

The Effectiveness of Video Games for Learning and Teaching English Language Among School-Age Students

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Article Info

Article history:

Received 12, 27, 2025

Revised 01, 09, 2025

Accepted 01, 09, 2025

Keywords:

Video game
language learning
English as a foreign language
Digital learning
language skill

ABSTRACT

This study discusses the effectiveness of video games in learning and teaching English to young learners through an extensive review of literature and meta-analysis on published research papers from 2009 to 2025. The results reveal the effectiveness of video games in promoting vocabulary, communicative, and confidence domains, with gamers performing better in language games in comparison to non-gamers. There was, however, little to no difference in formal academic achievement, English GPA. The effectiveness of learning through video games depends on the genre, with narrative-based video games proven to be an essential element in vocabulary development and multiplayer video games in speech development. The implications of this research indicate that video games, if properly integrated into structured digital game-based language learning platforms, can act as an additional teaching supplement.

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1. INTRODUCTION

English has become a global language, functioning as a primary medium of communication in education, technology, and international interaction. As a result, the demand for effective and engaging approaches to English language teaching and learning has increased, particularly among school-age learners who are growing up in digitally mediated environments. Traditional instructional methods, which often emphasize memorization, drills, and decontextualized grammar practice, have been widely criticized for their limited ability to foster communicative competence and sustained learner motivation.

In recent years, video games have emerged as a prominent component of young learners' everyday lives and, consequently, as a potential resource for language learning. Unlike conventional classroom materials, video games offer immersive environments in which learners are exposed to authentic language input, meaningful interaction, and immediate feedback. Many contemporary games require players to read instructions, follow narratives, interpret dialogues, and communicate with other players, often in English. These features position video games as a form of informal and experiential language learning that occurs beyond the boundaries of formal instruction.

Previous research has increasingly documented the positive effects of video games on specific aspects of English language development. Studies have reported gains in vocabulary acquisition, listening comprehension, and learner motivation, particularly among learners who engage regularly with English-mediated digital games. From a second language acquisition perspective, such gains can be associated with repeated exposure to comprehensible input, contextualized language use, and opportunities for interaction. However, despite these encouraging findings, the role of video games in English education remains contested, especially in relation to their pedagogical legitimacy and academic value.

A key concern raised in the literature is the apparent discrepancy between functional language proficiency developed through gaming and formal academic performance in school contexts. While learners may demonstrate increased fluency and confidence in informal communication, these skills do not always translate into improved

grammatical accuracy, academic writing, or standardized test performance. Moreover, existing studies often vary in scope, learner age, game type, and research design, making it difficult to draw consistent conclusions about the overall effectiveness of video games as educational tools.

Given these considerations, there is a need for a comprehensive synthesis of empirical research that examines not only whether video games support English learning, but how, under what conditions, and to what extent they do so across different language skills and learner populations. Therefore, this study aims to investigate the effectiveness of video games for learning and teaching English among school-age learners through a systematic literature review and meta-analytic synthesis of existing research. By analyzing linguistic, academic, and affective outcomes reported in previous studies, this research seeks to clarify the pedagogical potential of video games and to identify the conditions under which they can be effectively integrated into English language education.

2. LITERATURE REVIEW

English is a world-wide language which is crucial to education, international communication, and future job markets, making successful early education in English a highly desired aim. There is a recent indication of interest in using electronic and game-based settings as an additional accompaniment to support learning because they may offer repeated engaging exposure to authentic language in a range of formats (text, speech, communication). There is evidence of interest among teachers, researchers, and households in using game-based learning and gamified language learning applications because they may foster increased learning motivation, generate repeated meaningful input (focusing on vocabulary, listening), and generate low-stakes practice opportunity, which makes them highly desirable supporting tools for learning. Empirical studies conducted with this age group of learners show promising effects on vocabulary learning, attitudinal improvements towards English learning, and incidental learning in reading and listening skills after playing English games or using gamified language learning applications; systematic and scoping reviews also show evidence of a possibly important, if secondary, role of digital games and gamified mobile applications in teaching children and young learners.

Even though various research papers have illustrated that digital games and gamified software have had a positive effect on English language acquisition, specifically regarding vocabulary, reading, and motivation, several gaps and limitations exist. Even though several research papers exist regarding positive English language acquisition through digital games and gamified software, these research papers are short-term and are specifically conducted on receptive skills such as vocabulary and listening. Few research papers exist regarding the productive skills related to English language acquisition through digital games and gamified software, specifically speaking and writing. Additionally, even though the research papers conducted regarding digital games and gamified software are quite small-scale and non-standardized and lack long-term observation, the research papers are also limited as they specifically only explore the effects and benefits among older students and lack research related to children and teenagers. Finally, even though research papers exist regarding digital games and gamified software, very little research exists regarding how and which types of digital games and gamified software specifically affect English language proficiency differently. Even though these research papers conclude that digital game-based software increases motivation and provides authentic exposure to the English language, these research papers do not specifically illustrate how and under which circumstances these tools are most effective at acquiring the language among school-aged children.

However, in order to overcome such drawbacks, this research examines the effectiveness of video games as a medium of learning and English language teaching in children and adolescents, emphasizing the combined use of both online and offline video games in English language classes. This research proposes to examine ways in which learning through this medium affects all four language skills in English: listening, speaking, reading, and writing, and also to figure out what kind of elements in the game, combined with effective classroom interventions by teachers, work in favor of language application in everyday situations. This research, in its effort to provide a complete analysis of how gaming affects English language learning outcomes, proposes to combine different varieties of games, such as educational games, entertainment games, and apps, in different classroom situations, in order to provide new and tangible insights into the vast literature surrounding this subject.

3. METHOD

3.1 Research Design

This study employs a systematic literature review (SLR) combined with a meta-analytic synthesis to examine the effectiveness of video games as tools for learning and teaching English. This approach was selected to consolidate empirical evidence across diverse educational contexts and to identify consistent patterns in linguistic, academic, and affective outcomes reported in previous research. By integrating findings from both

quantitative and qualitative studies, the present review provides a comprehensive evaluation of game-based English learning over an extended period.

3.2 Data Sources and Search Strategy

Relevant studies were identified through systematic searches of major academic databases, including ScienceDirect and ResearchGate. The search process used combinations of keywords such as video games, game-based learning, digital games, English language learning, EFL, ESL, and language education. To ensure both historical depth and contemporary relevance, the review included studies published between 2009 and 2025. Reference lists of key articles and existing meta-analyses were also examined to identify additional relevant studies.

3.3 Inclusion and Exclusion Criteria

Studies were included in the review if they met the following criteria:

1. The study empirically examined video games or gamified applications in an English language learning context.
2. The participants reported in the study were non-native English speakers (EFL or ESL learners).
3. The study reported measurable outcomes related to linguistic development, academic performance, or affective variables.

Studies were excluded if they focused solely on entertainment without educational relevance, lacked empirical data, or did not clearly report learning outcomes. Based on these criteria, 17 primary empirical studies were selected for in-depth qualitative synthesis. In addition, existing meta-analyses comprising between 16 and 38 experimental studies were reviewed to contextualize effect trends and strengthen the robustness of the findings.

3.4 Characteristics of Included Studies

The studies included in this review encompassed a wide range of educational settings and learner populations. Participants reported in the selected studies spanned primary, secondary, and tertiary education levels, with a predominant focus on EFL and ESL learners. The reviewed research was conducted across diverse geographical and cultural contexts, allowing for cross-contextual comparisons of game-based English learning. This diversity enhances the interpretive breadth of the synthesis while also highlighting contextual variables that may influence learning outcomes.

3.5 Analytical Framework

To enable systematic comparison across studies, findings were organized into three analytical domains. The first domain addressed linguistic outcomes, including vocabulary acquisition, grammatical development, and oral fluency. The second domain examined academic performance indicators, such as standardized test scores and overall academic achievement. The third domain focused on affective factors, including learner motivation, engagement, and language anxiety. This multi-dimensional framework allowed for an integrated analysis of both cognitive and affective impacts of video game-based English learning.

3.6 Data Synthesis and Analysis

Quantitative findings reported in the selected studies were examined to identify recurring patterns and effect tendencies across educational contexts and learner groups. Where available, effect sizes reported in prior meta-analyses were compared to assess consistency across studies. Qualitative data, including findings derived from educator interviews and classroom observations, were analyzed thematically to capture pedagogical perspectives and instructional practices. The integration of quantitative trends and qualitative insights enabled a balanced interpretation of how video games function as supplementary tools in English language education.

4. RESULTS AND DISCUSSION

4.1 Comparative Performance Between Gamers and Non-Gamers

The synthesis of empirical findings reveals a consistent divergence between functional language competence and formal academic performance among learners who engage in video games. Across multiple standardized assessments, learners identified as gamers consistently outperformed non-gamers in vocabulary-related measures. For example, one study reported a mean vocabulary score of 21.04 for gamers compared to 18.54 for non-gamers out of a maximum score of 25, indicating a notable advantage in lexical knowledge. Similar trends were observed in broader proficiency assessments, where gamers achieved a higher total score sum (261) than their non-gaming counterparts (242).

However, these advantages did not consistently extend to formal academic achievement, particularly in terms of English grade point average (GPA). Several studies reported minimal or non-significant differences between gamers and non-gamers in English GPA (e.g., 1.92 vs. 1.91). This finding suggests that while video game exposure supports incidental vocabulary acquisition and receptive language skills, it does not automatically result in mastery of academic writing conventions, formal grammar, or test-oriented language structures. These results align with previous research indicating that informal learning environments, such as digital games, primarily foster communicative competence rather than institutionally valued academic performance.

4.2 Influence of Game Genre on Language Learning Outcomes

The effectiveness of video games for English learning appears to be highly dependent on game genre, with different genres supporting different aspects of language development. Role-playing games (RPGs) and narrative-driven games demonstrated a medium-to-large effect size on vocabulary acquisition and reading comprehension. One longitudinal study reported an increase in post-test vocabulary scores from 75.86 to 83.64 following sustained engagement with narrative-based games. This improvement can be attributed to repeated exposure to contextualized language, story-based input, and task-oriented reading demands inherent in RPG gameplay.

In contrast, massively multiplayer online games (MMOs) and competitive multiplayer platforms were found to be particularly effective in enhancing speaking skills and reducing communicative anxiety. Real-time interaction with other players requires spontaneous language production, negotiation of meaning, and pragmatic competence, thereby fostering fluency and confidence in spoken English. These findings support interactionist theories of second language acquisition, which emphasize the role of meaningful communication and social interaction in language development.

4.3 Pedagogical and Structural Challenges

Despite the documented benefits of video games for English learning, the reviewed studies also highlight several pedagogical and structural challenges that limit their effectiveness. One recurring theme is the evolving role of the teacher, who is increasingly positioned as a facilitator rather than a sole source of knowledge. Effective implementation requires teachers to provide instructional scaffolding, guide reflective learning activities, and align gameplay with curricular objectives. Without such guidance, the educational potential of games may remain underutilized.

Technical constraints also present significant barriers, particularly in contexts with unequal access to hardware, gaming platforms, and stable internet connections. These disparities can exacerbate educational inequality and limit the scalability of game-based learning interventions. Additionally, several studies caution against the overuse of native language (L1) subtitles, which may function as a cognitive “crutch” and reduce learners’ reliance on target-language (L2) listening strategies.

Finally, negative outcomes associated with unsupervised or excessive gaming were reported, including exposure to inappropriate language, sleep disruption, and symptoms of gaming addiction. These risks underscore the necessity of structured integration, parental involvement, and clear instructional boundaries when incorporating video games into English language education.

5. CONCLUSION

This study demonstrates that video games function as an effective complementary tool for English language learning among school-age learners. The synthesized evidence indicates that game-based environments are particularly successful in promoting vocabulary development, communicative fluency, and learner confidence, often outperforming traditional drill-based approaches in these domains. Through sustained exposure to authentic language input and interactive communication, video games support functional language use in ways that formal instructional methods may not fully replicate.

Nevertheless, the findings also reveal a persistent gap between informal, game-acquired fluency and formal academic accuracy, particularly in areas such as grammatical precision and standardized writing conventions. To address this gap, educational institutions should adopt structured digital game-based language learning (DGBLL) frameworks rather than relying on unguided gameplay. Effective implementation requires the strategic selection of game genres, such as narrative-driven role-playing games for vocabulary enrichment and multiplayer online games for spoken interaction, alongside careful management of cognitive load. Moreover, teacher preparation is essential, as educators must assume the role of facilitators who can scaffold gameplay, guide reflection, and explicitly connect in-game language experiences to real-world and academic language use. When integrated thoughtfully, video games have the potential to bridge entertainment and education, transforming informal play into meaningful and sustainable English language learning.

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