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The Impact of Quizizz on Turkish EFL High School Students' Vocabulary Learning*

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ABSTRACT

Mastering vocabulary plays a pivotal role in the overall process of foreign language learning. Owing to technological progress, mobile-based learning tools have gained significant popularity in aiding learners of English as a foreign language. This research, adopting a mixed-methods design that integrated both quantitative and qualitative perspectives, examined how using the Quizizz platform influenced Turkish EFL learners' vocabulary growth. Participants comprised 64 eleventh-grade students enrolled in a Turkish vocational and technical high school, who were randomly divided into experimental and control groups. During a six-week intervention, students in the experimental group practiced new vocabulary via Quizizz, whereas those in the control group learned identical word sets using conventional whiteboard-based lists. Improvements in vocabulary knowledge were measured through pre- and post-tests specifically developed by the researchers. Students' attitudes toward Quizizz were explored using a 12-item survey complemented by semi-structured interviews. Findings indicated that participants in the experimental group demonstrated notably higher vocabulary improvement than those in the control group. Students further expressed that the Quizizz platform was easy to use, enjoyable, and practical. The overall outcomes highlight how mobile-assisted technologies can effectively foster vocabulary acquisition and boost learner engagement within EFL settings.

Keywords: Vocabulary learning, Quizizz, mobile-assisted tools, language learning

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1. INTRODUCTION

The swift evolution of information and communication technologies in the twenty-first century has significantly reshaped many aspects of daily life, particularly the field of foreign language education. Advances in educational technology have shifted traditional teacher-centered instruction toward more learner-oriented settings that stimulate collaboration, enable instant feedback, encourage autonomy, and promote higher-order thinking and problem-solving abilities (Alsied & Pathan, 2013; Haswani, 2014). Among the most notable innovations in technology-supported language learning is Mobile-Assisted Language Learning (MALL), which involves the integration of mobile devices—especially smartphones—into the process of acquiring new languages (Alotumi, 2020; Hassan et al., 2016). Over recent years, MALL has become increasingly popular because of its accessibility, adaptability, and potential to provide personalized learning experiences (Hu, 2013). In a similar vein, mobile learning (m-learning) allows students to interact with educational materials anytime and anywhere. A variety of mobile-based platforms, including Edpuzzle, Flipgrid, Kahoot, Padlet, Socratic, Quizlet, and Quizizz, have been widely adopted in second language (L2) contexts to promote effective language teaching, learning, and vocabulary development (İpek & Üstünbaş, 2021; Klimova & Polakova, 2020).

Mobile technologies have the potential to extend learning beyond the classroom, responding to shifts in learners' motivation (Kukulska Hulme, 2015). In English as a Foreign Language (EFL) contexts, such technologies are widely used to support the development of core language skills, including listening, speaking, reading, and writing (Klimova, 2021). Among these skills, vocabulary acquisition plays a central role in language learning. Regardless of whether learners are acquiring a first, second, or foreign language, expanding vocabulary is essential for effective communication (Decarrico, 2001, p. 285). However, learners often face challenges such as limited exposure to the target language, lack of autonomy, and insufficient awareness of effective vocabulary learning strategies (Ismail et al., 2017). Research has shown that mobile technologies have been extensively applied

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to second language (L2) vocabulary learning and are generally more effective than traditional methods (Hao et al., 2021). In this regard, educators play a critical role in guiding learners toward the appropriate use of vocabulary learning techniques (Saeidi & Mozaheb, 2012). Technology can support this process by addressing difficulties such as unfamiliarity with learning strategies and limited ability to use new words meaningfully (Heil et al., 2016). As Prensky (2001) suggested, providing learners with a rich digital environment can enhance engagement, sustain attention, and deepen learning. Consequently, MALL is increasingly recognized as a valuable tool for facilitating vocabulary acquisition in EFL classrooms in the digital age (Klimova, 2021; Lei, 2018).

Several studies have reported the effectiveness of MALL programs in promoting vocabulary development in EFL contexts, highlighting the central role of vocabulary in language acquisition (Al-Ahdal & Alharbi, 2021; Bieńkowska et al., 2021; Hu, 2013; Xodabande et al., 2022). For example, Epp and Phirangee (2019) examined the use of a MALL application in a Japanese high school language course with 47 male students. After twelve weeks, participants using mobile tools showed substantial improvements in vocabulary knowledge. Similarly, Xodabande et al. (2022) investigated 55 high school students and found that those who engaged in mobile-based vocabulary learning achieved higher post-test scores than peers who studied using paper flashcards. Fathi et al. (2018) conducted a study with Iranian students and reported significant vocabulary gains for learners using the Memrise app compared to a control group. In another mixed-methods study, Saeidi and Mozaheb (2012) involved 80 upper-intermediate college students who learned 1,200 new words over seven weeks. The experimental group utilized SMS and a mobile learning system, whereas the control group relied solely on paper flashcards; the mobile-assisted group demonstrated higher vocabulary acquisition. Likewise, Başoğlu and Akdemir (2010) observed that 60 Turkish EFL students using mobile technologies outperformed peers who studied with traditional flashcards. Collectively, these findings suggest that MALL programs can significantly enhance vocabulary learning compared to conventional methods.

A growing body of research has explored how gender influences second language (L2) vocabulary development, yielding diverse outcomes. Gu (2002) carried out an extensive investigation revealing that female learners generally performed better than their male counterparts in both lexical range and fluency. In a related longitudinal study, Llach and Gallego (2012) followed 176 Spanish EFL learners (82 girls and 94 boys) over a six-year period spanning grades 4 through 9. Their findings demonstrated that female participants achieved faster vocabulary expansion during the initial three years, reaching their highest progress around grade 7, whereas male students exhibited stronger improvement in the subsequent two years. Collectively, these results underscore the necessity of continued examination into gender-related variations in vocabulary acquisition, particularly during the developmental stage of puberty.

In more recent years, a growing number of investigations have indicated that MALL environments may help to reduce gender-related disparities in vocabulary acquisition. For instance, Jafari and Chalak (2016) explored the use of WhatsApp for daily vocabulary practice among 60 Iranian high school learners (30 males and 30 females) over a four-week period. Their findings demonstrated statistically no significant difference between male and female participants in vocabulary improvement following MALL-based instruction. Likewise, Hassan et al. (2017) examined a computer- and mobile-supported vocabulary program with 122 university students (61 males and 61 females) and concluded that gender had minimal influence on learning performance. In a similar vein, Ashiyan and Salehi (2017) found that, after incorporating WhatsApp for vocabulary instruction, both male and female students exhibited comparable progress, particularly in mastering collocations. Taken together, these findings suggest that while earlier research pointed to possible gender-based differences in vocabulary learning outcomes, more contemporary studies imply that such variations have become less pronounced in MALL-supported contexts. Furthermore, considering the potential influence of factors such as learner motivation, exposure, and sociocultural background, it becomes evident that further empirical research is necessary to better clarify the role of gender in second language (L2) vocabulary development.

Building upon the expanding body of research on MALL, many scholars have examined learners' perceptions and attitudes toward mobile-based vocabulary learning (Alavinia & Qoitassi, 2013; Dizon, 2016; Hu, 2013; Lam et al., 2018; Lander, 2016; Lu, 2008). For instance, Lu (2008) compared mobile-assisted and traditional paper-based vocabulary instruction among 30 Taiwanese vocational high school students and found that learners in the mobile group not only achieved higher vocabulary scores but also displayed more positive feelings toward mobile-supported learning. Similarly, Hu (2013) studied 24 adult Chinese learners and discovered that using smartphones offered a flexible, autonomous, and time-efficient alternative to traditional study routines, which students regarded as both motivating and practical. In addition, Alavinia and Qoitassi (2013) reported that Iranian primary school girls receiving vocabulary input through mobile text messages demonstrated positive attitudes toward technology-enhanced learning experiences.

Extending this line of inquiry, Dizon (2016) investigated Japanese university students' use of Quizlet, a gamified vocabulary application, over a ten-week period. The results revealed that learners perceived the tool as both effective and convenient for improving vocabulary knowledge. Likewise, Lander (2016) observed similar positive outcomes among college students, emphasizing the practicality and motivational value of mobile tools in higher education contexts. Taken together, these studies confirm that MALL not only contributes to measurable gains in vocabulary acquisition but also nurtures learners' autonomy, confidence, and engagement in the language learning process. Therefore, integrating mobile-assisted platforms such as Quizlet into formal EFL instruction can be viewed as a powerful pedagogical approach that harmonizes language development with learner motivation and technological literacy.

1.1. Statement of the Problem

Previous investigations have focused on how mobile technologies contribute to vocabulary learning and have also explored students' perceptions regarding the use of MALL in this area. However, there remains a need to investigate how contemporary mobile applications are utilized by EFL learners across diverse contexts (Kukulska-Hulme & Arcos, 2011). Given the wide range of apps claiming to optimize language learning, the introduction of new programs in EFL classrooms should be guided by educators (Alhadiah, 2020). Among these tools, Quizizz has emerged as a promising application for vocabulary instruction. The platform offers a variety of interactive question formats, including multiple-choice, cloze tests, checkboxes, open-ended questions, and polls (Quizizz, 2022). In addition, Quizizz promotes student engagement through gamified and competitive learning, supports learner autonomy outside the classroom, and encourages active participation during lessons (Degirmenci, 2021; Unesa, 2022).

1.2. Purpose of the Study

Building on the issues identified above, the present study seeks to explore the impact of Quizizz, as a MALL platform, on both vocabulary acquisition and learners' perceptions within a Turkish K–12 EFL context. Specifically, this research aims to evaluate how the use of Quizizz contributes to vocabulary learning outcomes and how students perceive its integration in English language classrooms. In line with these objectives, the study addresses the following research questions:

1. To what extent are there significant differences in vocabulary knowledge between the experimental and control groups before and after the intervention?
2. Does students' vocabulary development vary according to gender?
3. What are participants' perceptions of using Quizizz for vocabulary learning in EFL classes?
4. How does learners' use of Quizizz relate to their behavioral intention (BI), perceived usefulness (PU), and perceived ease of use (PEOU)?

1.3. Problem of the Study

Although MALL has been extensively explored in second language education, most existing studies have concentrated on general aspects of vocabulary acquisition rather than on specific quiz-based mobile applications. In particular, there is a noticeable lack of empirical research examining how interactive tools such as Quizizz contribute to vocabulary learning among high school students in Turkish EFL contexts. Previous investigations have primarily focused on university learners or adult populations, leaving a significant research gap regarding younger learners' engagement with gamified mobile environments. Given this gap, there is a pressing need to explore how contemporary MALL platforms can enhance vocabulary development, learner motivation, and classroom participation in secondary-level EFL instruction. Quizizz, with its game-like interface and instant feedback features, presents a promising digital alternative to traditional teaching methods by combining competition, enjoyment, and autonomy in the learning process. Therefore, this study seeks to examine the implementation of Quizizz as a vocabulary learning tool in Turkish high school settings, aiming to determine its effectiveness, pedagogical relevance, and learner perceptions within the broader framework of technology-enhanced language education.

2. METHODOLOGY

2.1 Research Design

This study adopted a quasi-experimental design with a mixed-methods approach, incorporating pre-tests, post-tests, and interviews to examine the effects of Quizizz as a Mobile-Assisted Language Learning (MALL) tool on EFL learners' vocabulary performance and to explore their attitudes toward using the application over a six-week period. Mixed-methods data collection allows for a more comprehensive understanding of the research problem than either quantitative or qualitative methods alone (Creswell, 2012). Quantitative data were obtained through a multiple-choice vocabulary test administered as both a pre-test and a post-test to both of the groups, as well as a questionnaire. Qualitative data were collected via individual interviews with randomly selected participants from the experimental group, providing an opportunity for learners to describe their experiences in their own words (Merriam & Tisdell, 2015).

2.2. Participants

The participants of this research were 64 voluntary 11th-grade students, aged 16 to 17, enrolled in a state-run vocational and technical high school in Turkey. To ensure comparability, two intact classes were randomly assigned to serve as the treatment and control groups, with 32 learners in each class. The treatment group included 19 male and 13 female students, whereas the control group comprised 22 males and 10 females. All participants were native speakers of Turkish and had received approximately two hours of English instruction per week as part of their formal curriculum. It was also confirmed that none of the students had attended any extra English language courses beyond their regular school program, ensuring a relatively homogenous proficiency level at the outset of the study. The research lasted for six weeks and was implemented during the

spring semester of the 2022–2023 academic year. Students in the experimental group, often referred to as "digital natives" (Prensky, 2001), were already familiar with mobile technologies and demonstrated a strong willingness to integrate digital tools into their learning routines. They were asked to use their personal mobilephones for the Quizizz activities and were provided with reliable internet access throughout the intervention. Before data collection began, informed consent was obtained from all participants and their parents, and official administrative approval was secured from the school management.

2.3. Instruments

2.3.1. Multiple-choice vocabulary test

To assess the participants' vocabulary development, a 60-item multiple-choice vocabulary test was administered to both the experimental and control groups before and after the instructional intervention. The test items were primarily drawn from the eleventh-grade English textbook, while additional distractor items were created from supplementary workbook activities to broaden content variety and ensure comprehensive coverage of the target vocabulary. The instrument functioned as both a pre-test and a post-test, allowing the researchers to measure changes in vocabulary knowledge throughout the study period. To guarantee reliability and internal consistency, a pilot version of the test was first administered to a comparable class of the same grade level that did not take part in the main study. Feedback from this pilot helped refine the clarity and difficulty level of the items, ensuring that the final version accurately reflected participants' vocabulary knowledge.

2.3.2. Online questionnaire

In order to explore learners' perceptions of Quizizz following the intervention, a 12-item online questionnaire was distributed to the experimental group through Google Forms. This instrument was adapted from Dizon (2016) with the author's permission, and the original references to Quizlet were replaced with Quizizz to align with the present study's focus. The questionnaire comprised 5-point Likert-scale statements, ranging from "strongly agree" to "strongly disagree." To enhance clarity and ensure linguistic accuracy, the instrument was translated into Turkish with the assistance of two bilingual experts. The first two items of the survey focused on students' access to Quizizz and the time spent on vocabulary activities each week. The remaining ten items were adapted from Davis's (1989) Technology Acceptance Model (TAM) and centered on three key constructs: Behavioral Intention (BI), Perceived Usefulness (PU), and Perceived Ease of Use (PEOU). Here, PU represents the degree to which learners believe the system improves their performance, while PEOU reflects students' perceptions regarding the simplicity and convenience of using Quizizz as a learning tool.

2.3.3. Face-to-face interviews

Individual interviews were held with six volunteer students from the treatment group to gain deeper insight into their experiences with the vocabulary learning tasks. Each interview lasted at least fifteen minutes. Participants were permitted to use their native language (Turkish) to ensure they could express their thoughts accurately and fully. The interviews were audio-recorded, with participants' consent, and subsequently transcribed into English for analysis. Measures were taken to maintain confidentiality throughout the process.

2.3.4. Quizizz app

Quizizz is a free, online Mobile-Assisted Language Learning (MALL) tool that enables students to complete quizzes and tests at their own pace (Unesa, 2022). For this study, Quizizz was employed to enhance students' L2 vocabulary by providing questions aligned with the seventh unit of the eleventh-grade curriculum. The application engages learners through features such as leaderboards, memes, progress reports, and interactive activities, including matching exercises, multiple-choice items, and fill-in-the-blank tasks. Additional elements, such as colorful graphics, sound effects, and customizable avatars, were incorporated to increase student motivation and participation. Participants were encouraged to answer questions both accurately and promptly to maintain their position on the leaderboard. Quizizz also generates comprehensive performance analytics that enable instructors to monitor learners' vocabulary development systematically. Through these data reports, the researchers were able to track progress within the treatment group and contrast it with the control group's outcomes both before and after the intervention.

2.4. Target Vocabulary

The target vocabulary for the intervention was drawn from the seventh unit of the eleventh-grade EFL curriculum. The original list contained 100 words, and previously learned items from earlier units were excluded in consultation with the teacher. During the six-week intervention, participants were introduced to 60 target words, with 10 words covered each week. The experimental group practiced these words using Quizizz, engaging in activities such as multiple-choice questions, matching exercises (picture-word), and cloze tasks (see Figure 1).

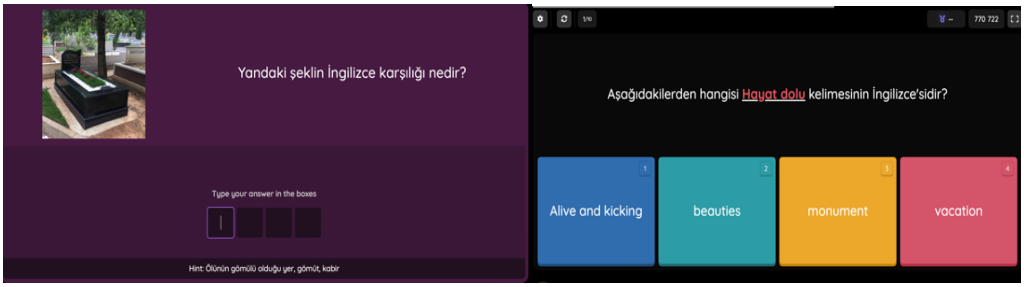

Figure 1. Screen views of the vocabulary exercises applied to the experimental group via quizizz

2.5. Procedure

Before the intervention began, both the treatment and control groups were thoroughly briefed on the study's objectives, procedures, and ethical considerations to ensure confidentiality and voluntary participation. During the first week, a 60-item multiple-choice vocabulary pre-test was administered to determine participants' initial knowledge of the target words, which had been carefully selected from the official EFL curriculum. Following the pre-test, the experimental group received an orientation session introducing them to the Quizizz platform, including guidance on how to download, register, and access the assigned learning materials. Participants were then enrolled in an online Quizizz course that integrated vocabulary sets drawn from the prescribed textbook and workbook. The intervention was carried out over six weeks, encompassing twelve sessions in total. At the beginning of each session, the teacher presented ten new vocabulary items, resulting in 60 target words across the entire treatment period. Learners in the experimental group practiced these items through Quizizz-based tasks—such as multiple-choice, matching, and fill-in-the-blank activities—both during class and independently outside the classroom. In contrast, the control group studied the same items using conventional instruction methods, including teacher-led explanations and board-based exercises. Following the intervention, both groups completed a post-test to measure their vocabulary gains. To further address the third research question, students in the treatment group also completed an online questionnaire designed to capture their perspectives in relation to Quizizz use in vocabulary learning. Additionally, a small number of learners participated in semi-structured interviews, providing qualitative insights into the perceived impact of the application on their learning experience.

2.6. Data Analysis

As this study adopted a mixed-methods design, the quantitative and qualitative data were collected and analyzed separately; however, the results were later integrated to present an in-depth comprehension of the research questions (Creswell, 2012). For the quantitative data, analyses of covariance (ANCOVA) were performed using *Jamovi* software to examine the pre-test and post-test vocabulary scores of both the experimental and control groups. As noted by Pallant (2020), ANCOVA is appropriate for comparing pre-test and post-test differences between groups while controlling for initial variations. In this study, the pre-test served as the covariate. Prior to conducting the analyses, key assumptions—including normality, homogeneity of regression slopes, linearity, reliability of covariates, and correlations among covariates—were tested, and no violations were detected. For the qualitative data, the researchers followed the categorization and coding procedures described by Dörnyei (2007). Participants' responses from the questionnaire and the transcribed interview data were examined to identify recurring themes. These themes were independently coded by the researchers, and the results were then compared and combined to ensure consistency and reliability. The qualitative findings were used to triangulate and enrich the quantitative results, providing deeper insight into the participants' experiences and perceptions.

2.7. Reliability and Validity of the study

To assess item quality, a pilot test with 100 vocabulary items was given to a similar class (n = 60) prior to the main study. After item analysis, each item's discrimination index was determined, and items with low discrimination values or excessive difficulty were eliminated. Strong reliability was indicated by the improved 60-item test's Cronbach's alpha coefficient of α =.919, which also showed good internal consistency. The online survey that was modified from Dizon (2016) was also found to be reliable because its Cronbach's alpha value was higher than the acceptable cutoff .70, indicating adequate internal consistency. Two professors from a Turkish institution examined the questionnaire and attested to its linguistic and contextual suitability to guarantee the authenticity of the Turkish version.

3. FINDINGS

The results of the present study integrate both quantitative and qualitative analyses that address the four research questions formulated earlier. Quantitatively, the results provide insight into learners' readiness levels prior to the intervention, their progress in vocabulary acquisition, and the potential influence of gender on performance outcomes. Qualitatively, students' attitudes and perceptions toward using the Quizizz platform for vocabulary learning in EFL settings were explored in depth.

3.1. Students' Readiness Level

As the first research question focused on evaluating the initial proficiency levels of the participants, it was necessary to determine their readiness before the treatment began. To this end, a 60-item vocabulary test—developed and validated by the researchers—was administered as both a pre-test and a post-test. The results from the pre-test confirmed that students in both the experimental and control groups had comparable English proficiency levels at the outset of the study. To ensure the accuracy of this assumption, the pre-test data from both groups were subjected to statistical analysis. Table 1 and Figure 2 present the participants' pre-test results. The normality of the data distribution was assessed using the Q–Q plot, which indicated that the data were approximately normally distributed.

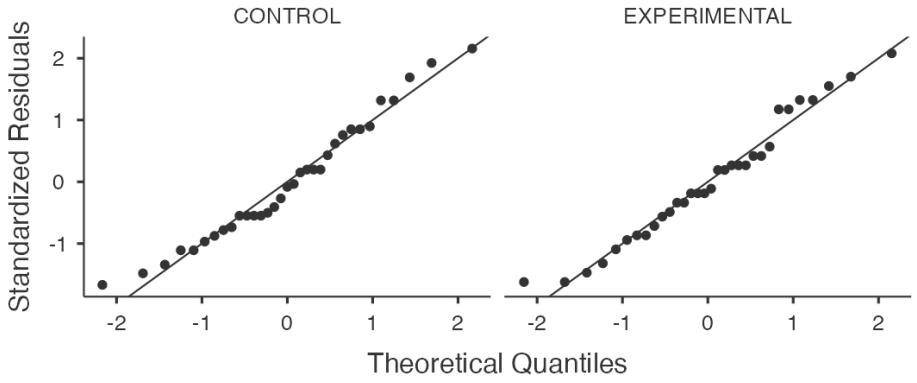

Figure 2. Readiness of control and experimental group

Figure 2 indicates that the results of the pretest in both groups correspond to the readiness level of the participants that was assumed before the start of the study.

Table 1.
Results of the Descriptive Statistics

	Group	***N***	***M***	***SE***	***SD***
Pre-test	Control	32	43.8	3.73	21.4
	Experimental	32	44.5	2.34	13.2

As presented in Table 1, both the experimental and control groups included 32 participants. The mean pre-test score of the control group was 43.8, while that of the experimental group was 44.5. These nearly identical averages suggest that participants in the two groups had comparable levels of English proficiency prior to the intervention. The descriptive statistics therefore confirm that any observable differences in the post-test phase are likely the result of the treatment itself, rather than variations in learners' initial vocabulary knowledge.

3.2. Results Related to the First Research Question

RQ1. To what extent are there significant differences in vocabulary knowledge between the experimental and control groups before and after the intervention?

To address the first research question, the study examined whether there were any statistically significant differences in vocabulary performance between the experimental and control groups following the intervention. Since ANCOVA was applied to account for any potential pre-test variations between groups, it provided a more precise comparison of post-test outcomes. The descriptive statistics for participants' pre- and post-test performance are presented in Table 2 below.

Table 2.
Post-test ANCOVA Statistical Results

	Sum of Squares	***Df***	***Mean Square***	***F***	***p***
Group	1274	1	1274	4.06	0.048
Pre-test	4212	1	4212	13.42	< .001
Residuals	19457	62	314		

As shown in Table 2, the ANCOVA results demonstrated that students in the treatment group gained higher vocabulary scores than those in the control group after the six-week intervention. This suggests that exposure to Quizizz-based vocabulary practice had a measurable and positive impact on learners' vocabulary acquisition. Moreover, the use of ANCOVA strengthened the

statistical validity of the results by controlling for baseline differences and reducing potential error variance. Overall, these findings suggest that incorporating Quizizz into English vocabulary instruction fosters more substantial vocabulary improvement than conventional classroom practices, thereby reinforcing the pedagogical value of MALL tools in EFL settings.

3.3. Results Related to the Second Research Question

RQ2. Does students' vocabulary development vary according to gender?

Regarding the influence of gender on L2 vocabulary growth, a scatter plot was used to illustrate the gender-specific scatter analysis (see Figure 3). An ANCOVA test was also carried out to determine the influence of gender on vocabulary acquisition (see Figure 3).

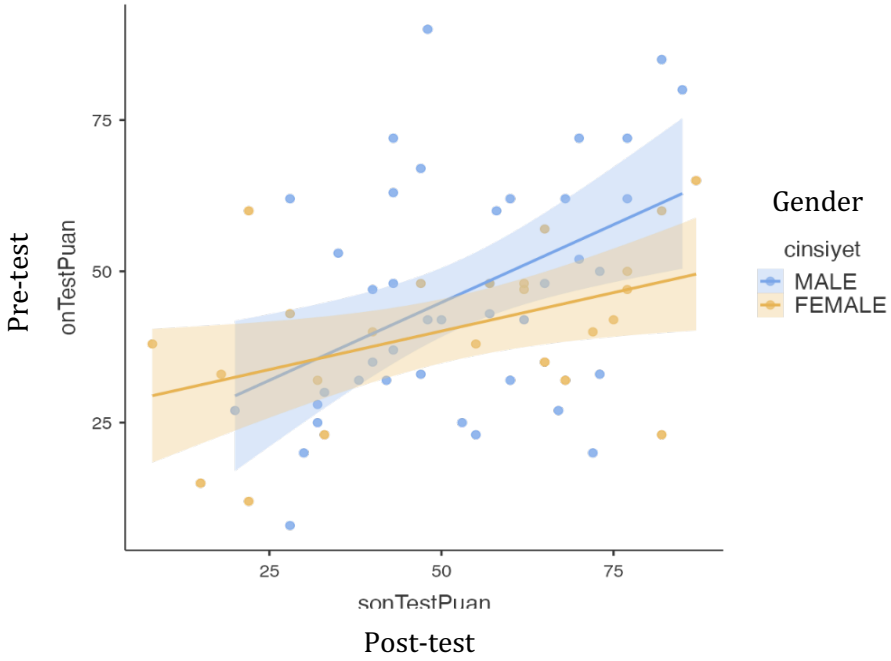

Figure 3. Scatter plot analysis

A scatter plot was utilized to visually examine the relationship among key variables, namely gender, pre-test scores, and post-test scores. As depicted in Figure 3, a slight positive correlation was observed between students' pre- and post-test performances across gender groups. This indicates that while both male and female participants showed improvement following the intervention, the degree of progress remained relatively consistent between the two groups.

Table 3.
Gender ANCOVA Statistical Results

	Sum of Squares	***Df***	***Mean Square***	***F***	***p***
Group	4380.2	1	4380.2	13.147	< .001
Pre-test	73.9	1	73.9	0.222	0.639
Residuals	20656.6	62	333.2		

The outcomes of the ANCOVA analysis, summarized in Table 3, indicated that gender had no significant influence on students' vocabulary gain ($p > .05$). While both genders benefited from the intervention, the differences in their post-test performance were minimal. These findings demonstrate that the Quizizz integrated learning activities were equally effective for learners regardless of gender, highlighting the inclusive potential of mobile-assisted vocabulary teaching in EFL contexts.

3.4. Results Related to the Third Research Question

RQ3. What are participants' perceptions of using Quizizz for vocabulary learning in EFL classes?

To explore how participants in the treatment group perceived the Quizizz intervention, the qualitative data were analyzed in two stages. First, volunteer students participated in individual, semi-structured interviews to share their experiences and attitudes toward using Quizizz. Second, a 12-item questionnaire was administered to all members of the treatment group (n = 32) to further examine their perceptions of the app's usefulness and overall impact on their learning.

3.4.1. Findings of open-ended interviews related to the students' perceptions

The answers of the participants from the treatment group were analyzed through thematic analysis to identify recurring patterns. The analysis revealed four overarching themes—feelings**,** vocabulary learning, intention to use in the future, and problems—along with eight associated subthemes. These themes collectively represent the participants' experiences and attitudes toward the use of Quizizz in English vocabulary acquisition. Figure 4 presents a schematic illustration of the main and subthemes that emerged from the interviews.

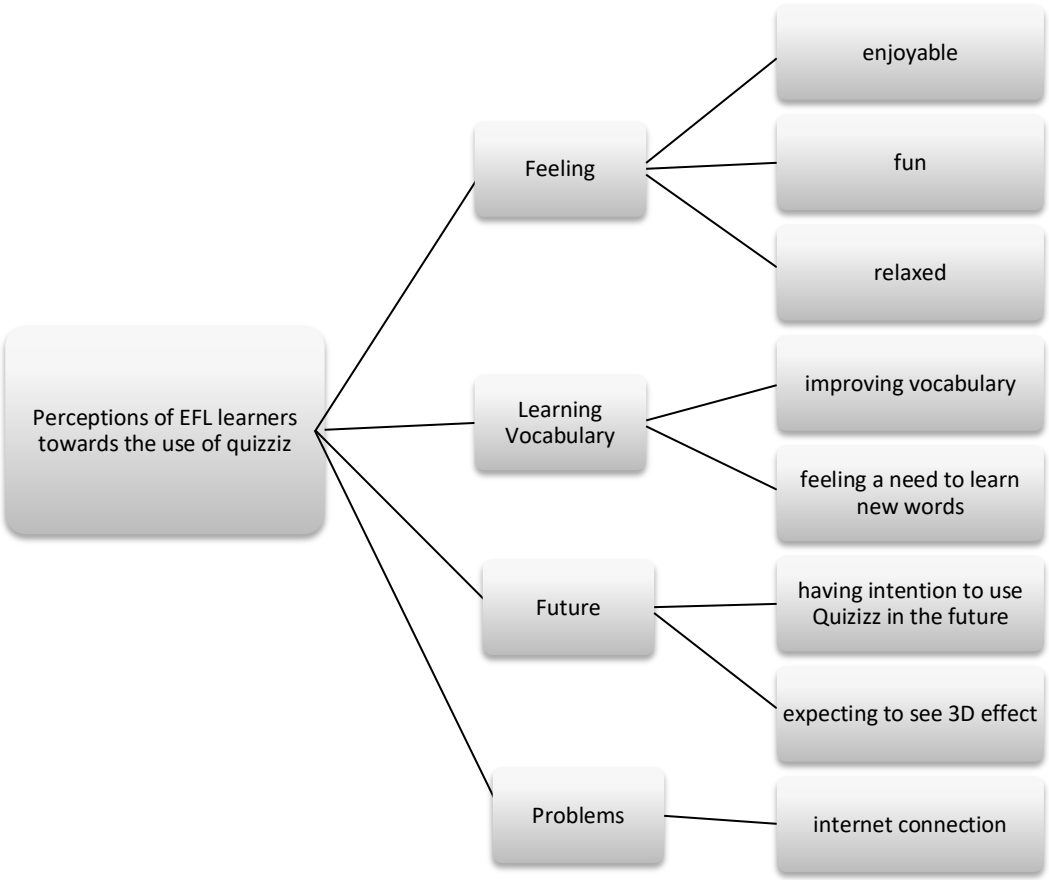

Figure 4. Perceptions of EFL learners towards the use of Quizizz.

The participants in the experimental group were asked to describe their experiences with Quizizz in learning new English words. Table 4 indicates the results of the data obtained from the respondents.

Table 4.
Perceptions of EFL Learners Towards the Use of Quizizz

Learners' attitudes towards Quizizz	***Percent***
Feeling enjoyable	67%
Feeling fun	17%
Feeling relaxed	17%
Learning Vocabulary improving vocabulary	50%
Feeling a need to learn new words	17%
Having intention to use Quizizz in the future	50%
Expecting to see 3D effect	17%
Having problems internet connection	17%

According to Table 4, 67% of learners stated that they enjoyed learning new words with the Quizizz app. In addition, 17% of participants felt fun and relaxed. For instance:

P4: "I really enjoyed the game version of this app."
P1: "I think it was fun to use Quizizz with my smartphone in class."
P5: "It was fun practicing new words and having fun as if I was playing a game. I was relaxed when I saw my level of understanding and my name on the scoreboard among my friends."

Participants found Quizizz easy to use to expand their English vocabulary. 50% of students reported that the Quizizz app improved their L2 vocabulary. 17% of participants stated that they felt the need to learn new words while using the Quizizz app. Quizizz was perceived as a convenient tool to improve English vocabulary. As some of them stated:

P3: "It was a good experience for me because it was easy to use it with my phone. I talked about it with my friends and learned new words, and that made me happy."
P1: "For me, using Quizizz was easy to use Quizizz because I could learn new words so quickly."
P5: "I can say that the Quizizz app has enriched my vocabulary."
P2: "I felt that I needed to learn some new English words. The questions were easy to understand, and I was able to answer them quickly."
According to the respondents' answers to the question "What are the good and bad sides of Quizizz?", 17% of them said that they would like to see a 3D effect in the future, and 17% of them said that they have problems with internet connection.

For example:
P2: "I had a bit of a problem with the internet connection sometimes, but it was easy for me to learn how to use it."
P4: "It was a good experience for me. However, I expect a 3D effect in this app. That might excite me even more."

In the face-to-face interviews, when asked "Would you learn English words with Quizizz if you had the opportunity?", nearly half of the participants declared that they intended to use the platform for vocabulary practice in the future. Sample responses included:
P6: "I will certainly use the Quizizz app in my English classes next year. I will prepare study sets for my friends because we all had fun answering the questions."
P4: "I will use the app in my future English lessons."

3.4.2. Findings of the 12-item questionnaire related to students' perceptions

The perceptions of the treatment group in regard to the usage of the Quizizz app were also examined through a 12-item online questionnaire. The first item asked participants to indicate their preferences when accessing and using Quizizz. This question aimed to identify how students typically engaged with the app (e.g., through smartphones, tablets, or computers) and their general patterns of usage during the study.

Table 5.
Device Preference for Quizizz

Material	***Counts***	***% of Total***	***Cumulative %***
Smart Phone	32	100.0 %	100.0 %

Table 5 summarizes students' device preferences for accessing Quizizz during the study. The results indicate that all participants (100%) reported using their smartphones to complete the activities. This outcome reflects the dominant role of mobile devices in digital learning environments, particularly among technology-oriented and digitally native learners. In the second item, students were asked to specify the amount of time they spent using Quizizz outside the classroom each week. Their responses provided valuable insights into the extent of self-directed engagement with the application. The distribution of these results is displayed in Table 6 below.

Table 6.
Amount of Time Participants Spent on Quizizz Outside the Classroom

Time	***Counts***	***% of Total***	***Cumulative %***
20-40 minutes per week	7	21.9 %	21.9 %
Less than 20 minutes per week	24	75.0 %	96.9 %
Between 40-60 minutes per week	1	3.1 %	100.0 %

As shown in Table 6, the majority of participants (75%) reported spending less than 20 minutes per week using Quizizz outside of class. A smaller portion of participants (21.9%) indicated that they used Quizizz for 20–40 minutes weekly, while only 3.1% of the participants reported spending between 40–60 minutes per week on the app. These findings suggest that although most students engaged with Quizizz beyond classroom hours, the duration of their independent use remained relatively limited.

3.5. Results Related to the Fourth Research Question

RQ4. How does learners' use of Quizizz relate to their behavioral intention (BI), perceived usefulness (PU), and perceived ease of use (PEOU)?

According to the Technology Acceptance Model (TAM), users' perceived usefulness (PU) reflects the belief that utilizing a given system contributes to better learning performance, whereas perceived ease of use (PEOU) represents the perception that the system is straightforward and requires minimal effort to operate (Dizon, 2016). As proposed by Davis (1989), an individual's behavioral intention (BI) to continue using a technological tool is shaped by both PU and PEOU, in addition to contextual factors such as motivation and learning environment. In this study, Pearson correlation coefficients were computed to determine the relationships among BI, PU, and PEOU and to explore how these factors interact in influencing learners' willingness to use Quizizz for vocabulary learning. The outcomes of this correlation analysis are displayed in Table 7 below.

Table 7.
Pearson's r for PU, PEOU and BI

		Behavioral intention		***Perceived ease of use***		***Perceived usefulness***
Behavioral Intention	Pearson's *r*	—				
	p-value	—				
	N	—				
Perceived Ease of Use	Pearson's *r*	0.440	*	—		
	p-value	0.013		—		
	N	32		—		
Perceived Usefulness	Pearson's *r*	0.638	***	0.603	***	—
	p-value	< .001		< .001		—
	N	32		32		—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

The Pearson correlation analysis revealed significant positive relationships among the three constructs of the Technology Acceptance Model (TAM)—Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioral Intention (BI). As summarized in Table 7, both PU and PEOU showed a meaningful association with BI. Specifically, PU demonstrated a stronger correlation, indicating that learners who viewed Quizizz as more effective for enhancing their learning performance were also more inclined to continue using it. Although PEOU presented a slightly weaker, yet still positive correlation with BI, it suggests that students valued the platform's simplicity and accessibility when engaging in vocabulary tasks. Overall, these findings highlight that participants tended to perceive Quizizz as a practical and supportive digital tool for vocabulary learning, contributing positively to their motivation and willingness to integrate it into future language-learning experiences. To gain deeper insight into students' perceptions, the remaining questionnaire items were further analyzed through descriptive statistics, focusing on the mean and standard deviation values of the three constructs (PU, PEOU, and BI). The results of this analysis are displayed in Table 8 below.

Table 8.
PU, PEOU and BI Mean and SD of Participants

Construct	***M***	***SD***
PU	4,56	0,552
PEOU	4,53	0,533
BI	4,35	0,649

Table 8 presents the means and standard deviations of the ten questionnaire items for the three TAM constructs: perceived usefulness (PU)**,** perceived ease of use (PEOU), and behavioral intention (BI)**.** All mean scores exceeded 4 (PU = 4.56, PEOU = 4.53, BI = 4.35), indicating that participants held a generally positive attitude toward Quizizz as a MALL tool in the EFL context.

Among the three constructs, PU emerged as the most prominent (M = 4.56, SD = 0.552). Within this construct, the third item, *"The use of Quizizz made it easier to learn English vocabulary,"* received the highest rating (M = 4.60, SD = 0.502), reflecting participants' perception of the app's practical benefits for vocabulary learning. For PEOU, both the first item, *"It was easy for me to study English vocabulary with Quizizz,"* and the fourth item, *"The Quizizz website and/or mobile app was clear and understandable,"* were rated equally high (M = 4.61), indicating that participants found Quizizz intuitive and user-friendly. Regarding BI, the second item, *"I intend to study English vocabulary with Quizizz in the future,"* had a mean of 4.39 (SD = 0.672), demonstrating that students expressed a clear intention to continue using Quizizz in their EFL learning.

4. RESULTS, DISCUSSION, AND RECOMMENDATIONS

Vocabulary learning has a fundamental role in foreign language acquisition. The objective of the present study was to investigate the impact of Quizizz on Turkish EFL students' vocabulary development, investigate whether gender influenced vocabulary acquisition, and explore learners' perceptions of the Quizizz app. To achieve these aims, the study compared the vocabulary performance of the experimental and control groups before and after the intervention, analyzed the influence of gender on vocabulary growth, and assessed the experimental group's perceptions of using Quizizz as a MALL tool.

The first research question focused on examining the effect of Quizizz on 11th-grade EFL learners' vocabulary development. The results indicated that the Quizizz-based intervention effectively improved the experimental group's vocabulary performance compared to the control group. This finding is consistent with prior research highlighting the effectiveness of MALL tools in facilitating vocabulary acquisition (Başoğlu & Akdemir, 2010; Epp & Phiranage, 2019; Fathi et al., 2018; Saeidi & Mozaheb, 2012; Xodabande et al., 2022). In particular, the present results reinforce earlier evidence that gamified mobile learning environments can enhance vocabulary recall through repetition, interactivity, and immediate feedback. The integration of visual elements, points, and progress tracking likely increased learner attention and retention, transforming vocabulary practice into an enjoyable, goal-oriented process. Furthermore, Quizizz appeared to foster motivation and self-regulation, as students received instant feedback and could monitor their own development throughout the six-week intervention.

However, these findings contrast with those of Bal (2018), who reported no significant differences in vocabulary scores between groups following a Quizizz-based program. One possible explanation for this inconsistency may lie in methodological factors such as the length of the intervention, the frequency of exposure, or the nature of the vocabulary tasks. In the present study, participants engaged in multiple sessions per week and were actively encouraged to interact with the platform both in and outside the classroom. Such regular practice may have contributed to deeper lexical processing and more stable learning outcomes, suggesting that duration and sustained engagement are key determinants of vocabulary growth in MALL-supported environments.

The second research question focused on the possible influence of gender on learners' vocabulary development. The analysis revealed no statistically significant differences in vocabulary performance between male and female participants. This finding is consistent with prior research that reported no gender effect in L2 vocabulary acquisition (Ashiyan & Salehi, 2017; Hassan et al., 2017; Jafari & Chalak, 2016), indicating that both male and female learners can benefit equally from gamified digital learning environments when provided with similar learning opportunities. However, this result diverges from Gu (2002), who found that female students outperformed males in vocabulary learning. These contrasting outcomes highlight the importance of contextual and methodological factors—such as motivation, learning strategies, or cultural attitudes toward technology—that may interact with gender. Therefore, further research is needed to explore gender-related variables in different educational settings and across diverse age groups, as also suggested by Llach and Gallego (2012). Overall, the present study supports the idea that engagement and frequency of practice play a more decisive role than gender in determining learning outcomes in mobile-assisted vocabulary instruction.

The third research question focused on learners' perceptions of Quizizz as a vocabulary learning tool. Both the interview and questionnaire data indicated that participants found Quizizz easy to use, practical, and enjoyable. All participants used their smartphones to access the app and most reported spending additional time practicing outside of class, even though it was not mandatory. These findings are consistent with earlier studies on MALL tools such as Quizlet, which documented positive learner attitudes toward mobile-assisted vocabulary learning (Alavinia & Qoitassi, 2013; Alhadiah, 2020; Dizon, 2016; Hu, 2013; Lam et al., 2018; Lander, 2016; Lu, 2008). Learners in the current study particularly valued the gamified nature of the app, its user-friendly design, and the opportunity to receive immediate feedback. They also expressed greater motivation and willingness to continue using Quizizz in future English courses, suggesting that the app not only facilitates vocabulary learning but also promotes learner autonomy and enhances digital literacy.

Despite these positive findings, the study acknowledges several limitations. First, the intervention lasted only six weeks; therefore, longer-term studies are required to determine whether the observed improvements can be sustained over extended periods. Second, the study was conducted with a relatively small and homogeneous sample, which may restrict the generalizability of the findings to broader populations or varied educational contexts. Future research should involve participants from diverse age groups, proficiency levels, and cultural backgrounds to ensure the robustness and validity of these findings. Third, the present study concentrated exclusively on vocabulary acquisition; however, MALL-based learning has the potential to enhance other language skills. Exploring the transfer effects of vocabulary learning to these broader language competencies would yield a more comprehensive understanding of the pedagogical value of gamified learning environments.

In conclusion, the findings of this study offer empirical evidence supporting the effectiveness of MALL tools in enhancing vocabulary learning in EFL settings. Integrating mobile-assisted applications such as Quizizz can significantly boost learners' engagement, motivation, and sense of autonomy—three key components of successful language learning. The combination of gamification, feedback, and competition in Quizizz appears to promote both cognitive and affective engagement, making vocabulary learning more dynamic and learner-centered. Consequently, educators are encouraged to incorporate such digital platforms strategically into classroom instruction, ensuring alignment with curricular goals and learner needs. Future research

should further investigate how factors such as proficiency level, instructional design, and frequency of use interact to influence learning outcomes. Ultimately, the present study contributes to the growing body of evidence that technology-enhanced, game-based learning can serve as a powerful complement to traditional instruction, promoting sustainable vocabulary development and overall language proficiency among EFL learners.

Research and Publication Ethics Statement

The authors confirm that all procedures performed in this study were in accordance with the ethical standards of institutional and national research committees. Ethical approval for the study was granted by the Ordu University Social and Human Sciences Research Ethics Committee (Session No: 03, Decision No: 2023-67, Approval Date: March 30, 2023).

Contribution Rates of Authors to the Article

The authors state that they have had equal contributions to the present study.

Statement of Interest

The authors declare that they both share no conflict of interest.

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