

Impact of Digital Storytelling on Enhancing Learners' Speaking Proficiency in the Saudi EFL Context

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Abstract: As with many digital tools and methods, Digital Storytelling (DST) can enhance the EFL learners' speaking proficiency in many aspects. Arab EFL learners are not an exception. **Objective:** To explore the effectiveness of digital storytelling (DST) as a strategy for enhancing speaking proficiency among EFL learners at Saudi universities. **Methodology:** A mixed-method approach based on 8-week training in DST was used. A sample of 145 EFL learners and five teachers from two Saudi universities were recruited in two rounds. First, the intervention was designed with pre- and post-tests to measure changes in the participants' speaking proficiency. The intervention included creating some multimedia stories, including audios, visuals, and narratives. The training was followed by a survey to gather data on the learners' perceptions about DST and its impact on their oral proficiency. In the second round, five teachers were interviewed to identify their insights about DST's impact, benefits and barriers of implementation. **Key Findings:** The results showed significant improvements after the intervention. Results showed that the learners had positive perceptions towards using DST for improving their speaking proficiency. Besides, the teachers reported positive effects of using DST on learners' speaking proficiency with some technical challenges that encounter the learners. **Conclusion:** The study generally supports using DST to improve the linguistic and communicative skills of the EFL learners. It promotes active participation and reduces learners' anxiety. **Recommendations:** Therefore, incorporating innovative technologies for DST in EFL instruction is recommended within a scalability of DST framework across diverse learner populations.

Keywords: Digital Storytelling, Speaking Proficiency, EFL Learners, Language Pedagogy, Saudi Context

أثر السرد القصصي الرقمي على تعزيز كفاءة المتعلمين في مهارة التحدث في سياق تعلم اللغة الإنجليزية كلغة أجنبية في السعودية

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الملخص: كما هو الحال مع العديد من الأدوات والأساليب الرقمية، يمكن للسرد الرقمي (DST) أن يعزز كفاءة متعلمي اللغة الإنجليزية كلغة أجنبية في مهارة التحدث في جوانب متعددة. ولا يُستثنى المتعلمون العرب من ذلك. **الهدف:** استكشاف فعالية السرد القصصي الرقمي (DST) كاستراتيجية لتعزيز الكفاءة الشفوية لدى متعلمي اللغة الإنجليزية كلغة أجنبية في الجامعات السعودية. **المنهجية:** تم استخدام منهج مختلط قائم على تدريب مدته ثمانية أسابيع في السرد القصصي الرقمي. شملت العينة 145 متعلماً للغة الإنجليزية وخمسة مدرسين من جامعتين سعوديتين، وتم تنفيذ البحث على مرحلتين، في المرحلة الأولى، تم تصميم التدريب باستخدام اختبارات قبلية وبعديّة لقياس التغير في كفاءة التحدث لدى المشاركين، وقد تضمن التدريب إعداد قصص رقمية متعددة الوسائط تشمل عناصر صوتية وبصرية وسردية، وعقب التدريب، تم توزيع استبانة على الطلاب لجمع بيانات حول تصوراتهم تجاه السرد القصصي الرقمي وتأثيره على كفاءتهم الشفوية. وفي المرحلة الثانية، أجريت مقابلات مع خمسة مدرسين لمعرفة آرائهم حول أثر السرد الرقمي وفوائده ومعوقات تطبيقه. **النتائج:** أظهرت النتائج وجود تحسن ملحوظ قبل وبعد التدريب، كما أظهرت النتائج أن المتعلمين يمتلكون تصورات إيجابية نحو استخدام السرد القصصي الرقمي لتحسين كفاءتهم في التحدث، وأكد المعلمون كذلك وجود آثار إيجابية لاستخدام السرد القصصي الرقمي على مهارات التحدث لدى المتعلمين، مع الإشارة إلى بعض التحديات التقنية التي واجهت المتعلمين أثناء التطبيق. **الاستنتاجات:** تدعم الدراسة عموماً استخدام السرد القصصي الرقمي في تحسين المهارات اللغوية والتواصلية لمتعلمي اللغة الإنجليزية كلغة أجنبية، إذ يعزز المشاركة الفاعلة ويقلل من القلق أثناء التحدث. **التوصيات:** وبناءً على ذلك، توصي الدراسة بدمج التقنيات المبتكرة للسرد القصصي الرقمي في تعليم اللغة الإنجليزية، ضمن إطار قابلية التوسع ليشمل شرائح متنوعة من المتعلمين. **الكلمات المفتاحية:** السرد القصصي الرقمي، مهارة التحدث، متعلمو اللغة الإنجليزية، تعليم اللغة، السياق السعودي

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Background

Language, defined as a means of global communication, needs to be taught with importance to its oral and written skills. Digital technology has made this possible by enabling language learning digitally ([Al-Kadi & Ali, 2024](#); [Almaktary & Al-Kadi, 2017](#); [Dmitrenko & Akhmadullin, 2023](#)) and multimodally ([Alonso et al., 2015](#)). However, it is to be noted that digital tools that excel in integrating visual and auditory elements might not adequately cater to kinesthetic or tactile senses during oral practice.

When it comes to English as a medium of international contact language, its role in academia, professionalism, and in social settings is obvious. However, oral skills in several contexts remain a challenge to language learners. whereas grammar could be learned from a book of grammar, oral skills are a matter of constant training in using the language ([Al-Amri, 2020](#); [Huang, 2023](#)). [Nasiri & Gilakjani \(2016\)](#) contend that speaking is often considered the most challenging skill for EFL learners. During speech, in contrast to reading and writing, processing of linguistic and social cues in real time is necessary to not only understand the concept but also the meaning behind it.

Seemingly, EFL students with limited exposure to communicational English are also challenged by traditional approaches in contexts wherein grammar translation method is prevalent and speaking is the less developed skill. Its major focus is on grammatical structures than communicative practice. Hence, speaking is subverting, A teacher-centered classroom focuses on memorizing grammar rules ([Castillo-Cuesta et al., 2021](#)) and vocabulary ([Mohammed, 2022](#)) rather than using the language for communication (both spoken and written). [Al-Hassaani & Al-Saalmi \(2022\)](#) pointed out the obstacles that stem from late exposure to English, insufficient classroom practice time, and lack of motivation to speak outside the classroom. [Pathan et al. \(2014\)](#)

stated that EFL learners, especially in Arab countries, encounter many challenges when they communicate in English, such as mother tongue interference ([LiStyani & Al-Kadi, 2022](#)). In the context of Saudi Arabia, these challenges are evident even though EFL education in Saudi Arabia is embedded in the national curriculum which aligns the country's strategic priority to equip the students with skills to engage with the world. Nonetheless, Saudi EFL learners face such challenges, which make them incapable of fluency and self-assurance in utilizing oral English effectively.

Such as lack of practice opportunities, fear of making mistakes, and a bias towards writing and grammar rather than speaking contribute to difficulties of speaking skills in the country. Language educators have been searching for ways to overcome such a challenge ([Al-Kadi & Ali, 2024](#)). The advances in digital technology ([Dmitrenko & Akhmadullin, 2023](#)) gave way to digital storytelling (DST) ([Bloch, 2018](#)).

According to [Hřebáčková & Štefl \(2022\)](#), DST is a multimodal activity grounded in social constructivism. It emphasizes learning through dialogue and shared interpretation. This strategy is an effective tool for improving English speaking skills among students ([Usmani et al., 2025](#); [Bai & Xian, 2024](#); [Nair & Yunus, 2021](#); [Fu et al., 2021](#); [Zhussupova & Shadiev, 2023](#)). Other studies including [Du et al. \(2024\)](#), [Zamzam \(2020\)](#), [Elyani et al. \(2022\)](#) showed a positive impact of DST on the learners' speaking abilities. As a pedagogical practice, DST blends the traditional method of storytelling ([Mohammed, 2022](#)) with multimedia tools.

DST is different from traditional storytelling, where the former uses digital tools to enrich the narrative experience, whereas the traditional one relies mainly on spoken or written words ([Modhish & Al-Kadi, 2016](#)). Hence, DST enhances the learners' communication skills, collaboration and critical thinking by involving them in creating and presenting stories. As the learners bring

their backgrounds and worldviews to create powerful stories, DST fosters their cultural and linguistic awareness.

As an innovative approach, DST has been slow getting a way to Saudi EFL classrooms. Yet, many Saudi EFL learners emerge with little ability to speak, despite having studied English for years ([Khan et al., 2018](#); [Bani Younes & Albalawi, 2016](#)). Still, the emphasis is on accuracy over fluency, and written language over spoken. They may enable the learners to score good marks in the written exam but will surely not be a one-stop solution for real-world communication. Capitalizing on the communicative approach ([Al-Amri, 2020](#)) and learner-engagement in learning ([Huang, 2023](#); [Wei et al., 2018](#)), this study digs into the effectiveness of DST on improving speaking ability of Saudi EFL students, which is suggested in lieu of the traditional teaching methods as DST creates a more engaging learning environment.

Objectives

The objectives of this study are twofold:

1. Investigating the impact of DST on EFL learners' communicative competency based on EFL learners' perceptions towards DST as a tool for enhancing EFL speaking.
2. Exploring the main obstacles encountered when incorporating DST into speaking instruction within Saudi EFL settings.

Research Questions

For achieving the objectives of the study, the following questions were posed:

1. To what extent does the DST improve the speaking proficiency of EFL learners at Saudi universities?
2. What are the Saudi EFL learners' perceptions towards the use DST in their EFL learning experience?
3. What are the advantages and challenges that Saudi EFL learners face when using digital storytelling (DST) in EFL classrooms?

LITERATURE REVIEW

This study is based on constructivist learning

theory which focuses on the learner's active role in constructing knowledge through meaning engagement and experiences, contrasting with traditional learning methods ([Mayer, 2009](#)). According to constructivism, learning is better when learners actively process their learning ([Gupta, 2011](#)).

However, the critical perspectives on constructivist approaches offered by [Mayer \(2009\)](#) and [Gupta \(2011\)](#) may strengthen the constructivist foundations in [Fosnot \(2013\)](#) and [Abderrahim & Plana \(2021\)](#). [Fosnot \(2013\)](#) emphasized knowledge construction through active, social, and experiential processes. [Abderrahim & Plana \(2021\)](#) extended this perspective by showing how these principles translate into digital storytelling. In view of all these together, DST stand as valuable method of learning grounded in constructivist and learner-centered practice.

From a social constructivist perspective, language learning develops through interaction, collaboration, and guided support. [Vygotsky \(1978\)](#) emphasized that learners can extend their abilities through interaction with more knowledgeable individuals within the zone of proximal development. DST reflects these principles by engaging learners in shared meaning-making. It promotes linguistic growth alongside interpersonal and cultural skills, while also acknowledging that effective scaffolding is essential for balanced participation. Basically, DST involves group work allowing learners to share their ideas and learn from each other. This collaborative approach equips learners with linguistic, interpersonal and cultural abilities ([Wei et al., 2018](#); [Zamzam, 2020](#)).

In addition, this study relies on multimodal learning theories which recognize that people learn through multiple sources of perception ([Alonso et al., 2015](#); [Gregori-Signes, 2014](#)). This multimodal approach supports various learning preferences and builds learners' participation and memory of language which works by fusing images, words audio into a

richer immersive experience ([Kortegast & Davis, 2017](#)). By incorporating visual, auditory and textual elements, DST creates a rich learning environment. It enables students to process and produce language effectively when integrating visuals, sounds and animations with their speaking skills. DST fosters self-reflexivity, enabling learners to apply abstract theories to personal experiences ([Kortegast & Davis, 2017](#)). [Gregori-Signes \(2014\)](#) reports that this approach promotes multimodal literacy in education and encourages a socio-educational focus. According to [Alonso et al. \(2015\)](#), Digital stories combine various multimodal elements, including voice, images, and music, to construct narratives that can integrate factual, emotional and cultural information.

This study is also underpinned by narrative-based learning approaches that claim storytelling is an effective tool for enhancing learning outcomes in various educational contexts ([Bruner, 1991](#)) as well as in EFL and digital storytelling (DST)-specific evaluations. The larger area of narrative-based learning (e.g., [Bruner, 1991](#); [Sarbin, 1986](#)) connects to fundamental conceptions of narrative as a core means of human meaning-making. [Stranieri and Yearwood \(2008\)](#) and [McQuiggan et al. \(2008\)](#) provide relevant insights into narrative-driven interactive and story-based learning environments. Narrative-based learning can increase self-efficacy and interest. When the learners interact with using storytelling, they show narrative profiles that are associated with desirable learning outcomes ([Lee et al., 2010](#)).

DST and Language learning

DST merges traditional storytelling with new methods of using multimedia tools such as audios, videos, images and texts. This approach empowers the learners to self-express, provide creativity and use authentic language when creating and sharing their own stories. DST enhances the learners' narrative experience by

incorporating modern technology, so it can make it appealing to today's digitally literate learners.

It should be noted that effective anxiety reduction in learners relies on well-structured scaffolding. However, several barriers can hinder this process, including time constraints, rigid curriculum requirements, insufficient technological resources, teachers' limited digital and technical competencies, increased workload, and the risk of superficial or tokenistic implementation.

Researchers such as [Huang \(2023\)](#), [Wei et al. \(2018\)](#), [Wulandari et al. \(2016\)](#) and [Ullah et al. \(2021\)](#) show that DST improves speaking skills by involving learners in the process of making digital stories, which combines many language skills. DST facilitates speaking skills leading to enhanced feelings of confidence and lower levels of anxiety. DST motivates and engages learners in language learning, and it is generally perceived as interesting and enjoyable ([Al Khateeb, 2019](#)).

Despite these promising effective and linguistic benefits, DST should not be viewed as a standalone solution or panacea for dramatically improving speaking abilities. As one of the most effective technology-mediated approaches for cultivating 21st-century literacies, positive affective factors (such as increased confidence and motivation, alongside decreased anxiety), and productive language skills, its full potential is realized only when it is thoughtfully and strategically integrated into a comprehensive, well-scaffolded speaking curriculum rather than implemented in isolation.

The aspect of anxiety stands in the way of speaking proficiency, which requires lexical richness that, this study argues, are promoted by DST through telling stories. DST allows language learners to deploy descriptive language, transitions words and the appropriate verb tenses, thereby developing linguistic mastery. Rehearsing and recording of stories can also support the learners' fluency and

pronunciation as they practice their scripts repeatedly receiving feedback to improve their story delivery. [Mirza \(2020\)](#) and [Yang et al. \(2022\)](#) indicate that this iterative approach mitigates speaking anxiety and bolsters self-confidence, both essential drivers of oral proficiency.

It also accommodates affective barriers to speaking such as fear of mistakes, inducing learners to use language and create a sense of positiveness towards speaking by presenting a creative and non-threatening environment [Karimova et al. \(2023\)](#) and [Castillo-Cuesta et al. \(2021\)](#) reported positive effects of DST on vocabulary and grammar learning. These two studies approved that English vocabulary and grammar knowledge is significantly improved when using DST compared to traditional teaching methods. [Leong et al. \(2019\)](#) reported that DST creates interest in learning and enhances vocabulary acquisition among ESL learners. [Castillo-Cuesta et al. \(2021\)](#) asserted that DST engages learners more effectively in language learning activities, suggesting that DST can be a valuable tool for improving the learners' grammar, vocabulary and writing skills.

DST in EFL classroom

DST can be used effectively in the language classroom to enhance critical thinking, foster literacy practices and promote active learning. Recent studies such as [Mesa and Alejandro, \(2020\)](#) and [Nassim \(2018\)](#) argued for using digital storytelling (DST) in classrooms to enhance learners' creative skills, writing, speaking, and to increase engagement and motivation. They claimed that DST provides an effective approach to language instruction, particularly for culturally and linguistically diverse students. As reported by [Grigsby et al. \(2015\)](#), the integration of multimedia helps students combine personal narratives with digital content and negotiate their identities. In addition, [Bloch \(2018\)](#) mentioned that DST also introduces students to academic writing norms.

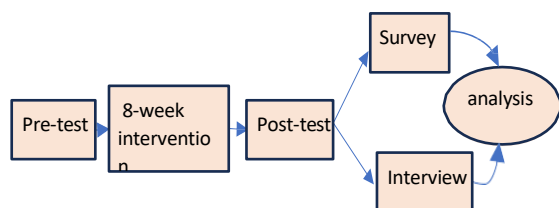
Nevertheless, the positive effects are sometimes short-term and may be influenced by novelty, motivation from creativity, technology, or task repetition rather than DST specifically. That is to say, long-term transfer to spontaneous, real-world speaking remains under-researched.

Based on this review of literature, the present investigation draws on relevant studies ([Bai & Xian, 2024](#); [Du et al., 2024](#); [Elyani et al., 2022](#); [Fu et al., 2021](#); [Nair & Yunus, 2021](#); [Usmani et al., 2025](#); [Zamzam, 2020](#); [Zhussupova & Shadiev, 2023](#)) to closely examine effectiveness of DST in the local context. By doing this, it extends research on viability of DST for improving EFL learning. It also strengthens evidence of other studies in the Saudi context ([Al Khateeb, 2019](#); [Al-Amri, 2020](#); [Eissa, 2019](#); [Usmani et al., 2025](#)). This present study adopts a DST-based intervention framework, which positions it among the few empirical studies of DST in EFL contexts. Its novelty lies in applying DST as a teaching tool and structured interventive design for enhancing communicative competence through learner-centered storytelling practices.

Method

A mixed-method research design was employed. Quantitative and qualitative methods were employed to provide a comprehensive understanding of DST's effectiveness of EFL learner's speaking proficiency. DST supports both cognitive and affective dimensions of language learning. It promotes reflective practice, learner autonomy, and confidence in speaking, making it particularly suitable for interventions aimed at improving oral skills ([Hung, 2019](#)). The study is designed as a post and pre-tests to examine the learners' improvements in speaking proficiency. This was followed up with survey and interview to gather information about the learners' perceptions about DST for enhancing their speaking proficiency. The design framework of this study can be presented visually (Figure 1).

Figure (1): Research design and data collection framework



Participants

Using purposive sampling, 145 EFL students enrolled in BA English language programs with diverse language proficiency levels and academic backgrounds from King Khalid University and University of Bisha were selected. This technique is appropriate in qualitative and mixed-methods research where depth of understanding is prioritized over generalizability (Patton, 2014). Hence, the purpose of this sampling is to ensure the selected participants have specific characteristics relevant to the objectives of the study. The selected samples had minimal exposure to DST as a learning tool. The participants were informed about the objectives of the study and assured of confidentiality. They were also informed that they could withdraw at any stage from the study.

After providing their consent, the participants completed a pre-test designed to measure their speaking proficiency. Their performance in fluency, accuracy, pronunciation, and coherence was assessed using a rubric adapted from the Common European Framework of Reference for Languages (CEFR), covering proficiency levels A1–B2 (Council of Europe, 2020). Quantitative measures capture the gains in fluency, accuracy, pronunciation, and coherence, while qualitative data help in explaining how DST supports these improvements through processes like rehearsal, script refinement, and multimodal scaffolding, as well as affective benefits such as reduced anxiety.

Instruments

The study used training sessions on DST with pretest and posttest. This was followed by a survey and teacher interviews. Each of these tools are described below.

Intervention

A DST-based intervention of eight weeks took place during the 2nd semester 2024-2025 (from January 19, 2025, to March 13, 2025). Before the intervention, the participants were introduced to the tools that they would use, namely *Toontastic* and *Storybird*. After an 8-week intervention, they sat for a post-test to measure the participants' improvement in speaking proficiency. In evaluating the participants' performance in the post-test, the same rubric of the pre-test was used.

Post-Training Survey

To triangulate the test findings, a 20-item post-intervention survey was administered after the intervention to gather feedback from the participants about their DST experience and their perceptions about DST effectiveness in enhancing their speaking proficiency. It was based on a 5-point Likert scale. The items examined five constructs central to speaking development:

1. Motivation and Engagement (items 1-5)
2. Fluency and Pronunciation (items 6-11)
3. Linguistic Development (vocabulary and grammar) (items 12-13)
4. Confidence and Self-Efficacy (items 14-17)
5. Challenges and Technical Issues (items 18-20)

The reliability of the survey was checked using Cronbach's Alpha. It was found that the alpha value was .881 across all the 20 items. This value indicates that there is a high consistency among the items of the survey. The survey was treated as a unified perceptual measure and used descriptively, so the overall internal consistency ($\alpha=.881$) was deemed appropriate, as subscales were not analyzed independently. Validity of the scale was supported through the review of subject-matter

experts who assessed clarity, relevance, and coverage of the construction of the tool. Based on their feedback, minor revisions were made. Besides, a pilot test was conducted with a small sample to evaluate item comprehensibility and identify any issues before full data collection.

Interview

An interview with five teachers was conducted to capture the educators' perspectives on DST's practicality, benefits and barriers to implementation. To complement the quantitative and survey results, semi-structured interviews were conducted with five EFL instructors who teach the 145 students during the DST intervention. Their professional perspectives provided valuable corroborative evidence on the pedagogical impact of DST on students' speaking development.

Data Analysis

After gaining the participants' scores in the pre- and post-tests and collecting the participants responses on the survey, the data was coded and analyzed statistically. For the pre-and-post-test speaking scores, a paired samples t-test was used to examine statistically significant differences in speaking proficiency. Prior to running the test, the assumptions were checked by assessing the normality of the difference scores using Shapiro–Wilk tests and Q–Q plots, and by screening for outliers through boxplots and standardized residuals. When assumptions were not met, the non-parametric Wilcoxon signed-rank test was applied as an alternative. In all cases, effect sizes (Cohen's d_z with 95% confidence intervals, and rank-biserial correlation for non-parametric analyses) were reported to indicate the magnitude of change.

For the participants' survey responses, descriptive statistics were used to identify their perceptions of their DST experiences and the perceived effectiveness of DST in enhancing speaking proficiency.

Likewise, the analysis of educators' interviews involved reflexive thematic analysis. The procedure included

familiarization with the transcripts, generating initial inductive codes, organizing these codes into preliminary themes, and reviewing, refining, and naming themes. A codebook was iteratively developed, and coding decisions were documented to maintain transparency.

Results

The results are arranged in this section. They correspond to the research questions one by one for a smooth flow of the analysis and discussion. The numeric data are tabulated.

RQ1: To what extent does the DST improve the speaking proficiency of EFL learners at Saudi universities?

To check the effectiveness of DST on EFL learners' speaking skills, the pre- and post-test results were used to determine the impact of DST intervention on learners' proficiency. Both tests were the same to allow a direct comparison of progress. The descriptive statistics of the learners' results in both tests are shown in the following table.

Table (1): Descriptive statistics of pre- and post-test speaking scores

Test	Mean	SD
Pre-test	58.34	10.45
Post-test	75.12	9.72

The results show that there is a marked progress in the mean speaking proficiency score from $M = 58.34$ ($SD = 10.45$) in the pre-test to $M = 75.12$ ($SD = 9.72$) in the post-test. A paired sample t-test was used to recognize the significance of the improvement in speaking proficiency between the pre-test and post-test. The results are shown in the following table.

Table (2): Paired sample T-test results

Test	Mean Difference	t-value	df	p-value
Pre-test – post-test	16.78	21.35	144	.000

The t-test shows that there is a statistically significant difference between the learners' speaking proficiency in the pre-test and post-test ($p=.00$) and a t-value of -21.35 with 144 degrees of freedom. This indicates that the

improvement in speaking proficiency from the pre-test to the post-test did not probably occur by chance, but a result of the DST intervention. Each of the subcomponents - fluency, accuracy, pronunciation, and coherence - was scored out of 10 and the results were analyzed to examine where the most substantial gains occurred. Table 3 shows the results.

Table (3): Paired-Samples t-Test results for speaking sub-skills

	Pre-test M	Post-test M	t(144)	p	d
Fluency	5.09	7.78	16.04	< .001	1.33
Accuracy	4.92	7.58	17.12	< .001	1.42
Pronunciation	5.18	7.49	15.26	< .001	1.25
Coherence	4.95	7.42	16.86	< .001	1.38

All subskills of speaking improved significantly ($p < .001$). Accuracy showed the greatest gain ($d = 1.42$), closely followed by coherence ($d = 1.38$), fluency ($d = 1.33$), and pronunciation ($d = 1.25$). All values denote very large effect sizes.

The results show d ranges from 1.25 to 1.42, denoting very large effect sizes. This indicates that improvement from pre- to post-test in all speaking sub-skills (fluency, accuracy, pronunciation, and coherence) was substantial and educationally meaningful. So, it can be concluded that the intervention had a strong positive impact on learners' fluency, accuracy, pronunciation, and coherence.

Before the intervention, learners often paused and used fillers. This shows limited fluency ($M = 5.09$), while after the intervention, their fluency improved markedly ($M = 7.78$), indicating smoother and more continuous speech. Repeated story creation and narration helped the learners reduce hesitation and enhance speech rhythm.

Overall, DST fostered language automaticity through meaningful practice and repetition. The pre-test accuracy mean (4.92) showed that the learners encounter some difficulties with grammar and word order, but after the DST tasks, the mean rose to 7.58. This reflects grammatical and lexical control that might be attributed to DST. The large effect

size ($t(144) = 17.12$, $p < .001$, $d = 1.42$) pedagogically confirms that DST enhanced accuracy. Pronunciation scores rose from 5.18 to 7.49 ($t(144) = 15.26$, $p < .001$, $d = 1.25$), showing significant improvement. This progress in light of DST's self-recording feature arguably enables students to identify and correct mispronunciations. Repeated listening and editing enhanced their phonological awareness and speech naturalness. Teachers noted clear gains in both sound accuracy and prosodic features like stress and intonation. Coherence improved notably from 4.95 to 7.42 ($t(144) = 16.86$, $p < .001$, $d = 1.38$). Before DST, the learners' speech was fragmented and lacked clear transitions. After the intervention, their storytelling became more logically sequenced and cohesive. DST's narrative structure helped them organize ideas and connect language with visual elements effectively. Given these findings, the evidence can be viewed as promising exploratory evidence rather than definitive proof of DST's mechanisms.

The overall test findings can be interpreted as preliminary empirical evidence that the DST approach substantially enhanced EFL learners' speaking proficiency. The gains observed are pedagogically meaningful because they were achieved within a single academic term. The large effect size ($d = 1.81$) implies that DST's impact is comparable to or greater than that of more traditional communicative interventions. The increases in accuracy and coherence further demonstrate that learners were not merely speaking more but speaking better – using grammar and vocabulary more precisely and structuring speech more logically. In essence, these findings suggest that DST facilitated an interplay between fluency and form, enabling students to internalize linguistic rules through expressive, multimodal performance rather than isolated drills.

Teachers confirmed improvement in learners' fluency through the interview results.

The teachers' accounts revealed consistent patterns of improvement in linguistic performance, engagement, and classroom dynamics, alongside a few pragmatic challenges regarding time and technology. Teachers unanimously noted clear improvement in students' fluency after the DST intervention. They observed that learners spoke more naturally, sustained speech longer, and relied less on Arabic fillers. One teacher explained that before the intervention, "many students tended to stop after short sentences or rely on Arabic fillers," whereas after DST, "they could continue expressing ideas in English without losing the thread." This progress was attributed to repeated practice and reflection during story creation, which enhanced automaticity and coherence. The teachers' observations confirmed the statistical results ($t(144) = 16.04, p < .001, d = 1.33$),

showing that DST effectively promoted smoother and more continuous speech.

Teachers observed notable improvement in students' grammar and vocabulary after the DST intervention. Learners began self-correcting errors and showing greater attention to grammatical accuracy while rehearsing their stories. This aligns with strong statistical gains in accuracy ($t(144) = 17.12, p < .001, d = 1.42$), reflecting that DST promoted purposeful editing and meaning-focused language use. Students also displayed richer vocabulary, using expressive and context-relevant terms, showing DST's effectiveness in reinforcing lexical development through authentic communication.

Four teachers reported major improvement in students' pronunciation and prosody after using DST. Through repeated self-recording and listening, learners became more aware of their pronunciation, leading to clearer and more natural speech. Teachers also observed higher public-speaking confidence, as even shy students spoke more expressively by the end of the intervention. Pedagogically, DST offered a supportive environment that combined

preparation and performance, reducing anxiety and promoting authentic oral communication. Teachers consistently observed improved coherence and logical flow in students' speech after the intervention. Learners began organizing their stories with clear beginnings, developments, and conclusions, using sequencing markers naturally. This aligns with the strong statistical gains in coherence ($d = 1.38$), confirming that DST enhanced students' ability to structure discourse effectively. Pedagogically, DST fostered organizational competence by allowing learners to internalize coherence through authentic narrative practice rather than rote instruction.

RQ2: What are the Saudi EFL learners' perceptions towards the use DST in their EFL learning experience?

The survey results outlined in Table 4 summarize the learners' perceptions. They can divide into perceptions of motivation and engagement, fluency and pronunciation, linguistic development (vocabulary and grammar), and confidence and self-efficacy. The descriptive statistics reveal a consistently positive perception of DST across all subdomains, with mean scores ranging between 3.77 and 4.50 on a 5-point Likert scale, suggesting high overall agreement among participants.

Table (4): Descriptive statistics of the survey

	N	Items	Mean	Standard Deviation
Motivation and Engagement	1	DST increased my motivation to learn English.	4.36	0.63
	2	DST made learning English more enjoyable.	4.44	0.61
	3	I liked participating in English tasks because of DST.	4.33	0.65
	4	DST made me more excited about practicing speaking.	4.29	0.68
	5	DST kept me interested throughout the course.	4.22	0.71
Fluency and Pronunciation	6	DST improved my speaking fluency.	4.46	0.57
	7	I felt more comfortable speaking English after DST.	4.41	0.59
	8	Creating my own story enhanced my fluency.	4.47	0.54
	9	DST allowed me to practice speaking in diverse contexts.	4.19	0.74
	10	I spoke more frequently in English because of DST.	4.24	0.70
	11	DST improved my pronunciation.	4.20	0.68
Linguistic Development (Vocabulary & Grammar)	12	DST helped me use new vocabulary effectively.	4.32	0.65
	13	DST helped me use grammar accurately while speaking.	4.16	0.73
Confidence and Self-efficacy	14	My overall speaking ability improved after DST.	4.43	0.60
	15	DST encouraged expressive and creative speaking.	4.50	0.52
	16	DST increased my confidence in speaking English.	4.39	0.61
	17	I feel more able to use English in real-life situations.	4.45	0.58

The first part in the table relates to motivation and engagement. This part includes five items, and they recorded means from 4.22 to 4.44, indicating that DST substantially enhanced students' motivation and sustained engagement. Participants perceived DST as making English learning more enjoyable and stimulating. The use of storytelling encouraged emotional investment and maintained interest, aligning with constructivist views that learning improves when students connect personally with content. The second part relates to fluency and pronunciation. It includes six items (6–11) and yielded strong mean values (4.19–4.47), reflecting learners' belief that DST improved their speaking fluency, comfort, and pronunciation. The narrative and iterative rehearsal process allowed for repeated speaking practice in authentic contexts, supporting communicative competence development. The third part is about linguistic development (vocabulary and grammar). It includes two items (12–13) and showed means of 4.16 and 4.32, suggesting that DST promoted deeper lexical and grammatical awareness. The process of scriptwriting required learners to select accurate vocabulary and structures to express meaning clearly. This highlights DST's capacity to integrate form-focused learning within communicative practice, bridging linguistic accuracy with meaningful language use. The fourth part is about confidence and self-efficacy. It includes four items (14–17) which scored the highest means (4.39–4.50), emphasizing DST's strong impact on students' self-confidence and expressive ability. Learners felt more able to use English in real-life contexts and perceived visible progress in speaking performance. Such outcomes suggest that DST fosters learner autonomy and a growth mindset, reducing affective barriers to oral communication.

RQ3: What are challenges of Saudi EFL learners in using DST in the EFL classrooms?

This question dwells on challenges. Although items 18–20 (Table 5) recorded

slightly lower means (3.77–3.90), they remain above the neutral midpoint, implying manageable challenges. Initial difficulties with digital tools and time investment were noted, yet they did not overshadow the overall positive experience. These findings underscore the importance of adequate technical training and support in future DST implementations.

Table 5. EFL Learners' perceptions of the Challenges of using DST in their Context

	N	Items	Mean	Standard Deviation
Challenges and Technical Issues	18	I found digital tools difficult to use initially.	3.83	0.83
	19	Creating a story required a lot of time.	3.90	0.79
	20	I experienced some technical issues.	3.77	0.86

Pedagogically speaking, the high means across fluency, motivation, and confidence categories indicate DST's suitability for communicative and task-based syllabi. Furthermore, DST can be used to develop students' self-efficacy by giving them ownership over content creation. The survey findings affirm that DST is a powerful pedagogical tool that not only enhances EFL learners' speaking fluency, accuracy, and pronunciation but also fosters motivation, confidence, and meaningful engagement, provided that adequate technical and instructional support accompanies its integration.

Evidence was also collected from the teachers' interviews. They unanimously agreed that DST transformed both learning outcomes and classroom dynamics. They observed that DST significantly increased student engagement, collaboration, and motivation, especially among learners who were previously hesitant to participate. Students helped each other with technology and language, showing strong intrinsic motivation as they willingly

recorded and refined their work. Despite some challenges, such as time demands and uneven technical skills, teachers found these manageable with planning and orientation. Over time, students' digital competence improved, turning challenges into valuable skill development. From a pedagogical perspective, instructors viewed DST as a powerful, multidimensional approach that blended creativity, technology, and linguistic practice. It promoted learner autonomy, reduced anxiety, and linked digital literacy with language proficiency, making learning more authentic and student-centered. In integration with quantitative findings, teachers' qualitative feedback confirmed significant gains in fluency, accuracy, pronunciation, and coherence. Together, these results illustrate that DST is not merely a technological tool but a transformative pedagogical strategy that enhances linguistic competence, motivation, and confidence while reshaping classroom culture into an interactive and reflective learning environment.

The findings related to RQ3 indicate that the challenges associated with DST should not be understated. Although the mean scores for challenge items were above neutral, values in the 3.77–3.90 range suggest that many learners experienced moderate levels of difficulty, particularly in relation to technical demands and time investment. These results are not at odd with prior research in EFL and Saudi contexts, where DST is identified as a pedagogically valuable but resource-intensive approach. It requires adequate technical infrastructure, digital literacy, and instructional support. While teachers generally reported that such challenges were manageable, this should be understood as dependent on careful planning, scaffolding, and sustained facilitation rather than as evidence of effortless implementation. Accordingly, DST's effectiveness should be interpreted as contingent on supportive conditions.

Discussion

This study examined the impact of DST on Saudi EFL learners' speaking proficiency through convergent evidence from pre/post testing, a learner survey, and teacher interviews. Quantitatively, learners' overall speaking scores improved markedly from the pre-test ($M = 58.34$, $SD = 10.45$) to the post-test ($M = 75.12$, $SD = 9.72$), with a large, statistically significant paired samples result ($t(144) = 21.35$, $p < .001$). Subskill analyses showed very large effects for accuracy ($d = 1.42$), coherence ($d = 1.38$), fluency ($d = 1.33$), and pronunciation ($d = 1.25$), indicating not merely increased talk time but substantively better speech—more precise, organized, and natural.

These outcomes align closely with the study's theoretical framing. From a constructivist and social-constructivist perspective, DST positions learners as active meaning-makers who plan, script, and perform personal meaningful narratives, often in collaboration with peers ([Gupta, 2011](#)). Multimodal learning theory predicts that combining voice, images, and text deepens processing and retention ([Alonso et al., 2015](#); [Gregori-Signes, 2014](#); [Mayer, 2009](#)). Consistent with this literature, learners in the present study advanced on discourse-level organization (coherence) while also consolidating micro-level form (accuracy), suggesting productive interplay between message planning and linguistic control.

Three features are central. First, iterative output with feedback—the plan → script → record → listen → revise cycle—created dense opportunities for pushed output and noticing, explaining the robust gains in fluency and accuracy (cf. [Du et al., 2024](#); [Mirza, 2020](#); [Yang et al., 2022](#)). Second, multimodal meaning-making required learners to align language with visuals and narrative arc, which plausibly strengthened cohesion and lexical choice. Third, affective safety and agency mattered: rehearsal in a semi-scripted, low-

stakes environment reduced anxiety and increased willingness to communicate, reflected in high survey means for enjoyment, motivation, and confidence (≈ 4.22 - 4.50) and echoed in teachers' reports that previously reticent students volunteered to present.

When interpreting the survey results, it should be clear that although learners reported highly positive perceptions of DST, these findings should be interpreted in relation to contextual implementation factors and potential response biases. The favorable responses may reflect the structured technological support, scaffolding, guided training, collaborative task design, and ongoing teacher feedback provided during the intervention. To strengthen interpretability, learners' self-reported perceptions triangulated with objective pre- and post-test speaking outcomes revealed significant gains across multiple speaking sub-skills. This provides convergent evidence that positive attitudes were accompanied by measurable linguistic improvement. Nevertheless, the possibility of ceiling effects, social desirability, and novelty bias cannot be fully excluded. The slightly lower ratings for grammar and vocabulary development further suggest that DST is perceived primarily as a fluency- and confidence-enhancing approach rather than a form-focused instructional method, a pattern consistent with previous DST research ([Al Khateeb, 2019](#); [Al-Amri, 2020](#); [Bai & Xian, 2024](#)). Accordingly, the findings should be understood reflecting the effectiveness of DST within a well-supported instructional context rather than as universally generalizable outcomes.

Qualitative data triangulated these patterns. Teachers observed longer stretches of natural speech with fewer L1 fillers (fluency), greater self-correction of tense, agreement, and articles (accuracy), clearer articulation and improved stress/intonation (pronunciation), and the emergence of clear beginnings, developments, and endings with sequencing markers

(coherence). The convergence of objective gains, learner perceptions, and professional observations strengthens ecological validity and argues against score inflation or test-practice artifacts.

The findings suggest embedding DST as a core strand in speaking curricula rather than an add-on activity. Practical moves include: (a) staging deliverables (pitch → script → storyboard → cut) mapped to the four subskills; (b) using the script as a site for guided micro-editing to target accuracy; (c) structuring listen–diagnose–repeat routines for pronunciation (segmental and prosodic features); and (d) teaching discourse with explicit narrative frames and visual storyboards. Known constraints, time demands and uneven tech skills, are manageable through an initial technical orientation (e.g., Storybird, Toontastic), clear CEFR-aligned rubrics, and sequenced deadlines across the eight-week block. These supports convert early hurdles into durable digital literacy gains.

The study has theoretical and practical implications. It is a contribution to the existing literature related to DST which enriches our understanding of the affordances of digital technologies that enhance oral skills in contexts where English is not used natively ([Modhish & Al-Kadi, 2016](#)). It also put forward empirical evidence to support DST's impact on learners' speaking proficiency within EFL contexts. This provides insights for instructors and policymakers to enhance EFL instruction through digital technologies with a particular reference to DST: This study also emphasizes the importance of speaking, suggesting ways in which DST can enhance the learners' communicative proficiency and highlighting the integration of technology in the classroom for a more interactive environment ([Al-Kadi & Ali, 2024](#)).

It guides educators, curriculum designers, and policymakers in integrating DST into EFL instruction effectively. It suggests that DST should be incorporated as a regular component

of EFL speaking courses. Before implementation, workshops and orientation sessions should be organized to familiarize both teachers and learners with DST tools. Providing technical support will help overcome barriers that may hinder the learning experience. Pair or group projects can enhance teamwork and communicative interaction. Teachers can use DST projects as authentic assessments that evaluate not only language accuracy but also creativity, organization, and oral delivery-moving beyond traditional paper-based tests.

While the discussion highlights converging evidence for the benefits of DST, several limitations and boundary conditions warrant a more cautious interpretation. The single-group pre–post design limits causal inference; improvements over time may partly reflect maturation, test familiarity, or regression to the mean rather than the unique contribution of DST. Although scoring procedures were standardized, speaking assessment remains vulnerable to measurement error and rate variability. The survey results, despite their consistency, are self-reported and susceptible to ceiling effects, social desirability, and novelty influences. DST implementation success depended largely on supportive conditions, e.g. training time, technological infrastructure, structured scaffolding, collaborative task design, and timely teacher feedback. The outcomes may differ in contexts with fewer resources or tighter curricular constraints.

Conclusion

This study explored the effectiveness of DST in enhancing the speaking proficiency with data collected from Saudi EFL learners at the university level. The results revealed significant improvements across all four subskills of speaking: fluency, accuracy, pronunciation, and coherence, demonstrating that DST not only increased the amount of speech but also improved its quality and organization. Learners' positive perceptions,

reflected in high survey ratings for motivation, confidence, and enjoyment, confirmed the motivational and affective benefits of DST. Likewise, teachers' observations supported the quantitative outcomes, highlighting noticeable progress in students' fluency, grammatical control, pronunciation, and discourse organization. The combination of multimodal learning, repeated practice, and creative expression helped students internalize language structures and overcome anxiety, fostering more confident and authentic communication. Pedagogically, DST has proven to be more than a technological innovation. It is a transformative learning strategy that merges language, creativity, and digital literacy.

DST stands as an effective and innovative approach for improving EFL learners' speaking proficiency. It bridges linguistic and technological competencies and transforms the classroom into an engaging space where language learning becomes personal, meaningful, and empowering. Implementing DST within EFL contexts can transform speaking instruction into a more interactive, motivational, and skill-integrated process that develops both communicative competence and digital literacy among learners. While DST reduces anxiety through creative expression, it may not fully address deeper structural issues in EFL speaking (e.g., limited authentic interaction opportunities in Saudi classrooms).

While this study demonstrated strong evidence of the positive impact of DST on EFL learners' speaking proficiency, several limitations should be acknowledged. The first two caveats warrant note: (1) outcomes were observed across a single term; delayed post-tests would clarify durability and transfer, and (2) generalization beyond participating universities and toolset should be made with caution. Nevertheless, within these bounds, the evidence indicates that DST is a high-impact pedagogy for tertiary EFL speaking—simultaneously improving fluency, accuracy, pronunciation, and coherence while elevating

motivation and confidence and reshaping classroom culture toward creative, authentic communication.

Limitations are also relevant to the sample size. The study involved 145 EFL learners from only two Saudi universities. Therefore, the findings may not be fully generalizable to all Saudi higher education contexts or to learners with different proficiency levels, academic majors, or institutional settings. The duration of the intervention may also be considered as a limitation. It lasted for eight weeks, which limits the ability to assess the long-term retention of speaking gains or the sustainability of motivation and confidence over time. The study relied primarily on two DST platforms - Toontastic and Storybird. While effective, these tools represent a narrow segment of available technologies. Other multimedia tools or AI-supported storytelling platforms might produce different results. The evaluation of speaking proficiency was based on human ratings using a CEFR-adapted rubric. Although inter-rater reliability was maintained, automated or acoustic analyses (e.g., speech rate, pause length) could provide more objective measures of fluency and pronunciation. Likewise, as the subscale-level reliability coefficients were not calculated, future research aiming at scale refinement or validation may benefit from reporting subscale internal consistency and conducting factor-analytic procedures.

Despite limitations (short duration and limited scope), the findings offer valuable implications for educators and curriculum designers. By incorporating DST into EFL speaking courses, institutions can cultivate linguistic competence, communicative confidence, and digital skills simultaneously. For practice, the findings support cautious, context-aware adoption. Successful implementation appears to require: (1) upfront training for teachers and learners in DST tools; (2) reliable access to devices and connectivity; (3) clear scaffolding for scriptwriting,

rehearsal, and feedback cycles; (4) realistic timelines to manage production workload; and (5) alignment with assessment criteria. Even in positive cases, DST imposes non-trivial demands on time, facilitation, and infrastructure; planning for these constraints is essential to realize communicative and affective benefits without overpromising outcomes

The limitations could be turned into opportunities for future research. Through broader samples, longer interventions, varied tools, and control-group comparisons, future researchers may by exploring DST's long-term effects on language retention, its use in other skills (listening, writing, and reading), and its impact across different proficiency levels or institutional contexts to establish a comprehensive understanding of its pedagogical value. Future research should strengthen design rigor by incorporating control or comparison groups (e.g., alternative speaking activities or traditional tasks, longitudinal follow-ups to test durability and transfer, and mixed-methods process measures (e.g., classroom observations, learning analytics, and qualitative accounts of challenges to unpack how and for whom DST works. More studies may also examine subgroup differences (e.g., digital literacy, proficiency level, gender), and include more granular linguistic analyses (e.g., pronunciation, lexical sophistication, and grammatical accuracy) alongside perceptions to triangulate effects. The current investigation may also be a good start for more rigorous investigation into DST as a tool for speaking development in Saudi EFL contexts and beyond.

Disclosure Statement

– **Ethical Approval and consent to participate:** All procedures performed in the study were in accordance with institutional and ethical standards.

– **Availability of data and materials:** The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

– **Author contribution:** The sole author listed has contributed to the work and approved it for publication. The author has worked on all stages of research. The author has reviewed the data and the final manuscript for approval. The author read and approved the final manuscript.

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