

DIGITAL STORYTELLING IN EFL CLASSROOM: SPEAKING AND CREATIVE THINKING SKILLS

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Abstract

This study investigated EFL students' speaking and creative thinking skills through digital storytelling activities using Book Creator. The objectives were to assess changes in speaking performance, evaluate creative thinking levels, and explore the Book Creator's role in supporting both skills. This study employed a pre-experimental one-group pretest–posttest design within a quantitative framework. Data were collected through pretest and posttest speaking scores, rubric-based creative thinking assessment, and field notes. The findings showed a marginal increase in mean speaking scores from 78.30 to 78.48. However, the paired-sample t-test indicated that the improvement was not statistically significant (Sig. = 0.831). In contrast, students demonstrated competence to excellent creative thinking, evident in their ability to generate and express ideas through visual, written, and audio elements. Field notes indicated increased comfort in independent recording, although speaking anxiety persisted. These findings suggest that digital storytelling facilitated idea expression and organization but did not significantly improve speaking performance. This study contributes by integrating multimodal digital storytelling into EFL contexts, highlighting its potential for fostering creativity despite its limited impact on speaking performance. Future research may further explore cognitive load, interactive speaking practices, and other 4C skills to provide a more holistic understanding of DST in EFL contexts.

Keywords: *book creator; creative thinking; digital storytelling; EFL students; higher education; speaking performance.*

1. Introduction

English as a Foreign Language (EFL) students in the 21st-century face the demands of a rapidly evolving and highly competitive global era. In response, contemporary education emphasizes soft skills, creativity, communication, and adaptability rather than mere knowledge transfer (Khan et al., 2022). The Partnership for 21st-Century Learning (P21) summarizes these essential competencies into the 4C, namely critical thinking, creative thinking, communication, and collaboration skills (Supena et al., 2021). To address these demands, many universities in Indonesia have implemented an Outcome-Based Education (OBE) curriculum, which emphasizes competency through innovative, interactive, and

effective learning processes that are relevant to the global competitive era (Harden, 2007; Muzakir & Susanto, 2023).

Within the 4C framework, communication and creative thinking skills are two main abilities in language learning to help students share their thoughts confidently and generate innovative solutions to problems (Abe & Birabil, 2022; Budiyanto et al., 2024). Although these two skills are already included in the 4C framework, in actual classroom practice, many EFL university students still find it difficult to develop them effectively. In the context of speaking skills, three major categories of challenges often faced by EFL university students, namely linguistic problems, psychological problems, and socio-environmental problems (Ali et al., 2025). Similar situation occurs in creative thinking, which remains underdeveloped and requires improvement to meet 21st-century expectations (Karunaratne & Calma, 2024). In the Indonesian context, studies similarly indicate that many university students exhibit a lack of creativity and perform poorly on tasks that require creative responses (Hidayati et al., 2024). This situation indicates that such challenges remain common among EFL university students and requires serious attention.

Preliminary observation revealed difficulties in vocabulary (100%), grammar (83.3%), and fluency (33.3%), often accompanied by fear of mistakes that reduced confidence. In addition, the interview responses revealed that students struggled with creative thinking, especially in generating and developing ideas, due to fear of being wrong, uncertainty about how to begin, and limited references to support idea development. These findings highlight the need for more engaging and student-centered approaches that can support speaking and creative thinking skills in an authentic classroom setting.

Therefore, digital learning tools and innovative pedagogical approaches have been introduced to address today's challenges (Chawla, 2024). One example is digital storytelling (DST), which enables students to communicate ideas through multimodal elements such as text, images, audio, and video (Nair & Yunus, 2021). In this context, Book Creator, as a digital storytelling platform, enables students to integrate audio, video, and visuals into interactive stories (Arjulayana et al., 2025)

Previous studies have demonstrated the effectiveness of Book Creator in supporting reading and writing instruction. As a multimodal DST tool, Book Creator helps students improved engagement, creativity, and idea development during the learning process (Fadhil et al., 2025; Handayani et al., 2023; Tuminah et al., 2022; Widyastuti & Anwar, 2025). However, its use in supporting EFL students' speaking and creative thinking skills remains limited. In the broader context of DST, several studies have used platforms such as MovieMaker, KineMaster, and Prezi to support students' speaking and creative thinking skills (Arroba & Acosta, 2021; Yang et al., 2020). However, these studies did not specifically examine the use of Book Creator in the EFL higher education context. Although previous studies have explored digital storytelling in EFL contexts, limited attention has been given to how Book Creator specifically supports the integration of speaking performance and creative thinking among university-level EFL learners within Indonesian higher education settings.

Building on Arjulayana, et al. (2025), which developed and evaluated Book Creator-based digital storyboards for academic speaking within an R&D framework, the present study extends previous work by examining changes in EFL students' speaking performance, identifying their level of creative thinking, and exploring how Book Creator supports both skills through digital storytelling activities.

Specifically, this study focuses on two skills needed in the 21st-century, namely speaking and creative thinking, while the other 4C components, such as critical thinking and collaboration, are not examined in this research. Based on this focus, the research questions in this study are as follows: 1) how does students' speaking performance change after using Book Creator as a digital storytelling? 2) what level of creative thinking do students demonstrate in their digital storytelling projects? 3) how does Book Creator support students' speaking and creative thinking skills in digital storytelling activities? This study is expected to provide findings that can help educators create English learning experiences that are both engaging and meaningful for university students.

2. Literature Review

2.1 Speaking Skills

Speaking is recognized as a core component of communication and the most prevalent form of interaction, involving a two-way process of conveying and responding to information (Ansari et al., 2022; Hussain, 2017). Communication skills consist of receptive and productive skills; speaking belongs to the productive skills category, meaning that it involves the active production of speech (Harmer, 2015; Jasim & Yahya, 2021). Speaking is simply defined as the ability to say words to express thoughts, ideas, and feelings (Arjulayana & Martínez, 2022). Meanwhile, Brown (2004) highlights that speaking, as a productive skill is directly observable, though its assessment may be influenced by listening ability. He also points out six aspects of speaking performance, namely pronunciation, grammar, vocabulary, fluency, comprehension, and task (Nurelviani & Prastyo, 2024).

In EFL learning, students often find speaking to be one of the most difficult skills to improve (Nguyen, 2024). As English is not their first language, EFL Students are required more effort to master speaking skills compared to native speakers. Speaking skills involve various linguistic components such as phonology, syntax, vocabulary, and semantics. In addition, as English is a non-phonetic language, its spelling often differs from its pronunciation, which can create difficulties for learners in producing accurate spoken language (Ghafar & Raheem, 2023).

One of the categories of challenges often faced by EFL university students is psychological problems (Ali et al., 2025). Students often fear mistakes and negative judgment, leading to speaking anxiety (Jaya et al., 2025). This anxiety may reduce their confidence and discourage them from actively participating in speaking class, it can be concluded that speaking skills play a crucial role in shaping one's ability to communicate (Azkiah, 2024). Therefore, mastering communication skills cannot be separated from continuous speaking practice in a supportive and safe social environment, where students feel comfortable to express themselves, as speaking is the core of effective communication.

2.2 Creative Thinking Skills

Besides speaking, creative thinking is another essential skill that contributes to students' abilities in the 21st-century learning (Hapsari & Prasetyarini, 2025). As part of higher-order thinking skills (Hajaroh, 2022), creative thinking goes beyond idea generation and is closely related to critical thinking skills, including analyzing, evaluating, and reflecting, which can support students to assess and improve their ideas (Shaber et al., 2025). In academic contexts, creative and critical thinking function as complementary and equally

important processes (Lau, 2011), where creativity generates problem-solving ideas and critical thinking evaluates, articulate those ideas and support participation in learning (Gunawan et al., 2025b, 2025a)

Creative thinking is essential as it fosters problem-solving capacity and helps students become more adaptive and innovative in responding to the changing demands of the modern world (Ayasrah et al., 2023). Creative thinking involves a complex cognitive process that differs among individuals, as creativity should not be seen as an absolute ability that either exists or does not, but rather as a blend of cognitive and personal factors that can develop at varying levels (Dilekçi & Karatay, 2023). Karunarathne & Calma (2024) explain that creative thinking in higher education involves thinking flexibly, generating original ideas, and applying innovative solutions to real-world problems. As part of their academic and professional development, students are expected to continuously improve their creative thinking skills. They also propose a framework for assessing creative thinking that includes three dimensions and four domains (Karunarathne & Calma, 2024). These domains describe how students demonstrate creativity through various expressions, collaboration, and problem-solving in different learning contexts.

2.3 Relationship between Speaking and Creative Thinking Skills

Speaking and creative thinking are related in the learning process. Speaking is not only about producing grammatically correct sentences, but also requires students to generate, organize, and express ideas in a clear and effective way (Dewi, 2023). The connection is further supported by Wang et al. (2024), who found that creative thinking contributes to improving speaking accuracy and fluency, because students who think creatively are able to develop ideas more flexibly and originally, which enhances the quality of their spoken output.

Speaking instruction at the university level should be creative and innovative (Arjulayana et al., 2021). This highlights the importance of integrating creative thinking into speaking activities, as well as providing learning environment that encourages students to create meaningful outcomes. In terms of cognitive levels based on Bloom's Taxonomy, which includes remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001; Nafiati, 2021), students in higher education should also be guided toward the "higher" cognitive levels, particularly analyzing (C4), evaluating (C5), and creating (C6) (Ginting et al., 2021). To reach higher cognitive levels, educators need to carefully select appropriate teaching methods and learning media.

2.4 Digital Storytelling and Book Creator

DST may help bridge the needs of these two skills, as students can be guided to generate and organize their ideas creatively while expressing them through speaking activities. This approach enables students to learn by combining multimodal elements such as text, images, audio, and video (Nair & Yunus, 2021). In DST practices, various web-based applications can be utilized. Book Creator is one such web-based application that can be used in DST practices. It functions as a digital storytelling platform that helps students create and publish interactive stories. In practice, Book Creator allows students to combine audio, video, and visuals in a flexible and personalized display, so that each student can produce digital products based on their creativity (Arjulayana et al., 2025). The use of digital storytelling tools such as Book Creator for speaking activities has the potential to create

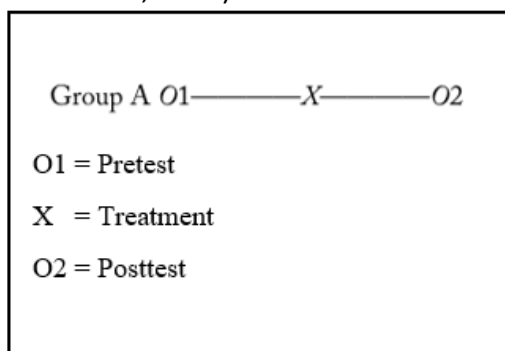
more valuable learning experiences by providing students with opportunities to express ideas, enhance creativity, and practice language authentically (Arroba & Acosta, 2021).

3. Research Method

This study employed a pre-experimental one-group pretest-posttest design within a quantitative framework. One group was measured before treatment (pretest), received the intervention and was measured again afterward (posttest) (Creswell & Creswell, 2018). The design of this study is illustrated with the following notation (Campbell & Stanley, 1963, p. 6; Creswell & Creswell, 2018):

Figure 1.

Notation of the One-Group Pretest-Posttest Design (Campbell & Stanley, 1963, p. 6; Creswell & Creswell, 2018)



Where O_1 refers to the pretest, X represents the treatment using Book Creator-based DST activities, and O_2 refers to the posttest. Although this design has limitations related to the absence of a control group due to academic constraints, it is considered appropriate for investigating the initial implementation of Book Creator in a real classroom setting.

The study involved 23 students from the third semester of the English Department at the University of Muhammadiyah Tangerang. This study was carried out from December 2025 to February 2026, within the 2025/2026 academic year, in the public speaking course. Prior to the data collection, ethical approval and informed consent were obtained to ensure research integrity. This study used two main instruments, namely a speaking assessment rubric and a creative thinking rubric. Field notes were also used to support the data by documenting the classroom observations.

Speaking data were obtained from lecturer-recorded performance scores during instruction, serving as pretest and posttest measures. The speaking rubric was adopted from Widiastuti (2025), which is based on the speaking assessment principles proposed by Brown & Abeywickrama (2020). In addition, the creative thinking assessment was adopted from Karunarathne & Calma (2024) which measures three dimensions of creative thinking through visual and written domains. Creative thinking scores were derived from students' digital storytelling projects and evaluated by the lecturer.

To measure improvements in students' speaking skills, pretest and posttest scores were analyzed using a paired-sample t-test with the assistance of IBM SPSS Statistics. Prior to the analysis, sata normality was tested using the Shapiro–Wilk test to ensure the assumptions for parametric analysis were met (Fatih et al., 2026). Meanwhile, creative thinking scores were analyzed using descriptive statistics, including mean, median, and

mode to describe students' level of creative thinking. Field notes were analyzed qualitatively to identify patterns in student engagement and anxiety.

4. Results and Discussion

4.1 Results

To provide an overview of students' speaking performance after the implementation of DST using Book Creator, the results were analyzed using a speaking rubric adopted from Widiastuti (2025), which is based on the speaking assessment principles proposed by Brown & Abeywickrama (2020). The results of students' speaking performance based on assessment criteria are shown in Table 1.

Table 1.

Speaking performance scores

Criteria	Number of Students
Excellent	9
Good	14
Fair	0
Needs Improvement	0
Total	23

As presented in Table 1, most students were categorized as good (14 students), followed by excellent (9 students). None of the students fell into the 'fair' or 'need improvement' categories. This suggests that, in general, students had already reached a relatively good level of speaking performance.

To further examine students' speaking performance after the implementation of DST using Book Creator, the pretest and posttest scores were analyzed statistically. Prior to conducting the paired-sample t-test, the data normality was tested using the Shapiro-Wilk test. The results are presented in Table 2.

Table 2.

Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Pre test	.938	23	.159
Post test	.970	23	.683

a. Lilliefors Significance Correction

As shown in Table 2, the significance value of the pretest was 0.159, while the posttest obtained a significance value of 0.683. Since both significance values were higher than 0.05, the data were considered normally distributed.

After confirming the normality of the data, descriptive statistics were analyzed to compare students' speaking performance before and after the implementation. The results are presented in Table 3.

Table 3.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	78.30	23	4.269	.890
	Post test	78.48	23	3.132	.653

The descriptive statistics showed that the mean scores slightly increased from 78.30 in the pretest to 78.48 in the posttest. In addition, the standard deviation of the posttest (3.132) was lower than pretest (4.269) scores, indicating that students' posttest scores were slightly more consistent. However, Score changes were minimal, and overall improvement remained limited.

A paired-sample t-test was conducted to determine whether there was a statistically significant difference between the pretest and posttest scores. The results are shown in Table 4.

Table 4.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-.174	3.857	.804	-1.842	1.494	-.216	22	.831

The paired-sample t-test result showed that the significance value (sig. 2-tailed) was 0.831, which was higher than 0.05, there was no statistically significant difference between the pretest and posttest scores. This finding indicates that the implementation of Book Creator-based digital storytelling did not significantly improve students' speaking performance.

Meanwhile, students' creative thinking level in DST projects was assessed using a rubric with three main dimensions: generating diverse ideas, generating creative ideas, and evaluating and improving ideas (Karunarathne & Calma, 2024). These dimensions were examined through both visual and written domains in students' digital storytelling products. The results are shown in Table 5.

Table 5.

Students' creative thinking level

Statistic	Score
Mean	78.217
Median	78
Mode	82

The scores obtained from the rubric were converted into 0-100 scale to facilitate interpretation. The result showed the mean score of students' creative thinking was 78.21, with a median of 78 and a mode of 82. These results suggest that students' creative thinking scores show some variation within similar range.

Referring to the scoring criteria, these scores indicate mostly students demonstrated a competent level, with some approaching an excellent level of creative thinking in DST projects, meaning that they were generally able to develop ideas clearly and creatively.

The use of Book Creator in DST activities was observed through field notes to examine how it supported students' speaking and creative thinking skills. Prior to the implementation, students were able to participate in speaking activities, but they often showed hesitation and signs of speaking anxiety. Their responses were generally short and not very fluent, and only some students were actively involved while others remained passive. In terms of creative thinking, students' ideas were still limited and mostly depended on the lecturer's examples.

During the implementation, students became more engaged, especially when working on their DST projects. They started to explore multimodal elements such as images, text, and audio to present their ideas. The results of their project also varied, which shows that students were able to develop their own ideas. Many of them included their personal preferences, for example, by choosing certain colors or design styles that reflected their interests.

Figure 3.
Differences in Color Selection in Book Creator



In both visual and written domains, students were able to match their content with themes they selected, showing that they could organize their ideas in a clear and meaningful way.

Figure 4.
Content Alignment with Themes



However, it was also observed that students tended to focus more on designing and completing their projects. Because of this, speaking practice was not always fully developed during the process. A clear difference could be seen between speaking in class and speaking through independent recording. In class, students often hesitated and used fillers such as ‘hmm’ and ‘uh,’ indicating reduced fluency. In contrast, when they recorded their speaking and independently, they appeared more comfortable and confident.

During this process, Students typically recorded, reviewed, and re-recorded their speech, making adjustments before uploading. This process allowed them to practice speaking in a more flexible way and helped them produce more fluent and controlled speech. Overall, the use of Book Creator created a more flexible and supportive learning environment. It helped students express their ideas more freely and gave them opportunities to practice speaking through repetition and self-review, although this practice was not always reflected in real-time classroom interaction.

4.2 Discussion

This section discusses the findings of the research, particularly in students’ speaking performance, creative thinking, and the use of Book Creator in DST activities.

4.2.1 Changes in Students’ Speaking Performance

Although the mean score showed a slight increase, the paired-sample t-test indicated that the improvement in students’ speaking performance was not statistically significant. The implementation of Book Creator-based digital storytelling did not substantially improve students’ speaking performance within the duration of the study. Based on the field notes, students appeared to focus more on completing and designing their DST projects during the implementation process. One possible explanation may be related to the cognitive load

experienced by students during the activities (Evans et al., 2024), as they were required to manage multiple aspects simultaneously, including idea development, multimodal design, editing, and speaking performance.

In addition, the asynchronous nature of the speaking activities may have contributed to the limited improvement in speaking performance. Since students recorded their speaking independently, they had opportunities to repeat, edit, and review their recordings before uploading them. Although this condition may help reduce speaking anxiety, it may also limit opportunities for spontaneous interaction and real-time communication practice, which are important components of speaking development in EFL learning (sitasi). This finding was also reflected in the classroom observations, where signs of speaking anxiety seemed less noticeable during the recording process, as students seemed more comfortable speaking independently. However, this observation is only based on what was visible during the projects and would need further exploration to better understand students' perspectives.

Field note observations also suggested that some students appeared to pay greater attention to the visual and aesthetic aspects of their projects than to oral production. Students were often more engaged in selecting images, arranging layouts, and editing multimodal elements during the project. As a result, the focus on digital product creation may have reduced students' attention to improving their speaking performance itself.

In the context of 21st-century skills, the 4C framework, speaking is essentially a two-way process. It is not only about expressing ideas but also about responding to and interacting with others (Ansari et al., 2022; Hussain, 2017). Therefore, students may require more opportunities for interactive speaking practice in authentic communication settings beyond asynchronous storytelling production. These findings suggest that DST platforms such as Book Creator may support students' engagement and idea expression without automatically leading to significant improvement in speaking performance. Thus, the effectiveness of DST for speaking development may depend on how interactive speaking activities are integrated into the learning process.

4.2.2 Students' Creative Thinking Level in Digital Storytelling Projects

In contrast to the limited improvement in speaking performance, a different pattern was found in students' creative thinking. The findings show that most students demonstrate a competent level and some students showed an excellent level in their DST project with Book Creator. This was reflected in the variation in their work, where students presented different ideas based on their own interest and preferences.

Students were able to express their ideas through both visual and written elements. They combined images, text, video, audio and other features in ways that matched their themes. This shows that DST gave them space to explore and express their ideas more freely, which is an important part of developing creative thinking (Hapsari & Prasetyarini, 2025). The variation in their projects also indicates that students were able to generate different ideas, not just follow one example. This aligns with the view that creative thinking involves flexibility and the ability to approach ideas from different perspectives (Karunarathne & Calma, 2024). In addition, many students incorporated personal elements into their work, such as preferred colors and visual styles showing that creativity can develop differently depending on each individual (Dilekçi & Karatay, 2023).

However, while students were able to generate and express their ideas, the process of evaluating and improving those ideas was less clearly seen. Most of the revisions they made were related to visual design rather than deeper changes in content. This suggests that the critical side of creative thinking, such as evaluating and refining ideas, was not as visible during the process (Lau, 2011; Shaber et al., 2025). Overall, these findings show that digital storytelling using Book Creator supports students in generating and expressing ideas, but students need further support to evaluate and refine their ideas.

4.2.3 Book Creator as DST tool in Supporting Students' Speaking and Creative Thinking Skills

The findings of this study show that the use of Book Creator in digital storytelling leads to different outcomes in students' speaking and creative thinking. While students were able to develop and express their ideas creatively through their projects, improvement in speaking performance remained limited and was not statistically significant. This finding supports the idea that speaking and creative thinking are related processes, as speaking involves not only producing language but also generating and organizing ideas (Dewi, 2023). In this study, students demonstrated this relationship through their ability to present ideas creatively in their digital storytelling projects. However, the findings also suggest that the ability to generate and organize ideas creatively may not always be directly reflected in speaking performance, particularly when speaking practice is conducted through asynchronous recording rather than interactive communication.

The use of digital storytelling provided a space where students could combine elements such as text, images, audio, and video. This is in line with previous studies that show the digital storytelling can help students organize and express ideas in more meaningful ways (Nair & Yunus, 2021). In addition, Book Creator allowed students to present their work in a more flexible and personal way, which seemed to encourage them to explore their ideas further (Arjulayana et al., 2025). However, although students were able to generate and express ideas, this did not always lead into improvement in speaking performance. This suggests that while creative thinking is related to speaking, as noted by Wang et al. (2024), the relationship between the two may not always be directly reflected in speaking outcomes, especially depending on how speaking practice is carried out. In this study, speaking practice tended to occur through independent recording rather than real-time interaction, which may explain the limited improvement.

From a cognitive perspective, this also relates to the need for students develop higher-order thinking, including analyzing, evaluating, and creating (Anderson & Krathwohl, 2001; Ginting et al., 2021). Although students were able to demonstrate the level of creating through their projects, the evaluating aspect was less clearly observed, particularly in refining the content of their ideas. These findings show that Book Creator can support students in developing and expressing ideas, particularly in the context of digital storytelling. While creative thinking was evident in students' work, speaking performance remained stagnant, suggesting that DST supports idea generation but requires complementary interactive speaking practice. However, to support speaking as a form of real-time communication, it may need to be combined with more interactive activities that allow students to respond and communicate directly with others. These findings contribute to the

expanding discussion on digital storytelling in English as a Foreign Language (EFL) instruction by demonstrating that multimodal platforms such as Book Creator can support students' creative expression and engagement differently from the development of speaking skills.

5. Conclusion

This study found that the use of Book Creator in digital storytelling produced contrasting outcomes in speaking and creative thinking skills. Students demonstrated competent to excellent creative thinking, evident in their ability to generate and express ideas through multimodal elements. In contrast, speaking performance did not show statistically significant improvement after the implementation of Book Creator-based digital storytelling activities. These findings suggest that although digital storytelling provides space for students to express and organize their ideas, speaking skills did not show significant improvement, suggesting that project-based activities alone are insufficient for speaking development. In practice, speaking skills still need to be continuously trained, particularly through more interactive activities that involve real-time interaction and spontaneous communication.

Pedagogically, DST may be integrated with interactive speaking practices such as peer dialogue, role-play, or collaborative projects to provide students with greater opportunity for real-time communication. From a theoretical perspective, this study contributes by extending digital storytelling research to Book Creator in EFL classrooms, highlighting its potential for fostering creativity while revealing limitations in speaking improvement. The findings highlight that Book Creator may effectively support students' creative and multimodal expression, while improvement in speaking performance may depend on the extent of interactive communication practice integrated into the learning process.

This study also has several limitations. The small sample size, short intervention period, and absence of a control group may have limited the measurable improvement in students' speaking performance and reduced the generalizability of the findings. Therefore, future studies are recommended to employ experimental or mixed-method approaches with larger samples and longer implementation periods. In addition, future research may also investigate students' experiences related to cognitive load during DST activities, particularly in managing speaking task and multimodal design demands during the project. may explore how digital storytelling activities can be combined with more interactive speaking practices to better support students' speaking development. In addition, further research should also examine other 4C skills, critical thinking and collaboration, in DST contexts to provide a more holistic understanding of 21st-century competencies.

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