

The Role of Digital Storytelling in Enhancing ESL Vocabulary Retention

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Abstract: Vocabulary learning is considered to be one of the most persistent problems in ESL learners, and typical vocabulary teaching, vocabulary lists, drilling, and memorization usually result in transient memory but not durable retention. The digital storytelling (DST) approach, which implies the combination of narration and the use of images, sound, animation, and even video produced by the learner, has been suggested as an alternative multimodal way to vocabulary teaching during the last two decades. This paper provides a review of empirical studies and meta-analyses on DST and its effects on ESL/EFL vocabulary results, categorizing them by the mechanisms underlying those effects (dual coding, contextualized/inconspicuous vocabulary acquisition, engagement/affect), summarizes seven representative studies in tables, and illustrates the prevalence of various research designs employed in this literature through figures.

Key Words: digital storytelling, vocabulary retention, ESL/EFL, multimodal learning, second language acquisition

Introduction

Knowing vocabulary is the foundation of all other language skills because one cannot read, write, listen, or speak successfully in a foreign language unless he/she has an adequate vocabulary. However, vocabulary instruction in many English-as-a-Second-Language/English-as-a-Foreign-Language classrooms relies heavily on methods that include disconnected vocabulary learning, word lists, bilingual glossing, and repetition, which tend to provide short-term recognition, not durable and flexible knowledge necessary for real language communication (Diana & Febriyani, 2025).

The alternative that was suggested in recent literature is digital storytelling (DST) (Robin, 2008). The idea of using DST in vocabulary learning lies in providing target vocabulary within meaningful and memorable context. Within DST activity, learners create or view a story that incorporates both written and visual elements as well as music and, in some cases, videos or animations. This method has been proven more effective for vocabulary acquisition than traditional text-only approaches. This paper discusses three issues: (a) what are the cognitive and motivational factors behind the impact of DST on vocabulary learning; (b) what can be said about empirical evidence on the effectiveness of DST as a vocabulary teaching method; (c) what are the weaknesses of this evidence base and its implications for classroom practice.

Theoretical Mechanisms

Three mechanisms, which have been repeatedly discussed in the literature as being responsible for better retention of target vocabulary in DST, can be identified.

Dual Coding and Multimodal Encoding

The dual-coding theory suggests that the better retention of material occurs when information is coded in terms of verbal and non-verbal channels; such coding produces separate memory codes, which reinforce each other (Pearson & Kosslyn, 2015). DST makes possible the coding of the target vocabulary together with images, sound, and context at once; this explanation is used in the majority of DST research studies.

Contextualized and Incidental Learning

Words presented in DST not only appear in the context but also make up part of the plot, so that the learner gets the opportunity to infer meaning from context.

Engagement, Motivation, and Affect

As DST tasks tend to be new, learner-created, and multimodal, they have been found more motivating and less stressful than traditional vocabulary drills, which factors themselves correlate positively with greater focus and coding in learning processes.

Review of Empirical Research

The table 1 provides a summary of seven papers investigating the effects of digital storytelling on vocabulary learning of ESL/EFL at different ages, proficiency, and national levels – from Malaysian young learners to Omani, Indonesian, and Iranian university students (Nami & Asadnia, 2024).

Table 1: Summary of Reviewed Studies on Digital Storytelling and ESL/EFL Vocabulary Learning

Study	Year	Context / Sample	Design	Key Vocabulary-Related Finding
Leong et al., (2019)	2019	Young Malaysian ESL learners	Qualitative case study	All observed effects of digital storytelling on vocabulary learning were positive; learners noticed and used new words more readily
Belda-Medina & Goddard, (2024)	2024	Pre-service teachers + children aged 8–10	Mixed-methods	Inclusive digital stories produced measurable pre-to-post vocabulary gains among children
Nami & Asadnia, (2024)	2024	Undergraduate EFL learners (experimental vs. control)	Mixed-methods, sequential explanatory	Learner-generated digital stories improved vocabulary test scores relative to control groups
Behforouz & Al Ghaiti, (2025)	2025	Multilingual undergraduate ESL learners	Quasi-experimental	Digital storytelling significantly benefited both vocabulary breadth and depth
Hava, (2021)	2021	EFL learners, motivation-focused	Mixed-methods	Digital storytelling was linked to greater motivation and satisfaction, conditions associated with vocabulary uptake
Ginting et al., (2024)	2024	University students, Indonesia (n = 56)	Quasi-experimental	Storytelling-narrated videos produced higher retention scores than lecture-style narration
Nation, (2022)	2023	Systematic review of prior studies	Systematic review	Synthesized evidence supports digital storytelling as an effective vocabulary acquisition tool across age groups and contexts

There are two trends that appear. The first one is that every study mentioned in table 1 that evaluated vocabulary performance through pre-posttests, breadth-depth measurements, or learners' feedback showed a positive correlation between digital storytelling and vocabulary improvement; none demonstrated no correlation or negative correlation. The second one is that there is considerable heterogeneity of research design in the selected literature, including case studies, quasi-experimental designs, and systematic reviews

that influence the validity of the causality claim based on these data. Figure 1 illustrates the distribution of the designs among the seven selected studies.

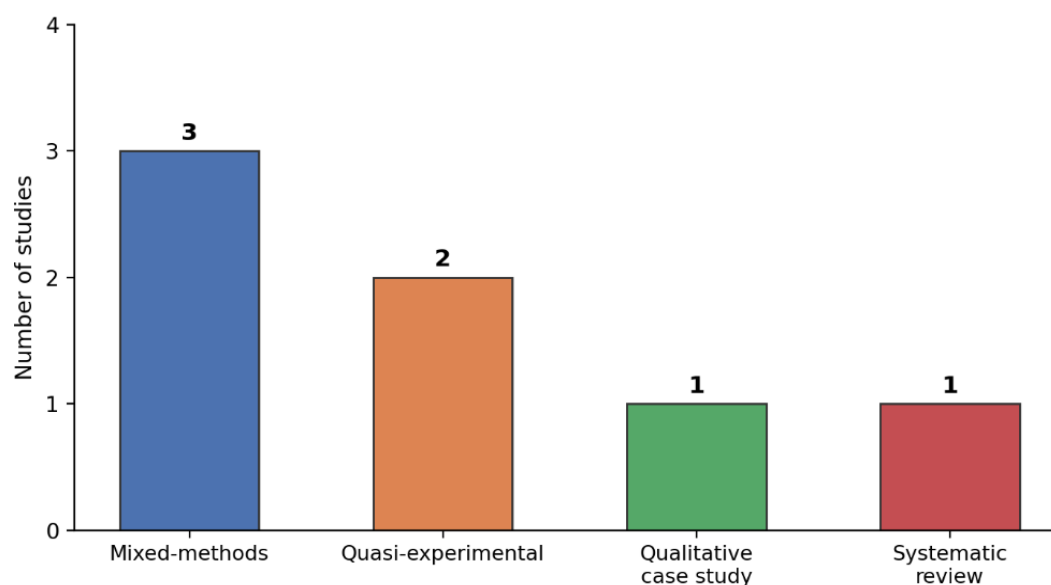


Figure 1: Distribution of Research Designs Among the Seven Studies Summarized in table 1. Counts Reflect this Review's Own Classification of Each Study's Design, Not a Separate Reported Statistic

Mixed methods designs were used in the majority of the papers (3 out of 7 papers) with an amalgamation of quantitative tests on pre-post vocabulary scores and qualitative interviews or reflection from the learners. Quasi-experimental research designs with control group were used in 2 papers, hence provided moderate evidence to prove causality between DST and vocabulary learning although the sample size was small ($n=56$ and $n=60$). There was only one case study and one systematic review in the literature which implies that there is a need for large sample size in controlled studies.

Discussion

Indeed, the reviewed literature seems to come to one and the same conclusion, regardless of the research context: digital storytelling appears to be positively correlated with vocabulary achievements in ESL/EFL classes better than the traditional methods. Moreover, this pattern is noticeable for learners of all ages ranging from school pupils to college undergraduates and for both productive and receptive vocabulary skills (breadth/depth of vocabulary knowledge and the actual use of this vocabulary in narrative).

However, there is no clear evidence provided regarding the exact mechanism behind this positive effect. In most cases, researchers consider such factors as dual coding, contextualized learning, or simply increased learner engagement, but there is little data comparing all three approaches and testing their efficiency separately from each other. Usually, authors state that DST technique leads to positive results in terms of vocabulary achievements and do not pay enough attention to what part of this process exactly accounts for success.

Pedagogical Implications

Integrate target vocabulary into a meaningful story, as opposed to giving it as a list of vocabulary, in order to benefit from contextualized and incidental learning routes.

Whenever feasible, engage students in the process of making their own digital stories, as opposed to just watching those made by teachers, since learner-made DST was found in several reviewed articles to enhance both engagement and depth of vocabulary learning.

Match the target vocabulary with some kind of visual/auditory cue (an image, sound effect, piece of music), as opposed to a textual cue, adhering to the dual coding theory.

Conduct short pre- and post-assessments before and after DST activities, in order for particular teachers/programs to generate their own evidence of effectiveness, given that the evidence base available at present is positive but still relatively small.

Limitations of the Current Evidence Base

There are several caveats that can be attached to the conclusions stated above. The sample size used in the quasi-experimental studies is quite small (less than 65 subjects in each case). In addition, very few researchers conduct delayed posttests after a few weeks and thus, claims regarding long-term retention rather than short-term improvement are supported by insufficient evidence. Publication bias in this field is possible in the sense that research articles showing positive results may be favored, and the fact that all results have been positive despite the very different contexts makes publication bias likely. Lastly, vocabulary breadth (how many words a subject knows) is measured in more studies compared to vocabulary depth (how well a subject understands the meaning and usage of the word).

Conclusion

Across a broad range of studies from different countries, involving different age levels and different designs, it has been consistently found that there is a positive relationship between digital storytelling and vocabulary retention in English as a second language/foreign language (ESL/EFL), which may be reasonably attributed to a combination of dual coding using multiple modes, contextualization of incidentally acquired knowledge, and learner engagement. Though the findings are encouraging, the body of evidence is still limited due to small samples, short follow-up periods, and the focus on vocabulary breadth instead of vocabulary depth. The use of digital storytelling should thus be considered, based on the existing evidence base, as a promising supplementary approach to vocabulary teaching.

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