

The Effect of In-Class Language Video Games on EFL Learners' Vocabulary Learning and Retention: An Educational Review

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Introduction

Vocabulary knowledge is generally considered one of the main elements of second-language proficiency. Lack of adequate lexical resources prevents the learner from understanding input, conveying meaning, and engaging in communicative activities. According to recent meta-analytic and empirical studies, vocabulary knowledge remains a key predictor of language proficiency, reading comprehension, and communicative competence in EFL contexts (Zhu et al., 2024).

Vocabulary development in EFL contexts poses specific difficulties due to exposure to the native language outside the classroom. Instructional design, therefore, is a key to whatever it takes to help in effective lexical development. Conventional methods, including translation, word-list memorization, and decontextualized practices, have been denounced by critics as non-enhancing for long-term memory and as shallow processing. Modern studies, however, view meaningful interaction, contextualization of input, and interaction among learners as the main requirements for long-term vocabulary acquisition (Fatimah & Masduqi, 2021).

Game-based language learning is one of the growing pedagogical practices that has attracted more academic interest. Digital language games are often linked to higher motivation, lower anxiety, and greater learner engagement. Nonetheless, recent empirical evidence on their effectiveness as an instrument for measurable vocabulary acquisition, especially when applied exclusively in the traditional classroom environment, is mixed (Learner engagement in digital game-based vocabulary learning, 2023).

The current study aimed to examine how the online drawing-and-guessing game Skribbl.io affects vocabulary learning and retention in EFL learners. Although the overall research project covered both in-class and flipped models of instruction, this article is narrowly based on the null hypothesis (H01):

H01: Using language video games in the classroom (in this case, Skribbl.io) does not affect EFL learners' vocabulary learning and retention.

The purpose of this paper is to evaluate empirical findings related to H01 and to contextualize these results within contemporary theoretical and pedagogical frameworks.

Literature Review Related to H01

Vocabulary Learning in EFL Contexts

The acquisition of vocabulary is multidimensional, cumulative, and must be repeated, meaningful, and a cognitive process. According to recent studies, the key to proper vocabulary development is the extent of processing, the context of use, and the possibility of recall and long-term consolidation (Zhu et al., 2024). Not only do learners need to be aware of lexical forms, but they also need to build their semantic meaning, flexibility of use, and contextual awareness. The lack of naturalistic input in an EFL environment limits access to incidental vocabulary acquisition. Consequently, teaching settings must be compensated for by systematically providing opportunities for retrieval and contextualization. In the absence of such support, improvements in vocabulary can prove weak and ineffective for memorization (Fatimah & Masduqi, 2021).

Game-Based Language Learning and Motivation

Game-learning environments are often associated with more active and better classroom environments. The aspects of competitiveness, challenge, and fun presented by digital games turn traditional learning activities into an interactive experience. Empirical research shows that these settings can increase learners' motivation and engagement in vocabulary tasks (Zhong, 2024). Nevertheless, the higher the motivation, the better the learning outcomes will be. It has been shown that engagement alone is insufficient unless supported by meaningful cognitive processing and systematic pedagogical support. Students can also focus on performance or success in the game rather than on linguistic analysis, thereby reducing the chances of acquiring vocabulary on a lasting basis (Learner engagement in digital game-based vocabulary learning, 2023).

Cognitive Processing and Incidental Vocabulary Learning

Incidental vocabulary learning occurs when the learner encounters lexical elements as they are presented during activities that focus on meaning-based learning rather than memorization. Although this type of exposure can lead to vocabulary growth, this depends on the level of cognitive processing and the task's demand. Research using cognitive load models to investigate vocabulary learning has proposed that excessive complexity can reduce retention by occupying processing capacity needed to encode lexical information (Zarifi & Azizinezhad, 2019). In high-paced, digital game-based learning, learners tend to process lexical information at a shallow level, with their attention directed towards speed and competition. This kind of exposure might not lead to stable lexical knowledge without formal reinforcement and reflexiveness (EFL learners' flow experience and incidental learning vocabulary, 2024).

Empirical Evidence on In-Class Language Games

There are empirical studies on vocabulary learning through digital games, but the results are inconclusive. Studies show that a great deal of vocabulary can be acquired when games are combined with explicit instruction and post-game activities

(Ozdemir, 2026). Other sources suggest that involvement is not always followed by quantifiable learning outcomes when games are applied without pedagogical integration (Digital game-based language learning for vocabulary development, 2024). Companies' recent reviews and bibliometric analyses indicate that the success of classroom-based digital games is largely determined by instructional compatibility rather than technological novelty. Games seem to be the most useful in the form of a systematic learning cycle, including pre-teaching, facilitated interaction, and post-activity consolidation (Research trends and hotspots of digital game-based vocabulary learning, 2024).

Methodological Overview Relevant to H01

In this study, a quasi-experimental design was employed, with three intact groups of EFL learners aged 15 to 25. To test H01, the analysis was restricted to the group trained in class as per Skribbl.io (the Skribbl group). A standardized placement assessment was used to determine the homogeneity of participants. Pretest and posttest: A vocabulary test developed by the researcher, previously tested by experts and piloted, was used for both. The lexical items were selected and aligned with the instructional goals, then integrated into gameplay-based activities. The learners communicated with the target vocabulary in class only during the intervention. No pre-teaching or post-game reflection was provided. The comparison of pre-test and post-test performance in the Skribbl group was performed using paired sample t-tests.

Methodological Reflexivity and Design Transparency

Several design features should be explained. To begin with, the intervention did not involve any direct vocabulary instruction before playing the game. Second, there was no systematic reflection or elaboration after the gaming sessions. Three, the research used only an immediate post-test, not a delayed post-test, to measure long-term retention. Lastly, it was only introduced during classroom sessions and was not distributed in practice. Such design choices were deliberate, since the experiment was meant to extract the independent effect of in-class gameplay. The recognition of

these limitations helps understand that results can be associated with unscaffolded digital interaction rather than the game-based pedagogy implemented within the overall instructional frameworks.

Results Related to H01

The descriptive statistics showed that the mean vocabulary scores increased slightly from pre-test to post-test in the Skribbl group. The inferential analysis, however, revealed that this increase was not significant ($p > .05$). Therefore, H01 was retained. Although some positive changes were observed, the lack of statistical significance suggests that in-class gameplay was insufficient to yield measurable vocabulary gains in this intervention.

Discussion

Interpreting the Retention of H01

Retention of H01. The interpretation of H01 is as follows: H01 was retained, indicating a very important difference between engagement and quantifiable learning outcomes. Although the game's setting encouraged involvement and interaction, this involvement did not lead to a statistically significant improvement in vocabulary. This observation aligns with a recent study that found that motivation alone is insufficient without a systematic cognitive processing and reinforcement (Learner engagement in digital game-based vocabulary learning, 2023).

Theoretical Framing Through Cognitive Load Theory

Modern cognitive load approaches to vocabulary acquisition can explain the results. Research employing cognitive load theories indicates that activities that involve attention to multiple factors simultaneously can reduce cognitive load available for lexical encoding (Zarifi & Azizinezhad, 2019). Even within digitally mediated learning spaces like Skribbl.io, learners have to decode visual information, produce quick replies, follow classmates, and manage competitive output simultaneously. Such concomitant demands could induce extraneous cognitive load, reducing the

probability of deep semantic processing. Consequently, vocabulary exposure might be done without elaboration to promote long-term retention.

Depth of Processing and Vocabulary Learning

Recent studies have underscored that vocabulary retention depends on meaningful interactions, repeated experiences, and opportunities for evaluation and contextual application. Processing can be shallow when learners are introduced to lexical items in a limited context and under time constraints, which reduces the likelihood of long-term memory retention (EFL learners' flow experience and incidental vocabulary learning, 2024).

Instructional Context and Time Constraints

The conventional classroom environment is also time constrained. Learning vocabulary involves repetition over time and is facilitated by retrieval practice. Exposure to the lexicon in a single session, with no follow-up activities, is unlikely to create stable lexical knowledge (Zhu et al., 2024).

Pedagogical Implications

The results suggest that digital games cannot be used as independent instructional methods if the outcome is to be measured in vocabulary retention. Rather, game-based activities are to be incorporated in coherent pedagogical cycles that enhance elaboration, retrieval, and

A Structured Model for Optimized Integration

Building on the present findings, an optimized integration framework may include three phases:

Pre-Game Phase: Explicit introduction of target vocabulary through semantic mapping and contextual examples.

Game Phase: Guided gameplay incorporating prompts that direct attention to form–meaning connections rather than speed alone.

Post-Game Phase: Retrieval practice, sentence construction, and contextual application tasks to reinforce consolidation. Structured recall activities, such as delayed quizzes, peer explanation tasks, and short productive writing exercises, may further strengthen memory traces by promoting repeated retrieval and semantic elaboration.

Embedding gameplay within such a scaffolded cycle may reduce extraneous cognitive load while increasing opportunities for meaningful processing and durable retention. Rather than positioning digital games as replacements for instruction, this model situates them as complementary tools within a principled vocabulary learning framework.

Conclusion

This research investigated H01, which posited that using Skribbl.io in class would not result in a significant difference in vocabulary learning and retention among EFL learners. This hypothesis was supported by statistical analysis. These results indicate that informal in-class play, despite its level of involvement, might not be sufficiently repetitive or cognitively stimulating to produce measurable improvements in vocabulary acquisition. This has been interpreted in light of current studies on cognitive processing and digital game-based learning, which suggest that simultaneous task demands in competitive digital settings can divert attentional resources away from durable lexical encoding; the lack of distributed opportunities to retrieve the information is also likely to limit long-term consolidation. The paper supports one of the key principles of language pedagogy: technology integration should be facilitated by instructional design. Digital resources can also be used to increase interaction and the classroom environment, but without systematic scaffolding and retrieval-based reinforcement, vocabulary acquisition might remain at the same level. Future studies are needed to determine the effects of structured

integration models, intervention length, and delayed post-testing on the efficacy of game-based vocabulary instruction.

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