



Review Article

Applying Wayground to Teach English Vocabulary For 12th Grade at Nguyen Thi Dinh High School for the Gifted in Sports, Ho Chi Minh City

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Abstract

This study examines the effectiveness of Wayground, a gamified digital learning platform, in enhancing English vocabulary learning among Grade 12 students at Nguyen Thi Dinh High School for the Gifted in Sports. Grounded in the Technology Acceptance Model (TAM), the research adopted a sequential explanatory mixed-methods design to investigate both students' vocabulary achievement and their perceptions of the platform. Quantitative data were collected through vocabulary pre-tests and post-tests as well as a structured questionnaire administered to 119 students, while qualitative data were obtained through classroom observations and semi-structured interviews with EFL teachers. The quantitative data were analyzed using descriptive statistics through SPSS 27, whereas the qualitative data were examined using thematic analysis. The findings revealed a statistically significant improvement in students' vocabulary performance after the implementation of Wayground, with mean scores increasing from 6.01 in the pre-test to 7.53 in the post-test. In addition, students reported high levels of acceptance of the platform across several dimensions, including perceived learning outcomes, attitudes toward learning, usability, engagement, and frequency of use, with average mean scores approaching 4.00 on a five-point Likert scale. Strong positive correlations ($r = .926-.963$, $p < .001$) further indicated that Wayground contributed substantially to students' motivation and engagement in vocabulary learning activities. Qualitative findings supported the quantitative results by revealing that Wayground created an interactive, flexible, and learner-centered environment that was particularly beneficial for students with demanding athletic training schedules. Teachers also perceived the platform as an effective tool for increasing classroom participation and promoting vocabulary retention. However, several minor challenges related to technical limitations and students' autonomous learning practices were also identified. Overall, the study concludes that the integration of gamified digital platforms such as Wayground can significantly enhance vocabulary learning outcomes and student engagement in EFL contexts. The findings provide important pedagogical implications for educators seeking to integrate technology-assisted learning tools into vocabulary instruction, particularly in specialized educational settings where students face challenges in balancing academic and extracurricular commitments.

Keywords

Gamification, Wayground, Vocabulary Learning, Technology Acceptance Model, Student Engagement

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1. Introduction

In the context of globalization and rapid technological advancement, English proficiency has become increasingly essential for international communication, academic mobility, and workforce competitiveness. In Vietnam, the implementation of the *Đổi Mới* (Reformation) policy and the country's growing integration into the global economy have significantly increased the demand for English as a key instrument for socioeconomic development and international collaboration. Consequently, English language education has become a major priority within the Vietnamese educational system, particularly at the upper-secondary level where students are expected to develop communicative competence and academic language proficiency.

Among the various components of language learning, vocabulary plays a fundamental role in the development of listening, speaking, reading, and writing skills. A limited vocabulary repertoire often prevents learners from effectively comprehending texts, expressing ideas, and participating in communicative activities. However, vocabulary instruction in many English as a Foreign Language (EFL) classrooms in Vietnam continues to rely heavily on traditional approaches such as rote memorization and teacher-centered practices. These methods frequently result in passive learning habits and short-term retention, especially among students who primarily learn vocabulary for examination purposes rather than for meaningful communication and long-term language development.

With the emergence of Education 4.0, Information and Communication Technology (ICT) has increasingly transformed pedagogical practices in English Language Teaching (ELT). Digital learning platforms and mobile-assisted applications provide opportunities for interactive, collaborative, and learner-centered instruction that aligns with the learning preferences of digitally oriented students in the twenty-first century. Gamified educational tools, in particular, have attracted considerable attention due to their potential to increase learner motivation, engagement, autonomy, and knowledge retention. Among these tools, Wayground has emerged as a promising platform for vocabulary instruction because it integrates interactive activities, instant feedback, and game-based learning features that may enhance students' participation and learning outcomes.

Despite the growing importance of English, students at Nguyen Thi Dinh High School for the Gifted in Sports encounter unique challenges in balancing academic learning with intensive athletic training. As student-athletes, they are frequently required to participate in rigorous training schedules and sports competitions, which often limits their study time and affects the continuity of their academic engagement. These conditions may reduce students' motivation and opportunities to develop English vocabulary effectively through conventional classroom instruction. Therefore, there is a need for flexible and technology-supported learning solutions that can accommodate students' demanding athletic commitments

while simultaneously supporting vocabulary acquisition and retention.

Against this background, the present study investigates the application of Wayground in teaching English vocabulary to Grade 12 students at Nguyen Thi Dinh High School for the Gifted in Sports in Ho Chi Minh City. Specifically, the study aims to examine the effectiveness of Wayground in improving students' vocabulary learning outcomes and retention. In addition, it explores both teachers' and students' perceptions of the usefulness, engagement, and challenges associated with the use of this digital learning platform in English vocabulary instruction. To achieve these objectives, the study addresses the following research questions:

- (1) How does the use of Wayground affect the vocabulary learning outcomes of 12th grade students? and
- (2) What are the views of students and teachers on the usefulness and application of Wayground in the classroom?

2. Literature Review

The rapid advancement of digital technology has significantly transformed pedagogical practices in English as a Second Language (ESL) and English as a Foreign Language (EFL) classrooms. The integration of Information and Communication Technology (ICT) into language education has gained increasing attention from educators and researchers due to its potential to enhance learners' motivation, participation, and academic performance. Previous studies have consistently demonstrated that technology-supported learning environments promote more interactive, learner-centered, and engaging instructional practices compared to traditional teacher-centered approaches.

Davis et. al. [4, 5, 11] consider that technology functions as a powerful source of motivation and inspiration for learners. Technological tools not only increase students' interest in classroom activities but also encourage active participation in the learning process. Furthermore, technology-assisted learning environments allow students to experience authentic and autonomous learning situations, thereby fostering learner independence and responsibility. Similarly, [25-27] emphasize that the increasing importance of language practice has led to the emergence of numerous digital tools that effectively support language teaching and learning.

In addition to improving engagement, technology integration also contributes to the development of positive emotional and affective factors in language learning. According to [16, 17], instructional materials should support students' attitudes, emotions, and values in order to help them become autonomous learners. In the context of vocabulary learning, [10-13] found that enjoyable and interactive classroom activities enhance learners' motivation and confidence in acquiring English vocabulary. Likewise, [15, 21-24] note that the use of ed-

educational technology enables teachers to create more enjoyable learning environments while simultaneously preparing students for technology-based learning in the digital era.

Gamification has emerged as an influential pedagogical approach in contemporary language education. By incorporating game elements such as competition, rewards, points, and immediate feedback into learning activities, gamified instruction can increase students' engagement, motivation, and participation. Recognizing the pedagogical value of gamification, many ESL teachers have adopted game-based learning strategies to create more appealing and effective classroom experiences [6-9, 14].

Research has shown that gamified learning environments are particularly effective in vocabulary instruction because they promote repeated exposure, active recall, and meaningful interaction with lexical items. Through interactive activities and collaborative participation, students are more likely to retain vocabulary knowledge and maintain interest in learning tasks. As vocabulary acquisition is often perceived as repetitive and monotonous, gamification provides an alternative approach that enhances both enjoyment and learning effectiveness.

Among the available gamified educational platforms, Wayground (formerly known as Quizizz) has gained popularity as an accessible and flexible learning tool. [18-20] state that Wayground can be conveniently accessed through web browsers and mobile applications on multiple devices, making it suitable for both classroom instruction and independent learning. The platform incorporates multiplayer features, instant feedback, and interactive quizzes that contribute to a more dynamic and engaging learning environment. [1-3] further suggest that Wayground enhances classroom participation and enjoyment by transforming traditional assessment activities into interactive game-based experiences. Consequently, the platform has become widely used by teachers for conducting online quizzes and formative assessments in contemporary educational settings.

This study is grounded in Maxwell's conceptual framework, which conceptualizes research as a system of interconnected concepts, assumptions, beliefs, and theories that guide the entire research process. A conceptual framework assists researchers in identifying the phenomenon under investigation, formulating research questions, and selecting appropriate research methods. In the present study, the framework provides a foundation for examining the effectiveness of Wayground in English vocabulary instruction and understanding learners' and teachers' perceptions of its implementation.

The study also draws upon Davis's Technology Acceptance Model (TAM), which explains users' acceptance of technology through two primary constructs: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness refers to the extent to which individuals believe that a technological tool can improve their learning performance, while perceived ease of use concerns the degree to which the technology is perceived as simple and effortless to use. These two

factors are believed to influence users' attitudes toward technology adoption and their willingness to integrate technological tools into learning activities.

Within this framework, Wayground is viewed as a technology-enhanced instructional tool designed to facilitate vocabulary learning and retention among Grade 12 students. The study adopts a mixed-methods approach that combines quantitative and qualitative data collection instruments, including pre-tests and post-tests, student questionnaires, classroom observations, and teacher interviews. These instruments are employed to examine students' vocabulary achievement, engagement levels, and perceptions of the platform. The framework assumes that students' perceptions of the usefulness and ease of use of Wayground influence their engagement with the platform, which subsequently affects vocabulary learning outcomes and retention.

3. Methods

3.1. Research Design

This study employed a sequential explanatory mixed-methods design to investigate the effectiveness of Wayground in teaching English vocabulary to Grade 12 students and to explore users' perceptions of the platform in the context of English language instruction. The mixed-methods approach was selected because it enables the integration of quantitative and qualitative data, thereby providing both statistical evidence and in-depth insights into the implementation of technology-enhanced vocabulary learning. The study was further informed by Davis's Technology Acceptance Model (TAM), particularly the constructs of perceived usefulness (PU) and perceived ease of use (PEOU), which guided the investigation of students' and teachers' acceptance of Wayground as an instructional tool.

The research was conducted in two consecutive phases. The first phase involved the collection and analysis of quantitative data through vocabulary pre-tests, post-tests, and student questionnaires. The second phase consisted of qualitative data collection through classroom observations and semi-structured teacher interviews to provide deeper explanations for the quantitative findings and to examine the pedagogical suitability of Wayground in a sports-specialized educational context.

3.2. Research Participants

The study was conducted at Nguyen Thi Dinh High School for the Gifted in Sports during the 2025-2026 academic year. A total of 119 Grade 12 students participated in the quantitative phase of the study. These students were selected because they represented the target population of upper-secondary learners preparing for graduation examinations while simultaneously participating in intensive athletic training programs. Their unique educational context provided a relevant setting

for examining the effectiveness of mobile-assisted and flexible learning technologies in supporting vocabulary acquisition.

In addition, three EFL teachers participated in the qualitative phase through semi-structured interviews. The teachers were selected based on their direct experience using Wayground in vocabulary instruction. Their perspectives contributed valuable insights into the practical implementation, benefits, and challenges of integrating digital gamified learning tools into English classrooms.

3.3. Instruments

Multiple research instruments were employed to ensure comprehensive data collection and triangulation.

1) Vocabulary Pre-test and Post-test

Standardized vocabulary tests were administered before and after the implementation of Wayground to measure students' vocabulary learning outcomes and retention. The tests were adapted from the English assessment materials used during the 2025-2026 academic year. Vocabulary-related items accounted for approximately 43-44% of the test content, making the instruments appropriate for evaluating vocabulary development. The comparison between pre-test and post-test scores allowed the researchers to determine the extent to which Wayground contributed to students' vocabulary improvement.

2) Student Questionnaire

A structured questionnaire consisting of 32 items was distributed to participating students after the intervention period. The questionnaire employed a five-point Likert scale ranging from "strongly disagree" to "strongly agree." The items were designed based on the constructs of the Technology Acceptance Model and focused on several dimensions, including perceived usefulness, perceived ease of use, engagement, motivation, behavioral intention, and attitudes toward vocabulary learning through Wayground. The questionnaire also explored students' perceptions of the advantages and challenges associated with the platform.

3) Classroom Observations

Classroom observations were conducted throughout the implementation process to examine students' participation and behavioral engagement during vocabulary activities. An observation checklist with Yes/No indicators was used to record students' interaction, excitement, attentiveness, collaboration, and need for technical support while using Wayground. The observations provided contextual evidence regarding classroom dynamics and students' responses to gamified vocabulary instruction.

4) Semi-Structured Teacher Interviews

Semi-structured interviews were conducted with three EFL

teachers to explore their perceptions of the effectiveness and practicality of Wayground in vocabulary teaching. The interviews focused on issues such as classroom implementation, pedagogical benefits, technological accessibility, student engagement, contextual suitability for sports-specialized students, and challenges encountered during instruction. This qualitative instrument enabled the researchers to gain deeper insights into teachers' professional experiences and evaluations of the platform.

3.4. Procedure of Wayground Implementation

Wayground was systematically integrated into vocabulary instruction through several stages. First, teacher accounts and classroom settings were established on the platform. Vocabulary activities and quizzes were then designed based on the Grade 12 English curriculum and targeted lexical content. During classroom implementation, students accessed the activities using smartphones through QR codes or game access codes provided by the teacher.

Throughout the activities, students participated in interactive vocabulary exercises individually or collaboratively. The platform provided immediate feedback, ranking systems, and reward mechanisms that encouraged active participation and competitive engagement. Simultaneously, teachers monitored students' participation, accuracy rates, progress, and commonly misunderstood items through the Wayground dashboard. Following each activity, teachers reviewed difficult vocabulary items, analyzed common errors, and provided corrective feedback. In addition, Wayground assignments were occasionally used as homework tasks to support self-paced learning and vocabulary retention outside the classroom.

3.5. Data Analysis

Quantitative data obtained from the pre-tests, post-tests, and questionnaires were analyzed using descriptive and inferential statistical methods to identify changes in vocabulary achievement and students' perceptions of Wayground. The comparison of pre-test and post-test scores was used to evaluate the effectiveness of the intervention.

Qualitative data from classroom observations and teacher interviews were analyzed thematically to identify recurring patterns related to student engagement, classroom interaction, technological usability, pedagogical benefits, and implementation challenges. The integration of quantitative and qualitative findings enabled the study to provide a comprehensive understanding of the educational impact of Wayground on English vocabulary learning among Grade 12 students in a sports-specialized high school context.

4. Results

4.1. Results of Pre-test and Post-test

Table 1. Paired Samples Statistics.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	6.012	119	1.6834	.1543
	Post-test	7.533	119	1.6976	.1556

The *Paired Samples Statistics* table presents the mean scores and standard deviations of the two test results. The *Mean* column shows students' average scores across the two testing points. The results indicate that the post-test mean score ($M = 7.53$) was higher than the pre-test mean score ($M = 6.01$), suggesting that students achieved better vocabulary

performance after the implementation of Wayground. Moreover, the standard deviations were almost the same for both tests ($SD = 1.68$ for the pre-test and $SD = 1.70$ for the post-test), indicating that the spread of students' scores remained relatively stable. Overall, the findings suggest an improvement in students' vocabulary learning from the pre-test to the post-test.

Table 2. Paired Samples Correlations.

		N	Correlation	Sig.
Pair 1	Pre-test & Post-test	119	.964	.000

The analysis shows a very strong and statistically significant positive correlation between the pre-test and post-test scores ($r = .964$, $p < .001$). This indicates that students' performance remained highly consistent across the two tests, as those who performed well in the pre-test generally continued to achieve high scores in the post-test. The strong correlation also supports the reliability of the research instruments, sug-

gesting that the two standardized tests measured students' vocabulary ability in a consistent and dependable manner. In relation to the Technology Acceptance Model (TAM), the stable improvement in students' results suggests that Wayground was perceived as useful and could be integrated into vocabulary learning without causing major learning or technical difficulties.

Table 3. Descriptive Statistics of Research Variables Related to Wayground Integration (N = 119).

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Vocabulary Acquisition Outcomes	119	3.97	1.096	.100
Students' attitudes towards learning vocabulary using Wayground	119	4.02	1.109	.102
Usability and User Experience with Wayground	119	4.04	1.100	.101
Frequency of using Wayground	119	3.98	1.085	.099
Students' Engagement and Motivation with Wayground	119	4.01	1.146	.105

Table 3 shows that students' responses towards the use of Wayground in learning vocabulary are generally positive as the means are all close to 4.00. Usability and user experience gained the highest mean score ($M = 4.04$), followed by students' attitudes ($M = 4.02$), engagement and motivation ($M = 4.01$), frequency of use ($M = 3.98$), and vocabulary acquisition outcomes ($M = 3.97$). These results show that the Grade 12 students found Wayground as a useful, accessible and engaging tool to support English vocabulary learning. The standard deviations, between 1.085 and 1.146, indicate an acceptable range of responses. This suggests that while most students had a positive view of Wayground, their experiences were not exactly the same. In sum, the results demonstrate descriptive evidence that Wayground was well received by students and has significant pedagogical value as a supplementary digital resource in vocabulary instruction.

4.2. Results of Classroom Observation

During the Wayground sessions in the Grade 12 classroom at Nguyen Thi Dinh High School, students appeared noticeably more engaged than in conventional vocabulary lessons. Many students paid close attention to their smartphone screens, responded quickly to the questions, and showed visible signs of excitement. At different moments, the classroom atmosphere became lively, with students cheering, laughing, or reacting playfully when the leaderboard changed. These behaviours suggested that Wayground helped create a more interactive and motivating vocabulary learning environment. The students in the three classes (12A2, 12A4 and 12A5) showed great interest and reacted positively to Wayground. This was evidenced by the consistent "Yes" responses to metrics related to enthusiasm, focus and active engagement. Students showed that Wayground encourages active learning in the classroom as they quickly set up their devices, engaged with vocabulary exercises and discussed difficult words with their peers. But some limitations were also identified, especially in terms of usability. Students in 12A4 and 12A5 classes experienced some technological issues and slower reaction times. The general findings indicate Wayground was a motivator and created an active learning environment, but its effectiveness may still be contingent on real-world factors like internet access and device readiness.

4.3. Results of Teacher Interviews

Most teachers expressed positive attitudes towards the use of Wayground for teaching vocabulary, noting its interactivity, ease of use, and the potential to enhance student participation and engagement over traditional teaching approaches. The platform was also deemed appropriate for student-athletes. The flexible design of the platform allowed students to engage in short learning activities even with their busy training schedules. However, teachers indicated that sometimes the intensive competitions impacted the consistency of learning. Teachers

also reported that Wayground increased students' motivation, vocabulary retention and learning outcomes through gamified and interactive activities, but unstable internet connections were identified as a common challenge that sometimes interrupted lesson flow.

In conclusion, the strong agreement between the quantitative data and the qualitative observations from teacher interviews provides strong validation for the efficacy of Wayground. The impact of the platform on learning outcomes is empirically supported by the statistically significant increase in the vocabulary performance as indicated by the increase in the mean scores between the pre-test (6.01) and post-test (7.53) ($p < 0.05$). This quantitative growth is also supported by classroom observations in which students were seen to show obvious indicators of interest, high attentiveness, and active involvement with the gamified content in courses 12A2, 12A4, and 12A5. The consistency between the statistically significant t-values and the observed behavioral engagement confirms the Technology Acceptance Model (TAM) paradigm used in this study. The observations confirmed that the high perceived usefulness and ease of use ($M \approx 4.00$) reported in the student surveys were converted into peer conversation and real-time active learning. In general, the results together show that Wayground is a very promising tool for teaching English vocabulary, particularly in terms of getting student-athletes with busy schedules involved. The results also indicate that pragmatic challenges experienced in all approaches such as inconsistent internet connectivity and the need for planned instructor support to sustain independent learning habits must be tackled for it to be successfully executed.

5. Discussion

The results of the study indicate strong empirical evidence of the pedagogical effectiveness of Wayground in helping students learn new vocabulary. The high scores for perceived usefulness and user experience ($M = 4.04$) indicate that the platform greatly reduces the cognitive load, enabling students to concentrate on language learning rather than technical navigation, according to the Technology Acceptance Model (TAM). The strongest quantitative evidence is the substantial improvement in test scores with the mean rising from 6.01 to 7.53 and a very high correlation ($r = .964$) confirming the consistency and impact of the intervention.

This success comes from the combination of instant feedback, spaced repetition, and gamified design that takes vocabulary learning from passive memorization to active engagement. Importantly, Wayground offers a flexible, low-anxiety and stimulating environment, a "low affective filter" in line with Krashen's theory for student-athletes under intense training pressure. These results are confirmed by classroom observations where students showed a high degree of enthusiasm and engagement in competitive modes of play such as "Mastery Peak." The difference between guided classroom use (M

= 4.08) and independent home use ($M = 3.87$), however, underscores the importance of teacher scaffolding and suggests that further measures need to be taken to promote learner autonomy. Ultimately these gains are the result of the synergy of innovative technology, academic motivation of 12th graders preparing for national exams, and continuous instructional support.

6. Conclusion

This study investigated the effectiveness of Wayground in enhancing English vocabulary learning among Grade 12 students at NTD High School. Employing a sequential explanatory mixed-methods design grounded in the Technology Acceptance Model (TAM), the study integrated quantitative data from a structured questionnaire administered to 119 students and pre-test and post-test measures to assess changes in vocabulary performance. In addition, classroom observations were conducted to capture students' engagement and learning behaviors during the intervention. These were complemented by qualitative insights obtained from semi-structured interviews with three EFL teachers.

The study concludes that Wayground is an effective and viable tool for vocabulary learning in EFL contexts, especially in technology integrated classrooms. It is strong in its usability, gamified design and ability to drive engagement. But it's most effective when guided and structured by a teacher. The platform has great potential for promoting autonomous learning, but this needs to be reinforced pedagogically.

The findings of the study have important implications for gamified technology in EFL settings. The success of Wayground demonstrates the importance of digital tools to learn vocabulary in the modern age, especially for NTD High School students who have to juggle their academic workload and intense athletic training. The results demonstrate improved exam performance and improved long-term vocabulary retention over traditional methods. This is active and repetitive. It moves words from short term memory to active use. Students' attitudes also changed positively. Wayground lowered the "Affective Filter" making learning vocabulary more fun and engaging, leading to greater confidence, motivation and enthusiasm in learning English. Wayground allows teachers to view progress in real time and identify gaps to scaffold learning. It also promotes student independence as students can practice anywhere and anytime. Overall, the use of technology and models such as TAM can improve student engagement and instructional effectiveness.

Abbreviations

TAM	Technology Acceptance Model
EFL	English as a Foreign Language
ICT	Information and Communication Technology
ELT	Practices in English Language Teaching

PU	Perceived Usefulness
PEOU	Perceived Ease of Use
NTD	Nguyen Thi Dinh

Author Contributions

Tran Thi Hong Hoan: Conceptualization, Data curation, Investigation, Writing – original draft

Ho Van Han: Formal Analysis, Methodology, Resources, Writing – review & editing

Conflicts of Interest

The authors have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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