

A PRE-EXPERIMENTAL RESEARCH ON THE USE OF GAMIFICATION IN DEVELOPING EFL STUDENTS' READING SKILLS AT A UNIVERSITY IN VIETNAM

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ABSTRACT

This study presents a pre-experimental research that examines the effectiveness of gamification in improving the reading skills of English as a Foreign Language (EFL) students at a university in Vietnam. Using a one-group pretest-posttest design, the research was conducted with 30 first-year English-major students over a 10-week period, employing Quizizz as the main gamified learning platform.

Data were collected through pre-test and post-test scores and a questionnaire. The results indicate a significant improvement in students' reading performance, along with increased engagement and motivation. Students also expressed generally positive attitudes toward gamified learning, despite minor challenges related to technology and competition.

The findings suggest that gamification can be an effective approach to enhancing EFL reading skills and student engagement in higher education contexts.

Keyword: *gamification, EFL, reading skills, engagement, Quizizz, Vietnamese students*

1. INTRODUCTION

The term "game" is traditionally associated with activities designed for fun, but misconceptions exist about their lack of educational benefits. The rise of technology has revived interest in applying game principles, leading to the concept of gamification, defined by Huotari and Hamari (2012) as the integration of game design elements into non-game services. This approach is proving effective in education, particularly in language learning, with tools like Duolingo and Kahoot! showcasing how gamified elements can enhance user engagement and retention.

Research indicates that gamification significantly improves motivation and engagement, which are essential for effective language learning, especially for learners of English as a Foreign Language (EFL). Studies suggest that gamification can alleviate anxiety and enhance involvement in various language competencies (Castillo-Cuesta, 2022; Suharno et al., 2023; Yavuz et al., 2020). However, comprehensive research on gamification's effects, particularly within Vietnam's educational system, remains limited. Existing studies have shown positive responses from Vietnamese students towards gamified

learning and improvements in vocabulary development (Phuong, 2020).

The current study aims to investigate the potential of gamification to enhance reading skills among EFL students at Thai Nguyen University, focusing on a group of 30 first-year students over ten weeks. The research seeks to quantitatively evaluate reading performance improvements, gauge student engagement, and analyze perceptions of the gamified approach. The significance of this study is twofold: theoretically, it fills knowledge gaps in gamification literature specific to the Vietnamese EFL context, while practically, it provides insights for educators and policymakers on effective gamified teaching strategies. This research aspires to contribute valuable empirical evidence to support the adoption of engaging, technology-enhanced methodologies in language instruction.

2. MATERIALS AND METHODS

2.1. Reading Skills

2.1.1. Defining Reading Skills

Reading skills are complex cognitive processes used to construct meaning from text (Beatrice, 2008). They involve largely automatic operations

that enable efficient decoding and fluent comprehension (Afflerbach, Pearson, & Paris, 2008). Automaticity allows readers to focus on higher-level meaning as word recognition becomes rapid and effortless.

These skills are essential for processing complex information and functioning in modern academic and professional contexts (Rost, 2015; Grabe & Stoller, 2002). For EFL learners, reading supports vocabulary, grammar, and cultural knowledge. Effective reading integrates foundational knowledge with higher-order strategies such as inferencing and contextual understanding, contributing to overall academic success.

2.1.2. Types of Reading

Reading is typically categorized into extensive and intensive reading. Extensive reading involves large amounts of easy, self-selected texts to promote fluency, vocabulary growth, and motivation (Day & Bamford, 1998; Nation, 2009). Intensive reading focuses on detailed analysis of shorter texts to develop linguistic accuracy and comprehension (Brown, 2000; Nation, 2009).

These approaches are complementary: extensive reading builds fluency and engagement, while intensive reading strengthens analytical and comprehension skills. Both can be integrated effectively in instructional design, including gamified learning.

2.1.3. Taxonomy of Reading Skills

Reading skills are often divided into lower-level and higher-level processes (Grabe, 2009). Lower-level skills include decoding and word recognition, while higher-level skills involve comprehension and critical thinking. Models by Gough and Tunmer (1986) and Scarborough (2001) highlight the interaction between decoding and language comprehension.

Key components include decoding and sight word recognition, fluency and vocabulary knowledge (Nation, 2001; Rasinski, 2012), and higher-order skills such as literal, inferential, and critical comprehension (Pressley & Afflerbach, 1995; Paul & Elder, 2008). Strategic skills like skimming, scanning, and comprehension monitoring, along with syntactic knowledge, further support effective reading.

2.1.4. Evidence-Based Pedagogies

Effective reading instruction combines multiple approaches. Explicit strategy instruction improves comprehension (Paris & Jacobs, 1984), while extensive reading enhances fluency and motivation (Day & Bamford, 1998). Vocabulary instruction is also critical (Nation, 2001).

Technology-based learning and cooperative activities support engagement and deeper understanding (Grabe & Stoller, 2002; Vygotsky, 1978). Motivation significantly influences comprehension outcomes (Van der Sande et al., 2023).

2.2. Gamification

2.2.1. Conceptualizing Gamification

Gamification is commonly defined as the use of game design elements in non-game contexts (Deterding et al., 2011). Huotari and Hamari (2012) further emphasize its goal of creating “gameful” experiences that enhance engagement, motivation, and value. In education, this involves integrating interactive and rewarding elements into learning activities.

In reading instruction, gamification can target both lower- and higher-level skills. For example, timed quizzes may enhance fluency, while interactive stories foster inferential comprehension. Grounded in intrinsic and extrinsic motivation, gamification incorporates selected game mechanics rather than full game design. Research suggests it can increase motivation, engagement, and reduce anxiety (Castillo-Cuesta, 2022; Suharno et al., 2023; Yavuz et al., 2020). Its ultimate aim is to improve measurable learning outcomes, not merely provide entertainment (Huotari & Hamari, 2012).

2.2.2. Components of Gamification

Core elements include points, badges, levels, leaderboards, quests, and achievements, which signal progress and motivate participation (Werbach & Hunter, 2012). Additional features such as avatars, teams, content unlocking, and virtual goods enhance personalization, competition, and collaboration within gamified systems.

2.2.3. Gamified Reading Instruction

Different gamified formats support specific reading skills. Game-based quizzes (e.g., Quizizz, Kahoot!) develop skimming, scanning, and vocabulary through timed tasks and feedback (Hwang & Wu, 2012; Ronimus et al., 2014). Interactive story games promote inferencing and critical thinking (Ningtyas, 2020). Word games strengthen foundational skills like spelling and word recognition (Prensky, 2010; Chen & Yang, 2013), while RPGs support comprehension and intercultural awareness (Rama et al., 2012).

Adaptive platforms (e.g., ReadTheory) combine multiple mechanics to personalize learning and sustain engagement (Hakulinen et al., 2015). The effectiveness of each approach depends on its alignment with targeted reading skills and learning objectives.

2.2.4. Gamification Platforms

Tools such as Quizizz, Kahoot!, and Wordwall enable interactive, game-based learning. Quizizz supports varied assessments with instant feedback, enhancing engagement (Hamari et al., 2014). Kahoot! promotes competition and collaboration, improving motivation and critical thinking (Deterding et al., 2011). Wordwall offers flexible templates for vocabulary and reading practice, supporting skill development (Dichev & Dicheva, 2017). These tools make learning more engaging and accessible.

2.2.5. Pedagogical Role in EFL

Gamification addresses key EFL challenges such as low motivation and language anxiety by fostering engagement and positive learning environments (Hamari et al., 2014; Krashen, 1985). It can also support cognitive processes like attention and memory.

However, its effectiveness depends on careful design. Overreliance on rewards (“pointsification”) may reduce intrinsic motivation, and poorly managed competition or technical issues can hinder learning. Therefore, gamification should be purposefully aligned with pedagogical goals and integrated into broader instructional frameworks to maximize its benefits while minimizing limitations.

2.3. Research Methodology

This study investigates the effects of gamification on EFL students’ reading performance, engagement, and perceptions.

2.3.1. Research design, sampling procedure, and research instrument

The study employed a one-group pretest–posttest pre-experimental design within a mixed-methods framework. Quantitative data measured changes in reading performance before and after a 10-week gamified intervention, while qualitative data explored students’ perceptions.

A multi-stage sampling design was used. First, a particular section of the course “Reading and Writing 2” was chosen through purposive convenience sampling. This choice was based on the course meeting the requirements of the study: the students were first-year English majors, and their registration in “Reading and Writing 2” signified an English level of A2 on the Common European Framework of Reference for Languages (CEFR). This particular section of the course was also selected as it was convenient for the researcher. Then, from the students enrolled in this targeted course section, 30 students were chosen through a simple random sampling method.

The main instrument is the One-Group Pretest-Pottest pre-experimental design. This study employs a mixed-methods design for data collection to gain a comprehensive understanding of student perceptions regarding gamified reading activities. An online questionnaire was utilized, incorporating quantitative elements with Likert-scale items to assess agreement levels and qualitative open-ended questions to gather detailed feedback and personal experiences from students.

2.3.2. Data collection procedure and data analysis

Phase	Week (s)	Activity	Data Collected/Instrument
Phase 1: Pre-Intervention	Week 1	Administering the pre-test to all participants.	Pre-test scores (Cambridge A2 Key tests)

Phase 2: Intervention	Week 1-10	Conducting 10 weekly gamified reading activities using Quizizz platform.	Completion rates and accuracy rates for each of the 10 intervention tests.
Phase 3: Post-Intervention	Final Week (after week 10)	1. Administering the post-test to all participants. 2. Distributing the perception questionnaire.	1. Post-test scores (Cambridge A2 Key test). 2. Quantitative (Likert scale) and qualitative (open-ended) data on student perceptions.

Quantitative data were analyzed using SPSS, including paired-samples t-tests to compare pre-test and post-test scores, and descriptive statistics (means, SDs, rates) for test performance and Likert responses. Qualitative data from open-ended questions were analyzed thematically following Braun and Clarke's (2006) procedures to identify recurring patterns and insights into student experiences.

3. RESULTS

This chapter provides the empirical results obtained from the study, followed by an extensive

discussion of the results in the light of the set research questions. It includes quantitative results from a paired t-test on reading performance and student engagement data from a gamified intervention. Additionally, it displays findings from a questionnaire, covering both quantitative Likert-scale responses and qualitative thematic analyses. The results are followed by a discussion that connects these findings to the study's aims and existing literature.

3.1. Paired t-test

A paired-samples t-test showed significant improvement in reading scores from pre-test (M=7.62, SD=2.18) to post-test (M=8.50, SD=1.57), $t(29) = -3.167, p = .004$. This confirms a statistically significant positive effect of gamification on reading performance. Reduced SD indicates more consistent performance post-intervention.

Table 1. Paired-Samples t-test Results for Pre-test and post-test Reading Scores

Categories	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	7,62	2,18	-3,167	29	,004
Post-test	8,50	1,57			

Engagement data from 10 Quizizz tests showed high completion rates (87%–100%, M=92.20%) and improving accuracy (75%–95%, M=81.40%), reflecting sustained participation and gradual learning gains.

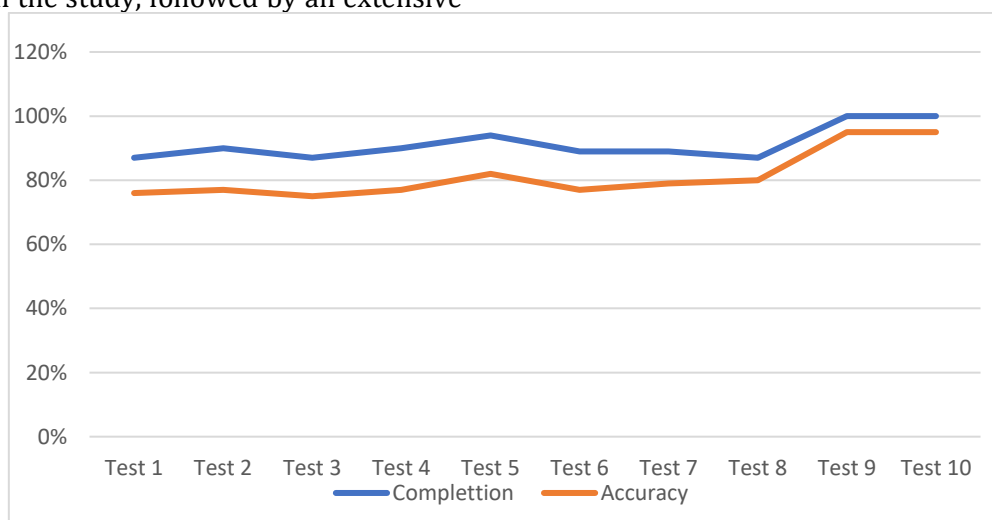


Figure 1. Average Completion and Accuracy Rates Across 10 Gamified Reading Tests

3.2. Questionnaire

Students reported positive perceptions of gamification, with all items scoring above neutral ($M > 3$). The highest agreement was on its usefulness ($M = 4.43$). Gamification increased engagement, enjoyment, participation, feedback effectiveness, and vocabulary learning. Confidence and sense of achievement were slightly lower but still positive. Overall, responses indicate strong acceptance of gamified learning.

Items	Mean	SD
1. Gamified elements made the reading activities more engaging for me.	4,10	,61
2. I enjoyed the challenges and goals presented in the gamified reading activities.	4,00	,45
3. I found gamified reading lessons more enjoyable than traditional reading lessons.	4,10	,61
4. Gamification made me feel more confident in my English reading abilities.	3,77	,82
5. Gamified reading activities provided me with helpful and timely feedback on my progress.	4,03	,67
6. Gamification helped me actively participate in the reading activities.	4,20	,48
7. Gamification made reading in the classroom more fun.	4,20	,66
8. I valued the sense of accomplishment I felt when I succeeded in a gamified reading activity.	3,87	,63
9. Gamification helped me to learn new vocabulary from the reading texts.	4,03	,49
10. I think gamification is a useful tool for learning English reading.	4,43	,50

Table 2. Descriptive Statistics for Students' Perceptions of Gamification in Developing Reading Skills

3.3. Open-ended questions

Analysis of students' responses to gamified reading activities revealed two primary sub-themes regarding their perceived efficacy: Engaging and Motivational Elements, and Structure and Feedback for Comprehension. The first sub-theme highlighted the appeal of competition, playfulness, and interactivity, which motivated students' efforts, supported by comments on "competition as motivator" and "instant feedback." The second focused on the effective structuring of material and immediate feedback, aiding comprehension and error correction.

Further investigation into specific gamified elements led to four additional sub-themes: Points and Progress emphasized the motivational impact of scoring and competition through leaderboards; Challenges and Levels highlighted engagement through time tasks and hierarchical progress; Badges and Rewards underscored recognition and accomplishment; and the Re-attempt Feature affirmed the importance of retrying tasks to reduce failure stress and enhance learning. These aspects collectively underscored the effectiveness of gamification in fostering student engagement and comprehension.

4. DISCUSSION

The study examined the impact of gamification on EFL learners' reading performance and engagement. Findings showed a significant improvement in reading scores (pre-test $M = 7.62$, post-test $M = 8.50$) after a 10-week gamification intervention, aligning with existing research on gamification's benefits for academic achievement. High overall completion rates ($M = 92.20\%$) indicated strong student engagement, supporting the notion that game elements can enhance motivation. Student perceptions were overwhelmingly positive, with high mean scores on the effectiveness of gamification ($M = 4.43$), enjoyment ($M = 4.10$), and active participation ($M = 4.20$). Qualitative insights highlighted the value of engaging elements, structure, and prompt feedback, which support intrinsic motivation. The successful gamification through Quizizz proved effective in improving reading achievement and fostering positive attitudes in a Vietnamese context, emphasizing the need for thoughtful design in educational tools. This research provides empirical support for gamification in enhancing

EFL learners' engagement and performance, warranting further investigation in larger studies.

5. CONCLUSION

This chapter summarizes the findings on the impact of gamification on EFL reading skills, interprets them in relation to prior research, outlines pedagogical implications, acknowledges limitations, and suggests directions for future studies.

5.1. Summary of Findings

The study investigated the effects of Quizizz-based gamification on first-year EFL students' reading performance and perceptions. Results showed a statistically significant improvement in reading scores after the 10-week intervention ($t(29) = -3.167, p = .004$), alongside high completion rates and increased accuracy.

Student perceptions were strongly positive, particularly regarding usefulness, engagement, and enjoyment. Qualitative data revealed two main benefits: motivational engagement (e.g., competition, interactivity) and enhanced comprehension support through structured tasks and immediate feedback. Game elements such as points, levels, rewards, and re-attempts were perceived as effective in supporting learning.

5.2. Pedagogical Implications

Gamification can enhance reading instruction when strategically integrated and aligned with specific sub-skills. It should be used as part of a balanced literacy approach rather than a standalone method. Effective implementation requires teacher training, institutional support, and equitable access to technology. A balanced use of competitive and cooperative elements and the adoption of blended learning models are recommended.

5.3. Limitations

The pre-experimental design without a control group limits causal claims. The short duration, small convenience sample, and single-institution context restrict generalizability. Reliance on self-reported data may introduce bias, and the assessment focused on general comprehension rather than specific sub-skills.

5.4. Suggestions for Further Research

Future research should employ more rigorous controlled designs and longitudinal approaches. Comparative studies of platforms and game elements, as well as analyses of specific reading sub-skills, are needed. Expanding participant diversity, examining teacher readiness, exploring blended models, and investigating individual differences and cognitive load effects would further strengthen understanding of gamification in EFL contexts.

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