English learning applications. This age group primarily consists of university students, recent graduates, and young professionals, making them an ideal demographic for understanding user engagement with educational technology. Additionally, a notable proportion of respondents were aged 25–30 years, further expanding the range of young adults represented in the study.

In terms of gender distribution, a significant majority of respondents identified as female (72.11%), while male participants accounted for 24.49% of the total sample. This gender imbalance is consistent with trends in educational research, where female learners often exhibit higher participation in language learning studies. Only a small percentage of respondents (3.4%) preferred not to disclose their gender, a common practice in modern survey designs to respect respondent privacy and maintain inclusivity.

Regarding educational background, the survey respondents primarily consisted of undergraduate students, who represented 78.91% of the total sample. This group included both those currently pursuing their undergraduate studies and those who have already earned their bachelor's degree. High school students accounted for 11.56%, reflecting a smaller proportion of younger learners who are still in secondary education. Graduate students, including those pursuing or having completed a master's or doctoral degree, made up 9.52% of the respondents. This distribution indicates that the majority of participants are university-level students, aligning well with the target audience of this study on engagement with AI-based English learning applications.

The data reveals that the majority of respondents self-assessed their English proficiency at an Intermediate level (48.98%), indicating that nearly half of the participants possess a moderate command of the English language. This group is likely comfortable with basic communication and can understand everyday English but may still encounter challenges with advanced vocabulary and complex grammar. A significant proportion of respondents identified their proficiency as Upper-intermediate (36.05%), suggesting a higher level of English competency. These learners can generally understand complex texts and communicate effectively in both spoken and written English, making them well-suited for advanced language learning content. The Advanced category (9.52%) represents a smaller segment of respondents who demonstrate a strong mastery of English.

These individuals are likely capable of handling academic or professional-level English with minimal difficulty, including nuanced expressions and specialized vocabulary. Moreover, a minority of respondents classified themselves as Beginners (5.44%), indicating that they are at an early stage of English language learning. This group may struggle with basic vocabulary, sentence structure, and pronunciation, making them highly dependent on foundational language support.

App Usage Patterns

The respondents were asked to indicate which English learning applications they use. Since each participant could select multiple apps, the results represent a multi-select dataset. The apps include Duolingo, ELSA Speak, Prep.vn, TFlat AI, CAKE, Mochi Mochi, Memrise, and others. Table 2 presents the total number of users for each app and the percentage of respondents who reported using each app, with Duolingo being the most popular app, used by 84.35% of respondents while ELSA Speak and Prep.vn come second and third with 47.62% and 30.61% respectively.

Table 2 App Usage Patterns Among Respondents

App Name	Number of Users (Total)	Percentage of Respondents (%)
Duolingo	124	84.35%
ELSA Speak	70	47.62%
Prep.vn	45	30.61%
TFlat AI	39	26.53%
CAKE	34	23.13%
Mochi Mochi	24	16.33%
Memrise	23	15.65%
Others	21	14.29%

App Usage Frequency

Respondents were also asked to report how frequently they use English learning apps. This

data provides insights into how often learners engage with the selected apps, offering a clear understanding of usage behavior. Table 3 reveals that the majority of respondents (48.30%) use English learning apps a few times a week, while a smaller proportion (6.12%) use them less than once a week. Such insights help in understanding the engagement levels of learners with AI-based English learning applications.

Table 3 App Usage Frequency Among Respondents

Frequency Category	Number of Respondents	Percentage of Respondents (%)
Everyday	53	36.05%
A few times a week	71	48.30%
Once a week	14	9.52%
Less than once a week	9	6.12%

3.2 Data Collection Method

3.2.1 Research Instrument

The survey was methodically structured to ensure the collection of high-quality and relevant data. Initially, respondents were required to complete a screening section consisting of three filter questions. These questions determined whether participants were actively learning English and using AI-based English learning applications (such as Duolingo, ELSA Speak, Cake, etc.). Only those who met these criteria were permitted to continue, ensuring that data was drawn exclusively from qualified respondents.

The development of the survey instrument was guided by a review of existing literature on student engagement, mobile-assisted language learning (MALL), and AI-enhanced educational tools (Habib et al., 2022; W. Wei, 2023). Key constructs such as feedback mechanism (Arini et al., 2022), personalized learning (Ouyang et al., 2024), and social media integration (Hwang & Chang, 2016) were selected based on prior studies indicating their significance in fostering user

engagement. The questionnaire items were designed to operationalize these constructs in the context of English learning apps, drawing on validated survey models where available and adapting them to the specific focus on AI features. This approach ensured theoretical grounding and contextual relevance, supporting the collection of data aligned with the study's research objectives.

Following the screening section, the survey was divided into five key sections, each focusing on a distinct aspect of engagement:

The first section focused on feedback mechanisms. It assessed how the apps provide immediate, personalized feedback, including real-time corrections, pronunciation guidance, and skill improvement suggestions. The questions aimed to determine whether such feedback enhances user confidence and motivation.

The second section explored personalized learning. It evaluated the extent to which the apps adapt learning content to users' individual proficiency, goals, and progress. Respondents were asked about the impact of personalized content on their learning experience.

The third section examined social media integration, investigating the role of social media features such as sharing achievements, receiving likes, or participating in learning challenges. This section aimed to determine whether social interactions and recognition boost user engagement.

The fourth section provided an overview of engagement, measuring different dimensions including cognitive (focus and attention), emotional (enjoyment and motivation), and behavioral (frequency of use and continued learning).

The fifth section gathered demographic information, including age, gender, education level, and self-assessed English proficiency. This demographic data enabled a nuanced analysis of engagement factors across different user groups.

In addition to the core sections measuring Feedback Mechanism, Personalized Learning, and Social Media Integration, the survey included two additional questions to gain insights into user motivations and deterrents for using AI-based English learning applications. These questions were designed to capture user perceptions and preferences, providing further context to the engagement analysis. The responses to these questions offer a deeper understanding of factors influencing user behavior and satisfaction with English learning apps.

The survey employed a combination of question formats, primarily using Likert scale items (ranging from 1 – strongly disagree to 7 – strongly agree) to measure respondents' perceptions for core questions. Multiple-choice and checkbox questions were also included to capture demographic details and motivational factors. This structured approach ensured the comprehensive and systematic collection of data, providing a robust foundation for the analysis of engagement factors in AI-based English learning applications.

3.2.2 Pilot Test

Before the full-scale distribution of the survey, a pilot test was conducted involving 45 respondents. The pilot test is a critical step in survey research, providing an opportunity to evaluate the clarity, reliability, and validity of the survey instrument. This preliminary phase helps identify potential issues related to question wording, response options, survey length, and overall user experience.

The purpose of the pilot test was to ensure that the survey questions were clearly understood by respondents and that they effectively captured the information necessary for the research objectives. Feedback from pilot test participants was carefully reviewed and it was concluded that the survey was clear & easy to understand.

The pilot test also provided insights into the average time required to complete the survey.

By conducting this pilot test, the survey was optimized to minimize confusion and maximize data quality, ultimately enhancing the reliability of the collected data.



3.2.3 Validity & Reliability

To ensure the accuracy and trustworthiness of the findings, the research prioritized the careful development and evaluation of a valid and reliable survey instrument.

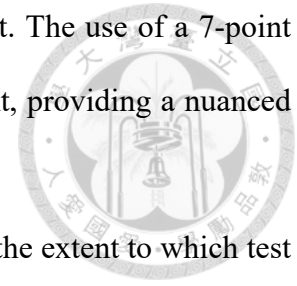
Validity

Validity is a fundamental concept in research that refers to the degree to which an instrument accurately measures what it is intended to measure (Bolarinwa, 2015). In the context of this thesis, which explores factors influencing Vietnamese students' engagement with AI-based English learning applications, ensuring the validity of the measurement instruments is crucial. Three main types of validity will be explored including content validity, construct validity, and face validity.

Content validity refers to the extent to which a measurement instrument covers the full range of the concept being measured (Alqahtani et al., 2023; Beck, 2020). For this study, content validity was ensured through a systematic review of existing literature on AI-based English learning applications and student engagement. The survey items were developed based on established theories and models related to feedback mechanisms, personalized learning, and social media integration.

Construct validity refers to the extent to which a test or measurement instrument accurately represents and measures the theoretical concept it is intended to assess (Smith, 2005). In this study, construct validity was addressed by organizing the survey into distinct sections corresponding to the key factors of engagement: feedback mechanisms, personalized learning, and social media integration. Each section comprised items designed to capture the nuances of these constructs,

facilitating a structured assessment of their impact on student engagement. The use of a 7-point Likert scale allowed for the measurement of varying degrees of agreement, providing a nuanced understanding of respondents' perceptions.



According to Weiner and Craighead (2010), face validity refers to the extent to which test respondents perceive the content of a test and its items as relevant to the context in which it is administered. This emphasizes the inherently subjective nature of face validity, focusing on the respondents' perspectives. To ensure face validity, a pilot test was conducted with 45 participants representing the target population. These respondents were asked to assess the clarity and relevance of the survey items. The feedback was overwhelmingly positive, with participants affirming that the survey was "clear and easy to understand" and required no modifications. This initial testing confirmed that the survey appeared effective in measuring the intended constructs from the respondents' viewpoint.

Reliability

Reliability is defined as the consistency of a measurement across time, instruments, and observers. According to Hutting et al. , reliability is an essential aspect of research, ensuring that repeated applications of a measurement yield consistent results, thus providing confidence in the stability of the data. In this study, internal consistency reliability was assessed using Cronbach's alpha, a widely accepted statistical measure for evaluating the reliability of scales. The Cronbach's alpha coefficients are shown in Table 4.

The survey demonstrated excellent internal consistency across all three main sections, as evidenced by the Cronbach's Alpha values. The Feedback Mechanism section achieved a Cronbach's Alpha of 0.82, indicating good internal consistency among the items measuring this construct. Similarly, the Personalized Learning section exhibited a Cronbach's Alpha of 0.82,

reflecting a very high level of reliability. Besides, the Social Media Integration section also achieved a Cronbach's Alpha of 0.89, confirming that the items within this section consistently measured the intended concept. Moreover, the Overall Engagement has a Cronbach's Alpha of 0.86, which shows a good level of reliability. These results collectively affirm the reliability of the survey instrument, ensuring that it produces stable and consistent measurements across respondents.

Table 4 Cronbach's alpha coefficients

Section	Number of questions	Cronbach's Alpha
Feedback Mechanism	5	0.82
Personalized Learning	5	0.83
Social Media Integration	5	0.89
Overall Engagement	4	0.86

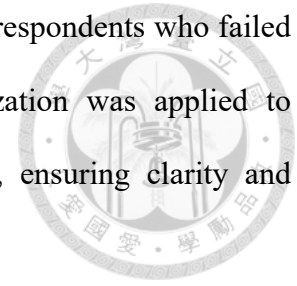
These values exceed the commonly accepted threshold of over 0.70 (Tavakol & Dennick, 2011), indicating excellent internal consistency. Such high reliability coefficients suggest that the items within each section consistently measure the same underlying construct, thereby affirming the reliability of the survey instrument.

By adhering to established methodologies and incorporating expert feedback, the survey instrument demonstrated robust validity and reliability, ensuring that the data collected would provide meaningful insights into the factors influencing Vietnamese students' engagement with AI-based English learning applications.

3.2.4 Data Analysis Method

This study employed a systematic and methodologically sound approach to data analysis using SPSS, ensuring accurate data processing, interpretation, and presentation. The analysis

began with data preparation and cleaning, including the exclusion of two respondents who failed screening questions and six more for careless responding. Standardization was applied to categorical variables, such as gender, age group, and education level, ensuring clarity and consistency across the dataset.



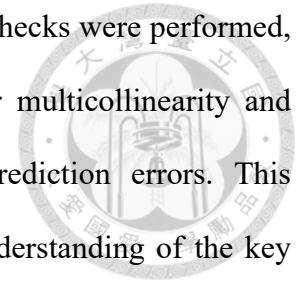
Reliability assessment followed, using Cronbach's Alpha to evaluate the internal consistency of the survey sections: Feedback Mechanism ($\alpha = 0.82$), Personalized Learning ($\alpha = 0.83$), Social Media Integration ($\alpha = 0.89$), and Overall Engagement ($\alpha = 0.86$). These values indicated that the items within each section were consistently measuring the intended constructs.

Descriptive statistics summarized the demographic characteristics and app usage patterns of respondents, providing insights into the composition of the sample. Means, standard deviations, and frequency distributions were calculated for key demographic variables, while the main engagement factors—Feedback, Personalized Learning, and Social Media Integration—were also analyzed descriptively.

Multiple linear regression analysis was conducted to evaluate the combined and individual effects of the three independent variables—feedback mechanism, personalized learning, and social media integration—on overall learner engagement. The regression coefficients revealed both the direction and strength of each predictor's influence, while model fit was assessed through R-squared and adjusted R-squared values, indicating that the predictors explained a substantial portion of the variance in engagement.

Next, the relationships between the independent variables (Feedback, Personalized Learning, and Social Media Integration) and the dependent variable (Overall Engagement) were explored using Spearman's correlation analysis. This non-parametric method was chosen due to the ordinal nature of the Likert scale responses and the non-normal distribution of the data.

Finally, to ensure the model's validity and robustness, diagnostic checks were performed, including an evaluation of Variance Inflation Factors (VIF) to test for multicollinearity and residual statistics to examine the distribution and consistency of prediction errors. This comprehensive analytical approach provided a reliable and insightful understanding of the key factors shaping learner engagement in AI-based English learning applications.



4. Results

4.1 Descriptive Statistics

This section presents the descriptive statistics of the four key variables in this study: Feedback Mechanism (FM), Personalized Learning (PE), Social Media Integration (SM), and Overall Engagement (EN). Descriptive statistics were used to provide an initial understanding of the data, including measures of central tendency (mean, median, mode), variability (standard deviation, variance), and distribution (skewness). These statistics offer a comprehensive overview of the respondents' perceptions of each factor and their overall engagement with AI-based English learning applications and are presented in Table 5.

Table 5 Descriptive Statistics

Statistics	FM	PE	SM	EN
Mean	5.32	5.27	4.81	5.21
Standard Error	0.09	0.09	0.11	0.09
Median	5.4	5.2	5.0	5.25
Mode	5.4	5.0	5.0	6.0
Standard Deviation	1.06	1.10	1.38	1.10
Sample Variance	1.13	1.22	1.90	1.21
Skewness	-0.99	-0.60	-0.72	-0.63

The results indicate that the mean scores for the four factors were generally high, reflecting positive user perceptions. Specifically, the mean score for Feedback Mechanism was 5.32, suggesting that respondents generally viewed the feedback features of the application positively. Similarly, Personalized Learning had a mean score of 5.27, indicating a favorable perception of the app's ability to tailor learning experiences to individual needs. Social Media Integration, with a mean of 4.81, was rated slightly lower than the other two factors, suggesting that social media features were perceived as moderately useful. Finally, Overall Engagement had a mean score of

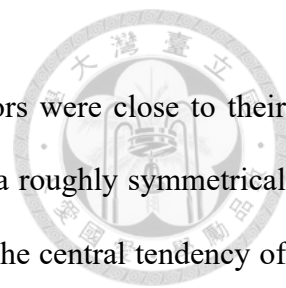
5.21, demonstrating generally high engagement among respondents.

In terms of central tendency, the median values for the four factors were close to their respective means (FM = 5.4, PE = 5.2, SM = 5.0, EN = 5.25), indicating a roughly symmetrical distribution for each variable. The mode values were also consistent with the central tendency of each factor, with most respondents selecting similar ratings. For instance, the mode of Feedback Mechanism was 5.4, while the mode of Overall Engagement was 6, suggesting that the most frequently chosen ratings were generally high.

The variability of responses was assessed using standard deviation and sample variance. Feedback Mechanism (SD = 1.06) and Personalized Learning (SD = 1.10) showed moderate variability, indicating that most respondents provided consistent ratings for these factors. In contrast, Social Media Integration (SD = 1.38) demonstrated higher variability, suggesting that respondents had more diverse opinions about the usefulness of social media features in the AI-based learning application. Overall Engagement (SD = 1.10) also exhibited moderate variability, consistent with the other main factors.

The skewness values further revealed the distribution characteristics of each factor. Feedback Mechanism (Skewness = -0.99) was moderately left-skewed, indicating that most respondents provided high ratings, but a few gave lower scores, resulting in a negative tail. Personalized Learning (Skewness = -0.60) and Overall Engagement (Skewness = -0.63) were slightly left-skewed, reflecting a similar pattern of higher scores with a slight negative tail. Social Media Integration (Skewness = -0.72) was also slightly left-skewed but had the highest variability among the four factors, suggesting a wider range of opinions among respondents.

These descriptive statistics provide a clear understanding of how respondents perceived the key factors of the AI-based English learning application. The high mean values for Feedback



Mechanism and Personalized Learning indicate that these features were generally well-received. In contrast, the moderate variability and slight skewness of Social Media Integration suggest that respondents had more diverse opinions about this aspect of the application. These characteristics of the data not only offer insights into user perceptions but also justify the use of non-parametric methods such as Spearman's correlation in subsequent analyses, given the moderate skewness of the distributions.

4.2 Multiple Linear Regression Analysis

Multiple linear regression was employed in this study to examine the simultaneous influence of multiple independent variables—Feedback Mechanism, Personalized Learning, and Social Media Integration—on learner engagement. This method was chosen because it allows for the analysis of how each predictor uniquely contributes to the variance in the dependent variable while controlling for the effects of the others. By using multiple linear regression, the study could assess not only the overall explanatory power of the model but also identify which factors had statistically significant effects on engagement. This approach is particularly appropriate given the continuous nature of the dependent variable and the study's objective to understand the combined and individual impact of multiple engagement-related features in AI-based English learning applications.

Table 6 Model Summary of Multiple Linear Regression

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Durbin-Watson
1	.559	.313	.298	.92209	1.964

From Table 6, it can be seen that the model summary of the multiple linear regression analysis indicated that the three predictors, Feedback Mechanism, Personalized Learning, and

Social Media Integration, collectively explained approximately 31.3% of the variance in learner engagement (as shown by the R-squared value). The adjusted R-squared value of 29.8% accounts for the number of predictors and suggests that the model has a good fit without overestimating its explanatory power. The correlation coefficient ($R = .559$) reflects a moderate positive relationship between the predicted and actual values of engagement. The standard error of the estimate was 0.92209, indicating a relatively low average prediction error. Additionally, the Durbin-Watson statistic was 1.964, which is close to the ideal value of 2.0, suggesting that there was no significant autocorrelation in the residuals. Overall, these results indicate that the model provides a statistically meaningful and reliable prediction of learner engagement based on the selected variables.

Table 7 ANOVA Results for the Regression Model

Model	Sum of Squares	df	Mean Square	F	p
Regression	55.333	3	18.444	21.693	< .001
Residual	121.586	143	0.850		
Total	176.919	146			

The ANOVA results for the regression model, as presented in Table 7, indicate that the overall model is statistically significant, $F(3,143) = 21.69$, $p < .001$. This means that the combination of the three predictors, Feedback Mechanism, Personalized Learning, and Social Media Integration, collectively contributes to explaining a significant portion of the variance in learner engagement. The regression sum of squares was 55.333, compared to a residual sum of squares of 121.586, showing that a substantial amount of the total variation in engagement scores (total sum of squares = 176.919) is accounted for by the model. These findings confirm that the predictors, when considered together, significantly improve the model's ability to predict learner

engagement compared to a model with no predictors.



Table 8 Regression Coefficients Predicting Learner Engagement

Predictor	B	SE	β	t	p	VIF
(Constant)	1.824	0.429	—	4.257	< .001	—
Feedback Mechanism	0.261	0.095	0.252	2.756	.007	1.743
Personalized Learning	0.281	0.095	0.281	2.957	.004	1.877
Social Media Integration	0.109	0.062	0.136	1.746	.083	1.271

The regression coefficients predicting learner engagement, as shown in Table 8, provide detailed insights into the individual impact of each predictor variable. Both Feedback Mechanism and Personalized Learning were statistically significant contributors, with unstandardized coefficients of 0.261 and 0.281, respectively. Their standardized beta values were .252 ($p = .007$) and .281 ($p = .004$), indicating moderate and relatively equal positive effects on engagement. Social Media Integration had a smaller unstandardized coefficient of 0.109 and a standardized beta of .136, which was not statistically significant ($p = .083$). The constant value of 1.824 represents the predicted engagement score when all predictor variables are set to zero. Based on these results, the regression model suggests that learner engagement can be predicted using the following formula:

Engagement score = $1.824 + (0.261 \times \text{Feedback Mechanism score}) + (0.281 \times \text{Personalized Learning score}) + (0.109 \times \text{Social Media Integration score})$.

4.3 Spearman's Correlation Analysis

This section presents the results of the Spearman's correlation analysis conducted to explore the relationships between the three independent variables—Feedback Mechanism (FM), Personalized Learning (PE), and Social Media Integration (SM)—and the dependent variable,

Overall Engagement (EN).



Table 9 Spearman's Correlation Results

Variable Pair	ρ	P-value	N	Interpretation
				Strong positive correlation
FM - PE	+0.663	< 0.001	147	(significant)
				Moderate positive correlation
FM - SM	+0.382	< 0.001	147	(significant)
				Moderate positive correlation
FM - EN	+0.445	< 0.001	147	(significant)
				Moderate positive correlation
PE - SM	+0.492	< 0.001	147	(significant)
				Moderate positive correlation
PE - EN	+0.455	< 0.001	147	(significant)
				Moderate positive correlation
SM - EN	+0.390	< 0.001	147	(significant)

Spearman's correlation was selected because the data demonstrated a moderate to slight skewness, making it unsuitable for Pearson's correlation, which requires a normal distribution. As a non-parametric method, Spearman's correlation is particularly appropriate for ordinal data, such as the Likert scale responses used in this study, and it measures the strength and direction of the monotonic relationship between two variables without assuming normality.

The correlation coefficients, p-values, and sample sizes for each pair of variables are presented in Table 6. The results reveal significant positive correlations between all three

independent variables and Overall Engagement. Specifically, Feedback Mechanism (FM) showed a moderate positive correlation with Overall Engagement ($\rho = 0.445$, $p < 0.001$), indicating that respondents who rated the feedback features of the application more favorably were more likely to report higher engagement. Personalized Learning (PE) also demonstrated a moderate positive correlation with Overall Engagement ($\rho = 0.455$, $p < 0.001$), suggesting that learners who experienced more personalized content tended to be more engaged. Social Media Integration (SM), while still positively correlated with Overall Engagement, exhibited a slightly weaker relationship ($\rho = 0.390$, $p < 0.001$). This suggests that while social media features may enhance engagement, their influence is not as strong as that of feedback or personalized learning.

The results also show strong positive correlations between the three independent variables themselves. Specifically, Feedback Mechanism (FM) and Personalized Learning (PE) are strongly correlated ($\rho = 0.663$, $p < 0.001$), suggesting that users who rated feedback positively also tended to view personalized learning features favorably. Similarly, Personalized Learning (PE) and Social Media Integration (SM) are moderately correlated ($\rho = 0.492$, $p < 0.001$), indicating a connection between the use of personalized content and social media features. The moderate correlation between Feedback Mechanism (FM) and Social Media Integration (SM) ($\rho = 0.382$, $p < 0.001$) suggests that although these two features are positively related, their connection is not as strong.

The statistically significant positive correlations between the independent variables and Overall Engagement suggest that all three factors, Feedback Mechanism, Personalized Learning, and Social Media Integration, are important drivers of user engagement. However, the strength of these relationships varies, with Feedback and Personalized Learning having stronger impacts than Social Media. This finding aligns with theoretical expectations, as feedback and personalized learning are core components of effective educational applications, while social media features

may play a supplementary role.

The use of Spearman's correlation in this analysis ensured that the relationships were accurately captured, even in the presence of moderately to slightly skewed data. This approach provided a robust understanding of how each factor is associated with engagement, laying a solid foundation for the subsequent ordinal regression analysis, where the impact of these factors on engagement will be further examined.

4.4 Diagnostic Checks

To ensure the validity of the multiple linear regression model, diagnostic checks were performed to assess potential multicollinearity and verify the distribution of residuals. Two key diagnostic tools were used: Collinearity Diagnostics and Residuals Statistics, as shown in Tables 10 and 11.

Collinearity Diagnostics

Collinearity diagnostics were conducted to detect multicollinearity among the independent variables: Feedback Mechanism, Personalized Learning, and Social Media Integration. Table 10 presents the eigenvalues, condition indices, and variance proportions. The highest condition index was 16.801, which is well below the commonly accepted threshold of 30, indicating no serious multicollinearity. Additionally, variance proportions showed no concerning clustering of high values across predictors within the same dimension.

Table 10 Collinearity Diagnostics for Predictor Variables

Dimension	Eigenvalue	Condition Index	Variance Proportions (%)
1	3.918	1.000	0.00
2	0.046	9.271	0.07
3	0.022	13.265	0.90
4	0.014	16.801	0.03

Residuals Statistics

Residual analysis was also conducted to assess the normality and spread of residuals. As shown in Table 11, the standardized residuals ranged from -2.774 to 2.531, which falls within the acceptable range of ± 3 , indicating the absence of extreme outliers. The mean residual was 0, and the standard deviation was approximately 0.913, suggesting that residuals were symmetrically distributed with no evidence of bias.

Table 11 Residuals Statistics for the Regression Model

Statistic	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.831	6.310	5.213	0.616	147
Residual	-2.558	2.333	0.000	0.913	147
Standardized Predicted	-3.868	1.783	0.000	1.000	147
Standardized Residual	-2.774	2.531	0.000	0.990	147

The diagnostic checks confirmed that the assumptions of multiple linear regression were adequately met. There was no evidence of multicollinearity among the predictors, and the residuals showed no major outliers or violations of normality. These results support the reliability and validity of the regression model used in this study.

4.5 User Motivations and Deterrents for Using English Learning Apps

User Motivations

This section presents the factors that motivate respondents to continue using English learning applications. Table 12 provides a clear overview of the motivational factors, their frequency, and their percentage among respondents.

Table 12 Motivational Factors for Using English Learning Apps

Motivation Factor	Frequency	Percentage (%)
Gamified features (e.g., points, streaks)	106	72.11%
Real-time feedback	91	61.90%
The challenge of improving my skills	80	54.42%
Personalized learning content	74	50.34%
Social sharing and peer interaction	21	14.29%
Others	4	2.72%

The results indicate that gamified features (e.g., points, streaks) are the most significant motivation for users, with 72.11% of respondents identifying this factor. This suggests that game-like elements, which provide immediate rewards and a sense of achievement, are highly effective in maintaining user engagement. This finding aligns with previous research, as gamified features have been widely recognized in past studies as powerful motivators for learner engagement, and are once again validated in the context of this study. (Ho-Minh, 2024; Imlawi, 2021)

Real-time feedback is the second most influential factor (61.90%), emphasizing the importance of immediate corrections and personalized guidance in maintaining user motivation. This aligns with the concept of adaptive learning, where users receive timely feedback to improve their skills. The challenge of improving skills (54.42%) and personalized learning content (50.34%) are also major motivations, highlighting that users are driven by self-improvement and a learning experience tailored to their individual needs. Social sharing and peer interaction (14.29%) appear less influential but still contribute to engagement, indicating that a smaller group of users values social connections in their learning experience. The "Others" category (2.72%) includes additional motivations mentioned by a few respondents, but these were not significant compared to the primary factors.

User Deterrents

This section presents the factors that discourage respondents from continuing to use English learning applications. Table 13 provides a detailed overview of the deterrent factors, their frequency, and their percentage among respondents.



Table 13 Deterrent Factors for Using English Learning Apps

Deterrent Factor	Frequency	Percentage (%)
Poor feedback mechanisms	84	57.14%
Difficulty in using the app	76	51.70%
Lack of personalization	75	51.02%
Lack of social interaction or community	40	27.21%
Others	6	4.08%

The results show that poor feedback mechanisms (57.14%) are the most significant deterrent for users, indicating that many learners become disengaged when they do not receive clear, accurate, and helpful feedback during their learning process. Difficulty in using the app (51.70%) is another critical factor, suggesting that a complex or unintuitive interface can significantly hinder user experience and lead to frustration. Lack of personalization (51.02%) is also a major deterrent, highlighting the importance of adaptive learning experiences that cater to individual user needs. Apps that fail to offer customized content are more likely to lose users. Lack of social interaction or community (27.21%) reflects the desire of some learners for a social learning environment, where they can interact with peers or receive support from a community. The "Others" category (4.08%) includes additional deterrents mentioned by a few respondents, but these factors were not as significant compared to the primary ones.

4.6 Hypothesis on test results

This section presents the results of the hypothesis testing conducted to examine the influence of the three key factors—Feedback Mechanism, Personalized Learning, and Social Media Integration—on Vietnamese students' engagement with AI-based English learning applications. The hypotheses were tested using multiple linear regression, as the dependent variable (Overall Engagement) was treated as a continuous metric for the purpose of analysis. The results of the hypothesis tests are summarized in Table 14, followed by a detailed interpretation of each hypothesis.

4.6.1 Hypothesis 1: Feedback Mechanisms Positively Influence Engagement

Hypothesis 1 proposed that Feedback Mechanisms positively influence Vietnamese students' engagement with AI-based English learning applications. The multiple linear regression results support this hypothesis, with Feedback Mechanism showing a significant positive effect ($B = 0.261, \beta = 0.252, p = .007$).

This indicates that personalized, real-time feedback such as pronunciation correction, grammar suggestions, and progress tracking plays a critical role in promoting user engagement. These features help learners monitor their performance, reduce anxiety, and encourage consistent app use, especially in the Vietnamese context, where traditional classrooms often lack individualized attention.

Descriptive statistics revealed a high mean score ($M = 5.32$) for Feedback Mechanism, and Spearman's correlation confirmed a moderate positive relationship with engagement ($\rho = 0.445, p < .001$). These findings highlight feedback as a core engagement driver, influencing emotional, cognitive, and behavioral dimensions.

In summary, Hypothesis 1 is supported. Feedback Mechanisms significantly enhance user

engagement, suggesting that EdTech developers should prioritize adaptive, responsive feedback systems to support learner motivation and long-term usage.

4.6.2 Hypothesis 2: Personalized Learning Positively Influences Engagement

Hypothesis 2 proposed that Personalized Learning positively influences Vietnamese students' engagement with AI-based English learning applications. The multiple linear regression results confirm this hypothesis, with Personalized Learning showing a statistically significant effect ($B = 0.281$, $\beta = 0.281$, $p = .004$).

This finding suggests that adaptive content, tailored to learners' proficiency, goals, and progress, meaningfully enhances user engagement. Personalized learning supports autonomy, reduces frustration, and sustains motivation, especially in Vietnam's exam-focused education system where one-size-fits-all instruction is common.

The high mean score ($M = 5.27$) for Personalized Learning and its positive correlation with engagement ($\rho = 0.455$, $p < .001$) further validate its influence. When learners feel that tasks are relevant and aligned with their needs, they are more likely to persist, enjoy the learning process, and take ownership of their progress.

In conclusion, Hypothesis 2 is supported. Personalized Learning is a key driver of engagement in AI-powered apps. Developers should continue to improve personalization features to maximize relevance and learner satisfaction, ultimately enhancing learning outcomes.

4.6.3 Hypothesis 3: Social Media Integration Positively Influences Engagement

Hypothesis 3 proposed that Social Media Integration positively influences Vietnamese students' engagement with AI-based English learning applications. However, results from the multiple linear regression did not fully support this hypothesis. While Social Media Integration showed a positive relationship with engagement ($B = 0.109$, $\beta = 0.136$), the effect was not

statistically significant ($p = .083$).

This suggests that although features like sharing progress, joining challenges, and receiving peer recognition may contribute to engagement, their impact is weaker compared to Feedback Mechanism and Personalized Learning. This is consistent with the lower mean score for Social Media Integration ($M = 4.81$) and its moderate correlation with engagement ($\rho = 0.390, p < .001$), indicating that students view these features as somewhat helpful but not essential.

In the Vietnamese context, where students are highly active on social media, such features may offer emotional encouragement and social motivation. However, their influence may depend on individual preferences and app implementation quality.

In summary, while Social Media Integration shows some potential, Hypothesis 3 is only partially supported. Developers should consider enhancing the depth and interactivity of social features to strengthen their role in fostering learner engagement.

4.6.4 Summary of Hypothesis Test Results

Table 14 Summary Table of Hypothesis Test Results

Hypothesis	Supported	p-value	Standardized Beta (β)	Interpretation
H1: Feedback Mechanism to Engagement	Yes	.007	0.252	Significant positive effect
H2: Personalized Learning to Engagement	Yes	.004	0.281	Significant positive effect
H3: Social Media Integration to Engagement	No	.083	0.136	Positive but not statistically significant

The hypothesis test confirmed that Feedback Mechanism and Personalized Learning significantly and positively influenced user engagement, with $p < .01$ in both cases. These features were strong predictors, enhancing motivation and consistent app usage. Social Media

Integration showed a positive but non-significant effect ($p = .083$), suggesting limited influence in this sample. Overall, the multiple linear regression model explained 31.3% of the variance in engagement. These findings highlight the importance of focusing on adaptive feedback and personalization to drive engagement, while social features may require further development to increase their impact.

5. Discussion



5.1 Discussion

This chapter provides a deeper interpretation of the study's findings by connecting them with existing literature and theoretical frameworks, focusing on how Feedback Mechanism, Personalized Learning, and Social Media Integration influence Vietnamese students' engagement with AI-based English learning applications.

5.1.1 The impacts of Feedback Mechanism on Engagement

The findings of this study highlight that Feedback Mechanism is a significant predictor of student engagement in AI-based English learning applications, particularly among Vietnamese learners. Learners who perceive the app's feedback as immediate, relevant, and personalized are more likely to remain engaged across cognitive, emotional, and behavioral dimensions.

This result aligns with existing literature emphasizing the central role of feedback in learner motivation and performance. In digital learning environments, especially AI-powered platforms, feedback serves as a substitute for human interaction, offering corrections, encouragement, and progress tracking in real time (Arini et al., 2022; Ilin, 2022). For Vietnamese learners, this is particularly important given the typical classroom challenges such as large class sizes, lack of individual attention, and limited speaking opportunities. Apps like Duolingo and ELSA Speak that offer real-time pronunciation scoring and grammar feedback provide a low-pressure environment where students can practice without fear of embarrassment, which enhances emotional engagement and reduces anxiety (Thach & Khau, 2025).

Furthermore, the feedback feature contributes to cognitive engagement by allowing learners to monitor their progress and identify areas for improvement. When feedback is constructive and timely, it encourages reflection, reinforces correct usage, and deepens

understanding. The descriptive statistics in this study showed a high mean score ($M = 5.32$) for Feedback Mechanism, indicating a generally favorable perception of its usefulness. This supports the idea that when learners trust the feedback provided by an app, they are more likely to pay attention, stay focused, and put in greater mental effort.

From a behavioral perspective, feedback also serves as a driver for continued use. Users who receive meaningful and motivating feedback tend to return more frequently to the app and persist longer in their learning efforts. Gamified feedback, such as rewards for correct answers or progress streaks, can further reinforce this behavior. In this study, real-time feedback mechanism was also identified as the second most cited motivational factor by respondents (61.90%), further confirming its role in promoting consistent app usage.

Theoretically, these findings align well with Self-Determination Theory (Ryan & Deci, 2000), which posits that feedback supports the psychological needs of competence and autonomy. When learners receive clear guidance on their progress, they feel more capable and in control of their learning, thus becoming more intrinsically motivated.

However, it is worth noting that while feedback is highly valued, its effectiveness depends on its quality and delivery format. Poorly designed or generic feedback may lead to confusion or frustration, as shown in the user deterrent section of this study, where "poor feedback mechanisms" were cited by 57.14% of respondents as a reason for disengagement. This reinforces the idea that feedback must be accurate, timely, and personalized to truly drive engagement.

In summary, the feedback mechanism is a crucial component of AI-based English learning applications. It directly supports learners' emotional security, cognitive focus, and behavioral persistence. For developers and educators, ensuring that feedback is both intelligent and learner-centric is key to maximizing engagement and learning outcomes.

5.1.2 The impacts of Personalized Learning on Engagement

The results of this study strongly support the hypothesis that Personalized Learning positively influences Vietnamese students' engagement with AI-based English learning applications. Users who experience more tailored content report higher levels of engagement.

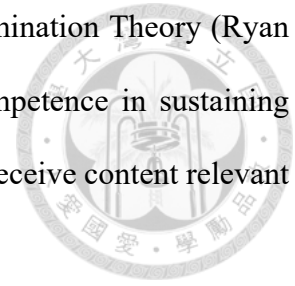
Personalized learning features in AI-powered apps, such as adaptive content, individual progress tracking, and targeted skill reinforcement, are especially valuable in Vietnam's exam-oriented education system, which often lacks differentiated instruction. These features enable learners to bypass the rigid one-size-fits-all curriculum and engage with English in a way that reflects their specific goals, interests, and current proficiency levels (Pham & Le, 2024; Thuy Nhu Thi et al., 2024).

The positive perception of this feature aligns with findings from other studies (Ouyang et al., 2024), indicating that students are more motivated when they feel the app reflects their needs and progression. When learners experience tasks that are appropriately challenging and relevant, they are more likely to remain engaged.

From a cognitive engagement perspective, personalized content helps learners stay focused by offering appropriately challenging tasks. Rather than encountering repetitive or mismatched exercises, learners can progress at their own pace and revisit areas where they struggle. This sense of control enhances understanding and encourages deeper mental effort. According to (Ouyang et al., 2024), adaptive learning in apps like Duolingo increases users' willingness to communicate in English—a finding consistent with the motivation and confidence-building effects reported in this study.

Emotional engagement is also enhanced through personalization. When learners feel that the app “knows” them—recommending content based on their skill gaps or personal goals—they

are more likely to feel supported and valued. This aligns with Self-Determination Theory (Ryan & Deci, 2000), which emphasizes the importance of autonomy and competence in sustaining intrinsic motivation. The freedom to choose learning paths, set goals, and receive content relevant to one's interests fulfills these psychological needs.



Behavioral engagement, including repeated app usage and longer learning sessions, is likewise supported by personalized learning features. Respondents in this study frequently cited personalization as a motivation to continue using the app. On the other hand, many users reported “lack of personalization” as a major deterrent (Table 13), confirming that when this feature is missing or poorly executed, learners tend to disengage.

In the Vietnamese context, where learners range widely in proficiency and learning goals, from TOEIC preparation to conversational fluency, AI-driven personalization can fill critical gaps left by conventional instruction. This is especially beneficial for students who prefer to focus on practical, real-life English applications rather than purely academic tests (Ngo, 2024).

In summary, Personalized Learning is a powerful predictor of engagement, offering learners a sense of control, relevance, and progression. For EdTech developers, this highlights the need to refine adaptive algorithms and user profiling systems to ensure learning experiences are both dynamic and learner-centered.

5.1.3 The impacts of Social Media Integration on Engagement

This study explored the role of Social Media Integration in influencing student engagement with AI-based English learning applications. Although the multiple linear regression model showed a positive relationship, the effect was not statistically significant. This indicates that while social features may contribute to engagement, their influence was weaker and less consistent compared to the other factors.

Despite this, descriptive and correlational data still suggest a moderate link between social features and engagement. Social media integration in AI-based apps often includes functions like sharing learning progress, joining challenges, or receiving recognition through likes and comments. These features can promote emotional engagement by creating a sense of accomplishment and peer support.

As noted in your literature review, Vietnamese students are highly active on platforms like Facebook, TikTok, and Zalo (Statista, 2023), which suggests potential for these features to enhance motivation and enjoyment through public recognition and community building (Manca, 2020).

For example, Duolingo encourages users to share learning streaks, participate in leaderboards, or invite friends. These gamified social elements align with Engagement Theory (Kearsley & Shneiderman, 1998), which emphasizes collaborative, meaningful learning experiences. In this context, social sharing can foster accountability and increase learner satisfaction, especially when peers offer encouragement.

However, the user feedback in this study reveals limitations. Only a small portion of respondents cited social interaction as a key motivator, while others identified a lack of social engagement as a deterrent. These figures suggest that while social features are valued by some users, they are not essential or universally appealing. Preferences may depend on personality, learning style, or how well the app implements these features.

Moreover, Vietnamese learners may still prioritize academic performance and efficiency over community interaction, particularly in a culture that often associates education with formal structure and measurable outcomes (Nguyen & Phan, 2024; Pham et al., 2023). In such environments, social features might be perceived as distractions rather than valuable components of learning.

Another limitation may lie in the design of current social features, which tend to focus on external sharing rather than meaningful in-app collaboration. Simply allowing users to post achievements may not be enough to sustain engagement unless combined with deeper peer-to-peer interactions or mentorship.

In conclusion, while Social Media Integration shows potential to support emotional and behavioral engagement, it was not a significant predictor in this study's regression model. To maximize its impact, EdTech designers should consider embedding more meaningful, community-based interactions and aligning them with learners' cultural and motivational needs. Further research may also explore segmenting learners by engagement type to better tailor social features to different user profiles.

5.2 Research Implications

The research implications chapter examines the broader significance of the study's findings, highlighting how the results contribute to existing theories of engagement, educational technology, and language learning, while offering insights for future research in the field.

5.2.1 Theoretical Implications

This study contributes to the theoretical understanding of learner engagement in the context of AI-based English learning applications by highlighting the roles of Feedback Mechanism, Personalized Learning, and Social Media Integration. Drawing from established frameworks such as Self-Determination Theory (Ryan & Deci, 2000) and Engagement Theory (Kearsley & Shneiderman, 1998), the research provides empirical evidence on how these digital features influence cognitive, emotional, and behavioral engagement—particularly among Vietnamese university students.

One key theoretical contribution is the validation of Self-Determination Theory (SDT) in

AI-assisted language learning environments. SDT suggests that intrinsic motivation is fostered when learners experience autonomy, competence, and relatedness. This study confirms that Personalized Learning significantly enhances engagement by promoting a sense of autonomy and control. When learners receive content tailored to their skill level and personal goals, they are more likely to feel competent and self-motivated. Similarly, the Feedback Mechanism supports the psychological need for competence by helping users monitor progress and improve through timely, adaptive guidance. These findings reinforce SDT's relevance in digital learning, especially in mobile-driven, AI-enhanced contexts.

In terms of Engagement Theory, which emphasizes collaborative and interactive learning, the study adds nuanced insights. While Social Media Integration was expected to contribute to relatedness and emotional engagement, the findings showed that its effect was not statistically significant. This suggests that simply enabling social sharing or competitive features may not be enough to create meaningful connections in learning apps. The implication here is that relatedness in digital language learning may require deeper, more interactive features, such as group-based tasks, real-time peer interaction, or mentorship systems, to align with Engagement Theory's emphasis on purposeful collaboration.

Moreover, the study adds to the literature by advancing a multi-dimensional conceptualization of engagement. While many prior studies have treated engagement as a single outcome, this research supports the view that engagement is composed of interrelated but distinct cognitive, emotional, and behavioral components (O'Brien & Toms, 2008). By examining how different app features influence each of these dimensions, the study contributes to a more detailed and layered understanding of how engagement functions in mobile-assisted language learning (MALL).

The Vietnamese context further enriches the theoretical discussion. Learners in Vietnam face unique educational challenges, including large class sizes, test-focused instruction, and anxiety around English speaking. The effectiveness of feedback and personalization in this study demonstrates that AI features can act as compensatory tools in environments where traditional instruction falls short. This extends the applicability of SDT and Engagement Theory into underrepresented, non-Western educational settings, suggesting these frameworks are robust across cultural contexts when appropriately adapted.

Lastly, this study provides a foundation for future theoretical models that integrate AI-specific variables, such as real-time data feedback, algorithm-driven content delivery, and learner-app interaction dynamics, into engagement research. As EdTech continues to evolve, there is a growing need to revisit traditional theories and incorporate elements unique to intelligent systems. This research represents a step toward that direction, encouraging future scholars to develop hybrid models that bridge cognitive psychology, educational technology, and artificial intelligence.

5.2.2 Practical Implications

The findings of this study offer several practical implications for key stakeholders in the education technology ecosystem, including app developers, educators, curriculum designers, and policy makers seeking to enhance learner engagement through AI-based English learning applications, especially within the Vietnamese context.

First, for EdTech developers, the results emphasize the critical importance of designing applications that offer high-quality feedback mechanisms. Since feedback was found to significantly influence engagement, apps should prioritize timely, personalized, and actionable feedback. This includes features such as real-time pronunciation correction, grammar suggestions, and performance analytics that track individual progress over time. Developers should also ensure

that feedback is understandable and encouraging, avoiding overly technical or generic messages. As user satisfaction with feedback directly correlates with retention and engagement, refining these mechanisms can improve both learning outcomes and app loyalty.

Second, the study highlights that personalized learning paths play a pivotal role in keeping learners motivated and engaged. Developers should integrate adaptive learning algorithms that adjust content difficulty, sequence, and recommendations based on user behavior, performance, and preferences. For example, allowing users to select learning goals and tailoring lessons accordingly can help learners feel more in control and aligned with their personal needs. This level of personalization not only enhances engagement but also increases the app's perceived value and relevance.

For educators and language centers, the findings suggest the need to integrate AI-based tools with traditional teaching methods. Teachers can leverage applications with strong feedback and personalization features to supplement classroom instruction, particularly in large classes where individual attention is limited. Encouraging students to use apps like Duolingo or ELSA Speak outside of class allows for additional practice and confidence-building—especially in speaking and pronunciation, areas where many Vietnamese learners struggle. Teachers should also monitor and guide students in selecting appropriate apps that match their learning levels and goals.

Curriculum designers can apply these insights by embedding AI-enhanced tools into blended classroom models. By aligning app content with formal lesson objectives and ensuring coherence between in-class and out-of-class activities, educators can create a more seamless and engaging learning experience. In addition, gamified elements, such as badges, streaks, and challenge-based learning, can be integrated into assessment strategies to maintain student interest and participation.

For policy makers and educational leaders, the study provides evidence to support investment in AI-powered educational technologies, particularly in public schools and universities where traditional resources may be constrained. Policies encouraging partnerships between EdTech firms and educational institutions can accelerate the adoption of scalable, personalized learning tools. Furthermore, training programs should be developed to equip teachers with the digital literacy and pedagogical strategies needed to effectively use AI tools in classrooms.

Finally, while social media integration showed weaker statistical influence, it still holds potential for fostering learner motivation and emotional connection. Developers and educators could consider enhancing community-based learning features, such as peer discussions, learning groups, or mentorship networks, to make social elements more meaningful and supportive.

In summary, the practical implications of this study call for a more learner-centered, adaptive, and feedback-driven approach to digital language education. By aligning technology features with student needs and learning behaviors, stakeholders can create more engaging, effective, and sustainable learning environments.

5.3 Limitations and Recommendations

While this study provides meaningful insights into the factors influencing Vietnamese students' engagement with AI-based English learning applications, several limitations should be acknowledged, along with recommendations for future research and practical improvements.

Limitations

First, the study employed an one-time survey design, which captures respondents' perceptions at a single point in time. This limits the ability to assess changes in engagement over time or draw causal conclusions. Longitudinal studies would be more suitable for understanding how engagement evolves as learners continue using these apps.

Second, although the sample size of 147 respondents provides sufficient data for regression analysis, it was collected through convenience sampling via online platforms and was limited to Vietnamese learners. As a result, the findings primarily reflect the experiences of Vietnamese users, and may not be generalizable to learners from other cultural or linguistic backgrounds. Additionally, the sample skewed toward university students aged 18–24, primarily from urban areas with stable internet access, which may underrepresent younger learners, working adults, rural populations, or those with limited access to technology.

Third, the study relied entirely on self-reported data, which is subject to bias such as social desirability and inaccurate self-assessment. Respondents might overstate their engagement or misinterpret questions. Although efforts were made to ensure validity and reliability, including a pilot test and high Cronbach's alpha scores, objective data (e.g., actual app usage logs) could enhance accuracy in future studies.

Fourth, while three key variables, Feedback Mechanism, Personalized Learning, and Social Media Integration, were examined, other potentially important engagement factors were not included. Features like UI/UX design, or learning motivation types such as intrinsic and extrinsic may also influence engagement but were beyond the scope of this research.

Finally, the study primarily focused on popular AI-powered apps such as Duolingo and ELSA Speak, which may have more robust features than lesser-known platforms. Thus, the findings may not reflect the experience of users on lower-tier or underdeveloped apps that lack personalization or feedback quality.

Recommendations

To build on the findings and address the limitations identified, several directions for future research and practice are suggested. One of the most important steps is to conduct extended

research that tracks learners over a long-term period. This approach would allow for a deeper understanding of how engagement evolves through different stages of app use, goal completion, or academic progression, something that a one-time survey cannot fully capture.

Notably, as this study was conducted exclusively with Vietnamese learners, future studies should aim to diversify the sample by including participants from a broader range of age groups, education levels, and geographic locations, both within and beyond Vietnam. This would improve the generalizability of findings and ensure that engagement strategies are inclusive and responsive to varied learner needs.

Additionally, it would be beneficial to integrate behavioral data from actual app usage logs, such as time spent on tasks, interaction frequency, or feature-specific engagement. Combining this with self-reported data could provide a more accurate and holistic picture of how learners interact with AI-based English learning tools.

Expanding the research model to include other engagement-related variables, such as interface usability or learners' motivational profiles, could also strengthen the theoretical framework. These elements are known to influence digital learning outcomes but were not covered in the present study due to its focused scope.

Finally, there is strong value in encouraging collaboration between EdTech developers, educators, and academic researchers. By applying empirical evidence to the iterative design of feedback systems and personalization engines, learning apps can become more user-centered, culturally responsive, and pedagogically effective. These collaborative efforts would ensure that AI-powered applications are not only technologically sophisticated but also grounded in learners' real needs and behaviors.

6. Conclusion

This study explored the key factors influencing Vietnamese students' engagement with AI-based English learning applications, focusing on three core elements: Feedback Mechanism, Personalized Learning, and Social Media Integration. Using a quantitative approach with data from 147 qualified respondents, the research applied multiple linear regression analysis to examine how these features impact overall learner engagement, defined across cognitive, emotional, and behavioral dimensions.

The findings revealed that Feedback Mechanism and Personalized Learning significantly and positively influence engagement. These results emphasize the importance of providing timely, adaptive feedback and customizing learning paths based on individual learner needs. In contrast, Social Media Integration, while showing a positive trend, did not yield a statistically significant effect, suggesting that social features alone may not be sufficient to drive strong engagement without deeper interactivity or alignment with learner motivations.

The study contributes to theoretical understanding by supporting Self-Determination Theory and Engagement Theory in the context of AI-driven language learning. It also offers practical recommendations for EdTech developers, educators, and policy makers on designing user-centered features that enhance learning outcomes.

Despite its contributions, the research is not without limitations. The use of self-reported, cross-sectional data and convenience sampling may limit generalizability. Future research is encouraged to adopt longitudinal methods, integrate usage analytics, and include more diverse populations.

In conclusion, as AI continues to transform education, designing English learning applications that combine effective feedback, personalization, and relevant social features is

essential. These tools have the potential to support more engaging, autonomous, and impactful language learning experiences for Vietnamese students and beyond.



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Appendix A: Questionnaire



Section 1: Introduction (Phần 1: Giới thiệu)

Thank you for participating in this survey. This research is part of a thesis project exploring factors that influence Vietnamese students' engagement with AI-based English learning applications.

Your responses will help us gain a clearer understanding of how features such as in-app error correction mechanisms, personalized learning content, and social media integration affect your motivation and learning experience.

All information provided will be kept confidential and used for academic purposes only. The survey will only take approximately 5–7 minutes to complete. At the end of the survey, I would like to offer you a compilation of a study material. Your contribution is greatly appreciated!

(Cảm ơn bạn đã tham gia khảo sát này. Nghiên cứu này giúp tìm hiểu về các yếu tố ảnh hưởng đến mức độ tương tác của người trẻ Việt Nam với các App (ứng dụng) học tiếng Anh có tích hợp trí tuệ nhân tạo - AI.

Câu trả lời của bạn sẽ giúp chúng tôi hiểu rõ hơn về cách các tính năng như cơ chế sửa lỗi trong app, tính cá nhân hóa của nội dung học tập, và tích hợp mạng xã hội ảnh hưởng đến động lực và trải nghiệm học tập của bạn.

Mọi thông tin cung cấp sẽ được giữ bảo mật và chỉ sử dụng cho mục đích học thuật. Khảo sát chỉ mất khoảng 5–7 phút để hoàn thành. Cuối khảo sát, mình xin gửi tặng bạn tài liệu học tập. Mình rất trân trọng sự đóng góp của bạn!)

Section 2: Respondent Evaluation (Phần 2: Đánh giá)

Important Note: This survey is only for individuals currently using English learning apps that integrate AI technology. If you do not learn English or do not use any apps like the list below,

please do not continue with the survey, as this may affect the accuracy of the research results.
Thank you sincerely for your cooperation!

(Lưu ý quan trọng: Khảo sát này chỉ dành cho người đang sử dụng các ứng dụng học tiếng Anh có tích hợp công nghệ AI. Nếu bạn không học tiếng Anh hoặc không sử dụng bất kỳ ứng dụng nào như danh sách dưới đây, bạn vui lòng không tiếp tục khảo sát, vì điều đó có thể ảnh hưởng đến độ chính xác của kết quả nghiên cứu. Xin chân thành cảm ơn bạn vì sự hợp tác!)

1. Are you currently learning English? (Bạn có đang học tiếng Anh không?)
 - ☐ Yes (Có)
 - ☐ No (Không)
2. In the past month, have you used any English learning apps such as Duolingo, ELSA Speak, PrepVN, Cake, and similar English learning applications? (Trong vòng 1 tháng qua, bạn có sử dụng ứng dụng học tiếng Anh nào như Duolingo, ELSA Speak, PrepVN, Cake, và các ứng dụng học tiếng Anh tương tự không?)
 - ☐ Yes (Có)
 - ☐ No (Không)
3. What is your main goal when using English learning apps? (Mục tiêu chính của bạn khi dùng các App học tiếng Anh là gì?)
 - ☐ To improve English communication (Để cải thiện giao tiếp tiếng Anh)
 - ☐ To prepare for certification exams IELTS, TOEIC (Để luyện thi chứng chỉ IELTS, TOEIC)
 - ☐ For work purposes (Để phục vụ công việc)
 - ☐ I do not use English learning apps (Tôi không sử dụng App học tiếng Anh)

Section 3: For disqualified respondents

Thank you for your interest in the survey! However, this survey is only for individuals who are learning English using apps that utilize AI (for example: Duolingo, ELSA Speak, Cake, etc.). Nevertheless, due to your enthusiasm, I'd still like to offer you a material. To receive it, please click on link and select the "Download" button. Note: The download link will expire on May 15, 2025. You should use a laptop to download the file effectively. We hope you will participate in more suitable surveys in the future. Wishing you a wonderful day full of energy!

(Cảm ơn bạn đã quan tâm đến khảo sát! Tuy nhiên, khảo sát này chỉ dành cho những bạn đang học tiếng Anh bằng các ứng dụng có sử dụng AI (ví dụ: Duolingo, ELSA Speak, Cake,...). Tuy nhiên, vì sự nhiệt tình của bạn, mình vẫn gửi tặng bạn tài liệu. Để nhận tài liệu, bạn vui lòng nhấn vào link và chọn nút “Download”. Lưu ý: Link sẽ hết hạn download vào ngày 15/5/2025. Bạn nên sử dụng laptop để download file hiệu quả. Rất mong bạn sẽ tham gia ở những khảo sát phù hợp hơn trong tương lai. Chúc bạn một ngày thật tốt lành và nhiều năng lượng!)

Qualified respondents will continue to section 6

Section 4: Part 1 – Overview (Phần 1 – Thông tin chung)

1. Which AI-based English learning apps do you use most often to learn English? (Select all that apply)

(Bạn thường xuyên sử dụng ứng dụng học tiếng Anh nào dưới đây? (Chọn tất cả những App mà bạn đã/ đang sử dụng))

- Duolingo
- ELSA Speak
- Babbel
- Memrise
- CAKE

- Mochi Mochi
- Other (please specify):



2. How often do you use AI-based English learning apps? (Bạn sử dụng các ứng dụng học tiếng Anh trên với tần suất như thế nào?)

- Daily (Hàng ngày)
- A few times a week (Vài lần mỗi tuần)
- Once a week (Một lần mỗi tuần)
- Less than once a week (Ít hơn một lần mỗi tuần)

Section 5: Part 2 – Feedback Mechanism (Phần 2 – Cơ chế sửa lỗi của app)

In this survey, *feedback* means the comments, corrections, or suggestions you receive from the English learning app. For example, the app may: tell you if your pronunciation is correct, show you grammar mistakes, track your progress and give you tips to improve. This feedback usually appears right after you finish a task or answer a question, and it is based on how you perform.

(Trong khảo sát này, "sửa lỗi" nghĩa là các nhận xét, đánh giá, hoặc góp ý mà bạn nhận được từ ứng dụng học tiếng Anh. Ví dụ, ứng dụng có thể cho bạn biết cách phát âm có đúng không, chỉ ra lỗi ngữ pháp, theo dõi tiến trình và đưa ra giải pháp cải thiện. Việc sửa lỗi này thường xuất hiện ngay sau khi bạn hoàn thành một bài tập, câu hỏi, hoặc nhiệm vụ, và dựa trên quá trình học của bạn.)

1. The immediate and personalized feedback provided by the app clearly helps me understand how to specifically improve my English skills. (1. Việc được sửa lỗi ngay lập tức và những góp ý từ chính lỗi sai tôi hay lặp lại trên App giúp tôi hiểu rõ cách cải thiện kỹ năng tiếng Anh của mình.)
 - a. 1 – strongly disagree (Hoàn toàn không đồng ý)



- b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
2. The personalized feedback provided by the app gives me a sense of progression, control, and competence in learning, thus increasing my engagement. (2. Việc được góp ý từ chính lỗi sai tôi hay mắc phải giúp tôi cảm thấy mình tiến bộ lên, làm chủ được việc học Tiếng Anh, tôi đã học tốt lên – từ đó tôi thấy muốn gắn bó App học tiếng Anh này nhiều hơn.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
3. The app helps me recognize and correct common pronunciation mistakes that Vietnamese learners usually make (e.g., dropping final consonants like /s/, /z/).
- (3. Là người Việt Nam, tôi hay bị các lỗi phát âm, ví dụ như quên phát âm các âm cuối như /s/, /z/. App giúp tôi nhận ra và sửa các lỗi phát âm này.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)



- b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
4. As Vietnamese, the app's pronunciation feedback helps me feel less afraid of speaking English. (4. Là người Việt Nam, việc được góp ý từ chính lỗi sai về phát âm tôi hay mắc phải giúp tôi cảm thấy bớt sợ khi nói tiếng Anh.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
5. I feel more confident in my English speaking ability after receiving real-time feedback from the app. (5. Mỗi khi tôi mắc lỗi sai, tôi đều nhận được góp ý cải thiện từ App, việc này giúp tôi cảm thấy tự tin hơn.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)

- e. 5 – agree (Đồng ý)
- f. 6 –somewhat agree (Phần nào đồng ý)
- g. 7 – strongly agree (Hoàn toàn đồng ý)



Section 6: Part 3: Personalized Learning (Phần 3 – Các nội dung học tập được cá nhân hoá cho tôi)

In this survey, *personalized learning* means the app changes or adjusts your learning based on your own level, progress, and needs. For example, the app may: give you easier or harder exercises depending on how you're doing, recommend tasks that match your learning goals, provide feedback based on your mistakes or performance. This helps you learn in a way that fits you, instead of following the same path as everyone else.

(Trong khảo sát này, “các nội dung học tập được cá nhân hóa” ám chỉ việc App điều chỉnh nội dung các bài học dựa trên trình độ, tiến độ, nhu cầu riêng, và mục tiêu của bạn. Ví dụ: đưa ra bài dễ hoặc khó tùy vào trình độ tiếng Anh hiện tại, gợi ý nội dung phù hợp với mục tiêu học, phản hồi dựa trên các lỗi mà bạn hay gặp phải.)

1. The app adjusts its content based on my personal learning goals, level, pace, and progress. (1. App điều chỉnh nội dung học tập dựa trên mục tiêu học tập, trình độ tiếng Anh hiện tại, tốc độ tiếp thu kiến thức của tôi.)

- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
- b. 2 – somewhat disagree (Phần nào không đồng ý)
- c. 3 – disagree (Không đồng ý)
- d. 4 – neutral (Không đồng ý cũng không phản đối)
- e. 5 – agree (Đồng ý)
- f. 6 –somewhat agree (Phần nào đồng ý)

- 
- g. 7 – strongly agree (Hoàn toàn đồng ý)
2. The app provides repeated practice or extra support when I struggle with specific tasks.
(2. App đưa ra thêm các bài luyện tập củng cố các kiến thức hoặc lỗi mà tôi hay gặp phải.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
- b. 2 – somewhat disagree (Phần nào không đồng ý)
- c. 3 – disagree (Không đồng ý)
- d. 4 – neutral (Không đồng ý cũng không phản đối)
- e. 5 – agree (Đồng ý)
- f. 6 –somewhat agree (Phần nào đồng ý)
- g. 7 – strongly agree (Hoàn toàn đồng ý)
3. Personalized content encourages me to spend more time learning English through the app. (3. Các bài học được cá nhân hóa tạo động lực tôi dành nhiều thời gian hơn để học tiếng Anh.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
- b. 2 – somewhat disagree (Phần nào không đồng ý)
- c. 3 – disagree (Không đồng ý)
- d. 4 – neutral (Không đồng ý cũng không phản đối)
- e. 5 – agree (Đồng ý)
- f. 6 –somewhat agree (Phần nào đồng ý)
- g. 7 – strongly agree (Hoàn toàn đồng ý)
4. As a Vietnamese learner, I find personalized learning helpful because it addresses challenges like pronunciation and grammar that are specific to Vietnamese speakers. (4.

Là người Việt Nam, tôi thấy việc nội dung học được cá nhân hóa rất hữu ích vì giúp giải quyết khó khăn đặc thù của người Việt như phát âm (các âm gió, bật hơi), sự khác biệt về ngữ pháp. VD: tiếng Việt là “con mèo đen”, nhưng tiếng Anh là “a black cat”, tính từ đứng trước danh từ.)



- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
5. I feel more motivated to continue learning English when I can choose content that matches my personal goals (e.g., work, communication, travel), not just test preparation.
- (5. Tôi có động lực học hơn khi được chọn nội dung phù hợp với mục tiêu cá nhân (ví dụ: công việc, giao tiếp, du lịch), thay vì chỉ tập trung ôn luyện lấy bằng cấp, chứng chỉ.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)

Section 7: Part 4: Social Media Integration (Phần 4 – Tích hợp mạng xã hội)

In this survey, *social media features* mean the parts of the app that let you connect your learning with platforms like Facebook, TikTok, or Zalo. For example, the app may let you: share your learning progress or achievements, invite your friends to join and learn with you, post your results or milestones online. These features are meant to make learning more fun and motivating by involving your friends or showing your progress to others.

(Trong khảo sát này, “tính năng mạng xã hội” là những phần của ứng dụng cho phép bạn kết nối việc học với các nền tảng như Facebook, TikTok hoặc Zalo. Ví dụ: chia sẻ tiến trình học, mời bạn bè học cùng, đăng thành tích lên mạng xã hội.)

1. Seeing my friends share their English learning progress on social media encourages me to continue using the English learning app. (1. Việc thấy bạn bè chia sẻ quá trình học tiếng Anh trên mạng xã hội khiến tôi có động lực sử dụng App.)
 - a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
2. Receiving likes, comments, or praise when I share my learning progress on social media motivates me to keep using the English learning app. (2. Được nhận tương tác, bình luận, hay lời khen khi chia sẻ quá trình học trên mạng xã hội khiến tôi có động lực tiếp tục sử dụng App học tiếng Anh.)
 - a. 1 – strongly disagree (Hoàn toàn không đồng ý)



- b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
3. Social features such as leaderboards, rankings, and public recognition make the learning app more engaging for me. (3. Các tính năng xã hội như bảng xếp hạng thành tích, chia sẻ thành tích công khai khiến cho App trở nên thú vị hơn khi sử dụng.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
4. Taking part in social media learning challenges, like sharing learning streaks or pronunciation videos, makes English learning feel less stressful and more enjoyable than traditional learning. (4. Tham gia các thử thách học tập trên mạng xã hội (ví dụ: chia sẻ chuỗi thành tích ngày học, cuộc thi nhỏ) khiến việc học tiếng Anh trở nên vui vẻ, bớt áp lực hơn so với cách học truyền thống.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)



- c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
5. As a Vietnamese learner, I feel like part of a learning community when the app allows me to share my progress on platforms like Facebook, TikTok, or Zalo. (5. Là người Việt Nam, tôi cảm thấy mình là một phần của cộng đồng học tập khi ứng dụng cho phép chia sẻ tiến trình học lên các nền tảng như Facebook, TikTok hay Zalo.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)

Section 8: Part 5: Engagement Overview (Phần 5 – Tổng quan về mức độ gắn kết)

1. Cognitive Engagement: The app helps me stay focused while learning English. (1. App giúp tôi tập trung hơn vào việc học tiếng Anh.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)



- e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
2. Emotional Engagement: I enjoy using this app to learn English. (2. Tôi thích dùng App này để học tiếng Anh.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
3. Behavioral Engagement: I often return to the app to complete more lessons or keep my learning streak. (3. Tôi thường mở App để học đều đặn hoặc muốn duy trì chuỗi ngày học thường xuyên.)
- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)

4. Overall engagement: I feel engaged and motivated when learning English through the app. (4. Tôi cảm thấy có động lực và hứng thú khi học tiếng Anh qua (các) App này.)



- a. 1 – strongly disagree (Hoàn toàn không đồng ý)
 - b. 2 – somewhat disagree (Phần nào không đồng ý)
 - c. 3 – disagree (Không đồng ý)
 - d. 4 – neutral (Không đồng ý cũng không phản đối)
 - e. 5 – agree (Đồng ý)
 - f. 6 – somewhat agree (Phần nào đồng ý)
 - g. 7 – strongly agree (Hoàn toàn đồng ý)
5. What motivates you to continue using the app for learning English? (Select all that apply)
(5. Điều gì thúc đẩy bạn sử dụng (các) App này để học tiếng Anh? (Chọn tất cả những mục phù hợp))

- a. Personalized learning content (Nội dung học được cá nhân hóa)
- b. Real-time feedback (Sửa lỗi liên tục trong quá trình học)
- c. Social sharing and peer interaction (Được chia sẻ thành tích lên mạng xã hội và học với bạn bè)
- d. Gamified features (e.g., points, streaks) (Bài học được thiết kế như đang chơi game (ví dụ: điểm thưởng, chuỗi ngày học nhận quà))
- e. The challenge of improving my skills (Thử thách cải thiện kỹ năng)
- f. Other (please specify): _____ (Khác, vui lòng nói rõ)

6. What factors, if any, cause you to stop using the app? (Select all that apply)
(6. Yếu tố nào sẽ khiến bạn không còn muốn sử dụng App? (Chọn tất cả những mục phù hợp))

- a. Lack of personalization (Thiếu các nội dung học được cá nhân hóa)
- b. Poor feedback mechanisms (Việc góp ý lỗi sai kém hiệu quả)
- c. Lack of social interaction or community (Thiếu sự tương tác với bạn bè, cộng đồng học tập)
- d. Difficulty in using the app (Khó sử dụng)
- e. Other (please specify): _____ (Khác, vui lòng nói rõ)



Section 9: Part 6: Demographic information (Phần 6 – Thông tin về bạn)

1. Age Group (Tuổi)

- ☐ Under 18 (Dưới 18)
- ☐ 18-24 (18-24)
- ☐ 25-30 (25-30)
- ☐ 31-40 (31-40)
- ☐ 41 or above (trên 40)

2. What is your gender? (Giới tính)

- ☐ Male (Nam)
- ☐ Female (Nữ)
- ☐ Prefer not to say (Không muốn chia sẻ)

3. What is your current education level? (3. Trình độ học vấn hiện tại)

- ☐ High school student (Học sinh THPT)
- ☐ University student (Bachelor's) (Đang học Đại học)
- ☐ Master's student (Đang học cao học)
- ☐ Other (please specify) (Khác, vui lòng nói rõ)

4. How would you rate your current English proficiency? (4.Bạn đánh giá khả năng tiếng Anh hiện tại của mình ở mức nào?)

- Beginner (Mới bắt đầu)
- Intermediate (Trung cấp)
- Upper-intermediate (Trung cấp cao)
- Advanced (Nâng cao)



Section 10: End of survey (Kết thúc)

Thank you for participating in the survey! To receive the materials, please click on link and select the "Download" button. Please note:

1. The download link will expire on May 15, 2025. You should use a laptop for the most effective download.
2. If you are entering the form a second time to get the link, please do not click submit twice, as this will affect the research results.
3. If you encounter any issues during the download process, you can contact me via email at ericruan.cht@gmail.com for support. Emails are typically responded to within 3 business days.

(Cảm ơn bạn đã tham gia khảo sát! Để nhận tài liệu, bạn vui lòng nhấn vào link và chọn nút

“Download”. Lưu ý:

1. Link sẽ hết hạn download vào ngày 15/5/2025. Bạn nên sử dụng laptop để download file hiệu quả.
2. Nếu bạn nhập form lần 2 để lấy link, thì đừng nhấn submit 2 lần nhé, như thế sẽ ảnh hưởng tới kết quả nghiên cứu.

3. Nếu có bất kỳ vấn đề gì trong quá trình tải về, bạn có thể liên hệ với mình qua email ericruan.cht@gmail.com để được hỗ trợ nhé, email sẽ thường được phản hồi sau 3 ngày làm việc.)

