

## PAPER

# Gamified Mobile Learning: EFL Students' Attitudes Toward Quizizz for Grammar Instruction

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Hoa Lu City, Vietnam[pdthuan@hluv.edu.vn](mailto:pdthuan@hluv.edu.vn)**ABSTRACT**

This study explores Vietnamese English as a Foreign Language (EFL) students' attitudes toward the application of Quizizz as a mobile-assisted language learning (MALL) tool for grammar instruction. With the increasing integration of gamified platforms in language education, understanding students' perceptions and engagement with such tools is essential. The study employs a quantitative research design, collecting data from 102 students enrolled in a general English course at a university in northern Vietnam. Using a questionnaire, students' attitudes were examined across affective, behavioral, and cognitive dimensions, along with their level of satisfaction with Quizizz. The findings indicate that students generally hold highly positive attitudes toward Quizizz, with high mean scores in affective ( $M = 4.4828$ ,  $SD = 0.70383$ ), behavioral ( $M = 4.3652$ ,  $SD = 0.60594$ ), and cognitive ( $M = 4.5025$ ,  $SD = 0.61690$ ) dimensions, highlighting strong emotional engagement, motivation, and perceived usefulness. A significant positive correlation between attitudes and satisfaction ( $r = .861$ ,  $p < .01$ ) underscores the effectiveness of Quizizz in fostering an engaging learning experience. However, an analysis of gender differences revealed no statistically significant variations in attitudes, suggesting that both male and female students perceive the platform similarly. The study concludes that Quizizz is a valuable tool for grammar learning, reinforcing motivation, engagement, and satisfaction. Findings contribute to theoretical discussions on MALL and gamification, offering practical implications for EFL educators seeking to integrate technology effectively into grammar instruction.

**KEYWORDS**

grammar learning, mobile-assisted language learning (MALL), Quizizz, students' attitudes

## 1 INTRODUCTION

The integration of technology into language education has transformed the learning experience, enabling students to access dynamic, engaging, and effective learning environments. Mobile-assisted language learning (MALL), as a key educational innovation, has demonstrated its potential to enhance flexibility, motivation,

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and autonomy among students [1]–[6]. MALL has been widely employed to support the development of language skills, including listening, speaking, reading, and writing [7]. Mobile applications have proven effective in enhancing listening skills through interactive audio exercises and podcasts [8]. Additionally, advancements in mobile technology have facilitated real-time communication and collaboration, allowing learners to engage in authentic language use [4], [9]–[11] and to improve vocabulary acquisition [12]. Similarly, mobile platforms have supported reading comprehension through interactive texts and annotation tools [10]. Speaking and pronunciation skills have also benefited from real-time feedback provided by AI-based applications [9]. It is also found that students generally hold positive attitudes toward MALL, appreciating its convenience, effectiveness, and engaging nature [13]–[19]. Despite its growing application in various educational contexts, there remains a limited understanding of its effectiveness in supporting English as a foreign language (EFL) learners' grammar acquisition, particularly in Vietnam.

In learning English, grammar forms the backbone of language proficiency, essential for accurate communication in EFL learning [20]. Mastery of grammar allows learners to construct sentences correctly, ensuring clarity and coherence in both written and spoken English [21]–[24]. However, traditional grammar instruction, often characterized by rote memorization and repetitive exercises, has been criticized for being uninspiring and disconnected from real-life applications [24], [25]. These limitations necessitate innovative approaches that can motivate learners and make grammar learning more accessible and engaging.

Quizizz is a MALL platform that has been found to create a fun and interactive environment for learners, making grammar practice enjoyable and reducing learning anxiety [26]–[30]. Quizizz also offers features such as immediate feedback and progress tracking, which can enhance students' motivation and self-regulation in learning [31], [32]. Diverse question types, including multiple-choice, drag-and-drop, true-or-false, and fill-in-the-blank, provide flexibility in assessment design, while the use of multimedia (pictures, videos, and audio) enriches the learning experience [31]. The effectiveness of Quizizz in fostering positive attitudes and improving learning outcomes has been highlighted in various studies. A'yun et al. [33] demonstrated that Quizizz significantly enhanced student engagement and academic performance in religious education, while [26] emphasized its role in increasing students' motivation and technology acceptance in second language learning. Furthermore, research has shown that Quizizz's gamified elements help reduce students' cognitive load and sustain their interest during learning activities [34]–[36]. Despite these findings, the specific impact of Quizizz on grammar learning and its influence on students' attitudes and satisfaction in EFL contexts remain underexplored, especially in regions such as Vietnam. Additionally, students' attitudes toward learning technologies are shaped by various factors, including age, gender, and prior experience [37], [38]. Gender differences in the use of MALL tools, particularly in terms of preferences and attitudes, have been documented in studies, suggesting the need for tailored approaches to accommodate diverse learner needs [39], [40]. Understanding these differences in the context of Quizizz can offer valuable insights for designing inclusive and effective learning experiences.

This study aims to investigate Vietnamese EFL students' attitudes toward the application of Quizizz in grammar learning, examine the relationship between students' attitudes and satisfaction, and explore gender-based differences in their perceptions. By addressing these objectives, this study contributes to the growing body of literature on MALL and gamification in EFL education, providing practical

implications for educators seeking to integrate technology into grammar instruction effectively.

The research questions guiding this study are as follows:

1. What are students' attitudes toward the application of Quizizz in learning grammar regarding affective, behavioral, and cognitive dimensions?
2. Is there a significant relationship between students' attitudes and satisfaction?
3. Do male students and female students differ in their attitudes?

This study holds significance as it contributes to the growing body of knowledge on MALL and gamification in grammar instruction. By examining Vietnamese EFL students' attitudes toward Quizizz and its impact on their learning satisfaction, this study highlights the potential of gamified platforms to transform the traditionally challenging process of grammar learning into an engaging and interactive experience. The study also addresses the existing gap in understanding how gamification strategies, coupled with MALL, can enhance learners' motivation, satisfaction, and overall attitudes toward grammar learning. These insights advance the theoretical understanding of technology-enhanced language education. Practically, the study provides valuable recommendations for EFL educators on how to effectively integrate Quizizz into grammar instruction. By exploring factors such as student attitudes, satisfaction, and gender-based differences, the research offers actionable strategies for tailoring the use of Quizizz to diverse learner needs. Educators can leverage the findings to create dynamic, student-centered classrooms that promote active participation and foster a positive learning environment. Ultimately, this study supports the design of innovative pedagogical approaches that utilize MALL tools like Quizizz to improve grammar learning outcomes, address learning challenges, and enhance the overall effectiveness of EFL instruction.

## 2 LITERATURE REVIEW

### 2.1 Students' attitudes toward Quizizz in learning English

Students' attitudes toward Quizizz in learning English are predominantly positive, reflecting its effectiveness as a gamified and engaging learning tool. Many learners appreciate the platform's interactivity, which enhances their motivation and interest in the learning process. Pham [16] found that university students highly value Quizizz for its ability to transform traditional assessments into enjoyable and stimulating experiences. Similarly, Sorohiti et al. [41] highlighted that students perceive Quizizz as a convenient and efficient platform for reinforcing their English skills, particularly vocabulary and grammar. Gamification elements such as leaderboards, badges, and rewards contribute significantly to students' positive attitudes. These features create a fun, competitive environment that encourages active participation and improves their focus during learning activities [35], [42]. Additionally, the instant feedback provided by Quizizz helps learners identify their mistakes, fostering a growth-oriented mindset and reducing the anxiety often associated with assessments [34]. However, some students have expressed concerns about the platform. For instance, technical issues, such as unstable internet connections and device compatibility, can hinder their learning experience [26]. A few students also reported feeling overwhelmed by the competitive elements, particularly the pressure

to perform well on leaderboards [43]. To address these challenges, educators need to provide guidance on using Quizizz effectively and ensure equitable access to technology. Despite these concerns, the majority of students acknowledge Quizizz as a valuable tool for English learning. They appreciate its flexibility, allowing them to learn at their own pace and revisit materials as needed [44], and its inclusivity, as it caters to diverse learning preferences and supports both collaborative and independent learning environments [27].

## 2.2 Gender differences in students' attitudes toward technology applications

Research consistently highlights gender-based variations in attitudes toward technology use for language learning. Abozandah [37] found that while both male and female students displayed a positive attitude toward mobile applications in learning English vocabulary, females exhibited slightly higher enthusiasm due to their perception of apps as effective and engaging tools. Similarly, Tafazoli, Parra, and Abril [45] revealed that gender plays a significant role in shaping attitudes toward computer-assisted language learning, with females reporting higher appreciation for its utility, though males often showed greater confidence in its use. Dehkordi and Taki [39] explored Iranian EFL learners' perceptions, finding that females valued the collaborative and interactive features of MALL more than males. On the other hand, Hou [46] noted that males tended to embrace technology as a self-directed learning tool, aligning with their preferences for autonomy in learning. Studies also identified gender-based differences in mobile phone usage. Hilao and Wichadee [40] showed that females were more likely to use mobile phones for language practice, while males focused on diverse features, including entertainment. Gafni, Biran Aчитuv, and Rahmani [47] confirmed similar trends, suggesting that females associate mobile applications with enhanced learning efficiency. Moreover, Yu [48] highlighted the fact that females experienced lower cognitive loads and maintained more favorable attitudes toward mobile English learning, correlating with their higher academic achievements. In contrast, Radin [49] emphasized that males demonstrated greater adaptability to newer technologies in learning.

## 2.3 ABC models of attitudes as a theoretical framework

The ABC model of attitudes, encompassing affective, behavioral, and cognitive components, provides a comprehensive framework to evaluate students' attitudes toward technology in language learning. This model is widely recognized for its multidimensional approach to understanding attitudes, which are complex and multifaceted [50]. The affective component captures students' emotional responses to technology, such as enjoyment or frustration, while the cognitive component reflects their beliefs and perceptions regarding its usefulness and ease of use. The behavioral component focuses on the actions or intentions of students in adopting or rejecting technology. The application of the ABC model aligns well with contemporary educational research, as it allows for an in-depth analysis of students' interactions with technology, including their preferences and challenges [51]. Studies such as [52] and [53] have successfully utilized this model to explore the interrelation of these components, providing actionable insights into technology acceptance in education. In the context of language learning, where technology plays a pivotal role in enhancing engagement and efficiency, the ABC model facilitates a nuanced

understanding of students' attitudes, enabling educators and policymakers to design more effective interventions [54].

### 3 METHODOLOGY

#### 3.1 Context and participants

This study was conducted in the second semester of the academic year 2023–2024 at a university in northern Vietnam that has training in tourism, economics, foreign languages, information technology, regular education, primary education, secondary education, political theory, psychology, and physical education. At the university, English was taught as a foreign language for students in all majors in different courses, including general English courses and English for specific courses. General English courses consist of three consecutive levels (1, 2, and 3) taken during the first two years. This study involved students in three classes learning General English Course 3 throughout the entire 15-week second term. At the beginning of the courses, during the first week's in-class learning session, all of the participants were verbally informed of the research project details, including the research purpose and activities, which involved doing assignments and answering a questionnaire at the end of the course. The students also reported they all used their smartphones daily for learning and entertainment. As a result, 102 students agreed to participate in the research project voluntarily. Table 1 provides demographic information about the participants, categorized by gender and department. The majority of participants were female, comprising 87 individuals (85.3%), while males accounted for only 15 individuals (14.7%). In terms of departmental distribution, 40 participants (39.2%) were from primary education, 34 participants (33.3%) were from secondary education, and 28 participants (27.5%) were from regular education. This data highlights a predominantly female sample, with the largest group of participants coming from primary education.

**Table 1.** Demographic information of participants (N = 102)

Categories		Frequency	Percent
Gender	Male	15	14.7
	Female	87	85.3
Departments	Primary Education	40	39.2
	Regular Education	28	27.5
	Secondary Education	34	33.3

#### 3.2 Application of Quizizz in learning grammar

The application of Quizizz for students in the General English course 3 involved three phases: creating quizzes in Quizizz, assigning quizzes, and announcing the results. As for the first phase—creating quizzes—the grammar topics in the course book were identified and prepared with eight key topics: infinitives and gerunds for purpose, past perfect, have/get something done, second conditional, should have and would have, may/might/could/must + have, third conditional, and reported speech.

These topics are integral parts along with other contents of the course book. To reinforce these grammar points, two quizzes were developed for each topic, resulting in a total of 16 quizzes. The quizzes created were stored in the library section in Quizizz. Each quiz consists of 20 questions, ensuring adequate practice and assessment of students' understanding. The quizzes were designed using various question formats, including multiple choice, fill-in-the-blank, match, reorder, drag-and-drop, and categorize, which provide diverse ways for students to engage with the material. These different question types not only assess students' recall of grammatical rules but also encourage deeper comprehension and application of structures in various contexts. The assignment of quizzes began in the first week of the course. Each class sent links to the quizzes through a social media network group for the students to complete during their free time. The deadline for each assignment was set within three days after the starting date. When the assignment ended, the results were announced in class with the projector showing dashboards with rankings of students for each assignment. Students could also see their progress with accuracy, points, and scores based on the correct, partially correct, or incorrect answers.

### 3.3 Data collection tools and analysis

To collect data for assessing students' attitudes toward Quizizz in grammar learning, this study utilized a questionnaire consisting of a total of 16 items in two distinct sections: demographic information (gender and departments) and categories of attitude dimensions and satisfaction. Table 2 presents the question items in categories. The affective category includes four items (1–4) measuring students' emotional engagement, enjoyment, motivation, and eagerness to learn via Quizizz. The behavioral category comprises three items (5–7), focusing on students' participation in Quizizz games, including their accuracy, response speed, and competitiveness. The cognitive category contains four items (8–12) that evaluate students' perceptions of Quizizz's effectiveness in enhancing their grammar learning experience, understanding of grammar structures, and grammar knowledge acquisition. Lastly, the satisfaction category includes two items (13–14), assessing students' overall happiness with Quizizz and their willingness to continue using it for grammar learning. This structured questionnaire effectively captures multiple dimensions of students' attitudes and experiences with Quizizz, providing a comprehensive understanding of their engagement, learning behaviors, and satisfaction with the platform.

**Table 2.** Description of attitude dimensions and satisfaction questionnaire items

Questionnaire Items	Categories
1. I enjoy using Quizizz in the grammar learning process.	Affective
2. I am eager to learn via Quizizz.	
3. I like learning with Quizizz.	
4. I feel motivated when I play Quizizz quizzes.	
5. I give answers to quiz questions as accurately as possible.	Behavioral
6. I respond as quickly as possible to each question.	
7. I maintain competitiveness in Quizizz games.	
8. I expect Quizizz to be used in every lesson.	

(Continued)

**Table 2.** Description of attitude dimensions and satisfaction questionnaire items (*Continued*)

Questionnaire Items	Categories
9. Quizizz games bring the learning experience better.	Cognitive
10. Quizizz games enhance my understanding of the structures.	
11. Quizizz games develop my learning skills.	
12. Quizizz games help me to gain more knowledge on the topics.	
13. I am happy with using Quizizz in learning grammar.	Satisfaction
14. I want to continue my grammar learning with Quizizz.	

Table 3 displays the reliability analysis of the categories of attitude dimensions and satisfaction, utilizing Cronbach's alpha values. The reliability statistics indicate strong internal consistency for all categories, with Cronbach's alpha values exceeding the commonly accepted threshold of .70. The affective category ( $\alpha = .918$ , 4 items) and cognitive category ( $\alpha = .920$ , 4 items) demonstrate excellent reliability, indicating that their items are highly consistent in measuring emotional responses and cognitive evaluations, respectively. The behavioral category ( $\alpha = .831$ , 4 items) shows good reliability, reflecting consistency in measuring actions or intentions, while the satisfaction category ( $\alpha = .945$ , 2 items) exhibits outstanding reliability despite having only two items. These results confirm the reliability of the questionnaire and its suitability for measuring the constructs in the study.

**Table 3.** Cronbach's alpha of categories

Categories	Cronbach's Alpha	N of Items
Affective	.918	4
Behavioral	.831	4
Cognitive	.920	4
Satisfaction	.945	2

The questionnaire was created using the web-based platform Google Forms. At the end of the course, the link to the questionnaire was delivered online to the students through the class's social media chat platform. The students were informed of voluntary participation in answering the questionnaire. After one week, the data collection was concluded. A total of 102 responses were collected. The results were stored and prepared on sheets to serve data analysis. Descriptive statistics, such as means, standard deviation, and percentages, were employed to assess students' attitudes toward Quizizz in learning grammar. The means were interpreted in three levels: 0–2.49 (low), 2.5–3.49 (moderate), and 3.5–5.0 (high). A Pearson correlation test between students' attitudes and satisfaction was performed. An independent sample T-test was also conducted to determine whether there were significant differences between male students and female students in their attitudes. The significance level was set at .05. All the data analysis used SPSS (Statistical Package for Social Sciences) version 20.

## 4 FINDINGS

### 4.1 Students' attitudes toward Quizizz

Table 4 provides descriptive statistics on students' attitudes toward Quizizz, categorized into three dimensions: affective, behavioral, and cognitive. Each dimension

encompasses data from 102 students, with scores ranging from a minimum of 2.00 to a maximum of 5.00, and an overall average indicating a high level of positive attitude toward Quizizz. The affective dimension, which captures students' emotional responses to using Quizizz, has the highest mean score ( $M = 4.4828$ ,  $SD = 0.70383$ ). This suggests that students generally have strong positive feelings toward the platform, indicating enjoyment and enthusiasm in using Quizizz for learning grammar. The relatively high standard deviation reflects some variability in emotional responses, which may be attributed to individual differences in engagement and interest levels. The cognitive dimension, with a mean score of 4.5025 ( $SD = 0.61690$ ), reflects students' perceptions of the usefulness and benefits of Quizizz in their grammar learning. The high mean score suggests that students recognize and appreciate the educational value of Quizizz, viewing it as an effective tool for enhancing their grammar skills. The lower standard deviation compared to the affective dimension indicates more consistent views among students regarding its usefulness. The behavioral dimension, representing students' willingness to use Quizizz, has the lowest mean score among the three dimensions ( $M = 4.3652$ ,  $SD = 0.60594$ ). Although slightly lower, this score still falls within the high category, implying that most students are inclined to use Quizizz in their language learning activities. The lower standard deviation in this dimension indicates a relatively uniform willingness to integrate Quizizz into their learning routines.

**Table 4.** Descriptive statistics on students' attitudes toward Quizizz

Categories	N	Minimum	Maximum	Mean	SD	Level
Affective	102	2.00	5.00	4.4828	.70383	High
Behavioral	102	3.00	5.00	4.3652	.60594	High
Cognitive	102	3.00	5.00	4.5025	.61690	High
Average				4.4502	.64222	High

The average mean score across all dimensions is 4.4502 ( $SD = 0.64222$ ), suggesting a generally positive attitude toward Quizizz as a MALL tool. The results indicate that while students demonstrate strong emotional engagement and recognize the tool's cognitive benefits, their behavioral commitment is slightly less pronounced, though still favorable. This trend may point to external factors, such as access to technology or time constraints, influencing their actual use of Quizizz despite recognizing its advantages. Overall, the data from Table 4 demonstrate that students exhibit a high level of acceptance and positive attitudes toward Quizizz, particularly in terms of emotional and cognitive engagement. These findings highlight Quizizz's potential as an effective and engaging tool for grammar instruction while also suggesting areas for further exploration, such as enhancing behavioral engagement to maximize its educational impact.

## 4.2 Relationship between attitudes and satisfaction

Table 5 presents the descriptive statistics of students' satisfaction with Quizizz, showing a mean score of 4.5539 ( $SD = 0.67819$ ) on a scale ranging from 2.00 to 5.00. This high mean score suggests that students are generally highly satisfied with Quizizz as a MALL tool. The relatively low standard deviation indicates a consistent level of satisfaction among participants, implying that most students share a positive perception of the platform's effectiveness and usability.



**Table 5.** Descriptive statistics of students' satisfaction of Quizizz

	N	Minimum	Maximum	Mean	SD	Level
Satisfaction	102	2.00	5.00	4.5539	.67819	High

Table 6 displays the Pearson's correlation matrix, examining the relationships between the three dimensions of attitudes (affective, behavioral, and cognitive) and satisfaction. The results indicate significant positive correlations among all variables at the 0.01 level (2-tailed), highlighting strong associations between students' attitudes toward Quizizz and their satisfaction with its use. The cognitive dimension exhibits the strongest correlation with satisfaction ( $r = .861, p < .01$ ), suggesting that students who perceive Quizizz as useful and beneficial for learning grammar tend to have higher satisfaction levels. The affective dimension also shows a strong correlation with satisfaction ( $r = .751, p < .01$ ), indicating that students who enjoy using Quizizz are likely to report higher satisfaction. The behavioral dimension, while still significantly correlated, has the weakest association with satisfaction ( $r = .720, p < .01$ ), suggesting that although students' willingness to use Quizizz contributes to their satisfaction, it has a slightly lower impact compared to cognitive and affective factors.

**Table 6.** Pearson's correlation matrix for attitudes and satisfaction

	Affective	Behavioral	Cognitive	Satisfaction
Affective	1			
Behavioral	.713**	1		
Cognitive	.761**	.812**	1	
Satisfaction	.751**	.720**	.861**	1

Note: \*\*Correlation is significant at the 0.01 level (2-tailed).

Overall, these findings demonstrate that students' satisfaction with Quizizz is strongly influenced by their attitudes, particularly their cognitive and affective perceptions. The high correlation between the cognitive dimension and satisfaction underscores the importance of perceived usefulness in fostering positive learning experiences. Meanwhile, the affective dimension highlights the role of emotional engagement in shaping satisfaction, reinforcing the idea that enjoyment and motivation play a crucial role in students' acceptance of technology-based learning tools. The weaker correlation between the behavioral dimension and satisfaction suggests that while students' willingness to use Quizizz is important, their actual satisfaction may be more closely tied to how they perceive its effectiveness and how much they enjoy using it. These insights suggest that educators and developers should focus on enhancing both the cognitive benefits and the emotional appeal of Quizizz to maximize student satisfaction and engagement.

### 4.3 Gender difference in students' attitudes toward Quizizz

Table 7 presents the gender differences in students' attitudes toward Quizizz across three dimensions: affective, behavioral, and cognitive. The analysis includes 15 male and 87 female students, with the mean scores, standard deviations, and

p-values reported for each category to determine the statistical significance of gender-based differences. The results indicate that male students consistently have slightly higher mean scores across all three dimensions compared to female students. In the affective dimension, which reflects students' emotional engagement with Quizizz, males report a mean score of 4.5500 (SD = 0.48366), while females score slightly lower at 4.4713 (SD = 0.73673). However, the p-value of 0.691 suggests that this difference is not statistically significant. Similarly, in the behavioral dimension, which represents students' willingness to use Quizizz, males have a mean score of 4.3833 (SD = 0.51640), while females score marginally lower at 4.3621 (SD = 0.62268), with a p-value of 0.901, indicating no significant difference between genders. For the cognitive dimension, which measures students' perception of Quizizz's usefulness in learning grammar, the mean score for male students is 4.6167 (SD = 0.50768), compared to 4.4828 (SD = 0.63428) for female students. The p-value of 0.440 again suggests that this difference is statistically insignificant.

**Table 7.** Gender difference in students' attitudes toward Quizizz

Categories	Gender	N	Mean	SD	P-Value	Difference
Affective	Male	15	4.5500	.48366	.691	Insignificant
	Female	87	4.4713	.73673		
Behavioral	Male	15	4.3833	.51640	.901	Insignificant
	Female	87	4.3621	.62268		
Cognitive	Male	15	4.6167	.50768	.440	Insignificant
	Female	87	4.4828	.63428		

The results indicate that gender does not significantly influence students' attitudes toward Quizizz, as all p-values exceed the 0.05 threshold for statistical significance. Although males tend to report slightly higher scores in all three dimensions, the differences are not substantial enough to be considered meaningful. This suggests that both male and female students perceive Quizizz similarly in terms of emotional engagement, perceived usefulness, and willingness to use the platform. These findings imply that Quizizz is an inclusive and effective tool for students regardless of gender. Future research may explore other factors, such as learning styles or prior experience with educational technology, to better understand variations in students' attitudes toward digital learning tools.

## 5 DISCUSSION

The findings of this study indicate that Vietnamese EFL students hold highly positive attitudes toward using Quizizz as a MALL tool for grammar instruction. The high mean scores across the affective (M = 4.4828, SD = 0.70383), behavioral (M = 4.3652, SD = 0.60594), and cognitive (M = 4.5025, SD = 0.61690) dimensions suggest that students perceive Quizizz as an engaging, enjoyable, and effective tool for learning grammar. The affective dimension's high mean score reflects that students are motivated and emotionally engaged, which aligns with the widely recognized benefits of gamification in reducing learning anxiety and increasing enjoyment and motivation [26], [34], [35]. Similarly, the cognitive dimension suggests that students recognize Quizizz as a valuable resource for grammar learning, reinforcing

its educational benefits through interactive quizzes and instant feedback [16], [41]. However, while students generally express willingness to integrate Quizizz into their learning routines, the slightly lower mean score in the behavioral dimension suggests that factors such as technological accessibility, prior digital learning experience, and self-regulation may affect students' actual engagement levels. These findings align with previous studies indicating that, despite high perceived usefulness and motivation, students' consistent use of gamified learning platforms depends on external factors, such as access to stable internet connections and personal learning habits [31], [44].

A significant finding is the strong positive correlation between students' attitudes and satisfaction with Quizizz ( $r = .861, p < .01$ ). This suggests that students who perceive Quizizz as engaging, effective, and easy to use are also more likely to be satisfied with the learning experience. This result supports prior research. [26] and [31] found that MALL tools significantly enhance learning satisfaction by fostering higher motivation, engagement, and a sense of achievement. Additionally, Degirmenci [32] and Pertiwi [29] emphasized that gamified learning tools create a positive and stress-free learning environment, reinforcing the findings of this study that students associate Quizizz with an enjoyable and productive learning experience.

Regarding gender differences in attitudes, the study found no statistically significant differences between male and female students across the three attitude dimensions, as all p-values exceeded .05. Although males had slightly higher mean scores, these differences were not large enough to be considered meaningful. This contrasts with earlier research, such as [39] and [40], which suggested that females tend to exhibit greater enthusiasm and engagement in technology-based learning environments, whereas males may demonstrate higher confidence in using digital learning tools but lower engagement. The insignificance of gender differences in this study suggests that Quizizz provides an inclusive learning environment where both male and female students benefit equally from its gamification and interactive features. This highlights Quizizz's accessibility and user-friendliness, ensuring equitable learning experiences across gender groups. However, these findings also suggest that tailored teaching strategies should focus more on individual learning preferences rather than gender-based differences. Since gender does not significantly impact students' attitudes toward Quizizz, educators should instead explore personalized learning pathways, adaptive learning techniques, and differentiated instruction to maximize the effectiveness of gamified learning for diverse learners.

Despite the similarities, some findings differ from previous research. One key difference is the lack of significant gender-based differences in attitudes toward Quizizz. Earlier studies, such as [39], [40], and [45], suggested that females tend to exhibit more positive attitudes toward educational technology, while males often approach MALL tools with greater confidence but lower engagement. This study, however, found no significant gender-based differences, suggesting that Quizizz's accessibility, gamification features, and user-friendly design may reduce gender disparities in technology adoption. Furthermore, while previous studies such as [34] and [44] found that some students faced challenges in adopting gamified learning due to technical barriers, this study did not explicitly identify technology-related difficulties as a major concern. This suggests that Quizizz's ease of use and accessibility may help mitigate common adoption barriers, allowing students to engage with the platform regardless of technical proficiency or prior digital learning experience. Additionally, while Pham [16] and Sorohiti et al. [41] emphasized that students' willingness to use MALL tools is often influenced by prior exposure

to technology-enhanced learning, the findings of this study indicate consistently high attitudes and satisfaction levels, even among students with varying degrees of prior technology experience. This suggests that Quizizz's simple interface and engaging elements may make it easier for students to adopt, regardless of their previous exposure to gamified learning environments.

## 6 CONCLUSION

This study on Vietnamese EFL students' attitudes toward using Quizizz for grammar learning offers significant insights into the role of MALL tools in enhancing student engagement and satisfaction. By highlighting students' positive attitudes across affective, behavioral, and cognitive dimensions, the research contributes valuable knowledge to the growing field of technology-enhanced language learning and supports the integration of gamification in EFL instruction. The study offers practical insights for educators aiming to integrate Quizizz into language learning beyond Vietnam. The gamified features of Quizizz, such as leaderboards, instant feedback, and multimedia integration, can be effectively employed in diverse educational contexts, including online, blended, and face-to-face classrooms. Educators worldwide can adopt Quizizz not only for grammar practice but also for broader language skills, such as vocabulary building, reading comprehension, and listening exercises. Moreover, this study highlights the potential for Quizizz to support self-directed learning and formative assessments, enabling students to monitor their progress and identify learning gaps. Beyond Quizizz, the findings inform broader mobile learning strategies by emphasizing the role of gamification and interactive elements in fostering engagement, satisfaction, and learning outcomes. Teachers should consider incorporating other gamified tools with similar features, such as Kahoot, Socrative, and Duolingo, into their teaching practices. Additionally, institutional policies should encourage digital literacy training to help educators and students maximize the benefits of mobile-assisted learning tools. Additionally, mobile learning presents usability barriers that can impact students' engagement. Small screen sizes may hinder readability and interaction, especially with complex grammar exercises. Navigation difficulties arise when interfaces are cluttered or lack intuitive design, causing frustration. Application stability issues, such as crashes or slow performance, disrupt learning flow. Students might also face challenges related to internet connectivity and device compatibility. Future studies should explore adaptive interface designs, accessibility options, and strategies to enhance mobile learning stability for a seamless educational experience.

The study also contributes to MALL research by positioning Quizizz within the ecosystem of MALL tools. Unlike Kahoot, which focuses heavily on speed-based quizzes, Quizizz allows self-paced learning, which may reduce student anxiety. Compared to Duolingo, which provides personalized language exercises, Quizizz emphasizes competitive, interactive quizzes suitable for classroom settings. These comparisons illustrate the unique advantages of Quizizz as a collaborative learning tool. Emerging trends in MALL, such as AI-driven personalization, adaptive learning, and real-time analytics, are also relevant to this discussion. Platforms integrating AI, such as ELSA Speak for pronunciation practice and Quizlet for vocabulary enhancement, highlight the growing role of personalization in language learning. Future MALL tools could further benefit from integrating AI features into platforms like Quizizz to offer personalized feedback and adaptive quizzes based on individual performance.

The generalizability of this study is limited by its predominantly female sample (85.3%) and focus on a single university in Vietnam. The female-dominated sample may have influenced the findings, as gender differences in attitudes toward gamified learning tools are documented in the literature. Future research should include more balanced gender representation and explore differences across various cultural contexts and educational institutions. Additionally, investigating diverse age groups, such as high school students or adult learners, would offer broader insights into Quizizz's applicability across different learning stages. Moreover, the study was limited to grammar instruction within a general English course. Expanding the scope to include other language skills, such as speaking, listening, and writing, would provide a more comprehensive understanding of Quizizz's effectiveness. Longitudinal studies tracking students' progress over an extended period could further strengthen the evidence for Quizizz's impact on language learning outcomes. Another limitation of this study is the lack of identification of technological barriers that participants may have encountered while using Quizizz. Although the study explores students' attitudes and satisfaction, it does not address potential technical issues such as unstable internet connections, device compatibility, or platform usability, which could have impacted students' learning experiences and engagement. For future research, it would be beneficial to investigate the technological barriers that students encounter when using Quizizz for grammar instruction. A mixed-methods approach could be employed, incorporating both quantitative surveys and qualitative interviews to explore issues such as internet connectivity, device limitations, user interface challenges, and digital literacy levels.

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