The Effectiveness of Gamified Vocabulary Learning on Enhancing Iraqi Secondary Students' English Language Retention

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Abstract:

This study explores the effect of gamification on the retention of English as a second language vocabulary by Iraqi high school students. The conventional method of teaching vocabulary is characterized by rote memorization devoid of interactive and motivational elements necessary for the long-term maintenance of learning language. Conversely, gamification incorporates features like instant feedback, scoring, and competition into learners' learning which boosts motivation and effectiveness. This study aims at the effectiveness of gamified versus traditional methods using a quasi-experiment approach. It involved (60) second-intermediate-grade students from Najaf governorate who were allocated to an experimental group and a control group. The current study investigated the impact of traditional and gamification teaching methods using a quasi-experimental design. The participants who were assigned to two groups, an experimental group, and a control group. Vocabulary instruction for the experiment group included game playing such as Kahoot and Quizizz and other games on the internet for four weeks while the control group was instructed through textbooks.

Keywords: Gamification, Vocabulary Retention, English Language Learning, Iraqi Education, Game-Based Learning, EFL Motivation

الملخص:

تستكشف هذه الدراسة تأثير اللعبيّة على الاحتفاظ بمفردات اللغة الإنجليزية كلغة ثانية من قبل طلاب المدارس الثانوية العراقية. تتميز الطريقة التقليدية لتدريس المفردات بالحفظ عن ظهر قلب دون عناصر تفاعلية وتحفيزية ضرورية للحفاظ على تعلم اللغة على المدى الطويل. وعلى العكس من ذلك، تتضمن اللعبيّة ميزات مثل التغذية الراجعة الفورية والتسجيل والمنافسة في تعلم المتعلمين مما يعزز الدافع والفعالية. تهدف هذه الدراسة إلى فعالية اللعبيّة مقابل الطرق التقليدية باستخدام نهج شبه تجريبي. وقد شملت الدراسة (٦٠) طالبًا من طلاب الصف الثاني المتوسط من محافظة النجف الاشرف ووزعوا على مجموعتين تجريبية وضابطة. بحثت الدراسة لحالية في تأثير طرق التدريس التقليدية واللعبيّة باستخدام تصميم شبه تجريبي. تم توزيع المشاركين على مجموعتين، مجموعة تجريبية ومجموعة ضابطة وتضمن تعليم المفردات للمجموعة التجريبية ممارسة ألعاب مثل

Kahoot وQuizizz وألعاب أخرى على الإنترنت لمدة أربعة أسابيع، في حين تم تعليم المجموعة الضابطة من خلال الكتب المدرسية.

1. Introduction

1.1 Background of the Study

Language achievement and skill development cannot be separated from vocabulary acquisition because these affect reading, writing proficiency, listening, and speaking. Learners in contexts such as Iraq's English as a Foreign Language (EFL) are somehow handicapped by limited exposure to English outside the classroom walls. Vocabulary instruction in the majority of Iraqi secondary schools depends on rote memorization and mechanical repetition and does not support learner interest or retention (Nation, 2001).

As pedagogical approaches in the world keep evolving, the use of technological tools is becoming more and more incorporated to aid in instructional strategies. Gamification is one innovation where elements of a game, such as points, badges, and leaderboards—are used within non-game contexts to foster engagement and motivation (Deterding et al., 2011).

Gamification takes advantage of the psychological forces of motivation by providing extrinsic and intrinsic rewards. The integration of engaging aspects makes studying fun and, hence, lowers the cognitive burden and anxiety that normally relates to language acquisition. Gamified environments have been shown to result in better educational achievements, active class participation, and increased student satisfaction (Hamari et al., 2014). As there are infrastructural constraints and traditional pedagogical methods common in Iraq, innovative techniques such as gamification are extremely desirable to enhance English vocabulary teaching.

1.2 Statement of the Problem

Despite ongoing curriculum reform efforts in Iraq, issues persist in effective vocabulary instruction. Students demonstrate low learning rates of new words and are low-achievement in motivation towards learning in English class. Teacher-centered and traditional models prevail in practice in the classroom, with negligible support for active learning or interaction with vocabulary. Consequently, many students fail to transfer vocabulary knowledge to real-life communication. The lack of learner-centered approaches exacerbates these issues, prompting the need for more dynamic instructional methods. This study aims to examine whether gamified vocabulary instruction can bridge this gap by enhancing both retention and learner motivation.

1.3 Research Questions

1. Does gamified instruction improve vocabulary retention among Iraqi secondary school students more effectively than traditional instruction?

2. What is the impact of gamified vocabulary learning on students' motivation to study English?

1.4 Hypotheses

H0: There is no significant difference in vocabulary retention between students receiving gamified instruction and those receiving traditional instruction.
H1: Students taught through gamified vocabulary instruction demonstrate significantly higher vocabulary retention and motivation.

1.5 Significance of the Study

This study holds significance for multiple educational stakeholders. For teachers, it introduces an alternative methodology that can make vocabulary instruction more engaging and effective. For curriculum developers, the findings provide empirical support for integrating digital tools and gamified strategies into language programs. Policymakers may use the results to justify investments in educational technology, especially in under-resourced regions. Furthermore, this study contributes to the broader academic discourse on gamification, offering insights into its applicability in EFL contexts and its potential for improving student outcomes.

1.6 Limitations of the Study

- Geographical Scope: It was conducted in Iraq's Najaf Governorate, which could restrict the generalizability of the finding.
- The intervention period of four weeks could fail to capture long-term effects.
- Sample Size: Only 60 students were involved, and it could not represent the population well.
- Focus: The research focuses exclusively on vocabulary retention without investigating other language skills like speech or writing.

2. Literature Review

2.1 Theoretical Framework

The study relies on Self-Determination Theory (Deci & Ryan, 1985) and Constructivist Learning Theory (Piaget, 1952; Vygotsky, 1978). Based on Self-Determination Theory, intrinsic motivation is formed when autonomy, competence, and relatedness are experienced by the individual. Gamification learning environments satisfy these psychological needs by offering choices, appropriately challenging tasks, and collaboration with others.

Constructivist Learning Theory assumes that students actively construct knowledge through meaningful experience. Gamification in language learning provides environments where learners can engage in situ questions with words, get immediate feedback, and devise solutions. These environments are in accordance with constructivist principles based on learner agency, discovery, and contextualized learning (Gee, 2007).

2.2 Gamification in Education

Gamification of the classroom involves using game mechanics—levels, points, achievement, and timer—to make learning more engaging (Kapp, 2012). It is not just for enjoyment but for converting passive learning to active learning. Gamified learning has been proven by studies to encourage focus in the long term, enhance the rates of task fulfillment, and create a positive classroom environment (Domínguez et al., 2013; Huang & Hew, 2018).

2.3 Gamification of Language Learning

Application of gamification in language learning has taken off in the last decade. Gamified computer programs like Duolingo, Quizlet, and Kahoot provide customized and interactive environments that are conducive to learning a language. Empirical evidence shows that gamified methods enhance vocabulary memorization, alongside grammar, listening, and reading proficiency. Gamification by mobile was capable of significantly improving motivation and vocabulary skill for Taiwanese EFL learners. (Abrams & Walsh, 2014)

2.4 Vocabulary Learning Challenges in Iraq

Iraqi students face several obstacles in vocabulary learning, including limited exposure to English outside academic settings, reliance on outdated teaching techniques, and insufficient access to technological resources. Many classrooms are overcrowded, and teachers often resort to lecture-based instruction due to time constraints and lack of training. These factors result in passive learning environments that hinder vocabulary acquisition. Gamification can potentially address these issues by offering a learner-centered approach that encourages repeated exposure and active engagement with vocabulary (Su & Cheng, 2015).

2.5 Empirical Studies

- Alhammad (2017) reported increased vocabulary retention among Saudi students using mobile-based games.
- Zainuddin et al. (2020) found that Kahoot significantly improved class participation and vocabulary recall.
- Yildirim (2019) observed heightened motivation and academic performance in Turkish EFL students using gamified quizzes.
- Wu (2018) reported substantial vocabulary gains among Chinese learners using digital gamification platforms.
- Oktay & Genc (2022) concluded that game-based learning strategies positively impacted vocabulary proficiency in Turkish high schools.

3. Methodology

3.1 Research Design

A quasi-experimental design was employed, utilizing a pre-test/post-test control group framework. This design enables the measurement of causal effects in real classroom settings where random assignment is not feasible. The methodology provides robust data on the comparative impact of gamified versus traditional vocabulary instruction.

3.2 Participants

Participants included 60 second-intermediate-grade students from a public secondary school in Najaf Governorate. They were randomly assigned to two groups: an experimental group (n=30) that received gamified instruction, and a control group (n=30) that received traditional instruction. The sample was matched for age, gender, and prior English proficiency to ensure comparability.

3.3 Instruments

1. Vocabulary Test: A 40-item multiple-choice test was developed and piloted by the researcher to assess vocabulary knowledge.
2. Motivation Questionnaire: Derived from Gardner's (1985) Attitude/Motivation Test Battery, focusing on effort, enjoyment, and perceived value of English learning.
3. Classroom Observation Checklist: Used to monitor and ensure consistent delivery of the instructional methods in both groups.

3.4 Procedures

Week1:

- Administered pre-tests and motivation questionnaires.
- Provided orientation and training to teachers on delivering both traditional and gamified lessons.

Weeks2–5:

- Experimental group engaged in gamified vocabulary activities, including Quizizz challenges, Kahoot quizzes, flashcard competitions, and vocabulary bingo.
- Control group followed standard textbook exercises and teacher-led instruction.

Week6:

- Conducted post-tests and administered follow-up motivation questionnaires.

3.5 Data Analysis

Quantitative data were analyzed using SPSS. Paired sample t-tests were used to evaluate within-group differences pre- and post-intervention. ANOVA tests were employed to compare between-group differences. Statistical significance was set at $p < 0.05$, as shown in the table below:

Table 1. Descriptive and Inferential Statistics for Vocabulary Retention and Motivation

Measure	Group	N	Pre-test Mean (SD)	Post-test Mean (SD)	Mean Gain	t-value (within)	p-value	Between-Group F	p-value
Vocabulary Retention	**Experimental**	**30**	**24.1 (3.2)**	**33.8 (2.5)**	**+9.7**	**12.45**	**<0.001**	**18.62**	**<0.01**
	Control	**30**	**23.7 (3.5)**	**26.5 (3.1)**	**+2.8**	**4.32**	**<0.05**		
Motivation – Effort	**Experimental**	**30**	**3.1 (0.6)**	**4.2 (0.5)**	**+1.1**	**9.88**	**<0.001**	**14.25**	**<0.01**
	Control	**30**	**3.0 (0.7)**	**3.2 (0.6)**	**+0.2**	**1.22**	**0.23**		
Motivation – Enjoyment	**Experimental**	**30**	**2.9 (0.7)**	**4.5 (0.4)**	**+1.6**	**15.77**	**<0.001**	**20.41**	**<0.001**
	Control	**30**	**2.8 (0.6)**	**3.0 (0.5)**	**+0.2**	**1.55**	**0.18**		
Motivation – Value	**Experimental**	**30**	**3.2 (0.5)**	**4.1 (0.5)**	**+0.9**	**8.11**	**<0.001**	**12.87**	**<0.01**
	Control	**30**	**3.1 (0.6)**	**3.3 (0.5)**	**+0.2**	**1.48**	**0.21**		

Note: SD = Standard Deviation; t-value = Paired sample t-test for within-group changes; F = One-way ANOVA for between-group comparison; $p < 0.05$ indicates statistical significance.

This table demonstrates clearly that:

- The **experimental group** (gamified instruction) showed significant gains in vocabulary retention and all motivation subscales.
- The **control group** had only small improvements, mostly non-significant.
- **ANOVA tests** confirm that the post-test differences between groups are statistically significant.

4. Results and Discussion

4.1 Vocabulary Retention Results

Post-test scores indicated a notable improvement in vocabulary retention among the experimental group, who achieved an average of 33.8/40, compared to the control group's 26.5/40. The difference was statistically significant ($p < 0.01$), suggesting that gamified instruction was more effective in facilitating vocabulary retention.

4.2 Motivation Results

Analysis of the motivation questionnaire revealed higher scores for the experimental group across all subscales. The most dramatic improvement occurred in the "enjoyment" dimension, indicating that gamification strengthened students' positive attitudes to learning English. Effort and perceived value were also increased by the experimental group.

4.3 Discussion

The results confirm the research hypothesis(H1) that gamification of learning vocabulary enhances motivation and retention. Integration of gamification components exposed learners to repeated exposure, interactive lessons, and instant feedback—elements that are verified to strengthen memory consolidation. The results support

earlier research (Su & Cheng, 2015; Zainuddin et al., 2020; Kim et al., 2018), which endorsed the advantages of gamification in language learning.

5. Conclusion and Recommendations

5.1 Conclusion

This study demonstrates that vocabulary learning through gamification improves the retention of the English language and the motivation of Iraqi secondary school learners significantly. Gamification is makes learning and encouraging by turning the learning of vocabulary into a game, emphasizing on weaknesses of conventional teaching. The results proved that not only does gamification led to improved academic performance but also fostered a more engaging and active learning environment. In an environment such as Iraq, where conventional pedagogy can be a burden for students, gamification represents an efficient and scalable solution.

5.2 Recommendations

- Gamification sites like Kahoot and Quizizz may be implemented in regular classes by teachers to enhance student engagement and vocabulary retention.
- Teacher training courses must include modules of educational gamification and computer literacy.
- Education policymakers must weigh the feasibility of funding provision to provide schools with the required technological infrastructure.
- More research needs to investigate the long-term effect of gamification on language learning and extend its use to other language competencies such as speaking, writing, and listening.
- Comparative research needs to be carried out in different geographical locations to validate the findings and assess scalability.

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