



DIGITAL STORYTELLING IN ENGLISH LANGUAGE LEARNING: EFFECTS ON SPEAKING FLUENCY, NARRATIVE COMPETENCE, AND STUDENTS' ENGAGEMENT

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Abstract

Speaking instruction in English as a foreign language classrooms often provides insufficient opportunities for sustained oral production, narrative organization, rehearsal, and audience-oriented communication. Digital storytelling combines spoken narration with images, text, music, and video, potentially creating a meaningful environment for developing oral language and multimodal communication. This study examined the effects of digital storytelling on students' speaking fluency, narrative competence, and classroom engagement. A mixed-method quasi-experimental design involved 88 tenth-grade students assigned to an experimental group and a control group. The experimental group completed an eight-session digital storytelling project involving story mapping, script development, oral rehearsal, multimedia production, peer feedback, revision, and public presentation. The control group received conventional spoken-narrative instruction using textbook modelling, individual practice, and classroom presentation. Data were collected through speaking performance tests, narrative competence rubrics, engagement questionnaires, observations, interviews, reflective journals, and digital story artifacts. Quantitative data were analyzed using descriptive statistics, paired-sample and independent-sample t-tests, normalized gain, and effect size. Qualitative data were analyzed thematically. The experimental group significantly outperformed the control group in speaking performance, narrative competence, and engagement. Improvements were strongest in fluency, narrative sequencing, audience awareness, and social engagement. The study concludes that digital storytelling can strengthen oral English learning when multimedia production is integrated with explicit narrative instruction, repeated rehearsal, formative feedback, and equitable access to digital tools.

Keywords: digital storytelling; speaking fluency; narrative competence; student engagement; EFL

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A. Introduction

Speaking is central to English proficiency, letting learners express ideas, negotiate meaning, and communicate for academic and social purposes. Secondary students are expected to describe experiences, retell events, and present narratives coherently, yet many struggle with hesitation, limited fluency, fragmented organization, and anxiety before an audience — difficulties intensified by short, one-time speaking tasks that leave little room to plan, rehearse, and revise.

Fluent speaking involves more than producing many words; it requires appropriate speech rate, manageable pausing, automatic access to vocabulary and grammar, and intelligible pronunciation (De Jong, Steinel, Florijn, Schoonen, & Hulstijn, 2012; Skehan, 2009). Narrative competence adds a further demand: speakers must organize events, establish characters and settings, build a complication, and sustain audience interest, since correct pronunciation alone does not guarantee a coherent story.

Digital storytelling integrates narrative composition with multimedia production, typically combining a spoken voice-over with images, text, music, and video (Robin, 2008). Sadik (2008) argues its value lies not only in the final product but in the planning, scripting, rehearsing, and revising involved.

These processes matter for language learning: scripting supports vocabulary and clause organization, rehearsal enables self-monitoring, and recording lets students notice pronunciation problems (Hafner, 2014; Oskoz & Elola, 2016). Prior studies report gains in achievement, motivation, critical thinking, writing self-efficacy, and multimodal engagement (Yang & Wu, 2012; Hung, Hwang, & Huang, 2012; Smeda, Dakich, & Sharda, 2014; Xu, Park, & Baek, 2011; Sarica & Usluel, 2016; Yamac & Ulusoy, 2016; Liang & Hwang, 2023), positioning it as a communicative rather than purely technical practice (Al-Amri, 2020; Kessler, 2018).

Digital storytelling may improve speaking through several mechanisms: story mapping scaffolds discourse organization, script drafting reduces cognitive load while speaking, repeated recording enables deliberate practice, peer feedback highlights clarity weaknesses, and sharing creates an authentic audience (Liu, Tai, & Liu, 2018; Hava, 2021). It can also strengthen behavioral,

emotional, cognitive, and social engagement (Fredricks, Blumenfeld, & Paris, 2004), particularly for personally or culturally meaningful stories (Castaneda, 2013; Anderson, Chung, & Macleroy, 2018). It is not automatically effective, though: students may over-invest in visual editing, unequal digital access can limit participation, and heavy script reliance may produce reading rather than natural narration (Quah & Ng, 2022), so teachers need a design that prioritizes language objectives over visual decoration.

Classroom-based studies examining speaking fluency, narrative competence, and engagement together remain limited; most focus on writing, motivation, or final products rather than the rehearsal and narrative-development process. This study addresses that gap through a structured digital storytelling intervention in a secondary EFL classroom.

The study aimed to examine the effects of digital storytelling on students' speaking performance, narrative competence, and engagement, while identifying the learning processes and implementation challenges involved. The research questions were: (1) Does digital storytelling significantly improve speaking performance compared with conventional instruction? (2) Which speaking and narrative components improve most? (3) Does it strengthen behavioral, emotional, cognitive, and social engagement? (4) How do students experience the process? and (5) What challenges emerge during implementation?

B. Method

This study used a mixed-method quasi-experimental design with an embedded qualitative component: a pretest-posttest control-group structure for speaking performance, narrative competence, and engagement, complemented by qualitative data on how and why changes occurred. Participants were 88 tenth-grade students (15–16 years old) from two intact classes with comparable prior achievement, one assigned as the experimental group ($n = 44$) and one as the control group ($n = 44$); both were taught by the same teacher. Sixteen experimental-group students representing high, moderate, and low achievement gains took part in follow-up interviews.

The experimental group completed eight 90-minute sessions covering topic exploration, story mapping, script development, language conferencing, oral rehearsal, multimedia production, peer review, revision, and presentation, working in groups of three or four on three-to-five-minute English digital stories from personal, cultural, or school-life themes; each student contributed spoken narration.

Speaking performance was assessed through an individual spoken-narrative test (four minutes, after a visual prompt and ten minutes' preparation), scored by two raters on an analytic rubric covering fluency, pronunciation, vocabulary, grammar, and narrative coherence (max. 100; interrater $r = .88$). Narrative competence used a five-dimensional rubric (orientation, sequencing, complication, resolution, audience awareness; $\alpha = .86$); engagement used a 20-item questionnaire across behavioral, emotional, cognitive, and social dimensions ($\alpha = .90$). Observation sheets, journals, interviews, scripts, recordings, and final stories provided qualitative evidence.

Quantitative data were analyzed using descriptive statistics, t-tests, normalized gain scores, and Cohen's d , after checking normality and homogeneity. Qualitative data were analyzed thematically, with trustworthiness supported through triangulation, member checking, and an audit trail. Ethical procedures included institutional permission, informed consent, anonymization, and guidance on copyright and privacy in digital story production.

Table 1 Digital Storytelling Instructional Cycle

Session	Core Activity	Speaking and Narrative Focus
1	Topic exploration and model analysis	Audience, purpose, narrative structure
2	Story mapping and idea selection	Orientation, complication, resolution
3	Script development	Vocabulary, grammar, cohesion
4	Language conferencing and oral rehearsal	Pronunciation, pausing, fluency
5	Voice recording and multimedia production	Expressive delivery and multimodal alignment
6	Peer review	Story clarity, audience response, feedback
7	Revision and rerecording	Accuracy, fluency, narrative coherence
8	Screening, presentation, and reflection	Public communication and self-evaluation

Source: Developed from the intervention design.

C. Finding and Discussion

1. Finding

The findings are organized into five areas — speaking performance, speaking components, narrative competence, engagement, and implementation challenges — with quantitative results presented alongside qualitative evidence.

Speaking Performance before and after the Intervention

The experimental and control groups showed comparable pretest speaking scores ($M = 62.31$, $SD = 6.52$ vs. $M = 60.95$, $SD = 6.17$; $t(86) = 1.01$, $p = .316$). After eight sessions, the experimental group's posttest mean rose to 82.63 ($SD = 7.07$) versus 70.69 ($SD = 7.62$) for the control group, a significant difference, $t(86) = 7.62$, $p < .001$, Cohen's $d = 1.62$ (large effect).

Table 2 Speaking Performance Scores of Experimental and Control Groups

Group	Test	N	Mean	SD	Interpretation
Experimental	Pretest	44	62.31	6.52	Moderate
Experimental	Posttest	44	82.63	7.07	High
Control	Pretest	44	60.95	6.17	Moderate
Control	Posttest	44	70.69	7.62	Moderate to high

Source: Processed from speaking performance test data.

The experimental group gained 20.32 points on average versus 9.75 for the control group, with normalized gains of .54 (moderate) and .25 (low) respectively — indicating that the digital storytelling cycle offered advantages beyond ordinary narrative instruction.

Table 3 Gain Scores and Inferential Comparison

Indicator	Experimental Group	Control Group	Statistical Result
Mean gain	20.32	9.75	Experimental group higher
Normalized gain	0.54	0.25	Moderate vs. low
Posttest comparison	82.63	70.69	$t(86) = 7.62$; $p < .001$
Effect size	-	-	Cohen's $d = 1.62$; large

Source: Processed from pretest and posttest data.

Improvement across Speaking Components

All five speaking components improved, with fluency gaining the most, followed by vocabulary and pronunciation. Students reduced excessive pauses, sustained longer idea units, and relied less on fragmented delivery; narrative coherence also improved as the project required repeated alignment among story map, script, narration, and visuals.

Table 4 Speaking Component Scores in the Experimental Group

Component	Maximum Score	Pretest Mean	Posttest Mean	Gain	Interpretation
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Fluency	20	11.85	16.98	5.13	Very strong improvement
Pronunciation	20	12.31	16.18	3.87	Strong improvement
Vocabulary	20	12.67	16.71	4.04	Strong improvement
Grammatical accuracy	20	12.25	15.94	3.69	Moderate to strong
Narrative coherence	20	13.23	16.82	3.59	Strong improvement

Source: Processed from analytic speaking rubric scores.

Observation and audio evidence supported this pattern: early rehearsals showed frequent word-searching and flat reading, while final productions showed clearer phrasing and transitions, with sections rerecorded after students noticed pronunciation or pacing problems — reducing performance pressure while preserving the requirement for intelligible speech.

Development of Narrative Competence

Narrative competence rose from 2.94 to 4.09 (five-point scale) in the experimental group versus 2.99 to 3.39 in the control group, $t(86) = 6.32$, $p < .001$, $d = 1.35$. The strongest gains were in event sequencing, complication development, and audience awareness.

Table 5 Narrative Competence Components in the Experimental Group

Dimension	Pretest Mean	Posttest Mean	Gain	Observed Development
Orientation	3.00	4.15	1.15	Clearer setting, characters, and context
Event sequencing	2.92	4.11	1.19	More logical temporal and causal order
Complication	2.83	4.02	1.19	More developed problem and tension
Resolution	3.04	4.10	1.06	More relevant and complete endings
Audience awareness	2.89	4.07	1.18	Stronger voice, emphasis, and visual support

Source: Processed from narrative competence rubric data.

Draft-to-final comparisons showed early scripts often listed events without causal connection; peer review prompted students to

clarify motivation and consequence. Revised versions added transitions, background information, and explicit links between visuals and narration, with the editing timeline making sequencing gaps more visible.

Effects on Student Engagement

Engagement increased more in the experimental group (3.06 to 4.08) than the control group (3.09 to 3.40), a significant difference, $t(86) = 7.05$, $p < .001$, $d = 1.50$, with social engagement scoring highest, followed by emotional and behavioral engagement.

Table 6 Engagement Dimensions after Digital Storytelling

Engagement Dimension	Experimental Posttest	Control Posttest	Interpretation
Behavioral engagement	4.18	3.43	More sustained task participation
Emotional engagement	4.21	3.45	Greater enjoyment and ownership
Cognitive engagement	3.96	3.31	More planning, monitoring, and revision
Social engagement	4.27	3.41	Stronger collaboration and peer support
Overall engagement	4.08	3.40	High vs. moderate engagement

Source: Processed from engagement questionnaire and observation data.

Behavioral engagement appeared in attendance and revision; emotional in pride and interest in sharing; cognitive in comparing wording and evaluating audio-visual fit; and social — the strongest — in role negotiation and peer coaching, though lower where one technically skilled student dominated editing.

Students' Experiences and Emerging Learning Processes

Five themes emerged from interviews, journals, observations, and artifact analysis: multimodal planning, repeated rehearsal and self-noticing, narrative ownership, peer-supported language development, and authentic audience awareness.

Table 7 Qualitative Themes in Digital Storytelling Learning

Theme	Evidence	Pedagogical Meaning
Multimodal planning	Students connected scripts, images, music, and scene order	Multiple modes clarified story meaning
Rehearsal and self-noticing	Students replayed narration and rerecorded weak sections	Recording supported fluency and pronunciation awareness

Narrative ownership	Groups selected personal, local, or youth-related stories	Meaningful topics strengthened motivation
Peer-supported language development	Students corrected wording, pronunciation, and sequence together	Collaboration expanded language resources
Authentic audience awareness	Students anticipated classmates' responses during screening	Public sharing increased communicative purpose

Source: Synthesized from interviews, reflective journals, observations, and artifacts.

Students found recording both demanding and useful: many disliked hearing their first attempts, but replay helped them notice unclear pronunciation, pauses, and flat intonation, motivating more practice. Culturally familiar or personally meaningful topics made speaking feel less artificial, and peer support was especially valuable for less confident students.

Implementation Challenges

Six main challenges were identified: unequal digital skills, limited device and internet access, time-consuming editing, excessive attention to visual effects, script dependency, and unequal group contribution. These challenges did not eliminate the benefits of digital storytelling, but they affected the quality and fairness of implementation.

Table 8 Implementation Challenges and Teacher Responses

Challenge	Classroom Evidence	Teacher Response
Unequal digital skills	Some students controlled editing while others waited	Rotating roles and basic editing tutorials
Device and internet limitations	Groups shared devices and experienced slow uploads	Offline preparation and scheduled device sharing
Time-consuming production	Editing reduced rehearsal time in several groups	Production checkpoints and restricted video length
Visual overemphasis	Students prioritized effects over narration	Language-first rubric and audio approval before editing
Script dependency	Some students read narration mechanically	Keyword cards and repeated expressive rehearsal
Unequal contribution	Technical members sometimes dominated group decisions	Individual narration requirement and peer contribution logs

Source: Synthesized from observation notes, student journals, and teacher reflection.

2. Discussion

Digital storytelling produced stronger speaking gains than conventional instruction, consistent with evidence that the approach supports language development when learners actively create digital stories rather than merely view them (Lim et al., 2022; Wu & Chen, 2020). Its distinctive contribution came from combining story planning, script refinement, repeated rehearsal, recording, peer response, and revision. Fluency showed the largest gain, likely because repeated recording and self-noticing let students revise hesitant or unclear sections across several attempts rather than a single classroom performance — reducing the simultaneous demands of content generation and delivery, consistent with Skehan's (2009) argument that planning and repetition free attentional resources for fluent performance.

Pronunciation and vocabulary improved because the digital story gave students a genuine audience-oriented reason to produce intelligible narration, consulting peers and teachers about word choice and pronunciation and then hearing the effect in context — supporting both the linguistic knowledge and processing-efficiency dimensions of speaking proficiency described by De Jong et al. (2012).

Narrative competence improved substantially, particularly in sequencing and complication development, as story maps, scripts, and editing timelines made discourse organization visible and required students to align audio, image, and event sequence (Oskoz & Elola, 2016; Anderson et al., 2018). Audience awareness also improved: students anticipated classmates as viewers rather than only the teacher, considering whether an opening engaged attention or a resolution communicated its message — an orientation Castaneda (2013) found valuable, transforming speaking into purposeful communication.

Engagement increased across all four dimensions of Fredricks et al.'s (2004) framework, supported by production milestones, topic ownership, planning, revision, and peer collaboration (Hava, 2021; Liu et al., 2018; Smeda et al., 2014). This also aligns with self-determination theory: competence through improved recordings, relatedness through shared problem-solving, and autonomy through topic and design choices (Deci & Ryan, 2000) — though unrestricted autonomy sometimes shifted attention toward decorative effects, underscoring the need for clear assessment criteria.

Multimedia use needs careful framing: per Mayer's (2021) principle that multimedia supports learning only when words and images serve cognitive processing, stronger products used visuals to

establish settings or clarify meaning, while weaker ones added decoration without communicative function. Peer feedback likewise contributed to language and narrative development, helping students detect unclear sections and pronunciation issues individual writers overlooked (Hwang, Zou, & Wu, 2023), and should be structured around focused criteria rather than general praise.

The study also confirms constraints noted in prior research (Nair & Yunus, 2021; Moradi & Chen, 2019; Quah & Ng, 2022): uneven technical skills sometimes concentrated decisions in one group member, offset by rotating roles; scripts supported accuracy but led some students to read mechanically, suggesting keyword prompts in later rehearsals; and time management was addressed by limiting story length, setting checkpoints, and approving narration before editing, since online and offline conditions affect outcomes differently (Rahimi & Yadollahi, 2017).

These findings suggest a language-first model beginning with communicative objectives, then story mapping, language support, rehearsal, recording, peer feedback, and editing, with assessment weighted toward fluency, intelligibility, and narrative organization rather than visual sophistication. The approach also supports culturally responsive learning, as students drew on local stories and personal experience to represent familiar identities in English (Anderson et al., 2018). Overall, digital storytelling is most effective as a structured language-learning process rather than a video-production activity: the artifact motivates students, but learning occurs through planning, rehearsal, feedback, and revision (Robin, 2008; Sadik, 2008; Yang & Wu, 2012).

D. Conclusion

This study examined the effects of digital storytelling on secondary students' speaking fluency, narrative competence, and engagement. The experimental group improved from a pretest mean of 62.31 to a posttest mean of 82.63, versus 60.95 to 70.69 for the control group, $t(86) = 7.62$, $p < .001$, $d = 1.62$. Fluency showed the strongest gain, followed by vocabulary, pronunciation, grammatical accuracy, and narrative coherence, while narrative competence improved significantly in sequencing, complication development, and audience awareness. Engagement rose across all four dimensions, with social engagement highest. Qualitative evidence linked these outcomes to multimodal planning, repeated recording,

peer feedback, topic ownership, and authentic audience awareness, while unequal digital skills, device limitations, time-consuming editing, visual overemphasis, script dependency, and unequal group contribution remained challenges. Digital storytelling can strengthen oral English learning when teachers prioritize language objectives, provide explicit narrative scaffolds, require repeated rehearsal, structure peer feedback, and ensure individual speaking responsibility. Future research should examine longer interventions, delayed retention, automated pronunciation feedback, and culturally responsive digital storytelling across proficiency levels.

Declaration of AI-Assisted Technologies

In preparing this manuscript, the authors used AI-assisted tools only to improve English language quality, grammar, readability, and academic expression. The tools were not used to generate data, conduct analysis, produce findings, or draw conclusions. All conceptual arguments, interpretation, and conclusions remain the authors' responsibility, and all AI-assisted outputs were reviewed and verified for accuracy and originality.

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