

Digital Storytelling and EFL Vocabulary Growth

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A Quasi-Experimental Study of A1-Level Learners at Intensive Languages Learning Center, Sétif 2 University

Received: 19/03/2026; Accepted: 07/07/2026; Published: 23/09/2026

ABSTRACT

This study examined whether integrating digital storytelling could expand the vocabulary size of A1-level EFL learners at Intensive Languages Learning Center. Learners had difficulty finding and using appropriate words in communication, and the study explored whether a story-based multimedia approach could provide a more effective instructional alternative. The study used a single-site, one-group quasi-experimental mixed-methods design with 18 participants. Three sequential phases were followed: exploration, experiment, and post-experiment. The exploratory phase involved classroom observations, a diagnostic test, a focus group, and informal discussions. The experimental phase included a pre-test, a five-week digital storytelling treatment using five selected stories, and a post-test. A satisfaction questionnaire was administered after the treatment. Quantitative data were analyzed in SPSS version 27; qualitative data were examined through document analysis.

Post-test scores exceeded pre-test scores. The post-test mean was higher than the pre-test mean, and a one-sample t-test indicated a statistically significant difference ($p = .000 < 0.05$). Learner feedback was consistently positive: digital storytelling was rated as comprehensible, helpful for vocabulary development, enjoyable, and satisfying. The learner profile at baseline showed elementary proficiency, moderate vocabulary knowledge, medium anxiety, moderate motivation, and a strong visual learning preference. Results show that Digital storytelling supported measurable vocabulary gains and positive learner engagement in this EFL context. The findings suggest it is a workable instructional option for beginning-level vocabulary teaching.

Keywords: digital storytelling, EFL vocabulary, vocabulary size, A1 learners, multimodal instruction

1. Introduction

Vocabulary is foundational to communicative competence. Learners who lack sufficient lexical knowledge may understand grammar rules yet still be unable to express meaning effectively. This constraint is especially consequential at the beginning stages of language learning, where limited word knowledge often prevents meaningful participation even before more complex grammatical patterns become relevant. Vocabulary size, the breadth of words a learner knows at a given proficiency level, is therefore not a peripheral indicator but a central measure of communicative readiness (Nation, 1997; Thornbury, 2006).

This study was motivated by a specific classroom problem: A1-level EFL learners at Intensive Languages Learning Center struggled to retrieve appropriate words during interaction. Preliminary classroom observations, a diagnostic vocabulary test, a focus group discussion, and informal conversations consistently showed that learners had difficulty expressing ideas, often hesitating mid-sentence or reducing their output to avoid using words they were not confident about. These patterns are consistent with research linking lexical insufficiency to reduced communicative confidence and willingness to speak (Horwitz, 1986; Noels, 2000).

Digital storytelling was selected as the instructional response because it integrates verbal input with visual, auditory, and narrative cues in a format that makes vocabulary more memorable and accessible (Lambert, 2002; Robin, 2006; Normann, 2011). Stories have long been used in language pedagogy to organize meaning, sustain attention, and contextualize vocabulary in ways that promote retention (Morgan, 1983; Haven, 2000). The digital format extends this tradition through multimedia delivery, giving learners repeated encounters with words in context while simultaneously linking those words to images, sequence, and meaning. Prior research has reported positive effects of digital storytelling on vocabulary learning in various EFL and young-learner settings (Sulistianingsih, 2020; Leong, 2019; Letchumanan, 2012).

Despite this evidence, most existing studies have examined digital storytelling in relation to general vocabulary learning or broad learner engagement rather than vocabulary size as a specific construct. A further gap is the limited research targeting A1 adult learners in institute-based settings. This study addresses both gaps by focusing on vocabulary size as the primary outcome variable and by examining digital storytelling as a structured instructional intervention over five weeks. The guiding hypothesis was that learners who received instruction through digital storytelling would show greater vocabulary growth than those exposed to conventional teaching alone.

2. Literature Review

2.1 Vocabulary in EFL Learning

Vocabulary underpins all four language skills, listening, speaking, reading, and writing. Without sufficient lexical knowledge, learners may grasp grammatical structures yet remain unable to communicate effectively, particularly in spontaneous interaction (Read, 2000; Nation, 1994). This gap is especially pronounced for beginner learners, for whom vocabulary growth is often a more immediate indicator of progress than grammatical development (Milton, 2009; Thornbury, 2006).

The vocabulary literature commonly distinguishes between receptive and productive knowledge. Receptive vocabulary includes words learners recognize in input; productive vocabulary includes words they can retrieve and deploy in speaking or writing (Nation, 1990; Webb, 2008; Graves, 2006). This distinction clarifies why learners may recognize familiar words in texts yet still struggle to use them spontaneously. In the present study, digital storytelling potentially supports both dimensions: repeated exposure may build recognition, while discussion and follow-up tasks may encourage productive use.

Vocabulary learning is also shaped by the difficulty of lexical items themselves. Pronunciation, spelling, polysemy, grammatical behavior, and word length all pose challenges that are amplified in

low-proficiency classrooms (Thornbury, 2006; Schmitt, 1997). At beginner level, learners typically know a limited number of high-frequency words but retrieve them slowly and unevenly under real-time interaction pressure (Cameron, 2001; Pinter, 2006). This is not only a linguistic problem: learners who cannot recall the right word often avoid participation, reducing the very opportunities for practice that vocabulary growth requires (Horwitz, 1986).

2.2 Digital Storytelling as a Pedagogical Tool

Digital storytelling combines narration with images, music, text, and video, creating a multimodal environment that may facilitate comprehension and memory encoding (Lambert, 2002; Robin, 2006; Gregori-Signes, 2007). This combination aligns with broader research on technology-enhanced language learning, which frames multimedia tasks as supportive of engagement, information processing, and learner participation (Brown, 2005; Cennamo, 2013; Traore, 2011).

In language teaching, digital storytelling has been associated with several benefits. It can make input more memorable, support repeated exposure to target words, and create opportunities for discussion and collaborative interpretation (Normann, 2011; Kajder, 2005; Haven, 2000). Studies on multimedia vocabulary learning suggest that combining novelty with meaningful repetition improves both motivation and retention (Leong, 2019; Sulistianingsih, 2020; Letchumanan, 2012). Research on digital storytelling specifically has reported positive learner perceptions and vocabulary-related gains, particularly among lower-proficiency learners (Abdul-Ameer, 2014; Tsalgini, 2020; Leong, 2019).

Most prior work, however, has examined digital storytelling in relation to general vocabulary learning or learner motivation rather than vocabulary size as a distinct construct. Studies have also tended to focus on young learners, heterogeneous proficiency groups, or contexts considerably different from the A1 institute setting addressed here. This study fills that gap by concentrating specifically on vocabulary size and by treating digital storytelling as a structured, deliberately sequenced instructional tool.

3. Methodology

3.1 Design and Setting

This study used a single-site, one-group quasi-experimental mixed-methods design. Participants were already organized in intact institutional groups and random assignment was not feasible, which made this the most appropriate available design (Campbell & Stanley, 1963; Phakiti, 2014). The investigation followed three sequential phases: exploration, experiment, and post-experiment. The quantitative strand centered on pre-test and post-test vocabulary performance; the qualitative strand informed problem identification and contextual interpretation (Creswell, 2012; Dörnyei, 2007).

3.2 Participants

Eighteen EFL learners at A1 level at Intensive Languages Learning Center participated in the study. The group represented the complete accessible population at the selected site and proficiency level. Because the project targeted learners with limited lexical resources, the group was treated as a single intact cohort throughout all phases.

3.3 Exploration Phase

Before the intervention, the researcher conducted three classroom observations, administered a diagnostic vocabulary test, facilitated a focus group discussion, and held informal individual conversations. These tools identified the learning problem, specifically, that learners needed to expand their English vocabulary, and confirmed its instructional relevance. Several baseline instruments were then administered to characterize the group: a placement test, the Foreign Language Classroom Anxiety Scale (FLCAS), a motivation scale, a learning styles inventory, and a vocabulary diagnostic test.

3.4 Intervention

The experimental treatment consisted of five digital stories selected to match the participants' A1 proficiency level. Both the moral content and language difficulty of each story were considered during selection. Each lesson combined listening to a digital story with guided discussion, comprehension tasks, and vocabulary practice. The digital stories were delivered with a projector, laptop, speakers, printed worksheets, and flashcards. The lesson sequence emphasized repeated exposure to lexical items in meaningful contexts and encouraged learners to notice, recall, and reuse vocabulary through tasks including fill-in-the-gap activities, matching, vocabulary acting, and group comparison.

3.5 Data Collection and Analysis

A pre-test was administered one week before treatment and a post-test was administered after five weeks. Both tests were administered under the same conditions and lasted approximately 15 minutes. A five-point Likert scale satisfaction questionnaire was administered after the post-test to capture learner attitudes. Quantitative data were analyzed in SPSS version 27. Descriptive statistics summarized performance; a one-sample t-test assessed whether the change in scores was statistically reliable. Qualitative data from observations, discussions, and documentary materials were examined through document analysis.

3.6 Ethical Procedures

Permission to conduct the research was obtained from the institution in advance. Participants received written consent information specifying the purpose of the study, the voluntary nature of participation, the right to withdraw at any time, and the confidentiality of all data collected. Each participant signed a consent form before data collection began (Creswell, 2012; O'Leary, 2017).

4. Results

4.1 Learner Baseline Profile

The placement test confirmed that 17 participants (94.5%) scored in the 19–25 band and one (5.5%) fell in the 26–32 band, placing the entire sample in the elementary range. No participant was classified as beginner or advanced, which confirmed the group corresponded to the intended A1 profile.

The diagnostic vocabulary test showed a predominantly moderate starting point. Three learners (16.6%) scored in the low range (13–25), ten (55.5%) in the moderate range (26–38), four (22.4%) in the high range (39–50), and one (5.5%) in the very high range (51–60). No learner scored in the very low range (1–12). Figure 1 presents this distribution.

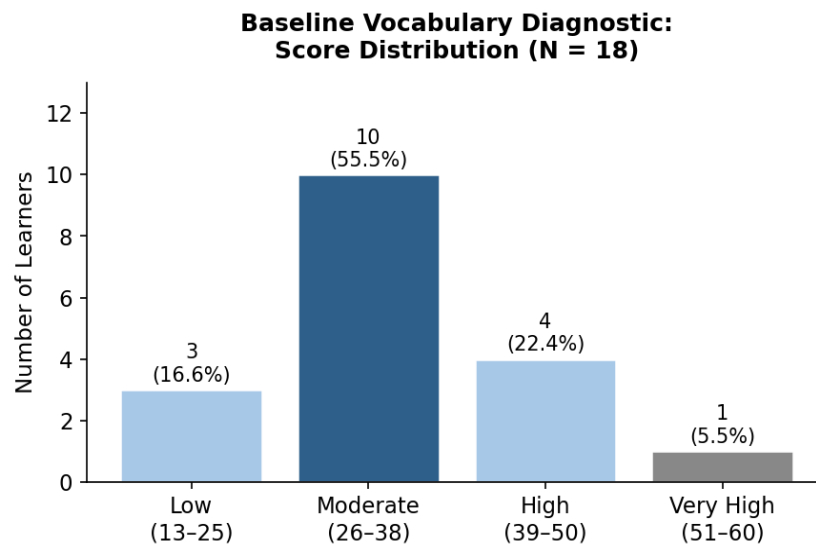


Figure 1. Baseline Vocabulary Diagnostic Score Distribution (N = 18)

Affective baseline measures showed notable variation within the group. On classroom anxiety, seven learners (63.6%) fell in the medium anxiety band and four (36.4%) in the high anxiety band; no learner reported low anxiety. On motivation, item means ranged from 31.5 to 44.5 with an overall mean of 37.62, indicating moderate motivation overall. Learning style preferences were strongly skewed toward visual processing: 14 learners (77.7%) were classified as visual, two (11%) as auditory, and one each as visual/kinaesthetic and visual/auditory. Figure 2 summarizes the affective and stylistic profile.

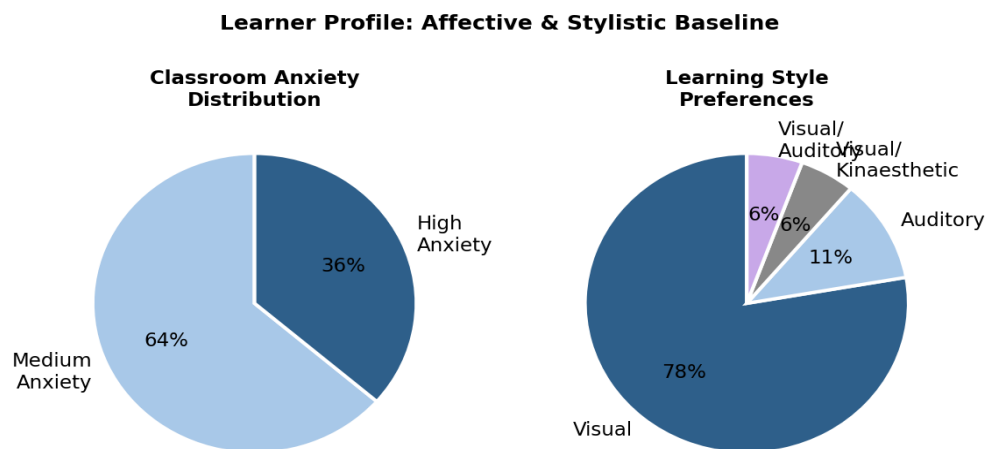


Figure 2. Learner Affective and Learning Style Profile

4.2 Pre-Test to Post-Test Change

On the pre-test, the group obtained a mean score of 9.10 (SD = 3.315, SE = 1.048). After five weeks of digital storytelling treatment, the post-test mean rose to 10.90 (SD = 2.644, SE = 0.836). The raw gain was 1.80 points. The reduction in standard deviation from 3.315 to 2.644 indicates that

scores also became slightly more consistent across the group. Table 1 presents the descriptive statistics; Figure 3 shows the pre–post comparison visually.

Table 1. Pre-Test and Post-Test Descriptive Statistics

Measure	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	10	9.10	3.315	1.048
Post-test	10	10.90	2.644	0.836

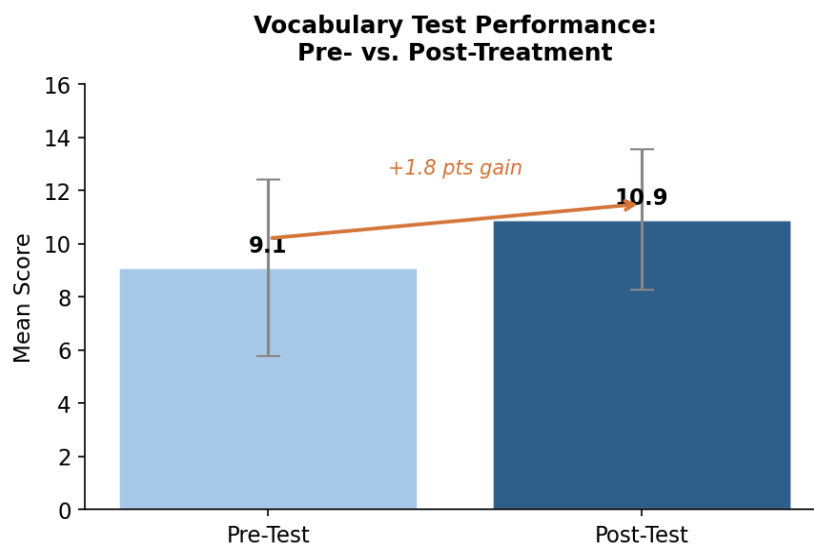


Figure 3. Pre-Test vs. Post-Test Mean Scores with Standard Deviation (error bars)

A one-sample t-test confirmed that the change was statistically significant. For the pre-test: $t(9) = 8.681$, $p = .000$, 95% CI [6.73, 11.47]. For the post-test: $t(9) = 13.038$, $p = .000$, 95% CI [9.01, 12.79]. Because the significance value was below .05 in both cases, the null hypothesis was rejected and the alternative hypothesis accepted. These results indicate that the group showed a reliable improvement in vocabulary test performance after the digital storytelling intervention. The Cronbach alpha for the vocabulary instrument was .55 across 15 items, indicating moderate internal reliability. Pearson correlation between the instrument and the target variable was .741 ($p < .01$), confirming strong construct alignment.

4.3 Learner Satisfaction

The post-treatment satisfaction scale produced consistently positive results across all four items, with an overall mean of 4.60, corresponding to the ‘strongly agree’ band. The item ‘digital storytelling was helpful in developing my vocabulary size’ received the highest mean (4.90), while ‘digital storytelling was easy to understand’ received the lowest (4.20), with 10% of learners selecting neutral and 90% positive. Table 2 presents item-level means; Figure 4 shows the distribution graphically.

Table 2. Post-Treatment Satisfaction Scale Results (N = 10)

Item	N	Mean	Interpretation
Digital storytelling was easy to understand	10	4.20	Agree
Digital storytelling was helpful in developing my vocabulary	10	4.90	Strongly Agree
I enjoyed developing vocabulary using digital storytelling	10	4.80	Strongly Agree
I am satisfied with the use of digital storytelling	10	4.50	Strongly Agree

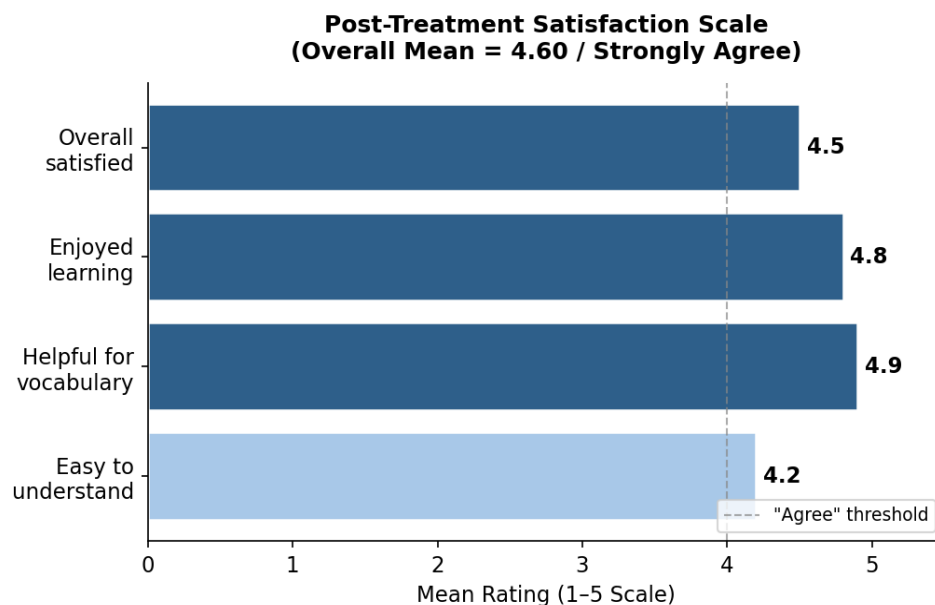


Figure 4. Learner Satisfaction Scale Means by Item (1–5 scale)

5. Discussion

The results show a coherent pattern across baseline, achievement, and attitude data. Vocabulary test scores increased from a pre-test mean of 9.10 to a post-test mean of 10.90, and the difference was statistically reliable. Learner satisfaction with the intervention was high across all four scale items. Taken together, these findings suggest that digital storytelling can support vocabulary growth among A1-level EFL learners, and that the approach is acceptable to this population.

5.1 Comprehensible Input and Vocabulary Access

The intervention appears to have worked in part because the stories were carefully matched to learners' proficiency level. This matters: for beginning learners, story length, vocabulary density, and contextual clarity determine whether input is usable or cognitively overwhelming (Thornbury, 2006;

Pinter, 2006). By selecting stories with simple language, clear visuals, and accessible moral content, the study reduced the risk of cognitive overload and made new vocabulary more processable. This is consistent with research showing that vocabulary is retained more reliably when learners encounter it in meaningful, comprehensible input rather than as isolated lists (Nation, 1990; Read, 2000; Cameron, 2001).

5.2 Multimodal Reinforcement

The intervention combined imagery, narration, and audio with printed worksheets and flashcards, creating repeated vocabulary encounters across multiple channels. This kind of multimodal design may have helped learners encode new words by linking form, meaning, and context simultaneously (Schmitt, 2000; Graves, 2006). Digital storytelling is well suited to this purpose: it presents vocabulary inside a coherent narrative while offering visual cues that support meaning inference. These findings reinforce earlier claims that digital storytelling can make lexical input more memorable and more tractable for learners at early proficiency stages (Lambert, 2002; Robin, 2006; Normann, 2011).

5.3 Engagement and Active Processing

Learners' positive feedback suggests that the treatment sustained attention and motivation rather than relying on passive memorization. This is pedagogically significant because vocabulary development at low proficiency levels often stalls when learners are asked to memorize decontextualized forms. Story-based instruction counters this by creating reasons to listen, predict, retell, and discuss, activities that promote deeper processing of new lexical items. The findings fit prior research showing that digital storytelling can raise learners' willingness to participate and their enjoyment of vocabulary learning (Leong, 2019; Sulistianingsih, 2020; Morgan, 1983; Haven, 2000). In this study, the consistently high satisfaction ratings indicate that the approach was not only acceptable but likely sustainable in an A1 institute classroom.

The lesson tasks also appeared to promote active rather than passive vocabulary engagement. After each story, learners completed fill-in-the-gap exercises, matching tasks, acted out words, and discussed vocabulary in small groups. These activities moved learners from recognition toward retrieval and use, which research consistently identifies as important for durable lexical knowledge (Read, 2000; Schmitt, 1997; Nation, 1997). This may explain why the intervention supported not only recognition but early productive access to the target vocabulary.

5.4 Implications for Teaching

Three practical implications follow from the findings. First, digital stories should be selected according to learner proficiency, interests, and emotional readiness. Simple language, clear visuals, and accessible moral content reduce cognitive load and allow learners to focus on vocabulary rather than decoding. Second, digital storytelling is likely to be most effective when paired with structured follow-up interaction. The lesson plans used in this study suggest that guided discussion and short collaborative activities transform passive viewing into active vocabulary learning. Third, teachers working with visually oriented learner groups may find digital storytelling particularly well suited, given the strong match between multimodal instruction and visual learning preferences found here.

6. Limitations

Several limitations should be kept in mind when interpreting these results. The one-group pre/post design lacks a control group, which limits causal inference. The observed vocabulary gains may have been influenced not only by the digital storytelling treatment but also by maturation, testing effects, or incidental English exposure during the five-week period. The findings are best read as evidence of improvement associated with the intervention rather than as proof that digital storytelling alone caused the gains (Campbell & Stanley, 1963; Phakiti, 2014).

The sample was small (18 participants, with a subset used for the pre/post statistics) and drawn from a single institution. This makes generalization difficult. The institutional and cultural context at Department may not reflect those of older, more advanced, or more diverse EFL populations. Finally, the self-report satisfaction scale showed moderate psychometric strength, which means attitudinal results should be treated as supplementary to the vocabulary test findings rather than as independent outcome evidence (Creswell, 2012; O’Leary, 2017).

7. Conclusion

Digital storytelling was associated with measurable vocabulary improvement and positive learner engagement among A1-level EFL learners in this institutional context. Post-test scores exceeded pre-test scores by 1.80 points on average, the difference was statistically significant, and learners rated the intervention as comprehensible, helpful, enjoyable, and satisfying. These findings suggest that digital storytelling can serve as a practical vocabulary-teaching tool for beginner EFL classes, particularly where learners favor visual input and need both linguistic support and motivational engagement.

The study contributes context-specific evidence on a relatively underexplored population in the digital storytelling literature: A1 adult learners in an institute setting. The results extend prior work on digital storytelling’s effects on vocabulary and learner engagement to this narrower, practically important context. At the same time, the findings point to clear directions for future research: studies with larger samples, control groups, multiple institutions, and longer follow-up periods are needed to establish whether the vocabulary gains observed here are durable, generalizable, and dependent specifically on the digital storytelling format rather than on increased engagement or teacher attention more broadly.

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Main Issues of Pedagogy and Psychology (MIOPAP)

ISSN: 1829-1295

Volume-4, Issue-2 (July – December 2026)

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