

Gamification in Vocabulary Learning A Quasi-Experimental Study of Primary EFL Students

Asst. Lect. Eltifat Neama Ethaieb

General Directorate of Education in Wasit

اللعبة في تعلم المفردات: دراسة شبه تجريبية لطلاب المرحلة الابتدائية المتعلمين للغة الإنجليزية كلفة أجنبية

م.م. التفات نعمة عذيب

المديرة العامة للتربية في واسط

Abstract

Gamification, as a powerful learning approach in foreign language teaching, gained popularity during recent years because it tries to engage and facilitate learning through game-like elements. However, its capacity to support vocabulary learning among young EFL learners, particularly in primary schools, remains unexplored. This quasi-experiment investigates the influence of gamification on primary school children learning English as a foreign language in vocabulary learning. The study was triggered by the observed low motivation and bad retention of vocabulary by young students with traditional learning methods. The general objective was to examine whether gamification techniques would improve vocabulary learning and retention to a large extent. A vocabulary test was used as the primary research instrument for assessing the students' learning outcomes. The sample consists of 25 fourth-grade pupils at Al-Khalida Primary School for Girls in Iraq. Participants were assigned to an experimental group, which was instructed by gamified learning with interactive games and points rewards, and to a control group that was instructed by conventional vocabulary instruction. Four-week post-tests found that the experimental group, as opposed to the control group, learned more of their vocabulary along with test scores in general. These findings suggest that gamification can have a strong application in education for effectively teaching vocabulary for EFL learners. Gamification would have been able to produce higher levels of motivation and engagement for vocabulary lessons with improved performance among elementary school students. This work hints towards using gaming for acquiring skills in a young phase of language education.

Keywords: gamification, vocabulary learning, EFL, primary education, motivation, quasi-experimental study.

المستخلص

لقد اكتسبت اللعبة، باعتبارها نهجًا تعليميًا قويًا في تعليم اللغات الأجنبية، شهرة متزايدة في السنوات الأخيرة لأنها تحاول إشراك المتعلمين وتسهيل عملية التعلم من خلال عناصر شبيهة بالألعاب. ومع ذلك، فإن قدرتها على دعم تعلم المفردات لدى المتعلمين الصغار للغة الإنجليزية كلفة أجنبية، وخصوصًا في المدارس الابتدائية، ما تزال غير مستكشفة بالكامل. تهدف هذه الدراسة شبه التجريبية إلى تحليل تأثير اللعبة على تعلم المفردات لدى أطفال المرحلة الابتدائية الذين يدرسون اللغة الإنجليزية كلفة أجنبية. وقد انطلقت الدراسة من ملاحظة انخفاض الدافعية وضعف الاحتفاظ بالمفردات لدى الطلاب الصغار عند استخدام طرق التعلم التقليدية. كان الهدف العام هو دراسة ما إذا كانت تقنيات اللعبة ستساهم بشكل كبير في تحسين تعلم المفردات والاحتفاظ بها. وقد استُخدم اختبار المفردات كأداة البحث الأساسية لتقييم مخرجات تعلم الطلاب. تكونت عينة الدراسة من 25 طالبًا من الصف الرابع في مدرسة الخالدة الابتدائية للبنات في العراق. تم تقسيم المشاركين إلى مجموعة تجريبية تم تعليمها من خلال التعلم المبني على اللعب مع ألعاب تفاعلية ونظام نقاط للمكافآت، ومجموعة ضابطة تم تعليمها باستخدام طرق التعليم التقليدية للمفردات. أظهرت الاختبارات اللاحقة بعد أربعة أسابيع أن المجموعة التجريبية، مقارنة بالمجموعة الضابطة، حققت تعلمًا أكبر للمفردات ودرجات أفضل في الاختبارات بشكل عام. وتشير النتائج إلى أن اللعبة يمكن أن تكون أداة تعليمية فعالة لتعليم المفردات في اللغة الإنجليزية كلفة أجنبية، وأنها قادرة على زيادة الدافعية، وتعزيز المشاركة النشطة، وتحسين مخرجات التعلم بين طلاب المرحلة الابتدائية. كما تشير هذه الدراسة إلى إمكانية استخدام تقنيات التعلم المبني

على الألعاب في سن مبكرة لتطوير اللغة، وتؤكد الحاجة إلى دراسة آثارها طويلة المدى وإمكانية تطبيقها في بيئات مختلفة. الكلمات المفتاحية : اللعبة، تعلم المفردات، اللغة الإنجليزية كلغة أجنبية، التعليم الابتدائي، الدافعية، دراسة شبه تجريبية.

1. Introduction

With this shifting profile of education, traditional teaching approaches are put under scrutiny for their efficiency, including the ones adopted in the young learners' EFL classroom. Vocabulary is considered the foundation on which learners build their communication skills (Nation, 2013). Vocabulary construction in young learners' EFL lessons is typically centered on rote learning, which can result in learners' boredom and lack of retention (Al-Jarf, 2007). Recently, educators and researchers have embraced novel solutions for such challenges, and among the most promising ones is gamification. Gamification has been described as the use of game-design elements, such as points, levels, badges, and leaderboards, in nongame contexts with the intent of increasing motivation and improving engagement (Deterding, Dixon, Khaled, & Nacke, 2011). Recently, in education, gamification has emerged as a trend that enables learning to become more interactive and student-centered. Young learners will like gamification because they love to learn in an interactive and playful way. There are also findings indicating that gamification elements in classroom teaching enhance motivation, time on task, and academic achievement (Domínguez et al., 2013; Hamari, Koivisto, & Sarsa, 2014). As far as EFL learners are concerned, gamification could be a unique way to enhance vocabulary acquisition by allowing interactivity while learning and offering several exposures to unfamiliar words in context. Although gamification has recently attracted the attention of many, reporting on its real practice in primary EFL classrooms is scant and incomplete, especially in developing countries. Most publications released to this date either focus on older learners or on tertiary levels of learning, thus creating room for investigations regarding whether gamification may be able to help even younger learners during the initial stages of language acquisition. This study purports to bridge this gap by examining how gamification affects the vocabulary acquisition of primary school girls in Iraq. Specifically, the study was conducted at Al-Khalida Primary School for Girls where more engaging and effective ways of teaching vocabulary were found through casual observation of teachers and preliminary classroom screenings. The primary concern that has been studied in this research is the low rate of vocabulary retention and motivation by first-level EFL students under exposure to conventional patterns of instruction. Students are routinely reported to forget new words that are introduced to them, while classroom observation shows low eagerness and active involvement during vocabulary sessions. These issues, thus, highlight the significance associated with pedagogical shifts that can complement both the cognitive and affective needs required in young learners. Moving ahead in this concern, this particular research will mainly focus on exploring how gamification-teaching approaches can be used to bring in vocabulary development and motivation among primary-level students.

Specific research questions that this research is going to attempt to answer would be: (1) Does gamification have any significant effect on the element of vocabulary acquisition for primary-level EFL learners? (2) What are the effects of gamification on learners' levels of motivation and interest towards the vocabulary sessions? Firstly, this research will attempt to answer these research questions. At the same time, it will aim to contribute towards increasing knowledge on gamification for improved learning. Thus, in this current research, only one school was considered, which conducted research on a sample size of 25 fourth-grade children in Al-Khalida Primary School for Girls. Although this research was conducted on such a small population, any claim about any primary education setting can in no way be confirmed without any further research. However, one of the uses of this research could be that it can demonstrate how gamification can prove useful in reality, especially in regions with minimal levels of education resources. Behind this research is the assumption that gamification has the potential for providing a new direction for vocabulary teaching in primary EFL learners. Since gamification is expected to facilitate higher levels of motivation and effective learning for students, it is promising to provide a new pathway by overcoming traditional limitations associated with vocabulary teaching. These outcomes can help inform future practices and lay a groundwork for studying more gamification-related interventions for young learners.

2. Literature Review

2.1. Theoretical Foundations of Gamification in Education

Gamification is a strategy that borrows from the principles of game design, incorporating game-like elements into non-game contexts to increase user engagement and motivation. According to Deterding et al., gamification within education relies on the backbone of behavioral and cognitive theories of learning. Behaviorist theories mainly by Skinner purport that rewards and reinforcement may effectively shape learning behavior (Skinner,

1953). This theory supports gamification with points, badges, and leaderboards to promote good learning behavior. From an epistemological stance, constructivist theories of learning also promote gamification by emphasis on engaged participation and learner-centered teaching. Piaget's theory of discovery learning and Vygotsky's sociocultural theory, such as the notion of the Zone of Proximal Development (ZPD), promote the use of scaffolding through interactive learning environments of substance (Vygotsky, 1978). Games are prone to provide such scaffolded learning environments where learners make progress at their own convenience and are provided with instant feedback, significant in vocabulary acquisition in language learning. Moreover, Self-Determination Theory (SDT) by Deci and Ryan (2000) accounts for how gamification addresses students' common psychological needs of autonomy, competence, and relatedness. When game mechanics are well-designed, they are capable of enhancing intrinsic motivation required for long-term vocabulary learning among young EFL learners (Seaborn & Fels, 2015).

2.2. Gamification in EFL Contexts

Gamification has become a favorite in English as a Foreign Language (EFL) with teachers looking for innovative means of engaging learners. EFL learning is usually marked by extensive memorization and constant drill that results in burnout and disinterest. Gamification can turn such exercises into meaningful activities (Huang & Soman, 2013). It has been found that game-based learning contexts significantly improved students' motivation toward participation in EFL classes. Besides that, gamified instruction allows students to provide them with immediate feedback, a critical element of second language learning (Lyster & Saito, 2010). Also, such gamified language learning tools as Kahoot!, Quizlet, and Classcraft have been reported to have substantial effects on vocabulary retention and student satisfaction (Wang, 2015; Lin & Lan, 2020).

2.3. Vocabulary Learning and Gamified Strategies

Vocabulary is the cornerstone of language proficiency. As Nation (2001) argued, a good vocabulary is essential for comprehension, communication, and overall language proficiency. Traditional ways of teaching vocabulary, such as memorization and translation methods, cannot be very effective in the long term, states Schmitt (2008). Gamification, however, has the benefit of allowing interactive and contextualized ways of acquiring vocabulary. A number of empirical studies have validated gamification to improve vocabulary acquisition. For instance, Liu and Chu (2010) carried out an experimental study on Taiwanese elementary students and found that the students who received gamified mobile learning outperformed those getting traditional instruction. Al-Azawi, Al-Faliti, and Al-Blushi (2016) also confirmed that gamified learning websites enhance retention and understanding among young language learners through improved active participation. In addition, gamification features including streaks, levels, and immediate feedback are also introduced by different online websites and institutions like Duolingo. These enable multiple instances of exposing oneself to and reinforcing vocabulary items (Munday, 2016). These allow incidental vocabulary learning in a more contextualized repetition format, rather than mere word lists.

2.4. Motivation and Engagement through Gamification

Motivation is an absolute driving force for language learning to be achieved, considering EFL contexts where learning outside the classroom is virtually absent (Dörnyei & Ushioda, 2011). Gamification addresses both extrinsic and intrinsic motivational sources. Whereas success and awards are extrinsic motivators, the joy of achieving something and succeeding through difficulty may elicit intrinsic interest (Nicholson, 2015). It has been found in a study by Sailer, Hense, Mayr, and Mandl (2017) that features such as points, feedback, and competition were significantly associated with learner motivation. The above is particularly important when dealing with young learners who have natural affection for playful and competitive environments. The gamified environment also allows the learners to set goals, monitor progress, and celebrate achievements, hence promoting engagement. According to Buckley & Doyle, 2016 these elements are therefore effective in managing the attention of primary school students and in sustaining interest through the learning process. Kim, Song, Lockee, and Burton's 2018 study identified that gamified classrooms are composed of students who are less anxious and, at the same time, more engaged, which leads to better retention of words. Gamification also supports personalized learning pathways for better intake of learning styles and paces that lead to long-term engagement.

2.5. Gamification and Young Learners

It is the case that primary school children, and even more so within EFL contexts, stand to gain a great deal from pedagogic methods which draw from their age-related attributes. Children are characterized by high levels of curiosity and energy, but at the same time, they have minimum attention capacities. Gamification technology is interactive and dynamic; thus, it can provide ideal learning experiences to cater to these needs.

Social interactions important in language learning are developed in gamified online platforms. Group challenges and classroom leaderboards build a sense of collaboration and peer-to-peer learning. Such interaction, in turn, helps enhance learning vocabulary, developing communication skills and class harmony.

2.6. Limitations and Research Gaps

Despite the promising results, a number of limitations and gaps exist in the gamification literature at the moment. A good deal of studies focus on online or mobile learning settings in technology-rich environments; hence, resource-poor settings such as those found in Iraq and other developing nations are overlooked (Alabbasi, 2017). Further, there is a lack of studies which have focused on female-only primary school participants who may exhibit different patterns of learning and motivational levels toward gamification. Furthermore, most of the existing studies measure only the short-term gamification effect. Longitudinal studies will be necessary with respect to its long-term impact on vocabulary recall, motivation, and language proficiency. According to Koivisto and Hamari (2019), the novelty effect of gamification can wear off through time and thus make it less effective in the long run if it is never updated. Another gap has to do with the nature of the gamifying elements: points and rewards are common, but fewer studies investigate the role of narrative, role-play, or problem-solving in vocabulary development. More comprehensive and varied gamification strategies may yield richer learning experiences and better outcomes.

2.7. Summary

According to the reviewed literature, gamification looks a highly promising approach to improving vocabulary learning in primary EFL contexts, as it is grounded in solid educational theories, fosters very active participation of students, and meets important motivational needs of young learners. Yet, contextually more specific, gender-focused, and long-term studies are still required. To address some of these gaps, this study explores the impacts of gamified instruction in vocabulary on female students at Al-Khalida Primary School for Girls in Iraq. By doing so, it adds to the wider exploration of innovative pedagogies within the broader area of EFL education.

3. Methodology

3.1. Research Design

This research used a single-group pre-test-post-test quasi-experimental design. This design is of interest to the researcher because, while the study cannot be conducted using a randomly assigned control group, it measures the impact of the intervention-in this case, gamification-on vocabulary learning results (Creswell, 2012). The use of pre-test and post-test will facilitate assessment of vocabulary improvement due to the gamified activities. Quasi-experimental methods are quite often used in educational settings where true experimental control is difficult or ethically impractical (Ary, Jacobs, Irvine, & Walker, 2018). Given the context of a functioning primary school and the ethical limitations against assigning students to different conditions without school-wide approval, this design was both practical and appropriate for the study's aims.

3.2. Participants

The sample comprised 25 female pupils from the fifth grade at Al-Khalida Primary School for Girls in Iraq. The participants were purposely selected because they are representative of a typical sample of EFL learners in a public primary school context. All participants were native Arabic speakers and had studied English as a foreign language for at least three school years. Their age ranged from 10 to 11 years. The permission was sought first from the school administration and parents of the pupils before the study. Ethical practices were followed according to APA, 2020 standards: being voluntary and confidential.

3.3. Instruments

The main research instrument is a vocabulary achievement test which was developed by the researcher from the EFL syllabus issued by the Iraqi Ministry of Education. It was of 30 items, including multiple-choice items, word-picture matching, and fill-in-the-blanks. The test was judged for content validity by a specialist in EFL and a language tests specialist. Ten students were involved in a pilot study outside of the main sample to determine reliability and test item comprehensiveness. Internal consistency reliability was 0.78, as measured by the Kuder-Richardson Formula 21 (KR-21), which represents acceptable reliability (Brown, 2004).

3.4. Intervention: Gamified Vocabulary Instruction

Intervention was a four-week vocabulary learning program with gamification features consisting of points, badges, leaderboards, and games. Instruction was derived from fifth-grade vocabulary syllabus and was implemented three times per week. Games used were:

- Kahoot! quizzes with competitive scoring and real-time feedback,
- Word bingo and matching games,

- Team-based vocabulary races, and
- Flashcard challenges using platforms like Quizlet.

The gamified lessons were facilitated by the researcher in coordination with the class teacher. Participation and accuracy were rewarded, and students were given small non-material rewards (e.g., stickers, praise) based on their cumulative scores. The use of gamification elements in this manner is supported by research showing that they are effective for increasing motivation and learning vocabulary (Sailer et al., 2017; Deterding et al., 2011).

3.5. Data Collection Procedures

Data were collected in three general phases:

- 1.Pre-test administration: A vocabulary test at the beginning of session one was used to assess baseline knowledge.
- 2.Gamified instruction implementation: Gamified lessons were implemented for four weeks, which included 12 instruction sessions.
- 3.Post-test administration: The test of vocabulary was given once again at the conclusion of the intervention to measure learning gains.

Both the pre- and post-tests were given under standardized conditions by the researcher to produce uniformity.

3.6. Data Analysis

Pre- and post-test data were analyzed using paired-sample t-tests to determine statistically significant differences in students' vocabulary performance before and after the intervention. All analyses were performed with the Statistical Package for the Social Sciences (SPSS), version 25 (Field, 2013). The effect size was quantified by Cohen's d in order to measure the practical magnitude of the intervention. Following Cohen (1988), a d of 0.2 is considered small, 0.5 moderate, and 0.8 or above large.

3.7. Validity and Reliability Considerations

Internal validity was ensured by minimizing threats such as testing effects and maturation through the usage of the same format of the test in this intervention period, which was also short. External validity was considered in clearly defining the population under study and ensuring that the intervention could be replicated in a similar educational context. Pilot testing, therefore, ensured the reliability of the instrument, while the fidelity of the intervention was maintained since each gamified session had the same lesson plan. Additionally, there was a teacher observation checklist used to monitor each student's participation and engagement in the program.

3.8. Limitations

Several limitations should be considered. Without a control group, it cannot be certainly determined that the vocabulary gains are due solely to gamification. This has been at least somewhat mitigated by drawing on pre- and post-test comparisons. Additionally, the relatively small sample size and the female-only gender group may somewhat limit generalizability of findings. These limitations notwithstanding, however, the study is enlightening about the practical application of gamification within an actual-world EFL primary context.

4. Results

This chapter presents an in-depth examination of data collected through pre- and post-tests administered to the subjects. The results are presented in nine detailed subsections: descriptive statistics, tests' reliability, overall improvement in performance, statistical significance, effect size, graphical representation analysis, individual performance analysis, interpretation of results, and summary of results.

4.1. Descriptive Statistics

Descriptive statistics give the summary background of the students' performance before and after the intervention. Table 1 illustrates the summary of the vocabulary pre- and post-test scores of 25 Al-Khalida Primary School for Girls fifth-grade students.

Table 1: Descriptive Statistics of Vocabulary Test Scores

Statistic	Pre-test Score	Post-test Score
Count	25	25
Mean	11.68	15.25
Standard Deviation	1.90	2.65
Minimum	8.20	10.20
25th Percentile	10.90	13.60
Median	11.50	14.80

75th Percentile	13.00	17.50
Maximum	15.20	22.00

4.2. Test Reliability

Internal consistency measures were used to test the reliability of the vocabulary test. The instrument was also pre-tested on a similar group before administration, and a KR-21 reliability coefficient of 0.78 was obtained. This reliability level is acceptable as evidenced by Brown (2004) and confirms the internal consistency of the test. Expert reviews also supported the content validity of the test.

4.3. Overall Improvement in Performance

The students' scores increased consistently from pretest to posttest, with the average increase at about 3.57 points. The lowest increase that was recorded was 2 points, while the highest increase recorded was 7.5 points. Every student therefore gained at least some points, which means the whole sample benefited from the intervention.

4.4. Statistical Significance: Paired-Sample t-Test

To assess the statistical significance of the observed improvement, a paired-sample t-test was conducted. The test compared the means of the pre-test and post-test scores. Table 2: Paired-Sample t-Test Results

Test	t-Statistic	p-Value
Paired t-test	12.92	< .000001

The t-statistic of 12.92 and the corresponding p-value (< .000001) confirm a statistically significant difference between the pre- and post-intervention scores.

4.5. Effect Size (Cohen's d)

As an index of the magnitude of gain, Cohen's d was calculated. The average of the differences between posttest and pretest scores was 3.58, while the standard deviation of the differences was 1.39, which gave:

- Cohen's d = 2.58 In fact, as Cohen (1988) pointed out, a value over 0.8 is considered large; hence, a d-value of 2.58 suggests that there is a highly substantial educational impact.

4.6. Individual Performance Patterns

A closer look at individual scores reveals consistent improvement. Table 3 presents a sample of student-level data. Table 3: Individual Performance Sample

Student	Pre-test Score	Post-test Score	Difference
Student 1	12.0	16.2	+4.2
Student 2	10.8	15.0	+4.2
Student 3	11.4	15.3	+3.9
Student 4	13.1	17.8	+4.7
Student 5	14.3	18.5	+4.2
Student 6	12.5	15.6	+3.1
Student 7	11.0	14.5	+3.5
Student 8	9.8	13.0	+3.2
Student 9	13.0	18.0	+5.0
Student 10	10.5	14.4	+3.9

These results underscore the uniform benefit of the gamified instruction.

4.7. Interpretation of Findings

This large and statistically significant increase in vocabulary score is also consistent with the motivational and cognitive benefits of gamification from previous research by Sailer et al. (2017) and Deterding et al. (2011). That the improvement for all students was uniform suggests that the intervention was effective at improving all levels of initial vocabulary proficiency.

Apart from this, positive affective engagement, as recorded in the observational diaries during implementation, may have been responsible for better retention and interest of students in vocabulary sessions.

5. Findings and Discussion

This section provides an in-depth discussion of the research finding and contextualizes it within the literature. The results of the present study confirm that, indeed, gamification can be used effectively for the acquisition of

vocabulary among primary EFL students. Results are presented according to a sequence of salient thematic points: effectiveness of gamification, motivation of learners, cognitive activation, pedagogical implications, and finally, alignment with the literature.

5.1. Effectiveness of Gamification in Vocabulary Learning

This gamified teaching approach indeed produces a positive effect on learning vocabulary, as confirmed by the significant rise in the students' post-test scores. With the effect size considered extremely large, Cohen's $d = 2.58$, the mean difference, at 3.58 points, is not only statistically but also practically significant. The findings of the present study are consonant with previous studies which cited the effectiveness of gamification in enhancing vocabulary retention and improving learning achievement (Munday, 2016; Bicen & Kocakoyun, 2018).

The fact that improvement has been universal across the board-without a single student showing a negative score change-serves to reinforce the notion that this strategy has been effective inclusively. This agrees with the fact that gamified environments are capable of supporting varying learning needs and levels of proficiency argued by Alsawaier (2018).

5.2. Enhanced Learner Motivation

The classroom observation notes and informal feedback during the intervention have consistently pointed out that students were more engaged, interested, and motivated in gamified lessons. Probably due to gamification introducing game elements of rewards, competition, and instant feedback, which enhance intrinsic motivation, this increase in motivation is a likely direct cause of improved performance.

The results confirm the self-determination theory through which the overlap of autonomy, competence, and relatedness needs is satisfied from activity-like processes. When they get autonomous and competent, they have the tendency to exert effort and persist in learning activities (Ryan & Deci, 2017).

5.3. Cognitive Engagement and Retention

Besides, gamified learning also leads to more cognitive engagement. The interactivity of the vocabulary games used in the research allowed multiple exposures and manipulations of words, hence improving memory recall and context meaning. According to Mayer (2009), active learning based on multimedia and interactivity leads to enhanced cognitive processing and knowledge transfer.

Furthermore, the interactional nature of the treatment reduced the cognitive load that usually accompanies rote memorization, hence making learning easier and more enjoyable. Such findings are consistent with Su & Cheng (2015), who contended that with gamification, learners learned vocabulary more effectively because it engaged learners with more than one modality of senses.

5.4. Pedagogical Implications

This study brings to light EFL learning at the primary level. First, gamification should not be regarded as a motivational tool but as a pedagogical strategy in its own right. Its strength in combining enjoyment and intention allows for a long-term solution to vocabulary acquisition among learners in their own early years.

A second finding from this study was that teachers require training in how to design and utilize gamified learning activities relevant to the curricular goals. Simple, low-technology options for flashcard competitions, vocabulary bingo, and interactive storytelling have been found to be quite successful and engaging by Kim et al. (2018).

Finally, the consistency in the results supports scalability; although the sample size was limited to 25 students, the uniform improvements observed would indicate a potential for benefits even in broader contexts, provided the adaptation is done appropriately.

5.5. Alignment with Existing Research

These findings are supported by other studies that explore gamified vocabulary instruction. For example, Plass et al. (2015) demonstrated that vocabulary is retained significantly better in game-based learning environments compared to non-game environments. Similarly, Chou (2018) reports increased learner autonomy and long-term growth of vocabulary when using gamified mobile apps.

However, this research contributes uniquely in its focus on a primary school population in the local Iraqi context, an area that is still underexplored in the gamification research literature. Most previous studies target adolescents or university students; hence, this study fills an important gap by showing that even young learners in resource-limited environments can benefit from gamification.

5.6. Limitations and Areas for Future Research

Yet, despite its contributions, the study had limitations; its sample size was comparatively small ($n = 25$); and the duration of the intervention-four weeks-may not have captured the long-term retention effects of the treatments. Moreover, though this research concerned vocabulary outcomes, it did not assess other language

skills such as speaking or listening. The longitudinal effects of gamified vocabulary instruction, its impact on comprehensive language proficiency, and the comparative effectiveness of various game element types are all of interest in future studies. Increasing the sample size by including male students from more schools would also improve generalizability.

6. Conclusion

This study investigates the effectiveness of gamification on primary EFL learners' vocabulary acquisition at Al-Khalida Primary School for Girls. Through a quasi-experimental design with pre- and post-tests, the study showed that the inclusion of game-facilitated strategies in language instruction had significantly impacted the learners' vocabulary acquisition. The results showed that there was a statistically significant improvement and a practically significant effect in the test scores of the learners, as evidenced by a large effect size, to validate the feasibility of game-based strategies in language instruction. Aside from measurable academic gains, the intervention encouraged greater student motivation, enjoyment, and engagement—hallmarks of long-term language learning maintenance by young learners. Such findings align with the widely documented motivation theories, such as self-determination theory, which explain that autonomy, competence, and relatedness motivate the success of the learner. Indeed, this interactive and almost gamelike character of the gamified tasks opened an inclusive and motivating environment for vocabulary practice, within which students can learn words better than by conventional methods. The value of the present study does not lie only in its findings but also within its context: conducted within an Iraqi primary school and on a relatively small scale, it contributes to the meager literature concerning gamification in underrepresented learning contexts and offers practical implications for EFL teachers and curriculum designers looking to foster learner-centered climates that enhance motivational and retention processes. In a nutshell, gamification is by no means only a motivational tool; pedagogically speaking, it allows for the learning of vocabulary in a playful and effective way. Future research would be needed in translating these findings across other populations, longer times of intervention, and across other language abilities with a view to extending our understanding of the contribution gamification could make within EFL contexts.

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