

Research Article

A Mixed Method Study of Learner Motivation in Iran: The Impact of Duolingo and Kahoot in Gamified EFL Education

Abdolhamid Mohammadi¹✉, Shahram Afraz², Fazlollah Samimi³, Fatemeh Sadat Alamdar⁴

¹Bandar Abbas University of Medical Sciences, Hormozgan Province, Iran

²Department of English Language, Qe.C., Islamic Azad University, Qeshm, Iran

³Department of English, B.A.C., Islamic Azad University, Bandar-Abbas, Iran

⁴Department of Education, Ministry of Education, Hormozgan Province, Iran

Abstract

During an era of digital education transformation, gamified learning platforms have come to the forefront because they can boost learners' motivation. This study investigates the impact of gamified platforms—Duolingo and Kahoot, particularly—on Iranian EFL learners' motivation levels and the challenges and best practices for integrating them into the Iranian education system. An explanatory mixed methods research design was utilized, starting with a quasi-experimental quantitative stage, and then a qualitative stage to explain and elaborate on the quantitative findings. In the quantitative stage, 120 Iranian EFL learners aged 18-35 from private language institutes in Bandar Abbas were allocated to experimental and control groups. Pre- and posttests were administered through the Oxford Quick Placement Test and Attitude/Motivation Test Battery (Gardner, 1985) to evaluate the changes in motivation. The outcome indicated a significant increase in the motivation scores of the experimental group, substantiating the effectiveness of gamified resources in increasing learner engagement. A qualitative phase consisted of semi-structured interviews and focus groups with 15 learners and 10 instructors to determine implementation challenges. Thematic analysis revealed five fundamental barriers: technological limitations, cultural resistance, lack of instructor training, curriculum alignment problems, and infrastructure restrictions. Despite the above-mentioned issues, participants emphasized the motivational power of gamified learning due to its interactive and enjoyable nature. Although the findings are context-specific and not widely generalizable, they provide valuable insights into gamified learning adoption in non-Western educational settings. This study contributes to the existing literature through context-sensitive gamification recommendations for EFL instruction and language education innovation.

Keywords: cultural resistance, educational technology, EFL learners, gamified learning, motivation, technological barriers

Cite as: Mohammadi, A., Afraz, Sh., Samimi, F., & Alamdar, F.A. (2025). A mixed method study of learner motivation in Iran: The impact of Duolingo and Kahoot in gamified EFL education. *Mixed Methods Studies in English Language Teaching*, 2(2), 1-27. <https://doi.org/10.71873/mslt.2025.1207333>

Received: 11/06/2025; **Revised:** 28/07/2025; **Accepted:** 25/08/2025; **Published:** 14/09/2025

© The Author(s), 2025 ✉hamidmohammadi@gmail.com Publisher: Qom Islamic Azad University



1. Introduction

In recent years, gamified learning platforms (e.g., Duolingo, Kahoot) have changed the education landscape by integrating elements derived from games, such as points, badges, and leaderboards, to enhance learner motivation and engagement (AbdAlgane & Ali, 2024; Domínguez et al., 2013). These platforms provide learners with a fun and interactive experience that encourages participation and improve learning achievements. Among other things, research shows that gamified learning positively impacts intrinsic motivation, specifically in language learning settings, which typically experience difficulties sustaining learner interest (Anisa et al., 2020; Kapp, 2012; Zhou, 2024).

While gamified learning has gained global traction for its ability to increase student motivation and engagement, its adoption remains patchy across learning contexts. Countries like Iran, with more traditional pedagogical structures have only recently begun to tap into their full potential, resulting in a need to examine both possibilities and regional challenges.

In the context of Iranian educational systems, gamified learning enters into traditional methods of language instruction and thus presents a variety of opportunities. Shahriarpour and Kafi (2014) indicated that digital games positively influence Iranian EFL learners' motivation and vocabulary acquisition. Likewise, the role of video games in reinforcing vocabulary retention has been highlighted by Vahdat and Behbahani (2013).

Despite its success internationally, gamified learning in Iran has unique challenges. According to some studies (Babakhani et al., 2023; Dehghanzadeh et al., 2021; Vahdat & Behbahani, 2013), effective gamification requires sensitive embedding within the learning context, but infrastructural limitations and cultural reluctance are likely to be the obstacles to adopting gamification in non-Western contexts like Iran. To further the reform of the education system in Iran, elucidating the effectiveness and barriers of gamified platforms in this context is pivotal for educators and policymakers. This study looks into the position of gamified learning platforms in fostering learner motivation and into the background for their implementation in the Iranian context.

While the world is shifting towards innovative education methods, the traditional foreign language teaching methodology in Iran is the key reason behind low learner involvement caused by reduced motivation. However, there is relatively not enough research into the efficiencies of gamified learning in the unique context of Iranian education and culture (Dehghanzadeh et al., 2021; Fathi et al., 2018; Jalili et al., 2020; Kazemi & Mohammadi Zenouzagh,

2023; Nazari et al., 2023; Salimei & Zangeneh, 2022). Consequently, it is timely to investigate how gamified learning can improve learners' motivation and educational performances in Iran.

A promising method for increasing learner interest in acquiring a foreign language is utilizing gamified learning platforms in schools' education systems in Iran. Past studies show that on a broad scale, gamified learning is one of the best ways to create a motivating force that encourages active participation (Babakhani et al., 2022; Batooli et al., 2019; Shafiee Rad & Alipour, 2024; Shirmardi et al., 2023; Teymouri, 2024). This study sought to provide context-sensitive policy suggestions for policymakers and instructors by examining both the motivational effects of gamified learning platforms and contextual barriers that affect their deployment in the Iranian EFL system.

Despite the growing body of literature, few studies from Iran have empirically investigated gamified learning critically from quantitative and qualitative perspectives. Existing research considers gamification a generally positive phenomenon without respecting contextual conditions like access to digital technology or cultural acceptability. Furthermore, theoretical motivation bases are rarely adequately examined. The present study bridges these gaps by integrating self-determination theory (Deci & Ryan, 2000), focusing on Iranian EFL learners' experiences with Duolingo and Kahoot. It renders a more nuanced image of how gamification works within a traditional learning setup, differentiating from earlier descriptive studies.

This study is distinct in that it employs an explanatory mixed methods approach in order not only to quantify motivational gains, but also to examine learners' and educators' lived experiences of Duolingo and Kahoot qualitatively. By focusing on the Iranian context—where evidence of gamified learning research is minimal—this research sheds light on how such platforms can be realistically and practically transferred to traditional language learning environments. The research objectives were twofold. Firstly, the study aimed to investigate how gamified learning platforms influence the motivational levels of Iranian EFL. Secondly, it was concerned with identifying the key issues associated with using these tools and providing best practices for effectively integrating these platforms into Iran's education system. The research questions of this study were as follows:

RQ1: How do gamified learning platforms impact the motivation levels of Iranian EFL learners in language acquisition?

RQ2: What are the challenges and best practices for integrating gamified learning platforms into Iran's educational systems?

2. Literature Review

2.1. Gamified Learning in Education

Gamified learning integrates game mechanics into non-gaming situations, such as points, badges, leaderboards, and rewards. This notion is rapidly gaining widespread acceptance in education (Deterding et al., 2011). Duolingo, Kahoot, and Quizizz are gamified learning platforms, emphasizing engaging learners, motivating them to learn, and facilitating learning outcomes. Research suggests that introducing gamified learning will solve persistent educational problems, such as disengagement, lack of motivation, and an interactive learning environment (Kapp, 2012). Subsequent global studies testify to the numerous advantages of gamified settings, while Iranian education has been scantily represented in this regard. For example, Babakhani and Tabatabaee-Yazdi (2022) report on how gamified learning digital activities positively influence Iranian EFL learners' willingness to communicate and cooperate. Likewise, Shahriarpour and Kafi (2014) found that digital games increased Iranian intermediate EFL learners' motivation towards learning English vocabulary.

Recent international studies provide diverse insights into gamification's effects on foreign language learning. Zhou (2024) illustrated that learning through digital games improved the motivation level among Chinese EFL learners considerably. However, the study only considered short-term activity, and its outcomes might not be universal across sociocultural backgrounds. Similarly, Temel and Cesur (2024) found that gamification using Web 2.0 technologies improved students' learning motivation and academic achievement in virtual classrooms. Nevertheless, the study relied heavily on self-report information, which limited the study's validity.

Ahmed et al. (2022) tested gamified learning of idiomatic knowledge using AI tools. Although results were promising, the experiment did not fully control for attitude, so causality was left somewhat unclear. Vathanalaotha (2022) conducted a survey of gamification in Thai secondary education and reported increases in participation. The research had no control group, and thus its explanatory value was restricted. Wulantari et al. (2023) covered a broader literature but did not conduct a profound critique of methodological quality.

Overall, international studies provide strong evidence for the motivational benefits of gamification. Nevertheless, they are mostly devoid of longitudinal designs and lack control over variables like learner background or technology familiarity. Although international trends are promising, the

Iranian context presents unique educational and cultural challenges that merit localized investigation.

Kazemi and Mohammadi Zenouzagh (2023) looked at the impact of interactive tools like Kahoot on vocabulary and attitudes. They found statistically significant gains, but only from one city. Babakhani and Tabatabaee-Yazdi (2023) examined gamification and self-efficacy in Iranian EFL learners. The study contributes by addressing psychological constructs but would have been strengthened by triangulation with qualitative data.

Dehghanzadeh et al. (2021) systematically reviewed gamification in Iranian EFL classrooms. They concluded that most studies are not theoretically grounded and are marred by their inconsistent application. Nadi-Ravandi et al. (2022) helped highlight this further by showing that most Iranian studies are empirically weak and overly descriptive. Jalili et al. (2020) and Fathi et al. (2018) examined gamification using mobile support. Both found positive effects on learner retention of vocabulary and learner autonomy. Neither explored wider classroom integration, but did concentrate closely on app-delivery.

Nazari et al. (2023) experimented with young students using mobile games. Promising though it is, the study lacks comparative testing with traditional practices. Similarly, Shafiee Rad and Alipour (2024) tried digital escape rooms and found increases in retention and motivation. Nevertheless, the novelty of the task may have artificially driven up interest. Panahandeh and Chalak (2020) used Kahoot in homework and achieved increased completion rates. Learning outcomes were not measured in the study, however. Batooli et al. (2019) conducted an exhaustive meta-review but highlighted differences in Iranian research design and reporting. Generally, while Iranian research shows gamified learning to be motivational, most research is flawed methodologically and afflicted with small samples, no control groups, and few theoretical frameworks.

2.2. Gamified learning and Learner Motivation

Motivation plays a central role in learning, particularly in second language acquisition. Research has established that gamified environments galvanize both intrinsic and extrinsic motivation, which is reflected in worldwide studies that revealed gamified learning is one of the factors contributing to a positive learning environment in the sense of combining educational purposes and entertainment (Jalili et al., 2020).

. Babakhani and Tabatabaee-Yazdi (2022) studied the effect of digital gamified learning activities on the WTC of Iranian EFL learners. Their findings showed that students receiving gamified content expressed an

increased motivation toward language learning with richer collaboration in classroom activities. Although they reported enhanced classroom collaboration via gamified activities, their study did not have a control group and was therefore limited to causality assertions.

Panahandeh and Chalak (2020) used Kahoot as a homework tool and found that the gamified approach led to higher completion rates, better participation, and greater student satisfaction than traditional assignments. Their use of Kahoot as a homework supplement indicated greater satisfaction, but did not test actual language learning. These studies, rich though they are, rely highly on self-report and motivational perception, rather than objective performance measures. This highlights how gamified learning connects academic content to practical application.

Moreover Ahmed et al. (2022) employed a between-subjects experiment design, which offered more solid evidence of vocabulary recall. However, their short-term focus raises an issue regarding long-term retention and contextual application. Batooli et al. (2019) also researched gamification in e-learning, indicating methodological inconsistencies and the lack of theoretical congruence across the studies. These findings highlight the need for more systematic, theory-informed research that combines experimental rigor with contextual awareness.

While the benefits of gamified learning can be widely documented, the details of challenges in its implementation are dissimilar in Iran. Mahmoodi-Shahreabaki and Yaghoubi-Notash (2014) stated that infrastructural barriers, including limited internet access and outdated technology, inhibit the adoption of gamified platforms on a large scale. Also, cultural reasons against non-traditional teaching methods reduce the ability of many educators who want to introduce modernity in classrooms. Meanwhile, these educators in Iran have started realizing the gamified learning potential; as evidenced by Shahriarpour and Kafi (2014), it is a great option to turn a conventional classroom into an interactive learning place.

This literature review has shown great potential in increasing motivation among learners and language acquisition, especially in EFL education. However, challenges concerning infrastructure, cultural attitudes, and teacher training must first be addressed in Iran to bring gamified learning into practice. Gamified tools should be adapted and aligned through this best practice to the specific context of Iranian learners, thus fully leveraging gamified learning's transformative potential for educational development.

3. Method

3.1. Design

This study used an explanatory mixed methods research design that combines quantitative and qualitative research to thoroughly examine the impact of gamified learning platforms on learner motivation in Iranian EFL education. This design provided quantitative associations between gamified learning and motivation and insight into the complex experiences and perceptions of the participants (Creswell & Creswell, 2018). Therefore, this mixed methods approach ensured comprehensive coverage of the research questions. While quantitative data provided concrete evidence of the efficacy of gamified learning, qualitative data allowed for an understanding of the subjective experiences of the learners and educators. Merging two forms of data allowed for an investigation of the holistic nature of gamified learning alongside Iran's specific cultural and educational landscape.

3.2. Participants

3.2.1. Quantitative Phase

The selection of participants for the quantitative phase of this study was based on Cochran's formula for finding the minimum sample size needed for statistical reliability. The quantitative phase of the study was conducted between February and April 2024 in two private language institutes located in Bandar Abbas, Iran. Concerning a 95% confidence level and a 5% margin of error, it was suggested that a minimum of 120 individuals should be sampled using simple random sampling. This sample size was considered sufficient to represent Iranian EFL learners and ensure meaningful statistical analyses. The Cochran formula was applied with a conservative estimate of p as 0.5, which provides the maximum sample size when the population proportion is unknown. This ensures the sample is large enough to yield efficient statistical inferences. An additional 10% was added to the calculated sample size to compensate for possible attrition during the intervention period.

The participants of this study were divided into two groups: an experimental group and a control group. The experimental group consisted of 60 Iranian EFL learners who went through gamified learning platforms such as Duolingo and Kahoot during the intervention. In contrast, the control group comprised 60 learners who followed standard language training without using gamified tools. The two groups were equated based on proficiency levels and demographic requirements.

Based on the inclusion criteria, the participants were between 18 and 35 years old ($M = 22$) and possess at least one year's prior experience in English

language learning. Their language proficiency was also screened through the Oxford Quick Placement Test (OQPT), which assessed learners at beginner, intermediate, and advanced levels (i.e., $n_{\text{beginner}} = 10$, $n_{\text{intermediate}} = 54$, $n_{\text{upper intermediate}} = 44$, $n_{\text{advanced}} = 12$). Recruitment included only individuals available and willing to complete the pretest, posttest, and the intervention phases of the study (males = 65; females = 55). Exclusion criteria were also defined clearly. Students with prior extensive experience from gamified learning sites were excluded to avoid confounding outcomes due to familiarity bias. Further, participants with irregular attendance during the intervention period were also excluded to maintain the integrity and consistency of experimental conditions.

Participants were first stratified by proficiency levels based on OQPT scores (beginner, intermediate, upper intermediate, and advanced) to control for potential baseline differences between the control and treatment groups. Then, simple random sampling was carried out within the strata to balance the two groups equally. Through this stratified randomization, the effect of the initial language proficiency was minimized on the intervention outcomes.

This sample size was used to enable statistically significant group differences in t-tests and ANOVA. The buffer of one extra allows for dropouts and non-adherence, adding power. Depth of understanding as opposed to generalizability was the focus in qualitative research, with data saturation being the driver.

3.2.2. Qualitative Phase

For the qualitative aspect of the research, the sample size was informed by the data saturation principle, in which data collection ceases when no emerging themes or information is forthcoming. Data saturation was operationally defined as when three consecutive interviews yielded no new codes, categories, or themes. The transcripts of the interviews were read in parallel with data collection, and saturation was determined after the 25th interview when redundancy of the response was seen in both learner and instructor groups. This occurred during the third round of participant interviews, when themes began to repeat. Once data saturation was established, a purposive sampling strategy was used to select 25 participants who had the potential to provide rich and diverse information on the use of gamified learning platforms.

This sample included two major groups. The first group comprised 15 students of the experimental group (males = 8, females = 7, $M=20$), selected to represent a range of age groups, genders, and proficiency levels ($n_{\text{beginner}}=2$, $n_{\text{intermediate}}=5$, $n_{\text{upper intermediate}}=5$, $n_{\text{advanced}}=3$). The diversity helped provide a

broad spectrum of experiences with gamified tools such as Duolingo and Kahoot. The second group comprised 10 teachers of EFL, with half representing teachers who used gamified tools and the other half representing teachers who used traditional teaching methods. This approach facilitated the inclusion of both positive and questionable views about the integration of gamification in Iranian educational settings.

The inclusion criteria for the students required them to actively participate in the experimental phase and utilize the gamified learning systems. Students also needed to be willing to be interviewed in semi-structured interviews and share their experiences openly. For the teachers, the inclusion criteria involved having at least three years of EFL teaching experience. Participants in the gamified group were also expected to have some experience with digital gamification tools to provide corresponding feedback.

The sample size of 25 participants was appropriate for qualitative research, which prioritizes depth over breadth. The size allowed for an in-depth exploration of individual and shared experiences. Above all, the use of the principle of data saturation ensured that the findings were sufficiently rich and captured the totality of themes emerging from the participants' perceptions.

The quantitative part had the Cochran formula to ensure that a statistically reliable sample was obtained, with the qualitative part being led by the principle of data saturation. While the first primarily focused on generalizability, the latter aimed to offer an in-depth exploration. Together, they offered a balanced methodological base for the mixed method when investigating the impact of gamified platforms on student motivation in the context of Iranian EFL classrooms.

3.3. Instrumentation

This study employed quantitative and qualitative instruments to assess the impact of gamified learning platforms on learner motivation and engagement

3.3.1. Quantitative Instruments

The researcher used a motivation questionnaire (Attitude/Motivation Test Battery) and a standard English proficiency test (Oxford Quick Placement Test) in this study. The Attitude/Motivation Test Battery (AMTB) and the Oxford Quick Placement Test (OQPT) served as pretests and posttests to measure changes in learners' language proficiency and motivational levels, respectively. The first quantitative tool used in this study was the Motivation Questionnaire, specifically, the AMTB, initially developed by Gardner (1985) and adapted for the Iranian EFL context. The AMTB was culturally adapted in

the Iranian EFL context by rephrasing some items to conform to students' local learning. Three applied linguistics experts guaranteed content validity. A pilot study ($n = 30$) confirmed high reliability (Cronbach's $\alpha = .89$), consistent with prior studies in Iranian EFL contexts (Shahriarpour & Kafi, 2014). This instrument measured integrative and instrumental motivation, as well as learner attitudes toward the language and learning environment. It encompassed 30 items using the Likert scale format, which ranges from 1 (strongly disagree) to 5 (strongly agree). This questionnaire was designed primarily to compare the motivation levels in the experimental and control groups before and after the interventions.

The other quantitative instrument was the Oxford Quick Placement Test (OQPT), administered as a pretest and posttest. The test was administered before and after the intervention to assess participants' language skills. The test evaluated grammar, vocabulary, and reading comprehension skills, thereby giving a quantitative measure for examining which instructional approach might have a greater impact on the learners' second language acquisition. The study compared pretest and posttest scores to assess the effectiveness of gamified learning against traditional learning. While the primary focus of the study was on learner motivation, the OQPT was used to control for initial language proficiency and ensure group comparability before intervention.

3.3.2. Qualitative Instruments

In the qualitative phase, the researcher used three instruments: a) semi-structured interview, b) focus group interview, and c) observation checklist. To gain deeper insights into learners' individual experiences, semi-structured interviews were conducted with a purposive sample of learners from the experimental group, along with EFL instructors. The interview protocol was researcher-developed, based on prior qualitative studies in gamified EFL learning (e.g., Babakhani & Tabatabaee-Yazdi, 2023), and validated through expert review for relevance and clarity. The interview protocol included open-ended questions focused on themes such as learner engagement and motivation during gamified learning, perceived advantages and challenges of using Duolingo and Kahoot, and suggestions for better integrating gamified learning into EFL instruction. These interviews provided rich qualitative data on learners' experiences and the practical application of gamified learning in Iranian EFL contexts.

In addition to individual interviews, focus group discussions were conducted with groups of eight participants consisting of experimental learners and instructors acquainted with gamified tools. Rapid exchange of ideas and experiences was possible in these discussions, from which researchers could

identify common positions and emerging themes regarding gamified learning. Focus groups became important for gathering collective viewpoints and enriching the qualitative insight achieved through individual interviews.

Finally, an observation checklist was developed based on the behavioral engagement model of Fredricks et al. (2004). It included task participation, response to gamified content, and social interaction with peers. Two trained researchers observed independently. The coefficient of Cohen's κ for inter-rater reliability was 0.87, indicating high agreement.

3.4. Procedure

3.4.1. Quantitative Data Collection

The pre-intervention phase started with recruiting participants of 120 Iranian EFL learners from the private language institutes in Bandar Abbas, and guaranteed stratified random sampling. Stratified on gender, age (18-35 years), and proficiency levels (beginner/intermediate/advanced) estimated by the OQPT. Once recruited, all participants completed the OQPT to measure their initial proficiency and Gardner's (1985) AMTB to evaluate their base motivation in both groups under controlled conditions in the classroom, according to the instructions provided by trained facilitators, which was the best control that could be taken.

Joining the Intervention Phase, participants were divided into two groups: an experimental group and a control group. The experimental group used gamified platforms (i.e., Duolingo and Kahoot) for eight weeks to facilitate learning. Although the eight-week duration would presumably not measure long-term effects, it followed prior intervention studies on gamifying learning within EFL (e.g., Nadi-Ravandi et al., 2022). It enabled a reasonable assessment of incidental changes in motivation and engagement. Weekly vocabulary, grammar, and reading comprehension tasks would be furnished and compatible with the learners' level of proficiency. The teacher supervised learner activities on the first part of the gamified learning platforms, provided guidance, and tried to ensure that students were actively engaged. The teacher would spend the same time teaching the control group through textbooks and teacher-led activities. Thus, every observed outcome difference would be firmly attributed to using gamified learning platforms.

In the post-intervention phase, both groups retook the OQPT and the Motivation Questionnaire under the same conditions as those set out for the pretest to measure language proficiency and motivation changes. Administering the tools under identical conditions strengthened the validity and reliability of group comparisons.

3.4.2. Qualitative Data Collection

The purpose of employing semi-structured interviews, focus group interviews, and classroom observations in this study was to gain in-depth insights into learners' and instructors' experiences.

Semi-structured interviews involved learners (15 from the experimental group) and instructors of EFL (5 experienced with gamified tools and 5 using traditional methods). About 30–45 minutes long, these interviews were either in-person or via video conference and followed an open-ended protocol that mainly focused on the learners' experiences with the gamified platforms, the benefits perceived from those platforms, and the obstacles confronted. All interviews were recorded with participants' permission and transcribed verbatim for analysis.

Besides being interviewed, two groups of eight learners, each from the experimental group, discussed with their peers. Moderated discussions centered around student engagement with gamified tasks, the impact on learning, and suggestions for improvement. Covered by extensive notes made by the moderator, the resultant discussions allowed for the lively exchange of ideas and collective positions on the efficacy of gamified learning. Sessions were recorded and supported by detailed notes from the moderator.

In order to strengthen the findings further, classroom observations were carried out using a structured observation checklist. The checklist included a participation checklist, interaction with peers and instructors, and responsiveness to gaming activities. The researchers carried out observations randomly to ensure an objective assessment of learner engagement.

The integrity of the study was maintained through informed consent, anonymity, and the participants' willingness to participate. All participants were briefed before data collection on the aims and methods of the study, and confidentiality would be guaranteed. Participants were requested to read and sign an informed consent form confirming their agreement to participate in the research. The names and identification of the participants would be kept strictly confidential. The participants would be made aware that they could withdraw from the study for any reason without any consequences for themselves.

3.5. Data Analysis

The quantitative and qualitative data were analyzed using appropriate procedures according to the explanatory mixed methods design to adequately assess the impacts of gamified learning platforms on learner motivation and

language proficiency. The quantitative data from the Attitude/Motivation Test Battery (AMTB) and the Oxford Quick Placement Test (OQPT) were analyzed using IBM SPSS Statistics (Version 25). Descriptive statistics were employed to describe participants' scores before and after the intervention. Inferential analysis was then employed to determine the intervention's effectiveness. Independent samples t-tests contrasted the experimental and control groups' posttest motivation and proficiency scores. Paired samples t-tests were examined for the within-group differences between pretest and posttest. One-way ANOVA contrasted the impact of gamified learning across different proficiency levels (i.e., beginner, intermediate, and advanced) for the experimental group. Cohen's *d* was also calculated to determine the magnitude of the observed effects. Internal consistency of AMTB was examined using Cronbach's α .

Qualitative data were analyzed thematically using Braun and Clarke's (2006) model, which involved familiarization, coding, theme development, and constructing narratives supported by participant quotations, using MAXQDA software to manage the coding process. Triangulation of methods was utilized to ascertain the credibility of findings by cross-validation of understanding through semi-structured interviews, focus group discussions, and observation checklists. The research team resolved disagreements through discussion and member checking with stakeholders.

Finally, the quantitative and qualitative strands were integrated using a convergent mixed methods design to allow comparison and cross-validation. This convergence enabled a holistic understanding of the effectiveness of gamified learning spaces. Quantitative results provided statistical information regarding changes in motivation and competence, while qualitative results offered additional insight into learners' and teachers' mindsets. The comparison showed areas of convergence—such as increased learner participation and motivation—and areas of divergence, including heterogeneity regarding teacher adoption of gamified tools. These integrated findings offered a contextualized account of the impact of gamified learning in the Iranian EFL environment, highlighting the complementarity between quantitative information and lived experience.

4. Results

4.1. Results for the First Research Question

The first research question asked about how gamified learning platforms impact the motivation levels of Iranian EFL learners in language acquisition. The results were based on the analysis of the pretest and posttest scores from the motivation questionnaire administered to the experimental and

control groups. Table 1 presents the mean and standard deviation of motivation scores for both groups before and after the intervention.

Table 1
The Mean and Standard Deviation of Motivation Scores

Group	Test	M	SD	N
Experimental	Pretest	65.42	6.85	60
	Posttest	85.37	5.92	60
Control	Pretest	64.78	7.10	60
	Posttest	66.45	6.87	60

Table 1 presents the mean and standard deviation of the motivation scores for the experimental and control groups at the pretest and posttest phases. The experimental group's average motivation score increased significantly from 65.42 ($SD = 6.85$) at the pretest to 85.37 ($SD = 5.92$) at the posttest, indicating a considerable improvement after using gamified learning platforms. Conversely, the control group experienced a slight motivation score increase, with the mean rising from 64.78 ($SD = 7.10$) on the pretest to 66.45 ($SD = 6.87$) on the posttest. These results suggested that the experimental group achieved more motivational gain than the control group throughout the intervention.

Figure 1
Comparison of Pretest and Posttest Motivation Scores

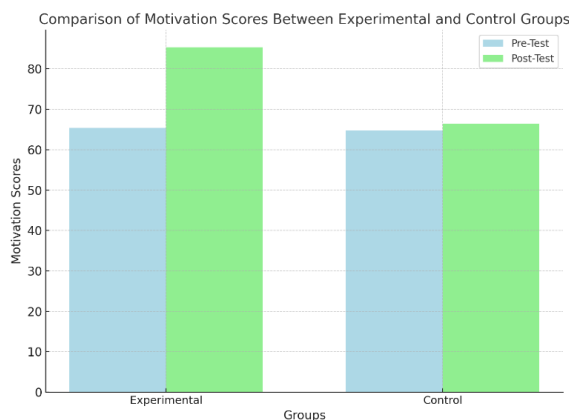


Figure 1 indicates the pre-and post-intervention difference in the motivation scores between experimental and control groups. The experimental group demonstrated a good change in motivation scores from the pretest to the

posttest, which improved from approximately 65 to 85. This remarkable change reflected the positive effect of gamified learning platforms.

On the other hand, there was a slight increase in the control group, whose scores increased from around 65 to 66, reflecting minimal motivational gain when there was a traditional teaching method. Overall, the graphical illustration confirmed that participants in the experimental group learned better in terms of motivation than those in the control group. Figure 1 illustrates the substantial posttest increase in motivation for the experimental group compared to the minimal change in the control group. This graphical presentation supported the statistical results.

An independent samples t-test was employed to analyze whether there was a statistically significant difference in the experimental and control groups' posttest motivation scores. Before conducting the test, the normality assumption was tested using the Shapiro-Wilk test. The p -values were non-significant and greater than 0.05, verifying that motivation scores are close to a normal distribution. Finally, Levene's test for equality of variances indicated that the variance between the two groups was statistically equal and that the non-equality was significant, $F = 1.23$, $p = 0.27$.

Table 2
Independent Samples t-Test Results

Group	Mean Difference	t	df	Sig. (2-tailed)
Experimental vs. Control	18.92	14.76	118	0.001

The results indicated a statistically significant difference in posttest motivation scores between the experimental and control groups, $t(118) = 14.76$, $p < 0.001$. The experimental group, which used gamified learning platforms, showed significantly higher motivation levels than the control group. The independent samples t-test analysis revealed a statistically significant difference between the posttest motivation scores of the experimental and control groups, $t(118) = 14.76$, $p < 0.001$. The motivation scores ($M = 85.37$, $SD = 5.92$) of the experimental group using gamified learning platforms were significantly higher than those of the control group ($M = 66.45$, $SD = 6.87$). This finding revealed that using gamified learning instruments (i.e., Duolingo and Kahoot) positively impacted learners' motivation in Iranian EFL contexts.

Cohen's d was calculated to determine the size of the difference in posttest motivation scores between the control and experimental groups. The formula $d = (\text{Mean}_1 - \text{Mean}_2) / \text{pooled standard deviation}$ was used. The calculated value of $d = 2.76$ was a large effect size, indicating that the

intervention (i.e., employing gamified learning platforms) had a practical and significant impact on learner motivation. This significant impact additionally confirmed that gamification substantially increased motivation in the experimental group as opposed to the traditional instruction group. While the results supported the significant impact of gamified learning platforms, it should be noted that instructor experience, teaching style, and students' prior experience with digital tools could also have impacted the results. These potentially promising confounding variables were not controlled for explicitly in the current design and need to be addressed in future research.

This was because the gamified platforms inform the other learning processes being run, and gamified learning contributes most to motivating Iranian EFL language learners. The experimental group experienced a significant increase in motivation compared to the control learners, supporting the proposal that gamified learning enhances learners' engagement.

Also, the qualitative data gathered in the context of semi-structured interviews or focus groups were analyzed through thematic analysis to address the second research question, concerning a problem with the peculiar "characteristics" and "barriers" in the gamified learning process within Iran's educational system. Thematic analysis of the qualitative data revealed the following key themes (Table 3).

Table 3
Themes Identified

Theme	Description	Frequency
Technological barriers	Limited access to reliable internet and digital devices in some regions.	18
Cultural resistance	Skepticism toward non-traditional teaching methods among educators and parents.	14
Instructor training	Lack of sufficient training and resources for instructors to effectively implement gamified learning.	12
Engagement and motivation	Positive feedback from learners, highlighting increased engagement and intrinsic motivation.	25
Alignment with curriculum	Challenges in integrating gamified activities with existing national curriculum standards.	10

Regarding technological barriers, the participants often mentioned difficulties with internet access and a lack of digital devices as barriers to gamified learning, especially in most rural areas. One instructor mentioned,

"Many of my students have challenges accessing online activities due to unstable internet connections."

As to cultural resistance, several participants noted cultural skepticism about gamified learning. A learner shared, "My parents believe that traditional ways are the best, and they consider gamified learning a waste of time."

With regard to instructor training, instructors emphasized that there are few opportunities for faculty development on how to implement gamified learning. One instructor said, "We need workshops to help us understand how to use Kahoot and Duolingo better in the classrooms."

Concerning engagement and motivation, the participants expressed unanimous positive feedback, saying that gamified platforms made learning enjoyable and engaging. A learner said, "I felt motivated to do my lessons because of the points and rewards." However, this was observed to differ across levels of proficiency. Higher-level learners indicated that the competitive aspect of gamified tools makes them engaging. In contrast, beginner learners are more interested in the visual and interactive aspects. This would mean that different proficiency levels would require different gamification components.

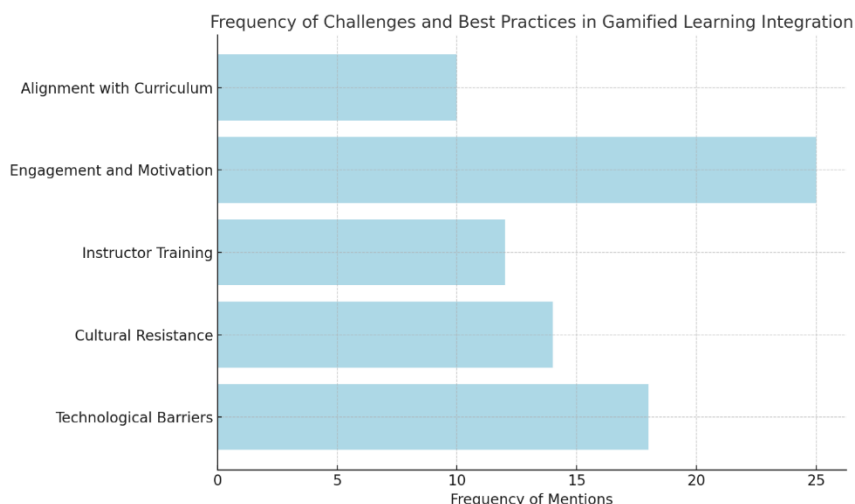
Alignment with Curriculum: Some participants expressed that fitting gamified content around the national curriculum was challenging. An instructor mentioned, "Topics on Duolingo do not always align with what we teach in class."

Out of all the themes, *engagement and motivation* was cited the most (n = 25), which indicated that participants continued to refer to the positive effect of gamified learning on their motivation and classroom engagement. *technological barriers* (n = 18) and *cultural resistance* (n = 14) were cited frequently, which reflected challenges faced while implementing gamified platforms in the Iranian learning culture. Moreover, *instructor training* (n = 12) was a salient theme, indicating that training of teachers was required when utilizing computer-based tools. The theme *alignment with curriculum* (n = 10) highlighted concerns of the extent to which gamified activities aligned with existing learning objectives. These findings provided advanced insights into the benefits and drawbacks of gamified learning from both students' and educators' perspectives.

Figure 2 depicts the prevalence of issues and best practices identified through the qualitative analysis of gamified learning integration, summarizing the rate at which various themes were covered under implementation.

Figure 2

Frequency of Challenges and Best Practices



As shown in Figure 2, *engagement* and *motivation* were the most referenced themes, with 25 participant mentions, reflecting the high value perceived in gamification for learner engagement. *Technological barriers* ranked second with 18 mentions, indicating concern about access to stable digital tools or infrastructure. *Cultural resistance* (14 mentions) and *instructor training* (12 mentions) also appeared as key factors affecting implementation success. Finally, *alignment with curriculum* was mentioned 10 times, indicating a moderate worry regarding the alignment of gamified content with official educational curricula. These results confirmed the multifaceted interaction between pedagogical innovation and contextual preparedness in Iranian EFL contexts. The visual layout helped quickly recognize prominent challenges and benefits, most importantly, the emphasis on motivation and engagement.

The qualitative findings revealed some of the best practices urged by the participants in advocating for gamified learning platforms in Iranian EFL education. The participants suggested that workshops and courses be offered for teachers to familiarize them with gamified tools and learning pedagogies. In addition, they emphasized the design of gamified learning materials tailored explicitly to Iran's national curriculum to ensure relevance and integration. The other main recommendation was to upgrade the internet infrastructure for equal distribution of digital learning resources to different locales.

The numbers also highlighted various implementation challenges. Technical barriers, such as unreliable devices or internet connectivity, were common. Social barriers arising from a lack of familiarity or discomfort among

teachers and institutions with game-based methodologies were also often mentioned. Despite these difficulties, participants reliably indicated the motivational potential of gamified learning. Solving these challenges through targeted teacher training, curriculum reorganization, and infrastructure development could significantly amplify the successful application of gamified platforms to Iranian EFL contexts.

Combining quantitative and qualitative findings provided a detailed impression of the impact of gamified learning environments on student motivation in Iranian EFL settings. The quantitative findings showed that experimental group students registered significantly higher posttest motivation levels than the control group, as confirmed through statistical analyses. These results pointed towards a highly positive impact of gamified resources on student engagement.

The qualitative data supported and explicated these findings by uncovering the experiential component underlying statistical trends. The participants most commonly reported heightened motivation during gamified learning sessions. The learners and instructors also referred to facilitators such as interactive content and immediate feedback as playing important motivational roles. Simultaneously, the qualitative data attested to several challenges such as technological limitations, inadequate instructor training, and deviance from the existing curriculum, which justified the context-specific limitations of the intervention.

Overall, the convergent results from the two data sources concurred that while gamified learning positively influenced motivation, its influence was dependent on situational factors. Thus, this mixed methods approach facilitated a better explication of how and why gamified sites influenced motivation in Iranian EFL contexts.

5. Discussion

This study tried to examine the impact of gamified learning platforms on the motivation of Iranian EFL learners. The outcomes indicated a significant increase in motivation in the experimental group, and it can be accounted for from the viewpoint of self-determination theory (Deci & Ryan, 2000). The system's point-like, reward-oriented, and progression-based characteristics seemed to fulfill learners' psychological needs for competence, autonomy, and relatedness, and thus enhance intrinsic motivation.

The results of the present study closely align with the findings of Babakhani and Tabatabaee-Yazdi (2022), suggesting that gamified exercises enhance motivation for oral communication among Iranian EFL learners. In this context, the positive effect on motivation observed in the present study

reinforces the findings of Panahandeh and Chalak (2020), who used Kahoot for homework assignments and found that student engagement and satisfaction improved. Both studies indicate that gamified learning tools foster a more interactive instructional climate, which is particularly important in traditional classroom practices in Iran.

These findings align with the principles of self-determination theory (Deci & Ryan, 2000), which opines that learning environments that foster autonomy, competence, and relatedness enhance intrinsic motivation. The gamification websites likely fostered students' autonomy by enabling self-driven progress, competence through immediate feedback and levelling systems, and relatedness through peer comparison and classroom interaction. These psychological rewards can explain why motivation increased significantly in the experimental group, as opposed to the control group, which employed more passive, teacher-centered instruction.

In line with Ahmed et al. (2022), who focused on gamified vocabulary learning, and claimed that gamified learning improved retention and lowered anxiety, the present study puts forth speculative propositions that the introduction of mechanisms such as active recall and immediate feedback probably accounted for the very increase in engagement seen.

While prior research (e.g., Babakhani & Tabatabaee-Yazdi, 2022; Panahandeh & Chalak, 2020) also reported increased motivation with gamified tools, these studies relied on methods that prioritized single areas of skill (i.e., speaking or homework completion) and implemented brief treatments. In contrast, this study applied a mixed methods approach and considered motivation as a comprehensive construct when considering various proficiency levels. Such a broader reach enhances the overall generalizability of the results and provides a more nuanced understanding of the contextual affordances and barriers specific to Iranian EFL classrooms.

Beyond motivation, the findings support global studies highlighting gamified learning's transformational potential. For instance, Jalili et al. (2020) have shown that gamified learning enhances learners' emotional engagement and attention, which is crucial for sustaining motivation. This current research contributes to that broad context by accentuating the particular application of gamified platforms within Iranian contexts, where traditional methods are dominant in language instruction. Notably, building on previous research, the present study focused specifically on Iranian EFL learners, thereby providing contextual perspectives that were missing in previous studies. While Babakhani and Tabatabaee-Yazdi (2022) and Panahandeh and Chalak (2020)

studied the effects of gamified learning on such aspects as communication and assignments, this study took on the broad view of motivation, incorporating both intrinsic and extrinsic aspects. A control group receiving traditional instruction further strengthened the value of gamified learning by enabling a concrete comparison.

The results also emphasize overcoming both cultural and technological barriers. In particular, although the experimental group was at an overwhelming advantage with gamified tools, there were anecdotes from participants of limited access to reliable internet and pre-existing outlooks directed against non-traditional teaching methods. These observations corroborate Mahmoodi-Shahrehabaki and Yaghoubi-Notash (2014), who stated that infrastructural limitations and cultural resistance are some of the main impediments in implementing innovative education in Iran.

In summary, the results of the current study confirm the findings of prior investigations regarding the effectiveness of gamified learning platforms on motivation for Iranian learners of English as a foreign language. Educators can bring gamified learning into language instruction through engaging and effective learning environments. Other contextual impediments to large-scale adoption include those associated with technology and cultural perceptions to guarantee equal access and acceptance of gamified learning tools. These observations help strengthen the evidence for the argument that gamifying in education has had some impacts, perhaps because it has permeated the dominant paradigms associated with the traditional forms of pedagogy.

The findings of the second research question (i.e., What are the challenges and best practices for integrating gamified learning platforms into Iran's educational systems?) reveal both resolving and obstructing issues with gamified learning. The qualitative analysis revealed themes of technological barriers, cultural resistance, lack of instructor training, and curriculum alignment, alongside increased learner engagement and motivation. These results provide invaluable insights in terms of contextual challenges and thus leverage the effective institutionalization of gamified learning tools.

The current study identified limited internet access and inadequate digital infrastructure as significant obstacles to gamified learning in Iran, particularly in rural areas. This aligns with the findings of Mahmoodi-Shahrehabaki and Yaghoubi-Notash (2014), who emphasized that technological challenges are one of the major stumbling blocks in adopting innovative educational tools in developing countries like Iran. Although other studies have understood them, the present study provides insight into how

these issues limit learners' opportunities for full engagement on gamified platforms, such as Duolingo and Kahoot.

One of the main hindrances identified during this research was the objection to non-traditional teaching approaches. The participants reported that some parents and a few educators were skeptical about the efficiency of the gamified tools compared to the traditionally accepted means. This aligns with Panahandeh and Chalak's (2020) finding that cultural attitudes can inhibit the acceptance of gamified learning, even if learners have a positive attitude about the process. However, the current study goes beyond stressing awareness programs and pilot programs, which may easily demonstrate the effectiveness of gamified learning.

Another major problem highlighted by this study was the lack of professional development opportunities for tutors. Instructors mentioned they were not sufficiently equipped to integrate gamified tools into their teaching practices. This finding agrees with Batooli et al. (2019), who highlighted that training-intervention programs should be targeted to impart the desired effect on the implementation of gamified platforms. Both studies indicate a need for a systematic approach to supporting educators through workshops, resource-sharing, and ongoing mentoring.

Despite those challenges, the participants in this study maintained a relatively strong support for gamified learning in enhancing learners' engagement and motivation. The experimental group reported enjoying gamified lessons and feeling more motivated to complete tasks. This directly supports Babakhani and Tabatabaee-Yazdi (2022) and Ahmed et al. (2022), who indicated that gamified tools foster a much more dynamic and enjoyable approach to learning, reducing anxiety around language learning and nurturing a generally positive attitude towards learning.

Integrating gamified learning activities at the intersection of curriculum directives became crucial. Teachers felt most of the content these platforms (e.g., Duolingo) provided was not in line with the mandated syllabus, consequently creating difficulty in their evaluations. This problem has also been highlighted in other studies, including that by Shahriarpour and Kafi (2014), who called for developing locally-based gamified tools according to the processing needs of Iranian learners.

Based on these studies, this work extends previous research by providing a deep insight into how the context challenges and advantages of gamified learning in the educational system of Iran interact. While previous studies (Mahmoodi-Shahreabaki & Yaghoubi-Notash, 2014; Panahandeh &

Chalak, 2020) focused on isolated aspects (e.g., cultural resistance and technological barriers), this work brought these investigations into a broader framework, furnishing a fair number of proposals to tackle these challenges.

6. Conclusions and Implications

This study provided empirical evidence that gamified learning platforms had a significant positive impact on the motivation of Iranian EFL learners. The experimental group, which used Duolingo and Kahoot, reported higher motivation than the control group, which was taught traditionally. These findings demonstrate that incorporating game-based elements encourages learner engagement and participation.

Unlike much of the earlier work preoccupied with general learner engagement or word recall, this research contributed new insight by situating gamified learning within the specific Iranian educational and sociocultural context in which gamification is a break from widely practiced traditional pedagogies. The study supplemented the literature by exploring quantitative results for the participants' motivation and the students' and teachers' narratives about their experiences to provide a richer account of practical and situational issues of gamification tool deployment.

In addition, the findings supported self-determination theory, as students showed greater intrinsic motivation from aspects like immediate feedback, rewards, and goal-oriented growth. Meanwhile, the study substantiated constructivist views, wherein cooperative learning environments allowed students to construct knowledge actively. The study narrowed the theory–practice gap in gamified language learning by integrating theoretical models with empirical evidence.

These findings also pinpointed context-dependent challenges such as internet access restrictions, teacher readiness, and curriculum incorporation. All the same, the participants considered gamified learning a motivational and pedagogical stimulus. This supported the potency of gamification to enhance language acquisition in similar non-Western contexts, provided infrastructural and cultural obstacles were addressed. Overall, this study validated the motivational benefits of gamified learning in the Iranian EFL context and demonstrated how such tools interact with regional constraints. It offered contextualized policy, training, and localization advice for teachers and content developers, setting the stage for future research on localized gamification efforts in similar educational contexts.

This study has several limitations that may affect the interpretation and generalizability of the findings. First, the study was conducted in a single cultural and educational context in Iran, limiting the applicability of the results to other settings. Second, the reliance on self-report instruments, such as the AMTB, introduces potential biases, including social desirability and response bias. Third, the novelty effect of the gamification platforms may have inflated initial engagement, potentially reducing long-term motivation. Fourth, external factors such as teacher proficiency, students' familiarity with mobile applications, and unstable internet connectivity may have influenced learners' experiences beyond the scope of this study. Finally, the intervention lasted only eight weeks and measured motivation without assessing other outcomes, such as academic performance or long-term retention. These limitations underscore the need for future research to employ longitudinal designs, incorporate observational or mixed-method triangulation, and implement stricter controls for contextual variables to better assess the sustained impact of gamified learning interventions.

Based on the findings, several suggestions are proposed for integrating gamified learning in Iran's educational system. Policymakers should improve infrastructure by expanding internet access and providing such devices as tablets and laptops to underserved students. Efforts to promote and research cultural awareness are also needed, highlighting the benefits of gamified learning to foster acceptance among parents and educators. In addition, teachers require structured professional development through workshops and ongoing support to effectively use these AI tools. Collaboration between technology developers and local educators is also critical for creating localized content aligned with Iran's national curriculum.

References

- AbdAlgane, M., & Ali, R. (2024). *Strategies for e-learning in teaching English as a foreign language: digital pathways*. Cambridge Scholars Publishing.
- Ahmed, A. A. A., Widodo, M., Komariah, A., Hassan, I., Sukmana, N., Ali, M. H., ... & Rohi, A. (2022). Assessing the effects of gamification on developing EFL Learners' idiomatic knowledge: Do attitudinal factors contribute to learning the idioms with the game? *Education Research International*, 2022(1), 2482570.
- Anisa, K. D., Marmanto, S., & Supriyadi, S. (2020). The effect of gamification on students' motivation in learning English. *Leksika: Jurnal Bahasa, Sastra dan Pengajarannya*, 14(1), 22-28. <https://doi.org/10.30595/lks.v14i1.5695>
- Babakhani, A., & Tabatabaee-Yazdi, M. (2022). Digital game-based activities as a predictive power of Iranian EFL learners' willingness to communicate and cooperate. *International Journal of Research in English Education*, 7(4), 95–104. <https://doi.org/10.29252/ijree.7.4.95>
- Babakhani, A. & Tabatabaee-Yazdi, M. (2023). The Power of Gamification on Iranian EFL Learners' Self-Efficacy. *Journal of New Advances in English Language Teaching and Applied Linguistics*, 5(1), 1118-1129. <https://doi.org/10.22034/jeltal.2023.5.1.4>
- Batooli, Z., Fahimnia, F., Naghshineh, N., & Mirhosseini, F. (2019). The Analysis and Review of the Literature in Gamification in e-Learning. *Technology of Education Journal (TEJ)*, 13(3), 700-712.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media. <https://doi.org/10.1007/978-1-4899-2271-7>
- Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaee, E., & Noroozi, O. (2021). Using gamification to support learning English as a second language: a systematic review. *Computer Assisted Language Learning*, 34(7), 934-957. <https://doi.org/10.1080/09588221.2019.1648298>
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. E. (2011). From game design elements to gamefulness: Defining gamification. In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments* (pp. 9–15). Association for Computing Machinery. <https://doi.org/10.1145/2181037.2181040>

- Domínguez, A., Saenz-de-Navarrete, J., de-Marcos, L., Fernández-Sanz, L., Pagés, C., & Martínez-Herráiz, J. J. (2013). Gamifying learning experiences: Practical implications and outcomes. *Computers & Education*, 63, 380–392. <https://doi.org/10.1016/j.compedu.2012.12.020>
- Fathi, J., Alipour, F., & Saeedian, A. (2018). Enhancing vocabulary learning and self-regulation via a mobile application: An investigation of the memorize app. *Journal of Modern Research in English Language Studies*, 5(1), 27-46. <https://doi.org/10.30479/jmrels.2019.10311.1282>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Gardner, R. C. (1988). Attitudes and motivation. *Annual review of applied linguistics*, 9, 135-148. <https://doi.org/10.1017/S0267190500000854>
- Jalili, S., Khalaji, H., & Ahmadi, H. (2020). Vocabulary learning in the mobile-assisted flipped classroom in an Iranian EFL context. *Teaching English with Technology*, 20(4), 82-95.
- Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. Pfeiffer.
- Kazemi, M., & Mohammadi Zenouzagh, Z. (2023). The impact of interactive content-embedded application on vocabulary learning and attitude change: a case study of Kahoot in the Iranian context. *SN Social Sciences*, 3(6), 87. <https://doi.org/10.1007/s43545-023-00669-9>
- Mahmoodi-Shahrehabaki, M., & Yaghoubi-Notash, M. (2014). E-learning in Iran as a developing country: Challenges ahead and possible solutions. *International Journal of Research in Education Methodology*, 6(2), 788–794.
- Nadi-Ravandi, S., Taghizadeh, M., & Fakhri, M. K. (2022). Gamification in education: A scientometric, content, and co-occurrence analysis of systematic review and meta-analysis articles. *Education and Information Technologies*, 27(7), 10207–10238. <https://doi.org/10.1007/s10639-022-11048-x>
- Nazari, M., Yousofi, N., & Rahimi, M. (2023). The study on the effect of using mobile games on improving vocabulary knowledge of young learners: A case study in Kermanshah. *Technology Assisted Language Education*, 1(2), 29-46. <https://doi.org/10.22126/tale.2023.2745>
- Panahandeh, M., & Chalak, A. (2020). Role of gamification in doing homework by Iranian EFL learners. *Journal of Studies in Learning and Teaching English*, 9(1), 79–95.
- Salimei, A., & Zangeneh, H. (2022). The effect of gamification on vocabulary learning (learning English as a second language) among the fifth-grade

- elementary school students. *Technology of Education Journal (TEJ)*, 16(4), 723-734. <https://doi.org/10.22061/tej.2022.8550.2686>
- Shafiee Rad, H., & Alipour, J. (2024). Investigating the effectiveness of digital escape rooms in enhancing L2 learners' vocabulary achievement, retention, and learning motivation. *Computer Assisted Language Learning*, 1-36. <https://doi.org/10.1080/09588221.2024.2436448>
- Shahriarpour, N., & Kafi, Z. (2014). The effect of playing digital games on Iranian intermediate EFL learners' motivation to learn English vocabulary. *Procedia - Social and Behavioral Sciences*, 98, 1738–1743. <https://doi.org/10.1016/j.sbspro.2014.03.601>
- Shirmardi, F., Roohani, A., & Jam, B. (2023). The effect of using a mobile game-based application on Iranian EFL learners' pronunciation: Exploring their motivational perception. *Interdisciplinary Studies in English Language Teaching*, 1(1), 175–190. <https://doi.org/10.22080/iselt.2021.21811.1014>
- Temel, T., & Cesur, K. (2024). The effect of gamification with Web 2.0 tools on EFL learners' motivation and academic achievement in online learning environments. *SAGE Open*, 14(2). <https://doi.org/10.1177/21582440241247928>
- Teymouri, R. (2024). Recent developments in mobile-assisted vocabulary learning: A mini review of published studies on digital flashcards. *Frontiers in Education*, 9, 1496578. <https://doi.org/10.3389/educ.2024.1496578>
- Vahdat, S., & Behbahani, A. R. (2013). The effect of video games on Iranian EFL learners' vocabulary learning. *Reading*, 13(1), 61–71.
- Vathanalaoha, K. (2022). Effects of gamification in English language learning: Implementing "Winner English" in secondary education in Thailand. *LEARN Journal: Language Education and Acquisition Research Network*, 15(2), 830–857. <https://www.tci-thaijo.org/index.php/learn>
- Wulantari, N. P., Rachman, A., Sari, M. N., Uktolseja, L. J., & Rofi'i, A. (2023). The role of gamification in English language teaching: A literature review. *Journal on Education*, 6(1), 2847-2856. <http://jonedu.org/index.php/joe>
- Zhou, S. (2024). Gamifying language education: The impact of digital game-based learning on Chinese EFL learners. *Humanities and Social Sciences Communications*, 11, 1518. <https://doi.org/10.1057/s41599-024-04073-3>