

(Research/Review) Article

The Use of Digital Storytelling (DST) as an Effective Strategy for Enhancing Students' Writing Skills: A Systematic Review

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Abstract: Digital storytelling (DST) refers to the merging of storytelling with digital media to address educational needs, such as communication, self-expression, and language acquisition, particularly writing skills. Writing has a significant role in students' lifelong learning. Hence, teachers constantly seek novel ways to enhance students' writing skills. To address the research question on describing the role of digital storytelling (DST) as an effective strategy in enhancing students' writing skills and its opportunities and challenges, this paper provides a systematic review of several studies on Google Scholar and ERIC. The methodology employed in this paper was a Systematic Literature Review (SLR) with a qualitative approach, commonly referred to as meta-synthesis. The findings demonstrate that digital storytelling (DST) can be used as an effective strategy by teachers in enhancing students' writing skills. Most of the authors of these research papers have presented empirical evidence supporting the benefits of integrating digital storytelling (DST) in the classroom to enhance students' writing more effectively.

Keywords: Digital storytelling (DST); writing skill; teaching writing, Language learning; Educational technology

1. Introduction

Writing is typically regarded as the most challenging skill among foreign language learners, compared to the other four skills (Damavandi et al., 2018, as cited in Kazazoglu & Bilir, 2021). Writing can be said as a combination of all skills and it is different from other skills. Harmer (2001) defines writing as a form of communication that delivers thoughts or expresses feelings through writing. Additionally, writing is a field for exploring and developing ideas, perceptions, and values. It means that writing is a productive skill that expresses feelings through written communication. Therefore, Richards and Renadya (2002) state that writing a text in English as a foreign language is not easy and is the most challenging skill to master. The art of writing is undoubtedly a complex and comprehensive endeavour that requires the mastery of not only the writing mechanics and grammatical rules of language, but it also requires knowledge of word choice, the ability to organize and develop ideas, maintain cohesiveness and coherence, and to deal with different genres and styles. For instance, if the students lack of vocabulary, they can have some errors in their sentences. In their writings, the students are unable to describe an object specifically in detail. These can cause errors and misunderstandings for the readers. Hedge (1988) defines that effective writing necessitates a strong ability to generate ideas, maintain high accuracy to prevent misinterpretations, and employ diverse grammatical structures, syntax, and vocabulary. Therefore, students must be able to learn writing in English to facilitate written communication.

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Writing skill in senior high school in Indonesia is taught by using the Genre-Based Approach (GBA). In the English language curriculum that applies at senior high school, students are required to learn several types of text. Students are introduced to different types of texts and taught through the model texts in which the purposes, the generic structures, the social functions, and the language features of texts are explicitly discussed. The purpose of the reading model texts is to enable the students to gain an understanding of the distinctions between different text types. This understanding should then be applied in their own writing, ensuring that the text is appropriate to the text type in question and that the generic structures are presented in the correct order and that the language features are used correctly. Mather, et. al. (2009) in Tarigan & Liana (2018) state that students may encounter difficulties when learning to write, such as coming up with content, making organizational structures, setting objectives, carrying out the technical parts of writing, editing the text, and rewording the objectives. Some students may struggle primarily with punctuation and capitalization, while others may have difficulty formulating their ideas into coherent messages. Students often find writing to be a daunting task, which can make it difficult for them to produce high-quality texts. Therefore, teaching writing is a significant challenge for educators. In order to enhance students' writing skills, it is fundamental for educators to present them with efficient tools and techniques. The use of learning media can significantly contribute to the teaching and learning process.

In the rapidly evolving landscape of education, the integration of technology has become a cornerstone for fostering innovative and engaging learning experiences. The integration of technology is now essential for creating creative and interesting educational opportunities. Teachers now have access to a plethora of resources and tools to help students learn languages because of the growing integration of Information and Communications Technologies (ICTs) in language instruction. ICTs are used by many teachers as a substitute tool for language acquisition or as a way to inspire their students. Yunus (2007) defines ICT as a valuable instrument for improving English language proficiency at the foundational level. ICT offers a nurturing and motivating setting where students can improve their writing abilities in terms of both quantity and quality (Yunus et al., 2013). Moreover, ICT in the English classroom provides teachers with more tools to facilitate students, accommodates a variety of learning methods, and assists students engage with the material that they learn. It can be concluded, since ICT supports a variety of learning styles and helps students access digital information effectively, it is regarded as a potent tool for educational change and reform.

Among the myriad digital tools available, DST has become a popular strategy in English language teaching, particularly in teaching writing. According to Miller & Rief (2010), students enjoy creating stories together with music and photographs on the computer and writing is the very first step before they create it. Writing helps students to clarify their thoughts and express them effectively in their scripts. DST is a multimodal tool that can enhance the writing ability of the students. Ohler (2008) defines that the use of digital storytelling is an efficacious strategy for imparting media literacy, a skill that is becoming progressively indispensable as students spend more time immersed in a culture saturated with media. Through DST, students can reveal their ideas with greater intensity and motivation. Furthermore, DST provides students a flexible learning environment to collaborate and critically considers various issues while leveraging their communication and technological skills. During the dynamic learning process facilitated by DST, students can enhance their writing skill.

However, this literature review underscores the need for further empirical research to elucidate the mechanisms by which DST improves students' writing skills. By identifying key factors that contribute to the effectiveness of DST in teaching writing, educators can better utilize this innovative pedagogical approach to support students' development as proficient writers in the digital age. Given this gap, this study attempts to address this research need by conducting a thorough literature review and empirical analysis. By synthesizing existing research findings and exploring the nuances of implementing DST in teaching writing, this paper aims to present valuable insights for educators, researchers, and policymakers interested in harnessing the potential of DST to enhance students' writing skills. Through a deeper understanding of the relationship between DST and writing proficiency, this research aims to contribute to the ongoing dialogue around effective pedagogical practices in the digital age. Finally, to achieve the aims of the research, the following research questions were addressed:

- 1) In what ways DST be an effective strategy for enhancing students' writing skills?
- 2) What are opportunities and challenges of integrating DST for enhancing students' writing skills?

2. Preliminaries or Related Work or Literature Review

Writing Skill and Technology

Writing has known as the activity or process to express some ideas or opinions is writing. According to Byrne (1988), writing entails the encoding of some kind of message to the readers, or we can say that by forming letters or combinations of letters, we can translate our thoughts into language and arrange the letters according to certain conventions in order to form some words into sentences that are linked together and become coherent words. Moreover, Kroma (1988) stated that writing is a cognitive process where the author expresses his or her thoughts and ideas on a paper (print), progressing from words to phrases, sentences to paragraphs, and paragraphs to essays. Acquiring writing skills in a foreign language presents greater difficulties compared to acquiring them in native language. It requires more attention to the learning problems such as dealing with vocabulary, grammar or structure, punctuation, etc. In accordance with Goncalves et al. (2018), writing becomes the most difficult language skill to master, compared to other language skills. Similarly, Pratiwi (2021) argues defines that writing is a highly complex skill to master for second language learners. There are several aspects that should be considered in writing. Consequently, the act of writing is not merely the act of “writing things down”. Among the four basic skills, it is arguably the most complex and challenging to learn.

In the writing process, thinking skills and creative skills are required. Writing represents what people think. The writing process begins when the writer gets an idea, organizes the idea, and then communicates the idea in the written form. Writing needs some processes of thinking. Hence, a writing process is never a one-step action, but it has several steps. In accordance with Brown (2001), writing is the act of putting thoughts into words on paper and giving them structure and consistency. Moreover, Langan (2006) states that it is not only about the post when writing, but also about the process of writing that would make the writing itself attract people’s attention. Through writing, people can explore his or her mind (idea) in the media such as a paper that has a certain purpose to convey a message to the readers. The art of writing is demanding task that often comes with several difficulties when teaching writing to EFL learners (Damavandi et al., 2018, as cited in Alemi et al., 2022). Students frequently encounter some difficulties when attempting to express their thinking and ideas or thoughts through written form. Therefore, it is of paramount importance to expand students’ fundamental knowledge about writing, encompassing accurate spelling, grammar, precise punctuation, and appropriate capitalization. According to Moses & Mohamad (2019), teachers encounter significant challenges when it comes to instructing the writing skill and engaging students to write with greater proficiency. These difficulties primarily arise from insufficient knowledge of vocabulary as well as deficiencies in grammar and spelling.

To strengthen the writing skills of the students, various supplemental tools were utilized, with the most significant becoming the technology-enhanced approach. The integration of technology into language classes offers numerous advantages and can effectively enhance students’ writing skills. In accordance with Gerde et al. (2012), the utilization of a range of technological devices, including tablets, computers, and smartphones, enables students to archive their written work in a digital format. This enables teachers, peers, and parents to assess the students’ progress over time by reviewing their written work. Similarly,

Purcell et al. (2013) define that the majority of teachers have acknowledged that digital technologies are useful tools for teaching writing skills. They have emphasized that these tools have a positive impact on students' creative thinking and stimulate them to explore various forms of writing.

DST and Writing Skill

The utilization of technology in education has proved to be very beneficial for practically every subject, including the teaching and learning of the English language (Yilmaz & Sığirtmaç, 2023). Digital tools, such as DST, have become increasingly popular in classroom activities and it aims at improving students' language skills (Lee, 2014). Some experts have provided various definitions of DST. In accordance with Lee (2014), a digital story is a narrative that is created by combining different forms of digital media, including audio, images, and videos. In line with Gubrium & Turner (2011), they define stories as visual narratives that typically last between 3 to 10 minutes. The narrative stories integrate diverse forms of media, including photographs, videos, voices and music, audio recordings, and text, to construct captivating depictions of experience. In addition, Robin (2016) highlights that DST refers to the practice of utilizing computer-based resources for storytelling purposes, which encompasses multiple forms of media, including music, videos, images, texts, and narrations. Frazel (2011) also defines DST as the process of combining various media to enhance and enrich written and spoken words.

In teaching writing, DST helps the teachers to gain students' interest and involve them in the learning process because the content is moving and including interesting animations. It also contains the story subtitle which can make the story understandable for the students itself. The students' engagement will make the learning process feel more comfortable. Chen & Chuang (2021) state that DST can modernize traditional teaching writing methods by directing students' attention to learning processes. It provides numerous benefits to the students. Increasing students' technology experiences through the creation of digital storytelling is one of the examples. In accordance with Xu et al. (2011), DST is an efficient strategy for motivating students who lack of confidence or motivation to write in a second language. In fact, DST is mostly based on active student collaboration. Therefore, it is expected that the use of DST can be an effective strategy for enhancing students' writing skill.

3. Materials and Method

To answer the research problem, this paper employs a Systematic Literature Review (SLR) methodology utilizing a qualitative approach, commonly referred to as meta-synthesis. According to Dixon-Woods (2010), a SLR is a rigorous scientific procedure that follows a set of specified standards to assure the thoroughness, objectivity, transparency, and responsibility of the methodology. This method is a comprehensive and structured method of discovering, evaluating, and summarizing (synthesizing) all relevant studies pertaining to a particular research issue or topic. The procedure entails an explicit and systematic approach to recognize, choose, and evaluate relevant literature critically as well as to collect and interpret the data from the literature that incorporated in the review. In synthesizing (summarizing) the result of descriptive studies, a SLR used a qualitative approach and the method used is called meta-

synthesis. This method is defined as a technique of the data integration in order to obtain new theories or notions, or to achieve a more profound and comprehensive degree of understanding (Perry & Hammond, 2002). The researcher conducted a comprehensive review of multiple research articles and journals pertaining to the topic. The objective of this study is to describe and explain trends observed in the use of DS in enhancing students' writing skills. The study conceptualizes the essential elements of the DS implementation process through a review of pertinent research studies.

The literature review consisted of internet journals and/or proceedings. This study relies on a methodical examination of the literature acquired from the primary databases, Google Scholar and ERIC that published from 2018 to 2024. Hence, the researcher employed a seven-step process in conducting the literature evaluation for this study. It involves the establishment of the parameters and objectives of the scoping phase. The process consists of several phases: literature searches, screening, mapping, quality assessment, findings synthesis, and conclusion phase. In order to ensure that the review conducted by the researcher is systematic, many procedures are followed, as outlined by Davies et al. (2013). The subsequent procedures are elaborated upon in the subsequent sections.

Establishing the Scope of the Review

The researcher commences by constructing inclusion criteria to identify which studies will be incorporated into the review. The criteria of the review are shown in table 1 as follows:

Table. 1 Review Inclusion Criteria (Meta-Synthesis).

Type of the Criteria	Inclusion Criteria
Topic	The literature should have a direct correlation with the review question
Recency	The literature was published from 2016 to 2024
Research Base	The literature should be grounded in empirical study, encompassing both qualitative and quantitative methodologies
Transparency	The methodology used in conducting the research on which the literature is based should be clearly articulated. (e.g., the size of the sample, the instrument used, and the analysis conducted)
Validity/Reliability	The validity and reliability of the literature findings can be reasonably anticipated, considering the study's nature, considering the nature of the study

Searching the Literature

The researcher discovered pertinent studies in several literatures. Google Scholar and ERIC database are utilized in this systematic literature review (see table 2).

Table 2. Literature Type and Sources Sought.

Type of the Literature	Source
Journal Articles	Utilize the Google Scholar and ERIC platforms to do an online search of the database
Proceeding	Utilize the Google Scholar and ERIC platforms to do an online search of the database Agreed Search Keyword: “Digital Storytelling” AND (“writing skill” OR “enhance writing skill” OR “storyboard” OR “plotagon”)

Screening the Literature

Each study was evaluated based on the specified criteria for inclusion. Establishing clear and consistent criteria for selecting studies helps prevent hidden bias and ensures that the research question is well addressed. By evaluating each study using identical criteria and documenting the outcomes, the review's findings are presented in a clear and transparent manner.

Describing and Mapping

The researcher provides a comprehensive account of the methodology and conclusions of each study that were included. This includes details about the population under investigation, the design of the study, and the key characteristics relevant to the research topic. It is utilized to generate a comprehensive map that provides a systematic representation of the research endeavour related to each subject.

Assessment of Quality and Relevance

The researcher assesses each study by creating a descriptive map based on these criteria. First, the credibility of the results is contingent upon the research's quality, which is established by its adherence to widely acknowledged norms for establishing a certain type of research, as described in the research design (methodological quality). Second, it is necessary to take into consideration the suitability of the research design in properly examining the specific subject matter of the investigation (methodological relevance). Furthermore, the research focus is suitable for addressing review questions (topic relevance). Finally, the ultimate weight of evidence (WoE) is derived by assigning weights to the criteria as determined by Gough (2007). The criteria of WoE are described in detail below (see table 3).

Table 3. The Criteria for Evaluating the Weight of Evidence (WoE).

Criteria/Level	Methodology Quality	Methodology Relevance	Topic Relevance
1. Excellent	Excellent research design justifies all decisions taken: e.g., sample, instrument, analysis—clear evidence of actions taken to maximize validity and reliability.	The research question is stated clearly and the methodology is highly relevant to RQs and answers them in detail.	The study is closely related to one of the leading review questions and provides robust evidence to base future policy/action
2. Good	The research design is well articulated, demonstrating the implementation of deliberate decisions to ensure the production of accurate and reliable findings.	Review questions are either stated explicitly or can be deduced from the text. The findings pertain to the research question.	The study is consistent with one of the main research inquiries and offers crucial empirical support.
3. Satisfactory	The research design may be implicit but appears to be logical and produces valuable data.	The RQ is not explicitly stated but seems to align well with the study's design and findings.	Some of the research findings are applicable to one of the primary review questions.
4. Inadequate	The study design is not clearly delineated and contains flaws.	The RQ is not stated or not in accordance with the design.	The study did not address the primary question.

Synthesizing Study Findings

This comprises presenting the summary of the research methodology, findings, and the supporting evidence under a theme title that summarizes the research methods, conclusions, and evidence weights from the collaborative mapping process. From several studies, each with high WoE that demonstrates strong evidence can support the findings. Findings with a lower WoE or a smaller number of studies were considered to be reasonable evidence.

Conclusions/Recommendations

To provide a clear foundation for each suggestion, the researcher formulates a number of recommendations that are tightly tied to the synthesis findings. It entails pointing up any potential restrictions on extrapolating or applying the results. Figure 1 shows a flow chart that explains the processes involved in doing a systematic review of the SLR research, making it easier to understand the study process.

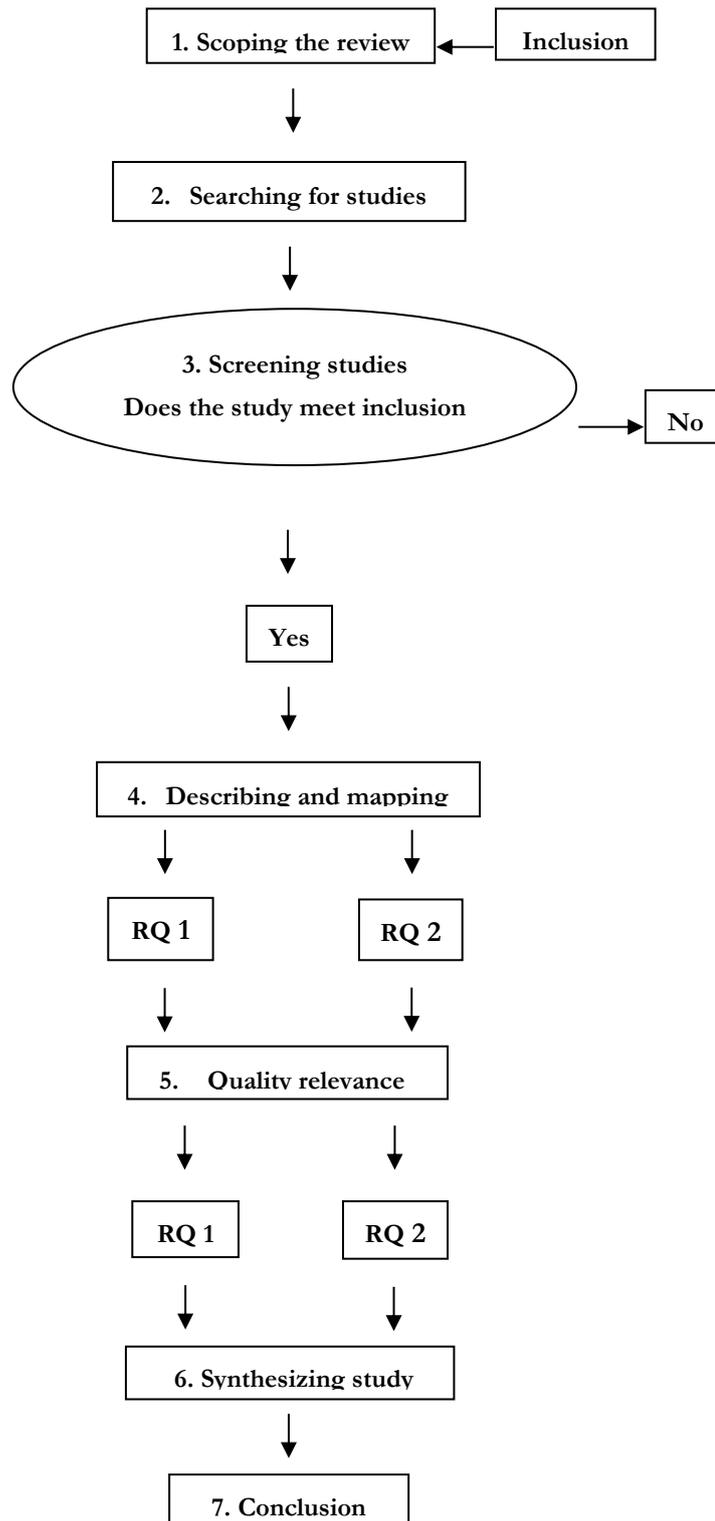


Figure 1. The Research Framework adapted from (Davies et al., 2013).

4. Results and Discussion

In this section, the author needs to explain the hardware and software used, dataset sources, initial data analysis, results, and results analysis/discussion. Presenting the results with pictures, graphs and tables is highly recommended. Formulas or evaluation measuring tools also need to be included here. There must be discussion/analysis, and you can't just rewrite the results in sentence form, but you need to provide an explanation of their

relationship to the initial hypothesis. In addition, this section needs to discuss and elaborate on important findings.

Figures and Tables

In this section, the research papers' findings will be thoroughly examined. Owing to the nature of investigations, 56 scientific literature that were published between 2018 and 2024 were deemed eligible for this systematic review, provided that they fulfilled the inclusion criteria and provided answers to the review questions. The greatest and most influential of the numerous research articles that have been presented on the topic of DST's impact on enhancing students' writing skill are described in the Table 4 below.

Table 4. Literatures that Fulfil Inclusion Criteria and WoE.

No	Authors	Topic	Country	Publication Type	Research Methods	Sample Size	Relate RQ (1-2)	WoE (1-4)
1	(Tarigan & Liana, 2018)	DST Technique	IND	Journal	Classroom Action Research	16 Students	1, 2	1
2	(Gámez & Cuellar, 2019)	Writing skill	COL	Journal	Classroom Action Research	18 Students	1, 2	1
3	(Munajah et al., 2023)	Writing skill	IND	Journal	Qualitative Descriptive Method	10 Teachers & 60 Students	1, 2	1
4	(Alemi et al., 2022)	EFL learners' writing skill, pedagogy,	IRI	Journal	Mixed Method	22 EFL Learners	1, 2	2
5	(Sadikin et al., 2023)	Writing skill	IND	Journal	Qualitative Descriptive Method	29 Students	1, 2	1
6	(Hapsari et al., 2016)	Writing skill	IND	Proceeding	Quasi Experimental	10 Students	1, 2	2
7	(Rong & Noor, 2019)	Creative teaching method,	MAY	Journal	Pre-experimental	15 Students	1, 2	1
8	(Zikri, 2023)	Writing skill	IND	Journal	Quasi Experimental	22 Students	1, 2	1
9	(Fitri et al., 2021)	DST-based task, narrative writing skill	IND	Journal	Mixed-method	29 Students	1, 2	1
10	(Anita, 2019)	Storybird Web 2.0, narrative writing skill	IND	Proceeding	Classroom Action Research	20 Students	2	2
11	(Shemy, 2020)	Students' motivation and achievement, teacher feedback	OMN	Journal	Quasi-experimental	40 Students	1, 2	1
12	(Aljaraidh, 2020)	Students' academic	JOR	Journal	Quasi-experimental	50 Students	1, 2	1

		achievement and motivation, Visual memory, self-expression, feedback						
13	(Demirbaş & Şahin, 2023)	Creative writing skill	TUR	Journal	Quasi-experimental	52 Students	2	1
14	(Kotluk & Kocakaya, 2017)	Students' academic achievement and self-efficacy, active learning and engagement	TUR	Journal	Quasi-experimental	64 Students	1, 2	1
15	(Yamaç & Ulusoy, 2016)	Students' engagement and motivation, multimodal literacy	TUR	Journal	Mixed-method	26 Students	1, 2	1
16	(Wiwikanda & Susanti, 2022)	Critical thinking skill, narrative writing,	IND	Journal	Pre-experimental	20 Students	1, 2	1
17	(Hava, 2021)	Student's motivation and achievement, self-efficacy,	TUR	Journal	Mixed-method	40 Students	1, 2	1

In the table 4, it showed that overall, there are 17 empirical studies involved students and teachers. Subsequently, the researcher employed the existing literature to address the review questions (RQs) that was previously formulated by the researcher. In this study, the researcher posed two inquiries on the efficacy of using DST as an effective strategy to enhance students' writing skills, as well as the opportunities and challenges associated with incorporating DST to enhance students' writing skills.

The integration of DST is very popular among teachers and students, particularly in teaching English writing. DST can be an effective strategy for enhancing students' writing skill in several ways. According to Miller (2010), DST helps student to learn the art of writing good stories and integrate text and art creatively, thereby improving their narrative and descriptive writing skills. This study is similar with the study written by Munajah et al. (2023). They found that DST has an essential role in improving students' interest, process, and learning outcomes in story writing, emphasizes the need for innovation in teaching materials, and the potential of DST to engage students in the writing process. Writing digital stories can also enhance students' creative thinking skills, which are crucial for effective writing. By integrating DST in the teaching and learning process, students perceive DST as useful, motivating, and encouraging of their creativity and participation in writing activities (Tarigan & Liana, 2018; Castillo-Cuesta et al., 2021; Hava, 2021). Students are freely to write their writing. DST

encourages students to organize their thoughts and ideas coherently, be creative and focus on the content and logical flow of their writing, which is crucial for effective writing. Therefore, being more creative and can lead them to present their writings in an innovative and dynamic way.

DST can be an effective method for increasing students' motivation to write in English. Alemi et al. (2022) suggest that DST encourages students in building empathy, and increasing fruitful collaboration between peers. This makes students be more heightened interest and willingness to write. Students' motivation to write refers to the increased enthusiasm, engagement, and positive attitude towards the act of writing, which is significantly enhanced through the use of DST. It demonstrates that DST could boost students' motivation towards technical writing by actively engaging them in the creative process, thereby making writing a more enjoyable and rewarding experience (Aljaraideh, 2020). Additionally, Sadikin et al. (2023) also argue students can be more enjoyable in learning writing because it requires images, videos, and audios in their learnings. The phase of DST is effective in integrating technology and writing into harmony. So that, it can increase their understanding of story components and retain information and students' motivation to learn English language, particularly English writing.

In writing the story, grammar and vocabulary are very essential. Good grammar and a rich vocabulary contribute significantly to the overall quality of writing (Yuliawati, 2021). Implementing DST when learning English writing can assist students to improve their grammar and vocabulary (Rong & Noor, 2019). Likewise, Hava (2021) holds the view that the process of producing digital stories entails the composition of multiple writing drafts, which helps students practice and improve their grammar and spelling skills. In addition, the use of DST helps students improve their vocabulary and grammar knowledge and attempts to use complex language forms (Gámez & Cuellar, 2019). Developing a strong command of vocabulary enables students to select more suitable terms and tailor their writing to different audiences. In addition, students will have the ability to generate captivating prose without relying on repetitive vocabulary. The greater the students' level of proficiency in grammar, particularly in relation to the writing domain, the more likely they are to acquire the capacity to write well (Yuliawati, 2021). Therefore, students are trained to produce writing pieces with minimal grammatical errors and use varied, precise vocabulary to describe incidents or characters effectively. Writing facilitates language acquisition as students effectively articulate their thoughts using words, phrases, and paragraphs, so enhancing their vocabulary and grammar skills.

Numerous existing studies have unequivocally demonstrated that incorporating DST into the teaching and learning English writing can be a very beneficial and effective. One of the benefits of incorporating the DST in the teaching and learning English writing is DST can promote students' associative thinking, visual thinking, and divergent thinking. The study was conducted by Nasir et al. (2023) found that DST trains associative thinking when creating the story at each stage of creation process. This thinking is required to create a scenario-based story plot by writing on a graphic storyboard or using a brainstorming sheet. During writing a story plot, students must relate the topic with the real life in the story format. This enables students to establish relation between their knowledge and real-life content (Bilen et al., 2019).

Beside associative thinking, DST also promotes visual thinking. Students are required to build their imaginations to create good stories that is related to the topic given. This activity may be challenge for students, but through the combination of multimedia such as, images, sound, and videos this may stimulate students' imagination. DST has shown promise in capturing students' interest and motivating them to engage more actively in the writing process. Moreover, this can visualize students to picture the events of the story in their minds (Shemy, 2020). Divergent thinking also involves students thinking (Lashari et al., 2022). According to Kotluk & Kocakaya (2017), in the process of making DST, divergent thinking can be nurtured through script writing and the integration of multimedia. Students are demanding to generate their ideas to overcome the unique ideas. In the teaching and learning writing using DST, this activity enables students' divergent thinking in developing more ideas that detailed and unique.

Utilizing DST in teaching and learning English writing can enhance students' creative and critical thinking skills. When students are given the freedom to integrate diverse media into their narratives, they are more likely to experiment with language and enhance their storytelling abilities. This can promote students' creativity. In the classroom of English language, creativity is the vital role which means "converting or changing one thing into another" (Murugan & Razali, 2013). Creative thinking can be described as a "double-minded" that "operates on multiple plans" (Koestler, 1964). He also adds that incorporating creative thinking into lessons is regarded to be important as it can foster a comfortable and stimulating classroom atmosphere, which is crucial for the students' educational progress. In addition, creative thinking can help foster authentic communication and collaboration. Rong and Noor (2019) state that the students are urged to employ their own imagination and ingenuity when crafting their narrative stories. They are delivered thematic tags and are required to create stories around these themes, which also fosters creative thinking. Therefore, creative storytelling through DST encourages students' motivation as they were ignited by joyful and fun experience. When students use a problem-solving activity in their stories, they may feel compelled in employing their creative thinking while solving the task given by the teachers. By nurturing creativity among students, DST also stimulates students' self-confidence, self-esteem, and motivation among learners.

Beside creative skills, critical thinking skill also can enhance students' writing ability. Gresham (2014) found that through digital technologies, it enables students to be a risk-taking, -self-actualization, and decision-making person. Likewise, Wiwikananda and Susanti (2022) argue that students are encouraged to predict plots, deliver their views, and shape their cognitive processes, including analysis, synthesis, compilation, evaluation, and interpretation. This holistic approach helps students improve their writing by fostering critical thinking skills necessary for constructing coherent and meaningful narratives. DST can enhance students' critical thinking skills by providing a multi-aspectual creative writing process that encourages students to engage in entertaining and informative activities, which highlight their creativity and facilitate the writing process (Demirbaş & Şahin, 2023). Integrating digital stories in the classroom enables students to produce conventional texts, expand their vocabulary and sentence structure, and focus on proper spelling and punctuation. These activities collectively foster the development of critical thinking skills. Furthermore, DST requires students to organize their thoughts, structure their narratives, and make connections between ideas,

thereby fostering critical thinking. Students can cultivate cognitive abilities at an advanced level, such as problem-solving, by making choices and surmounting challenges to effectively accomplish assignments. DST often involves collaborative projects, allowing students to work together and provide feedback on each other's work. This collaborative aspect not only enhances students' writing skills but also fosters important social and communication skills (Shahid & Khan, 2022).

While DST holds promise as an effective strategy for enhancing students' writing skills, there are challenges and considerations that teachers must address. The study was conducted by Sadikin et al. (2023) discovered that the challenges of integrating DST for enhancing students' writing skills include in terms of the access to technology, not all students may have equitable access to essential technology resources, such as computers, software, or reliable internet connections. Students often lose access to DST activities due to poor internet connections. They define that this can create a digital divide among students, limiting the effectiveness of DST as a tool for enhancing writing skills. This situation relates to the technical skills. Students and teachers may need to acquire new technical skills to effectively use DST tools. Demirbaş and Şahin (2023) argue that instructional clarity and assessment and feedback are the challenges of using DST when teaching and learning writing. Ensuring that teachers provide clear and precise instructions during the DST activities is crucial. Misunderstandings or ambiguities in instructions can hinder the effectiveness of the DST process. Furthermore, providing timely and constructive feedback on students' digital stories can be more complex compared to traditional writing assignments. Teachers need to develop new assessment rubrics that consider the multi-modal nature of DST.

Time constraints are also very necessary in integrating DST in teaching and learning English writing. Employing DST into the curriculum may require additional time for planning, instruction, and implementation. Teachers may already have a packed schedule, and finding the time to incorporate DST activities can be challenging. Moreover, the expertise of teachers in customizing content for story creation is crucial for effective use of technology in DST (Smeda et al., 2014). Likewise, Hava (2021) states that creating digital stories is a lengthy process that requires significant time and effort from both students and teachers. The process of digital storytelling is complicated and demands creative and digital skills, which also can be challenging for students. Additionally, the engagement levels of students can vary, with some students showing low interest in school activities, including DST, which can impact their writing skills (Anita, 2019). Students often struggle to think of interesting or significant ideas to write about, which can lead to wasting time on the introduction and having less time for the body and conclusion of their writing.

5. Conclusion

DST has emerged as a compelling pedagogical tool for enhancing students' writing skills. Studies have shown that DST fosters students' writing skill (narrative and descriptive writing), strengthens creative and critical thinking skills, and increases student motivation and engagement. The process of crafting digital stories encourages students to organize their thoughts coherently, experiment with language, and refine their grammar and vocabulary. Additionally, DST promotes associative, visual, and divergent thinking, fostering a deeper understanding of story components and facilitating knowledge retention. However, the

successful implementation of DST requires careful consideration of potential challenges. Unequal access to technology can create a digital divide, while students and teachers may require additional training to develop the necessary technical skills. Effective use of DST hinges on clear instructional delivery, timely and constructive feedback mechanisms, and the development of assessment rubrics tailored to the multimodal nature of digital stories. Time constraints present another hurdle, as incorporating DST into the curriculum demands additional planning, instruction, and implementation time. Finally, student engagement levels can vary, and some students may struggle with generating creative content or managing the complexities of the digital storytelling process. By embracing DST as an effective pedagogical strategy, teachers can enable students to develop self-assurance, expertise, and flexibility in writing for the digital era. This will provide them with the essential abilities to succeed in a world that is becoming more interconnected and technologically advanced. In essence, this systematic review has presented a large number of literatures connected to the topic of digital storytelling, and these literatures have supported its use in ensuring greater capability of students in writing. In other words, based on the perspective of various researchers, it is safe to say that the use of digital storytelling can generate better writing skills among students of all ages and from all walks of life.

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