

The Effectiveness of Digital Storytelling Through Storyberries to Enhance Students' Writing Skills in Narrative Text

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Abstract. This study aims to measure the effectiveness of using digital storytelling (DST) through the Storyberries platform in enhancing the narrative writing skills of junior high school students and to evaluate the impact of media use on their writing skills. This study employs a Quasi-experimental quantitative research method using a nonequivalent control group design. The participants were 8th-grade students at a middle school in Sidoarjo, with a total sample size of $n = 59$, including 32 in the experimental group and 27 in the control group. Students in the experimental group received instruction using DST via the Storyberries platform as a writing learning medium over five meetings. The control group, on the other hand, used traditional methods and did not utilize digital media. Data were collected through pre- and posttests and subsequently analyzed using descriptive statistics, the Wilcoxon rank-sum test, the Mann-Whitney test, and effect size calculations. Based on the pretest and posttest scores, this study shows a significant difference ($p < .001$) with an effect size of 0.7, classified as large. These findings indicate that using DST via the Storyberries platform can be an effective way to develop students' writing skills, particularly in narrative writing. Therefore, integrating DST through the Storyberries platform is considered beneficial for EFL instruction and is recommended as an effective pedagogical strategy to increase student engagement in the classroom and enhance students' narrative writing skills.

Keywords: digital storytelling, EFL students, narrative text, Storyberries, writing skills

1. INTRODUCTION

Writing is the most complex skill for students, particularly for EFL learners. For junior high school students, the development of writing skills is very important because it involves grammatical accuracy, vocabulary development, sentence

structure organization, and coherence (Hyland, 2003). Unlike the other English language skills, writing is the most important skill for students to reflect on what they have heard and read and to express their thoughts through a written process, making it a major challenge in English language learning.

In Indonesian secondary schools, students begin learning to create and design narrative texts as one of their writing competencies. Hidayatullah (2022) defines a narrative text as a text that tells the story of a sequence of interconnected historical events. In narrative texts, there are several types, including fairytales, legends, fables, experiences, science fiction, and others. Therefore, students are expected to understand and retell a story by writing a narrative text with an appropriate structure.

In accordance with the guidelines for writing narrative texts at the junior high school level, many students, especially in Indonesia, consider narrative writing complicated and challenging (Maolida et al., 2025). Based on this assumption, several problems were identified (Hyland, 2003; Gunawan et al., 2025; Maolida et al., 2025; Moradi & Chen, 2019). There are still many problems in the writing process, such as vocabulary usage, grammar mastery, organizing ideas, structural compatibility, and a lack of innovative learning media used by teachers. Upon discovering the problem, the first issue is students' limited vocabulary and mastery of grammar. The second problem was that the students could not think and put their thoughts into writing, so it took a lot of time to create a narrative text.

The third problem was the mismatch in the text structure students use when writing narratives. Finally, the last problem was teachers' lack of ability to create an interesting and exciting classroom atmosphere, so that students do not feel bored during learning. An effective way to enhance students' writing skills is by using digital storytelling.

DST is not a new strategy for teaching students, and it can offer solutions to these problems. In line with this, digital storytelling is the art of telling a story that combines images, video, and audio through digital multimedia (Robin, 2006). By integrating visuals and audio, students gain a more meaningful experience of what they see and hear, enhancing their participation in the classroom. Students who use this strategy tend to pay more attention to learning because of the presence of fun media, so they focus on what is conveyed. In recent years, the world of technology has developed rapidly, with one example being the emergence of many learning platforms. In this case, from time to time, these digital platforms will change and evolve, including changes to features and platform names.

Therefore, the integration of DST utilizes a website called 'Storyberries' that provides many interactive narrative stories as the main medium for presenting digital stories. Features available on Storyberries, such as multimedia elements and interactive quizzes, can boost engagement, deepen students' understanding, and help them complete learning tasks aligned with the program's objectives (Herda et al., 2023). In this context, DST not only supports students in writing narrative texts but also increases students' participation in the classroom. Through Storyberries, classroom learning becomes effective because the platform offers stories presented via visual and audio media. Additionally, there is text that students can read directly. Thus, Storyberries helps students understand the stories being conveyed.

Several studies have shown that DST is crucial to increasing students' engagement in language learning (Gunawan et al., 2025; Moradi & Chen, 2019). The selection of narrative texts as the focus of this study is based on their relevance to the

junior high school curriculum, particularly in 8th grade, where students are required to understand and compose narrative texts. However, students often struggle to write well-structured narrative texts. Therefore, the use of digital media is necessary to support the learning of narrative text writing. The use of DST as a strategy that offers both audiovisual and textual components supports students' learning development. Consequently, this study utilizes the Storyberries platform to support and implement DST strategies in the classroom. Herda et al. (2023) state that the Storyberries platform also offers numerous features that support learning, especially in the EFL classroom. Thus, the combination of narrative texts and DST through Storyberries is considered appropriate and effective for improving students' writing skills.

Based on previous studies, several research gaps remain regarding the implementation of digital storytelling (DST) in English language learning. As in Tanrikulu (2022), applied research was conducted with university students as participants. In addition, two studies used high school participants in their research across different grades, namely 10th and 11th grade (Amelia, 2024; Puspitarini & Junaedi, 2024). At the same time, the other 2 studies examined elementary/primary-level participants (Alemi et al., 2022; Ngoi et al., 2024). Thus, the research gap shows that none of the studies conducted at the junior high school level, especially at 8th grade, have been conducted. At this level, 8th-grade students begin to receive instruction in narrative text, where they need strategies to enhance their writing skills.

Not only that, several studies, such as those conducted by Tanrikulu (2022) and Alemi (2022), explain the use of DST in relation to students' writing abilities generally. In their research, they did not focus on a specific text genre, such as narrative, descriptive, recount, or other genres. Thus, most studies investigate the use of DST to improve students' writing skills, but they remain limited in the specific narrative text genre studied. Therefore, this study will provide information on the use of DST media to improve narrative text writing skills.

This existing literature also shows an application used to create a digital story: Cartoon Story Maker (Alemi et al., 2022). This application is used to create digital story products. In addition, research by Puspitarini and Junaedi (2024) uses YouTube via shared links. With that, students can access the videos shown together. Based on these findings, this research will use digital storytelling media in the form of a website called "Storyberries." Students can access this website to find interactive digital stories. This can be used to address gaps in other studies.

However, Storyberries was also used in a study to assess reading ability among young learners (Herda et al., 2023). In that study, the Storyberries platform was used as a learning tool in EFL classrooms to improve students' low reading comprehension skills. In addition, the Storyberries platform was also used for vocabulary instruction in the classroom. Therefore, this study uses the Storyberries platform to support the implementation of DST in EFL classes to improve the writing skills of 8th-grade junior high school students.

The constructivist theory explains how students can develop their writing skills through guidance and scaffolding during the learning process. In this study, DST serves as a scaffold by providing stories that help students generate ideas and compose narrative text. Additionally, multimodal learning theory explains that when verbal and visual information are presented simultaneously, learning in the classroom becomes more meaningful. Since DST combines text, illustrations, and audio narration, it supports students' understanding of story content, particularly in

narrative texts. These theories provide a strong foundation for understanding how digital storytelling can effectively enhance students' narrative writing skills. This study also addresses the gap by applying DST to improve students' narrative text writing through the "Storyberries" website, using a quantitative quasi-experimental research design to measure the effect on students' narrative writing skills among 8th-grade junior high school students in Sidoarjo. In addition, this study uses Jacob's (1981) scoring rubric to assess students' writing skills. After identifying the existing problems, this study formulates the following research questions: (1) Does the use of DST through Storyberries significantly improve junior high school students' writing skills in narrative text? (2) To what extent does DST through Storyberries affect students' narrative writing skills?

2. METHOD

This research used quantitative methods, specifically a quasi-experimental design employing a Nonequivalent Control Group Design. This study used experimental methods in accordance with Creswell's (2018) experimental design, which aims to measure one or more variables of focus and how those variables affect the results of the research. The researcher collected data by administering a pretest and a posttest to assess students' writing skills. Furthermore, the researcher used an experimental method to measure the extent to which the use of DST affects students' narrative writing skills, as evidenced by the numerical data presented.

2.1 Population and Sample

This study uses purposive sampling with the same criteria. The criteria for choosing sample classes are based on similarities in curriculum and grade level. Both classes use the same English curriculum, the Merdeka Curriculum, and have the same English skill level: low English skills. This study was conducted in Sidoarjo, with a population of approximately 201 8th-grade secondary school EFL students at SMP Muhammadiyah 2 Taman, with varying levels of English proficiency. The sample consisted of two classes, that is, classes 8E and 8F, and they were selected based on several considerations. The same English teacher taught both classes, followed the same curriculum, and had comparable English proficiency levels, according to the teacher's assessment. These classes had never used Storyberries before, so the English teacher recommended using both classes for the research. The total sample consisted of 59 students, divided into an experimental group ($n=32$) and a control group ($n=27$). The 8E class became the control group, while the 8F class became the experimental group. The difference in the number of students between the two groups is due to the natural composition of the classes, as each class has a different number of students. This condition is common in quasi-experimental research designs, and the statistical analysis does not require equal sample sizes, so it does not affect the results of each group.

2.2 Research Instruments

This research used a writing test and a scoring rubric as the instruments. This writing test utilizes a pretest and posttest, which were designed by the researcher

based on the characteristics of narrative text and the learning objectives and validated by experts before they were administered. In the pretest, students were required to write a narrative text in response to the provided instructions and topics. After completing the experimental stages, the posttest was administered by having participants write a 50-100-word narrative using the provided instrument. The scoring rubric was assessed according to the assessment rubric created. The following rubric and criteria for student writing performance were assessed based on the structure and context adapted from the writing rubric by Jacob et al. (1981).

2.3 Data Analysis

In this study, the researchers used a t-test in IBM SPSS 26 to compare the effects between the experimental and control groups. The data analyzed included descriptive statistics, normality tests, the Wilcoxon signed-rank test, the Mann-Whitney test, and effect size calculations.

3. RESULT

3.1 Significant Improvements in Students' Writing Skills Using DST Through Storyberries

3.1.1 Normality Test

The normality test was used to determine whether the pretest and posttest data results between the experimental group and the control group are normally distributed. The results of the normality test are presented in the following table:

Table 1. Normality Test.

		Tests of Normality		
		Kolmogorov-Smirnov ^a Statistic		
			df	Sig.
pre_total	control	.081	27	.200*
	experimental	.138	32	.128
post_total	control	.133	27	.200*
	experimental	.236	32	.000

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The normality test shows that the pretest data for the control group had a significance value of ($p = 0.200$) and for the experimental group ($p = 0.128$). Therefore, the data were normally distributed in both groups ($p > 0.05$).

3.1.2 Hypothesis Test Using the Wilcoxon Signed-Rank Test

The Wilcoxon test was used to test the hypothesis because the data were abnormally distributed. This test measures the improvement in pre- and posttest scores for each group.

Table 2. Statistical Test of the Experimental Group.

Test Statistics	
	post_total - pre_total
Z	-4.703 ^b
Asymp. Sig. (2-tailed)	.000
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

The significance value of the Statistics test shows an Asymp. Sig. (2-tailed) of 0.000, which is less than 0.05 (Sig 0.05). This indicates a significant difference between the pretest and posttest scores in the experimental group.

Table 3. Statistical Test of Control Group.

Test Statistics	
	post_total - pre_total
Z	-2.826 ^b
Asymp. Sig. (2-tailed)	.005
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

The results of the statistical test show that the significance value is Asymp. Sig. (2-tailed) is 0.005 ($p < 0.05$). This result indicates a significant difference between the pretest and posttest scores.

3.1.3 Mann-Whitney Test

Table 4. Mann-Whitney U Test Rank.

Ranks			
	GROUP	N	Mean Rank
post_total	control	27	16.87
	experimental	32	41.08
	Total	59	

Table 5. Mann-Whitney U Test Statistics.

Test Statistics	
	post_total
Mann-Whitney U	77.500
Wilcoxon W	455.500
Z	-5.408
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: GROUP	

Mann-Whitney U Test showed the result as an Asymp. Sig. (2-tailed) value of

0.000 ($p < 0.05$). This value indicates that the experimental and control groups differed significantly. This is supported by the results of the rank test, which show that the experimental group's mean rank (41.08) is higher than the control group's (16.87).

3.2 Results of the Effect of DST through Storyberries on Students' Writing Skills

The effect size is calculated using the r (Z-based) effect size. The formula for the r (Z-based) effect size is as follows:

$$r = \frac{Z}{\sqrt{N}}$$

r : Effect Size

Z : Statistical test value (Mann-Whitney test)

N : Total sample

$$r = \frac{-5.408}{\sqrt{59}} = \frac{-5.408}{7.68} = -0.704$$

$$|r| = 0.7$$

The magnitude of the effect size was determined using the following criteria:

Table 6. The r (Z-based) Effect Size Criteria

Range	Category
0.1 - 0.3	Weak
0.3 - 0.5	Moderate
≥ 0.5	Strong

Based on the effect size results using the r (Z-based) formula, the effect size is $|r| = 0.7$. According to the established criteria, this effect size falls into the "strong" category (>0.5).

Based on the results, implementing DST through Storyberries positively impacts students' writing abilities in narrative texts. First, the Wilcoxon Signed-Rank test results showed that the value indicated a significant effect for the experimental group. Therefore, students' pretest and posttest narrative writing scores differed. These results align with Puspitarini and Junaedi (2024), who found that DST significantly improves students' narrative writing skills between pretest and posttest. Through the integration of digital technology with engaging features, students can be motivated to learn, thereby impacting their writing skills (Amelia, 2024; Fitri & Harianingsih, 2021; Mukarromah et al., 2025). Thus, DST has a positive impact on English language learning, particularly on writing skills, especially narrative writing. The multimodal characteristics of the Storyberries platform can explain improvements in students' writing skills. The combination of illustrations, images, text, and audio narration provides support that can help students understand the story's context. In addition, the control group also showed an increase in scores.

However, the increase in scores for the control group was not as significant as that of the experimental group. The improvement in the control group was relatively small. This may have occurred due to the natural learning process within the classroom, which led to an increase in scores for the control group. Meanwhile, the improvement in the experimental group was attributed to the use of DST through the Storyberries platform as a learning medium. Robin (2008) states that digital storytelling increases student engagement in the classroom, which impacts motivation and writing quality.

Subsequently, the results of the Mann-Whitney U test were significantly different ($p < 0.05$). This indicates a significant result, leading to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_1). These significant results indicate that digital storytelling through Storyberries makes a significant contribution to composing narrative texts and improving students' writing skills. Additionally, according to Zarei (2024), DST can assist students in the writing process. Students can comprehend the text's content, enabling them to compose texts in a structured form that aligns with writing components. Therefore, this study showed positive results regarding students' writing abilities through digital storytelling. The hypothesis, using the Wilcoxon and Mann-Whitney U tests, demonstrates that there was a significant change in the pretest and posttest scores of students in the experimental class. This is also consistent with previous research (Amelia, 2024a; Fitri & Harianingsih, n.d.; Mukarromah et al., 2025; Puspitarini & Junaedi, 2024; Robin, 2008; Zarei, n.d.), indicating that digital storytelling yields significant improvements in students' writing skills. Therefore, the use of digital storytelling via Storyberries has proven more effective in supporting English language learning than conventional teaching methods.

In addition to examining the difference in differences in pretest and posttest scores between the experimental and control groups, this study also analyzed the effect size of digital storytelling using Storyberries. The calculation of effect size using the r (Z-based) effect size formula indicated a strong effect. The strong effect size ($r = 0.7$) observed in the experimental group indicates an improvement in students' narrative writing skills. This strong effect size is attributed to the extended intervention, which spanned from pretest to posttest over five meetings using digital storytelling via Storyberries. Riani et al. (2021) found significant differences in the use of digital media in writing instruction before and after the intervention. Additionally, Yang and Wu (2012) demonstrated that digital storytelling enhances students' writing skills in idea development and story composition.

In fact, despite its findings, this study also had several limitations that may have affected the generalizability of its results. The limitations of this study include that it examines only how the use of digital storytelling affects students' writing skills, not other skills such as reading, listening, and speaking. It also focuses on one genre of text: narrative text. Thus, this study does not address other text genres, such as recount and expository. Furthermore, this study was conducted in an EFL classroom context and involved junior high school students. Thus, the findings cannot be directly generalized to students at different educational levels. Moreover, the sample size is relatively limited, with a total of 59 students selected from two classes: the experimental group (32 students) and the control group (27 students), out of a total population of 201 8th-grade students. Therefore, caution is warranted when generalizing the results of this study to a broader population or to different

educational settings. This discussion supports integrating DST through Storyberries as a digital learning medium for writing skills in the EFL classroom. Storyberries provides many interactive features, such as audio, visuals, and text, which help students compose texts with the correct structure and content. This platform supports students in language development, critical thinking, and creativity (Herda et al., 2023). Overall, the results of this study align with existing research. The evidence from the Wilcoxon and Mann-Whitney tests indicates that students' ability to write narrative texts has increased. This study also demonstrates the effect size of DST use in narrative text writing by EFL students. Theoretically, the results of this study are explained by Vygotsky's (1987) constructivist theory, which posits that scaffolding aids students in the writing process. Before implementing digital storytelling with Storyberries, students took a pretest to assess their foundational skills in writing narratives. Following the intervention, an improvement in writing skills was observed, consistent with Vygotsky's Zone of Proximal Development (ZPD).

Furthermore, in line with Richard E. Mayer's (2010) multimodal learning theory, which posits that combining images, text, and audio can support interactive learning in the classroom. Digital storytelling provides this combination, helping students understand the content and structure of the stories presented. The implementation of DST as a strategy and medium for teaching English is more effective than traditional methods. Therefore, the use of DST through Storyberries can be recommended as a strategy for teaching English, particularly for developing writing skills in the EFL classroom.

4. CONCLUSION

Based on the analysis of the results and discussion, it can be concluded that implementing DST through Storyberries, as a digital medium in classroom learning, significantly improved students' narrative writing skills. Several tests conducted demonstrate significant differences in students' scores before and after using DST through Storyberries. Furthermore, the effect size indicates that using DST via the Storyberries platform has a significant impact on classroom learning. In general, this study highlights the importance of integrating digital technology into classroom instruction, particularly in the EFL classroom. Through technology integration, the interaction between teacher and student strengthens, and student-centered learning is implemented. Good interaction between teachers and students will improve students' learning performance, particularly in English language learning. Therefore, the use of DST via the Storyberries platform can be considered an effective medium for teaching narrative writing. With the right strategies and methods, this platform can also be used to improve other language skills.

Furthermore, for future research, this study can serve as a reference for research on the use of digital storytelling in English language learning, covering a broader range of language aspects. Research can be conducted at higher or lower educational levels, depending on the research needs to be met. Future research can provide comprehensive knowledge regarding the pedagogical aspects of digital media that can be utilized in English education.

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