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The Effect of Digital Story-Based Learning Methods (Digital Storytelling) on Improving Students Descriptive Writing

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Abstract

This study aimed to analyze and test the effect of implementing a digital storytelling method on improving descriptive writing skills in grade IV students of SDN 06 Panai Hulu, Labuhanbatu Regency. The background of this research problem is students' low descriptive writing skills, characterized by a lack of detail, limited vocabulary, and difficulty organizing ideas. This problem is exacerbated by the use of conventional learning methods that are less effective in fostering student creativity and motivation. This study used a quantitative approach with a one-group pre-experimental design. This design, also known as a quasi-experiment, was chosen because of practical considerations in the field that did not allow for a control group or random sampling. This design allowed researchers to conduct an intervention and observe its effects on one group of subjects. The research subjects were one group of 37 fourth-grade students at SDN 06 Panai Hulu. Data were collected through descriptive writing tests given before (pre-test[P1.1]) and after (post-test[P2.1]) the treatment. The results showed that the implementation of digital story-based learning methods had a positive and significant effect on improving students' descriptive writing skills. The average pre-test score in the experimental group was 52, which then increased sharply to 85 in the post-test. The average increase (gain score) obtained was 33 points. The t-test results showed a calculated t value of 33.43, significantly greater than t table = 2.03, so the Alternative Hypothesis (H1) was accepted. It can be concluded that digital storytelling-based learning methods are highly effective as an innovative alternative for improving elementary school students' descriptive writing skills. This research provides strong empirical evidence that integrating technology and narrative can significantly improve student learning outcomes and motivation.

Keywords: **digital storytelling, writing skills, descriptive text, learning methods**

I. INTRODUCTION

Writing in Bahasa Indonesia occupies a central position in Indonesian primary education as it supports communication, cultural preservation, and the development of higher-order thinking skills. Among the four language skills—listening, speaking, reading, and writing—writing is widely regarded as the most complex because it requires the integration of cognitive, linguistic, and affective processes. This article is based emphasises that writing demands careful organisation of ideas, appropriate lexical selection, and coherent paragraph development, making it the last skill to be fully mastered by learners (Udani et al., 2025).

Within the national curriculum and the Kurikulum Merdeka framework, descriptive writing constitutes a foundational genre at the primary level. Descriptive texts aim to depict objects, places, or events so vividly that readers can virtually see, hear, and feel what is described. They train students to attend to detail, sharpen their imagination, and enrich their vocabulary, thereby forming a basis for more complex forms of writing such as narration, exposition, and argumentation. A well-crafted descriptive text transforms personal experience into shared imagery, creating strong impressions and facilitating the transition to other discourse types (Ritu Arya & Ashish Verma, 2024).

However, preliminary observations and interviews conducted at SDN 06 Panai Hulu revealed persistent difficulties in students' descriptive writing performance. Many pupils struggled to initiate their texts, sequence ideas logically, and maintain a clear focus, resulting in fragmented and incoherent compositions. Their vocabulary was limited and repetitive, which made descriptions monotonous and reduced the expressive power of their writing. Furthermore, students rarely drew on sensory perception—sight, sound, touch, taste, and smell—when describing objects, often producing generic statements such as "the table is big" instead of richer depictions (Herviana, 2025).

These weaknesses were closely linked to prevailing instructional practices. The teaching of writing in the observed classes remained largely teacher-centred, dominated by lecturing and direct assignment without sufficient scaffolding or opportunities for creative exploration. Under such conditions, students tended to be passive recipients of information, quickly becoming bored and viewing writing tasks as burdensome rather than meaningful. As a result, their achievement in descriptive writing fell below the school's minimum mastery criterion (KKM), signalling a misalignment between curricular expectations and actual outcomes (Abbas et al., 2026).

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To address these pedagogical challenges, this thesis proposed the integration of digital storytelling as an innovative instructional method. Digital storytelling is defined as the process of constructing narratives using multimedia elements such as images, text, voice-over, music, and sound effects. Grounded in constructivist perspectives, this approach positions learners as active creators of knowledge who design, script, and produce digital narratives rather than merely consume them. Through these activities, students are expected to engage more deeply with content, exercise their imagination, and practise descriptive language in authentic contexts (Morales-Muñoz et al., 2026).

In the context of descriptive writing, digital storytelling offers several pedagogical advantages. By capturing photographs, recording sounds, and assembling visual sequences, students must carefully observe objects and environments, thereby enriching the sensory basis for their written descriptions. The requirement to script narration for their stories encourages them to select precise vocabulary, organize ideas coherently, and express emotions and atmosphere in words. At the same time, the use of technology aligns with students' everyday digital experiences, increasing engagement and motivation (Nasution et al., 2025).

Therefore, the thesis formulated a central research problem: whether the application of a digital storytelling based learning method exerts a significant influence on the improvement of descriptive writing skills among fourth-grade students at SDN 06 Panai Hulu. To maintain focus, the study was limited to the effect of this single instructional method on the specific skill of descriptive writing, without investigating other language skills such as speaking, reading, or listening. The research targeted one intact class of 37 students identified as experiencing clear difficulties in meeting the expected standards in descriptive writing (Ben Otman et al., 2025).

Accordingly, the objective of the study was to determine the magnitude and significance of the impact of digital storytelling on students' descriptive writing achievement. The research was expected to yield theoretical contributions to the literature on Bahasa Indonesia pedagogy, particularly regarding innovative methods for teaching writing, and practical implications for teachers, students, and school administrators. For teachers, the method could serve as a concrete pedagogical model; for students, it could enhance motivation and creativity; and for the school, it could encourage the institutionalization of technology-rich learning environments (Kurniawan, 2025).

The introduction of key terms further clarifies the scope of the study. "Descriptive writing" is defined as written discourse that provides detailed, sensory-rich portrayals of objects, places, or events. "Digital storytelling" refers to a learning method in which pupils actively develop digital narratives by combining audio-visual materials and written scripts, following steps such as determining a theme, collecting digital resources, composing a narrative, and finally producing a descriptive text. With these definitions and the stated problem formulation, the study sets out to empirically examine whether digital storytelling can serve as an effective solution to the documented difficulties in descriptive writing in the selected primary school context (Suherman & Suherman, 2025).

Writing is conceptualized as an active, productive language skill involving the transformation of ideas and feelings into graphic symbols that others can read and interpret. Authors such as Nurgiyantoro and Tarigan underline that writing requires mastery of graphology, grammar, vocabulary, and discourse organization, and is thus more demanding than listening, speaking, or reading. The purposes of writing range from expressing emotion, informing, persuading, entertaining, to solving problems, and effective instruction must take these diverse aims into account (Sarbini et al., 2025).

Descriptive writing is defined as a genre that seeks to portray objects, places, people, or events in such a way that readers can imagine experiencing them directly. Scholars cited in the thesis note that successful descriptive texts offer concrete detail, appeal to the senses, use engaging diction and figurative language, and are often organised spatially. Different types of description, including description of places and of characters, employ specific strategies such as focusing on relevant details, depicting physical features, and revealing mood and atmosphere.

The discussion of teaching methods emphasizes that methods are structured ways for teachers to achieve instructional objectives, shaped by factors such as goals, learner characteristics, situational constraints, and teacher competence. Effective methods should stimulate students' motivation, provide opportunities for independent and collaborative work, minimize verbalism, and foster meaningful, experience-based learning (Nelson et al., 2024).

Digital storytelling is presented as a contemporary method that merges traditional storytelling with digital technologies. It entails combining images, text, audio, and video to create emotionally engaging narratives and is associated with the development of research skills, writing proficiency, technological fluency, and presentation abilities. Key elements include point of view, a dramatic question, emotional content, the gift of voice, soundtracks, economy, and pacing, all of which can be leveraged to strengthen students' descriptive writing. Based on this theoretical foundation, the thesis proposes that digital storytelling is pedagogically well suited to enhance descriptive writing among primary school learners.

II. METHODS

A. *Research Design*

This study adopted a quantitative approach employing a pre-experimental design, specifically the one-group pretest–posttest design. This design is classified as quasi-experimental because it lacks random assignment and a separate

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control group, making the results potentially susceptible to the influence of extraneous variables. Nonetheless, it was considered appropriate for the school context where logistical and ethical constraints prevented the formation of comparison groups.

In the one-group pretest–posttest design, a single intact group is measured before and after receiving an instructional intervention. Symbolically, the design can be represented as $O1\ X\ O2$, where $O1$ denotes the pretest, X the treatment, and $O2$ the posttest. The difference between the two observations is attributed to the effect of the treatment, within the acknowledged limitations of the design.

B. *Participants*

The population of the study consisted of all fourth-grade students at SDN 06 Panai Hulu, Labuhanbatu Regency, during the 2025–2026 academic year. The class comprised 37 students, 10 boys and 27 girls. Given the relatively small and homogeneous population, the researcher used total sampling, meaning that all members of the population were included as the research sample. This approach ensured that the findings would be directly representative of the target class where the instructional problem had been identified.

C. *Variables and Operational Definitions*

The independent variable of the study was the application of the digital storytelling based learning method, while the dependent variable was students' descriptive writing achievement. Operationally, digital storytelling referred to a series of structured learning activities in which students designed and produced digital stories by integrating visual and audio materials with written narration. The implementation was observed through stages such as theme selection, gathering digital resources, scripting, recording, and editing.

Descriptive writing ability was operationalized as students' performance on a written test requiring the composition of a descriptive text. The assessment covered aspects including idea organization and text structure; richness and appropriateness of vocabulary; use of descriptive language and figures of speech; accuracy of spelling and punctuation; and overall coherence and readability. These criteria were aligned with theoretical descriptions of effective descriptive writing discussed in the literature review.

D. *Instruments*

The primary data collection instrument was a descriptive writing test administered twice: once before (pretest) and once after (posttest) the instructional intervention. In each administration, students were asked to write a descriptive text on a given topic within a specified time limit. The scoring rubric reflected the operational components of descriptive writing ability and allowed for quantitative analysis of changes in performance. The thesis also mentions observational tools to capture students' engagement, creativity, and responsibility during digital storytelling activities, although the main focus of analysis remained on test scores.

E. *Procedures*

Prior to the intervention, the researcher conducted initial observations and obtained permission from the school to implement the digital storytelling programme in the fourth-grade class. In the pretest phase ($O1$), all 37 students completed the descriptive writing test under standard classroom conditions, yielding baseline data on their writing performance.

The treatment phase (X) comprised a sequence of lessons in which digital storytelling was integrated into Bahasa Indonesia learning, particularly the teaching of descriptive texts. Students were introduced to the concept of storytelling and digital storytelling, including its elements such as point of view, emotional content, and pacing. They then worked individually or in small groups to select topics, collect images and other media related to the objects or scenes they wished to describe, and plan their narratives.

Subsequently, pupils wrote scripts that combined narrative and descriptive passages, focusing on vivid sensory detail and coherent organization. These scripts were recorded as voice-overs and combined with visual materials using simple digital tools accessible in the school context. Throughout the process, the teacher acted as a facilitator, guiding students, offering feedback on their language use, and encouraging collaboration and creativity. The treatment period allowed students multiple opportunities to practice descriptive language in meaningful multimodal tasks.

Following completion of the digital storytelling activities, the posttest ($O2$) was administered. Students were again required to produce a descriptive text on a comparable topic to the pretest, under similar conditions, so that differences in performance could be attributed to the instructional intervention rather than task variations.

F. *Data Analysis*

The thesis employed descriptive and inferential statistics to analyse the quantitative data. Descriptive analysis included calculation of mean scores for the pretest and posttest, as well as gain scores indicating the magnitude of improvement. Inferential analysis was conducted using the t-test for dependent samples to determine whether the

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observed difference between pretest and posttest means was statistically significant. The obtained t value was compared with the critical t value from the table at a predetermined significance level, leading to acceptance or rejection of the null hypothesis.

The null hypothesis ($H0$) stated that there is no significant effect of the digital storytelling–based learning method on descriptive writing outcomes, whereas the alternative hypothesis ($H1$) posited a significant positive effect. On the basis of the t-test results, $H1$ was accepted and $H0$ rejected, confirming that the method had a meaningful impact on students' descriptive writing skills in the studied class.

III. RESULTS AND DISCUSSION

A. *Descriptive Statistics*

The quantitative results reported in the thesis show clear improvement in students' descriptive writing scores following the implementation of digital storytelling. The mean pretest score for the 37 students was 52, indicating relatively low initial performance and reflecting the difficulties identified in the preliminary diagnosis. After the treatment, the mean posttest score increased to 85, representing a substantial enhancement of writing achievement. The average gain score was therefore 33 points, suggesting that the instructional intervention had a strong practical impact.

A summary of the key quantitative indicators is presented in Table 1.

Table 1. Summary of Pretest and Posttest Descriptive Writing Scores

Measure	Pretest (O_1)	Posttest (O_2)	Gain
Number of students (N)	37	37	–
Mean score	52	85	33
t statistic (paired t-test)	–	–	33.43
Critical t value (α level)	–	–	2.03

All values in Table 1 are drawn directly from the thesis results. The large difference between the obtained t value (33.43) and the critical t value (2.03) indicates that the improvement in scores is statistically significant at the chosen level of significance.

B. *Interpretation of Quantitative Findings*

The marked increase in mean scores demonstrates that the digital storytelling method was effective in improving students' descriptive writing ability in this context. The gain score of 33 points represents not only statistical significance but also educationally meaningful progress, moving the class performance from below the school's KKM towards a level consistent with curricular expectations.

From a pedagogical standpoint, the results suggest that digital storytelling successfully addressed the specific weaknesses identified in the initial observation. Through the process of creating digital stories, students had to engage more actively with descriptive language, organize their ideas around coherent narratives, and attend to sensory detail when selecting images and recording narration. This multimodal engagement appears to have transferred to improved performance in conventional written tasks, as evidenced by the posttest scores.

C. *Discussion in Relation to Writing Skill*

The improvement in students' writing can be discussed in light of theories that emphasize writing as a complex, higher-order skill requiring repeated practice and meaningful application. The thesis notes that traditional, teacher-centred instruction often fails to provide sufficient opportunities for such practice, resulting in superficial engagement and low motivation. Digital storytelling, by contrast, offers a project-based, student-centred environment in which learners must continuously make decisions about content, language, and presentation. This environment fosters initiative, creativity, and deeper processing, all of which are recognized in the literature as conditions conducive to the development of writing proficiency (Purba et al., 2025).

The process of scripting digital stories obliges students to encode ideas into language in a way that is understandable to an audience, reinforcing the communicative purpose of writing. It also encourages revision and refinement, as pupils listen back to their narration and adjust wording to achieve the desired effect, an important aspect of the writing process that may be neglected in more traditional approaches. Through these practices, students gradually internalise patterns of effective descriptive writing, which are then reflected in independent written assessments.

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D. *Discussion in Relation to Descriptive Text*

The genre-specific skills involved in descriptive writing also appear to have benefited from digital storytelling. Because students must visually represent the objects or scenes they wish to describe, they are compelled to consider which details are most salient and how they contribute to the overall impression. The integration of images and sound with text encourages them to think in terms of sensory experience, a key characteristic of effective descriptive discourse emphasized in the theoretical framework (Ambarsari & Aprima, 2025).

Moreover, the narrative dimension of digital storytelling helps students situate descriptions within a meaningful context. Rather than listing attributes in isolation, they learn to embed descriptive passages within a story, which strengthens cohesion and provides a more natural flow of information. This capacity to weave description into narrative structure likely contributed to the increased coherence observed in their posttest compositions.

E. *Discussion in Relation to Motivation and Engagement*

The thesis also highlights the motivational benefits of digital storytelling. In the observed class, students were more enthusiastic and willing to participate when lessons involved the use of digital media and the creation of stories that could be shared with peers. Activities such as taking photographs, recording voices, and editing simple videos transformed writing tasks from a purely paper-based exercise into an integrated creative project. This shift appears to have reduced boredom and resistance to writing, replacing them with a sense of ownership and pride in the final products (Maulani et al., 2025).

Higher motivation may explain part of the observed improvement in scores. When students feel engaged and see the relevance of writing to meaningful tasks, they are more likely to invest effort in planning, drafting, and revising their texts. Thus the digital storytelling method functions not only as a language-learning strategy but also as a motivational tool that aligns with students' digital literacy and interests.

F. *Methodological Considerations*

Despite the positive results, the thesis acknowledges the limitations inherent in the pre-experimental one-group design. Without a control group or randomized assignment, it is not possible to wholly exclude the influence of external factors such as maturation or exposure to other learning experiences outside the intervention. Nonetheless, the magnitude of the gain and the short time frame of the treatment make it reasonable to attribute most of the observed change to the digital storytelling programme (Syahr et al., 2025).

Future research might strengthen internal validity by employing true experimental or quasi-experimental designs with control groups and randomization, or by replicating the study across multiple schools and grade levels. Qualitative data such as student reflections, classroom discourse analysis, and artefact-based assessments could also enrich the understanding of how digital storytelling shapes the development of descriptive writing skills..

IV. CONCLUSIONS

This study provides empirical evidence that a digital storytelling based instructional method can significantly improve descriptive writing skills among fourth-grade students in a primary Bahasa Indonesia classroom. The application of digital storytelling led to a substantial increase in mean writing scores—from 52 in the pretest to 85 in the posttest—with a gain of 33 points and a t statistic far exceeding the critical value. These results indicate that integrating narrative, images, and audio into writing instruction effectively addresses common difficulties in idea organization, vocabulary use, and sensory detail. Pedagogically, the findings suggest that digital storytelling can serve as a powerful alternative to traditional, teacher-centred approaches, fostering student engagement, creativity, and active participation in the writing process. By situating descriptive writing within multimodal storytelling projects, teachers can help students internalize genre conventions and experience writing as a meaningful, enjoyable activity. The method also aligns with contemporary demands for technological literacy and supports the development of a range of skills beyond writing, including collaboration and presentation. Given the limitations of the one-group pretest–posttest design, further studies employing more rigorous experimental frameworks are recommended to confirm and extend these findings. Nonetheless, the present evidence supports the adoption and adaptation of digital storytelling in primary-level Bahasa Indonesia classes, particularly where students struggle with descriptive writing. Schools and teachers may consider investing in simple digital tools and professional development to implement this method more widely, with the expectation of improved writing outcomes and more motivated learners.

AI Usage Statement

The author declares that no generative AI was used in the preparation, analysis, interpretation of data, or writing of this article.

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Author Contribution Statement

For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, A.H.N. and S.; methodology, A.H.N.; software, A.H.N.; validation, A.H.N., S. and R.K.; formal analysis, A.H.N.; investigation, A.H.N.; resources, A.H.N.; data curation, A.H.N.; writing—original draft preparation, A.H.N.; writing—review and editing, A.H.N.; visualization, A.H.N.; supervision, A.H.N.; project administration, A.H.N.; funding acquisition, S. All authors have read and agreed to the published version of the manuscript.” Authorship must be limited to those who have contributed substantially to the work reported

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Ethical Compliance

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

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The authors declare that they have no affiliations with or involvement in any organization or entity with any financial interest in the subject matter or materials discussed in this manuscript.

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