



Research Article

# Assessing the Effectiveness of Quizizz Mobile App in Improving Grammar Competence among EFL Students

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## Abstract

With the increasing popularity of mobile technology, there is growing interest in exploring its potential for enhancing learning outcomes. This study aimed to investigate the impact of using Quizizz, a mobile application, on high school students' grammar competence and their perceptions of the app for grammar learning. The study employed a mixed-methods approach with a quasi-experimental design, involving 92 11th-grade students at a high school in Vietnam. The experimental group received 17 weeks of grammar instruction using Quizizz, while the control group received traditional instruction. The results revealed that students in the experimental group significantly outperformed their peers in the control group, highlighting the positive impact of Quizizz on high school students' grammar competence. Additionally, students' perceptions of Quizizz for grammar practice were generally positive, as indicated by the questionnaire and interviews. The findings suggest that Quizizz can be an effective tool for enhancing grammar learning in high school students, and teachers should consider incorporating more mobile learning tasks into their instruction. Further research is needed to determine the generalizability of the results to a larger population of EFL learners.

**Keywords:** Mobile technology, Quizizz, Grammar competence, EFL learners.



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## 1. Introduction

Technological advancements have revolutionized many aspects of our daily lives, including education. In particular, the emergence of mobile technology and devices has transformed the way individuals access, process, and communicate information. According to Hidayati et al. (2022), the development of technology has led to the emergence of various types of mobile technology with multifunctional devices that offer tremendous learning potential. This potential has been recognized by educators, leading to an increasing interest in exploring the use of mobile technology for educational purposes.

Mobile technology has become an essential tool in learning because of its flexibility in place and time. This trend of digital learning has been referred to as mobile-assisted language learning (MALL). The educational system has changed significantly due to the advancement of technology, and students can now carry personal handheld devices such as iPads, laptops, iPhones, tablets, and others, which allow them to learn more efficiently and effectively on devices that integrate different features (Almaiah et al., 2021).

MALL has proved to be a valuable pedagogical instrument in language learning practice (Gkeka et al., 2020; Pegrum, 2020). Language learning technologies have burgeoned in recent years, with a trend towards mobility, portability, and personalization. This trend has led to the transformation from traditional learning to e-learning and mobile learning. Snezhko et al. (2022) reported that there were over 9 billion portable devices worldwide. These staggering numbers represent a considerable advantage that education stakeholders should consider. Handheld devices are the most powerful platform utilized by modern assistants for connectivity and learning (Pegrum, 2020).

Despite the popularity of Quizizz, a mobile application for language learning, in many countries, it is relatively unknown in Vietnam, particularly in the context of grammar learning in high schools. Grammar is a significant focus in high school programs in Vietnam, but students typically learn grammar in traditional ways such as studying from a book, which can be tedious for many students. This can lead to a lack of motivation, disinterest in studying, and a lack of enthusiasm for grammar.

Therefore, this study aims to investigate the impact of Quizizz on high school students' grammar competence and their perceptions of the app for grammar learning. The study will address two research questions: (1) to what extent does Quizizz improve high school students' grammar competence, and (2) what are high school students' perceptions towards Quizizz in grammar learning?

By examining the impact of Quizizz on grammar learning and high school students' perceptions of the app, this study will contribute to the MALL field and provide valuable insights into the use of mobile technology in enhancing grammar learning in high school students.

## 2. Literature review

### 2.1 Mobile-Assisted Language Learning (MALL)

Mobile-Assisted Language Learning (MALL) is a growing subcategory of Computer Assisted Language Learning (CALL) that has garnered significant attention in recent years. MALL refers to using mobile devices such as smartphones, tablets, and laptops to access learning materials and activities, communicate with other learners and instructors, and interact with the learning

environment. The development of mobile technologies has made MALL more accessible and convenient, allowing learners to study anywhere and anytime. MALL offers several advantages over traditional classroom learning, including flexibility, portability, and personalization (Vu, 2016; Zhang, 2021).

One key benefit of MALL is its flexibility in terms of location and time. The advancement of technology has transformed the educational landscape, allowing learners to use their personal handheld devices instead of carrying numerous learning materials. MALL can also provide opportunities for learners to engage with authentic language resources and interact with native speakers of the target language (Zhao, 2021). Furthermore, MALL promotes learner autonomy, as learners can control their learning pace and select the learning resources that best suit their needs.

MALL has several features that make it an effective tool for language learning. Key features of MALL include mobility, which allows learners to access learning resources wherever they are, interactivity and immediacy of learning, providing learners with immediate feedback on their performance, and support for inquiry-based learning, which enables learners to meet their expectations and aspirations (Linh & Vu, 2021). MALL can also be used to integrate instructional content, allowing teachers to choose suitable applications for enhancing the effectiveness of their lessons.

Previous research has demonstrated that MALL can be a valuable portable tool for teaching and learning languages, including grammar. Studies have shown that MALL can support vocabulary instruction and serve as a potential assistive tool in the complex process of language learning (Crompton & Traxler, 2018; Hussain Gamlo, 2019). Additionally, research has found that portable tools can help students access authentic online materials, enabling them to brainstorm and develop their ideas readily (Curum & Khedo, 2021).

## **2.2 Affordances of MALL**

Mobile-Assisted Language Learning (MALL) offers numerous affordances that make it an attractive option for both learners and teachers. One of the most significant characteristics of MALL is its flexibility in time and place, which allows learners to access language learning materials at any time and from anywhere, as well as participate in language learning activities at their convenience (Almaiah et al., 2021). This flexibility is particularly useful in creating a dynamic learning environment for modern learners who tend to move frequently, and who require support from mobile technologies.

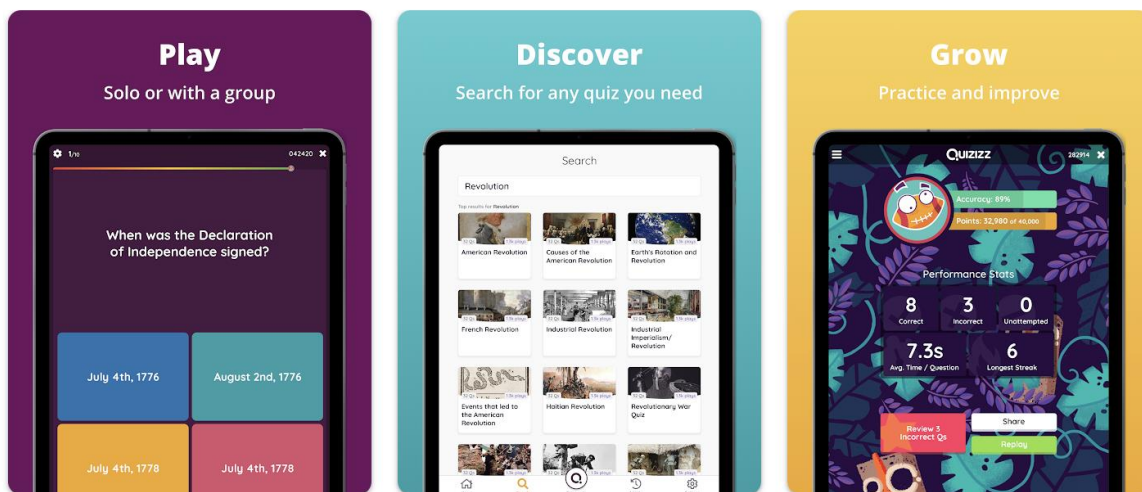
MALL also provides students with an opportunity to learn in a more engaging and interesting manner, as teachers can use diverse multimedia formats such as videos, podcasts, and other interactive tools to make the lessons more creative, fascinating and attractive (Im, 2021). The use of mobile devices enables students to access the internet easily and obtain a great deal of necessary information, which in turn can help them develop their learner autonomy and practical knowledge. In addition to offering flexibility in time and place, MALL also plays a crucial role in ensuring that learners and teachers remain in contact during periods of lockdown or quarantine (Hidayati et al., 2022). For instance, during the COVID-19 pandemic, the use of MALL has greatly assisted students and teachers in maintaining communication and continuing with learning activities despite the challenges posed by the pandemic.

Apart from its practical benefits, MALL also has an emotional impact on learners, particularly in terms of motivation and engagement. MALL provides an innovative teaching method that brings interest and engagement to learners. Mobile technologies enable learners to use the devices anytime and anywhere, even outside the class, thereby increasing their motivation and interest in

learning. Studies have also shown that MALL can foster motivation in students' learning by creating curiosity and making the lessons more attractive, particularly in activities such as vocabulary learning (Goyal et al., 2021; Vu et al., 2021). Furthermore, MALL has been found to reduce learners' anxiety, particularly in language learning activities such as pronunciation and speaking skills.

### 2.3 Quizizz in Grammar teaching and learning

Quizizz is an online gamified quiz software created by Deepak Joy Cheenath and Ankit Gupta in 2015 while they were teaching remedial math at a school in Bangalore, India. Along with Kahoot, Quizlet, and Edupuzzle, Quizizz is one of the most popular gamified quizzes. It is widely used to facilitate classroom activities, such as group work, pre-tests, reviews, exams, and unit tests (Mia et al., 2022). Its features, such as timely feedback, section revision, and test repetition, have been highly evaluated by users. The software's "incredible features," such as memes, music, avatars, and themes, have been found to increase students' motivation and participation in learning and taking the quiz.



**Figure 1: Screenshot of Quizizz Mobile App**

Quizizz is an online tool that helps learners check their knowledge and learning progress. It is also viewed as an evaluation tool that guides students' concentration due to its unlimited places, attractive displays, and time settings. Quizizz has a positive impact on helping students review their strengths and weaknesses in learning grammar, accelerating their progress in grammar achievement. In addition, Quizizz is considered an effective medium to improve students' competence.

The advantages of using the Quizizz Games Application include free availability, compatibility with internet-enabled electronic devices, provision of a question bank that can be selected or edited based on the lesson's objective, facilitation of creating questions for teachers, non-essential for creating students' accounts, and promotion of social learning (Asmara et al., 2022). However, using Quizizz may also have disadvantages, such as Wi-Fi connection trouble and technical problems that can affect students' results.

The use of Quizizz in teaching grammar has been shown to positively impact self-assessment, grammar mastery, and students' achievement in learning relative pronouns and conditional sentences. Studies have explored the effectiveness of Quizizz in improving high school students'

grammar understanding, revealing significant enhancement in their comprehension when using Quizizz for self-assessment (Dextre-Vilchez & Vásquez-Mercado, 2022; Pham, 2022). Additionally, research has indicated that using Quizizz positively impacts learners' perceptions (Mahmud & Law, 2022). University and tertiary students found the testing process with the Quizizz application enjoyable, and they agreed that learning grammar through Quizizz was engaging and helpful (Asmara et al., 2022). The ability to use Quizizz anywhere and anytime prevented students from feeling bored or sleepy during the learning process.

### **3. Methodology**

This was a mixed-method research study that utilized both quantitative and qualitative data. A quasi-experimental design was employed, with the experimental and control groups being intact groups that were randomly selected. This approach was deemed appropriate given that the study focused on the educational field and the researcher was unable to deliberately divide students into experimental and control groups.

#### **3.1 Research site**

The research was carried out at Vo Van Kiet High School of Vietnam, which has been operational for six years, comprising three grades (10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup>) with 13 classes each. The school adheres to the programs of the Ministry of Education and Training (MOET). This study represents a novel inquiry at the institution, particularly concerning MALL. Further studies are necessary to enhance the quality of teaching and learning at this school.

#### **3.2 Participants**

Convenience sampling was used to assign participants an experimental group and a control group, with 46 students in each group. The experimental group learned grammar using Quizizz for 17 weeks, while the control group learned with the Presentation-Practice-Production method. Mobile devices were not permitted during grammar lessons. The choice of 11th graders was motivated by their being a neglected group in MALL research, and their reputation as digital natives capable of multitasking through the internet and social networks.

#### **3.3 Data collection instruments**

##### **3.3.1 Grammar Pretest and Posttest**

In this study, a pre-test and post-test were administered to measure the effectiveness of the treatment. The pre-test consisted of 40 items adapted from the question bank of Vo Van Kiet High School and comprised of Multiple Choice and Error Correction sections. The post-test consisted of four parts: Multiple Choice, Error Correction, Verb Form, and Rewrite, with a total of 34 items completed within 45 minutes. Before assigning the post-test to the experimental and control groups, it was reviewed by two teachers with five years of experience in teaching 11th-grade students, and a try-out test was conducted in another class. The final post-test was administered on paper to prevent cheating, as students were allowed to return to school at that time.

##### **3.3.2 Questionnaire**

The study employed a questionnaire to explore students' perceptions of using Quizizz. The questionnaire was designed on Google Forms and consisted of three parts: Part 1 – Background information, Part 2 - Perceptions of students on using Quizizz, and Part 3 - Open-ended Questions. The survey included 14 items in Part 2 and was adapted from Chen et al. (2019), with changes made to better suit the research context. The questionnaire was completed online to enhance

students' experience using mobile devices. The reliability of the questionnaire was measured using Cronbach's alpha. The statistics showed that items in the questionnaire had relatively high internal consistency, with Motivation and The Support of Quizizz Groups having alpha coefficients of 0.825 and 0.811, respectively, while the Technical Issues Group had a coefficient of 0.688, indicating good reliability.

### **3.3.3 Interview**

The objective of the interview was to gather learners' overall perceptions of the use of Quizizz for grammar practice. The interview aimed to support research question 2 in obtaining a deeper understanding of students' perspectives towards Quizizz. This interview was conducted using a structured interview approach. The researcher asked questions in a predetermined sequence and did not need to decide which question to ask next. Additionally, the researcher randomly invited six students to participate in the interview, and one-on-one interviews were conducted to ensure privacy and encourage students to freely share their ideas.

## **4. Findings and discussion**

### **4.1 Grammar Pretest and Posttest**

#### **4.1.1 Independent sample t-test of pretest results.**

An Independent Samples t-test was employed to analyze the pre-test scores of the experimental group (EG) and the control group (CG). Before conducting the t-test, the normal distribution of the dependent variable was confirmed. Levene's test was used to assess the homogeneity of variances, resulting in a significance value greater than 0.05. This indicated that there were no significant differences in grammar competence between the EG and CG before the intervention.

The normality of the underlying population was verified by visually examining the Normal Q-Q Plots for the pre-test scores of the EG and CG. The plots showed that the scores were distributed along a relatively straight line, which suggested a normal distribution.

The Independent Samples t-test results revealed a t-value of 0.29 with a degree of freedom (df) equal to 90 and a significance level (p) of 0.78. As the p-value was greater than the significance threshold of 0.05, there was no statistically significant difference between the experimental group (Mean: 6.82, SD: 1.40) and the control group (Mean: 6.75, SD: 1.13). This finding suggested that students in both groups had similar levels of grammar knowledge at the beginning of the study.

#### **4.1.2 Independent sample t-test of posttests results.**

An Independent Samples t-test was employed to analyze the post-test scores of the experimental group (EG) and the control group (CG) to assess the impact of the Quizizz application on grammar competence.

The normal distribution of the dependent variable was confirmed by visually examining the Normal Q-Q Plots for the post-test scores of the EG and CG. The plots showed that the scores were distributed along a relatively straight line, suggesting a normal distribution.

Levene's test was conducted, resulting in a significance value of less than 0.05, indicating a violation of the homogeneity of variances assumption. Despite this, the Independent Samples t-test was performed, and the resulting significance level (p) was .000, which reinforces data reliability. The results indicated a significant difference between the post-test scores of the EG and CG.

The post-test mean scores revealed a statistically significant difference between the two groups. The experimental group's average score was higher at 7.83, while the control group's average score was 5.97. In comparison to the control group's pre-test mean score of 6.75, their post-test mean score was lower by 0.78. This suggested that the grammar competence of the control group did not improve significantly when taught grammar using the PPP method. In contrast, the experimental group, who were taught grammar through the Quizizz application, outperformed the control group, indicating a significant enhancement in grammar competence for the experimental group when learning with the Quizizz application.

#### 4.2 Questionnaire

A total of 46 students from the experimental group participated in an online survey to gauge their perceptions of using Quizizz for grammar practice. The survey consisted of 14 items, divided into three categories: Motivation, Support of Quizizz, and Technical Issues. The Motivation category comprised seven items (Q1-Q7), the Support of Quizizz category included four items (Q8-Q11), and the Technical Issues category contained three items (Q12-Q14). Result details are presented in Figure 2.

<b>MOTIVATION</b>	Mean	SD
1. Quizizz app is effective in terms of learning grammar.	3.74	0.80
2. Quizizz app motivates me to learn grammar.	3.93	0.93
3. Interaction with Quizizz requires little mental effort.	3.48	1.01
4. I think it is interesting while using Quizizz for grammar practice.	3.78	0.94
5. I am satisfied with Quizizz as a grammar learning tool.	3.72	0.89
6. I am willing to keep using mobile devices for grammar learning.	3.76	0.95
7. I am willing to keep using Quizizz for grammar practice.	3.76	0.87
<b>THE SUPPORT OF QUIZIZZ</b>	Mean	SD
8. Quizizz allows me to accomplish learning tasks more efficiently.	3.80	0.91
9. Quizizz helps me enlarge grammar structures.	3.57	0.96
10. Quizizz entitles me to greater control over my learning process.	3.48	0.94
11. Learning to operate Quizizz for grammar practice is easy for me.	3.54	0.72
<b>TECHNICAL ISSUES</b>	Mean	SD
12. I am satisfied with the resolution of mobile devices in grammar task.	3.57	0.91
13. Generally speaking, Quizizz is easy to use.	4.24	1.04
14. I am satisfied with the functions offered by Quizizz.	3.89	0.90
Average	3.73	0.91

**Figure 2: Perceptions of Students toward Quizizz**

Overall, after 17 weeks of learning with Quizizz, the results indicated slightly positive perceptions toward the application. The average mean of the seven items related to motivation was 3.74 (SD = 0.90), suggesting that students were moderately motivated to use Quizizz for grammar practice. Specifically, students perceived the application as effective for learning grammar and found it motivating. However, they had neutral perceptions regarding the mental effort required to interact with Quizizz.

In terms of the support provided by Quizizz for learning grammar, the average mean of the four items was 3.60 (SD = 0.88), indicating relatively positive perceptions. Students had positive

perceptions of the application's efficiency in accomplishing learning tasks and found it easy to learn how to operate. However, they had neutral perceptions of the application's support for practicing grammar structures and promoting learner autonomy.

Regarding technical issues, the average mean of the three items was 3.90 (SD = 0.95), showing strong positive perceptions of Quizizz's technical aspects. Students were satisfied with the application's ease of use and its functions but were not as satisfied with the resolution of mobile devices during practice.

Qualitative data analysis of the questionnaire results revealed that approximately 76% of students enjoyed learning English via mobile devices, and about 78% of participants reported no difficulties during the 17 weeks of using mobile devices for English grammar learning. Roughly 22% of students encountered problems, such as internet disconnection, worn-out batteries, health issues (eye strain, headaches, dizziness), blackouts, and unreliable internet sources.

Aside from English grammar, 72% of students believed that mobile devices could be utilized for learning other language skills, pronunciation, and vocabulary. A few students (8.7%) considered mobile devices practical for learning other subjects, such as Physics, Science, Mathematics, and Literature. Some students (1.9%) expressed that they could develop interaction skills through mobile devices, while 8.7% thought that learning with handheld devices could aid in discovering other topics. Additionally, 8.7% of students were unsure of the potential benefits of mobile devices for learning.

### **4.3 Interview**

Six students (three males and three females) participated in a structured, face-to-face interview to gather insights into their experiences using Quizizz for grammar practice. The first question addressed the frequency of Quizizz usage in grammar practice.

Half of the interviewees reported using Quizizz frequently for grammar practice, with reasons such as attractive display, ease of use, better retention of grammar concepts, and the availability of various quizzes. Notably, one student appreciated the diversity of quizzes created by different teachers, which provided interesting and abundant learning opportunities. The other half of the interviewees did not use Quizizz frequently, citing a lack of time and prioritizing tutor-led learning.

The second question explored the perceived advantages and disadvantages of using Quizizz for grammar practice. Four main advantages were identified: academic benefits, attractive display, engaging features, and a competitive environment. Students highlighted that Quizizz helped them strengthen their knowledge and remember lessons more effectively. They also praised the application's user-friendly and visually appealing display, along with its gamified features, such as theme music, sounds, and power-ups. Furthermore, the competitive environment created by live play encouraged students to perform better.

Regarding the disadvantages, interviewees mentioned three main concerns: internet lag, cheating, and insufficient time for answering questions. Internet lag led to screen freezes that interrupted students' practice, while the possibility of looking up answers online facilitated cheating. Some students also found the average time of 30 seconds per question to be insufficient for careful consideration of their responses.

In response to the third question, all interviewees agreed that using Quizizz for grammar practice was a relatively or quite effective method. They appreciated the variety of exercises and sources, which enriched their learning experience. Compared to traditional grammar classes, students



found Quizizz more time-efficient, as it eliminated the need for taking notes. The gamified design of the platform increased students' curiosity and competitiveness.

The fourth question solicited additional ideas from the interviewees about using Quizizz. Four students shared their suggestions, which included improving the internet connection at school, creating a unique symbol for Quizizz for easier recognition, and incorporating representative characters for each student, similar to Duolingo, to increase engagement.

Finally, the interviewees shared their overall perceptions of learning English with Quizizz after 17 weeks of use. All participants considered the experience positive and worthwhile. On a scale of 1 to 10, two students rated Quizizz at 8 and 8.5, respectively. One student highlighted the platform's utility in supporting students' learning during the pandemic, while another noted that the positive aspects of Quizizz outweighed any negative experiences, leading to an overall favorable impression of the application for grammar learning.

## 5. Discussion

After 17 weeks of using Quizizz, the study results showed that the experimental group, which employed Quizizz for grammar instruction, outperformed the control group. The post-test mean scores were also higher than the pre-test mean scores, highlighting the positive impact of Quizizz on high school students' grammar competence. This finding is consistent with the results of several other studies (Mia et al., 2022; Pertiwi, 2022).

Some researchers have explored high school students' grammar comprehension through self-assessment and conditional sentences. Pertiwi (2022) found that high-performing students who had a strong grasp of grammatical concepts could improve their self-assessment primarily with the help of Quizizz. However, low-performing students experienced difficulties with grammar when relying exclusively on Quizizz and needed a tutor's assistance during the correction phase (Dextre-Vilchez & Vásquez-Mercado, 2022). This challenge might be due to the absence of a discussion forum within Quizizz. The platform has also shown beneficial effects for both tertiary and primary school students.

The study's second research question explored high school students' perceptions of using Quizizz for grammar practice, with 46 participants taking part in the survey. The findings revealed that 85% of students used mobile devices for more than three hours per day, indicating a high frequency of portable device usage among this demographic. About 40% of participants reported using handheld devices for 1 to 2 hours daily for grammar learning. In general, students' perceptions of Quizizz for grammar practice were slightly positive, with most students feeling motivated to use the app for this purpose. They believed that Quizizz was an effective tool for learning grammar and found it engaging and enjoyable.

In terms of students' perceptions of Quizizz's support, they had relatively positive views on the app's ability to help them accomplish learning tasks. However, they were neutral about the impact of Quizizz on learner autonomy. Students had strong positive perceptions of the app's ease of use and functionality but were neutral about the resolution of mobile devices for grammar tasks on Quizizz. Aside from grammar, 72% of students believed that mobile devices could be used to learn the four language skills, pronunciation, and vocabulary. This supports previous studies that have found mobile devices effective for enhancing listening, speaking, reading, and writing skills.

Overall, the survey results suggest that students have a favorable view of using Quizizz for grammar practice, and mobile devices are an essential part of their daily lives. However, there is

room for improvement in terms of learner autonomy and addressing technical issues related to mobile device resolution. A significant portion of the study participants used Quizizz regularly for grammar practice. Some of these individuals engaged with the platform two or three times per week, while others practised weekly. Multiple factors contributed to their frequent use of Quizizz, such as an attractive display, user-friendliness, improved retention, expansion of grammatical understanding, and a wide variety of quizzes.

Students found the colorful interface of the Quizizz application to be engaging and enjoyable, which led them to practice vocabulary more frequently. Among the reasons cited for using Quizizz, the availability of diverse exercises was one of the most frequently mentioned. In contrast, those who did not use Quizizz regularly identified a lack of time to practice or only using it when assigned by their teacher as the primary reasons for their infrequent engagement.

Four main advantages of using Quizizz emerged from the study: academic benefits, display effects, and a competitive environment. Participants reported that the platform led to increased knowledge, better recall of lessons, and motivation from seeing their results. The display was appreciated for its illustrated pictures, eye-catching appearance, and attractive theme. Additionally, the app featured vivid theme music and sound effects, as well as power-ups that enhanced the user experience. The live-play feature of Quizizz also promoted a competitive environment among students.

However, there were also some drawbacks to using Quizizz, including internet lag, potential for cheating, and time constraints. This study did not confirm previous research findings on cheating (Pham, 2022), as some participants felt that they could not cheat during tests and considered Quizizz a better alternative to traditional formative tests.

When asked whether practising grammar using Quizizz was a good method, most participants agreed that it was either a relatively or quite good approach. They cited reasons such as abundant resources, time efficiency, and increased competitiveness and curiosity. Participants of a related study (Hidayati et al., 2022) that used WhatsApp for language learning also shared similar beliefs about the benefits of handheld devices in language classrooms. They felt that mobile devices helped reduce their anxiety, improved pronunciation and speaking skills, and facilitated better retention. Some students offered suggestions for improving the Quizizz experience, such as more stable internet connections at school and additional unique, simple, and representative characters for users.

After 17 weeks of engagement, all participants agreed that using Quizizz for grammar practice was a good or even excellent experience. Many students reported positive experiences with distance learning during the pandemic, echoing findings from other studies (Asmara et al., 2022; Kolbaek, 2021; Singh & Mohan, 2019). These participants highlighted the critical role mobile devices played in language learning, as they facilitated easy access and learning opportunities during quarantine. Consequently, a majority of students expressed a willingness to use smartphones for educational purposes.

## 6. Conclusion

The experimental group exhibited greater improvement than the control group after 17 weeks of learning grammar with Quizizz. The researcher posits that incorporating Quizizz into grammar practice positively impacts learners' grammar competence. This finding indicates that Quizizz should be employed in grammar instruction to enhance high school students' grammar

competence. The current study suggests that it is crucial for students to allocate more time to reviewing and preparing lessons through the Quizizz application to reinforce their understanding. Moreover, teachers are encouraged to adopt Quizizz as a supplementary tool for teaching and learning languages, particularly grammar, to motivate students during lessons.

EFL students demonstrated a high frequency of portable device usage daily. Specifically, 85% of students used mobile devices for more than three hours per day, and 40% of participants employed portable devices for one to two hours daily for grammar learning. This substantial frequency of handheld device usage in a subject typically considered uninteresting, such as grammar, suggests that Vietnamese EFL students prefer practicing grammar on mobile applications. Given this high frequency, the researcher recommends that teachers design more learning tasks related to mobile devices, which can motivate students to use portable tools for both formal and informal learning. Task design should consider learners' needs, interests, learning styles, language proficiency levels, and expectations, enabling teachers to create more suitable tasks for increased student engagement.

Overall, EFL students' perceptions of Quizizz in grammar practice were slightly positive. The motivation group indicated relative motivation while learning grammar with Quizizz. Additionally, relatively positive perceptions and neutral perceptions were observed in the support of the Quizizz group and technical issues group, respectively. These results underscore the importance of incorporating mobile applications like Quizizz into teaching and learning grammar in Vietnam. The research unveiled a fairly positive perception among EFL students, suggesting significant potential for applying Quizizz in teaching and learning grammar. Interview data revealed that an attractive display, ease of use, longer retention, expansion of grammatical points, and a variety of quizzes to practice were the five main reasons for students' frequent Quizizz usage. Conversely, some students cited a lack of time for practice or only practiced on Quizizz when assigned by a teacher. Furthermore, academic benefits, display, effects, and competitive environment were identified as four advantages of using Quizizz. In conclusion, interviewees concurred that using Quizizz to learn grammar was a relatively or quite effective method. The study's data suggest that the Quizizz application could be further leveraged in the future to attract more students to grammar learning. Teachers should consider the value of learning outside the classroom, as out-of-class learning is gradually gaining appreciation. Involving teachers in the process of creating applications for out-of-school use is anticipated as a technique to enhance teachers' perspectives.

This study has several limitations that future research could address. Firstly, the small sample size limits the generalizability of the findings. Further experimental investigations with larger samples are needed. Secondly, the study focused on high school students who may have limited experience with mobile technology in education, potentially affecting their perceptions. Future work should explore various EFL learners, including primary school students, undergraduates, and students from different schools. Thirdly, this short-term study, based on one semester and five units, yielded significant results, but the differences between the experimental and control groups are merely suggestive. Future researchers should consider extending the treatment period and increasing the number of units to enhance the statistical power of the analyses. Lastly, the study did not differentiate between male and female learners in mobile-assisted language learning. Since mobile phone usage can differ between genders in daily activities, further research should investigate appropriate mobile learning design for different students.

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