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The Effect of Powtoon Audiovisual Media on Students' Descriptive Writing Skills

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Abstract: Writing descriptive essays is one of the most challenging language skills for elementary school students. This study aims to determine the effect of Powtoon audiovisual media on the descriptive writing skills of fifth-grade students at SDN Pondok Cabe Ilir 03. The study employed a quantitative approach with a one-group pre-test–post-test design involving 24 fifth-grade students selected through total sampling. Data were analyzed using descriptive statistics, Cohen's d effect size, the Shapiro-Wilk normality test, Levene's homogeneity test, and a paired-sample t-test with the assistance of SPSS 25. The mean score increased from 64.67 on the pre-test to 81.71 on the post-test (a gain of 17.04 points), with a Cohen's d of 2.19, indicating a very large effect. The proportion of students scoring ≥80 rose from 4.17% to 66.67%, and the paired-sample t-test yielded a significance value of 0.000 (sig. < 0.05); thus, H_0 was rejected. Consistent with Paivio's Dual Coding Theory, the findings suggest that Powtoon, by simultaneously activating the verbal and nonverbal subsystems, facilitates idea development in writing. It can be concluded that Powtoon audiovisual media has a significant positive effect on the descriptive writing skills of fifth-grade students and can be implemented as an engaging alternative learning medium in the digital era.

Keywords: *powtoon; writing skills; descriptive essays; elementary school; quasi-experiments*

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INTRODUCTION

The goal of Indonesian language instruction is to develop students' knowledge, skills, creativity, and positive attitudes through four language skills: listening, speaking, reading, and writing (Welianto et al., 2024). Of these four, writing is often considered the most challenging because it requires a strong vocabulary, sufficient knowledge, and the ability to organize ideas coherently (Asyifa et al., 2024). Writing is not simply the transcription of spoken language into

written symbols; it is a complex cognitive process in which writers generate ideas, select relevant information, organize content, construct sentences, and revise their language so that readers can understand the intended meaning (Flower & Hayes, 1981). At the elementary level, these processes develop alongside students' vocabulary, grammatical knowledge, spelling, and ability to sustain attention (Kim et al., 2021). Young writers therefore need learning experiences that make the subject of their writing concrete and understandable before they are expected to produce a coherent text.

Descriptive writing is particularly relevant to elementary language learning because it connects language production with students' immediate experiences. As a type of writing that describes objects based on sensory observation, it should enable readers to feel as though they can see, hear, or feel the object being described (Rahmadani et al., 2022). To achieve this, students must identify the object, select relevant details related to its shape, color, size, location, function, or behavior, and arrange these details in a logical sequence using precise vocabulary (Asyifa et al., 2024). A successful descriptive text, therefore, does not merely list isolated attributes; it builds a coherent representation for readers who may never have observed the object themselves.

These demands explain why students may struggle with descriptive writing even when they understand the topic orally. Oral responses can be supported by gestures, questions, and shared visual references, whereas written texts require students to make their ideas explicit through words and sentence relationships. Students may know what an object looks like but have difficulty selecting appropriate adjectives, varying their vocabulary, or connecting one sentence to the next. They may also concentrate so heavily on spelling and punctuation that content development becomes limited, as the mechanical demands of writing can constrain both the amount and the quality of young students' compositions (Graham et al., 1997). These difficulties are reflected in the broader literacy situation in Indonesia, which ranked 66th out of 81 countries in the PISA 2022 survey (Kemendikbudristek, 2023). Similar problems were observed in the fifth grade (24 students) at SDN Pondok Cabe Ilir 03, where descriptive writing skills had not yet reached optimal standards owing to weak cohesion between sentences, limited word variety, technical writing errors, and low learning motivation resulting from a lack of interactive learning materials.

The quality of instructional guidance plays an important role in addressing these difficulties. In a meta-analysis of writing instruction for elementary-grade students, Graham et al. (Graham et al., 1997) found that several approaches, including strategy instruction, teaching text structure, creativity and imagery activities, and transcription instruction, contribute to writing development, with creativity and imagery instruction producing a substantial effect on writing quality (ES = 0.70). Similarly, Kim et al. reported positive effects of writing interventions

among primary-grade students, although these effects varied according to the instructional focus and learners' characteristics (Kim et al., 2021). These syntheses suggest that writing performance improves when teachers make the composing process visible and provide structured activities that help children move from generating ideas to producing and revising a text, rather than relying solely on the final writing assignment.

In this context, the choice of a writing stimulus is an important instructional decision. Pictures, short videos, animations, and teacher-guided observation can provide shared points of reference, and they are particularly useful when students have limited opportunities to encounter the object being described or when teachers need to direct attention to specific features. Digital technology has further expanded these resources by presenting information through text, images, sound, and animation. A review by Williams and Beam showed that technology-mediated instruction can support students' writing, but it also emphasized that the value of technology depends on how it is integrated into instruction (Williams & Beam, 2019). Visual stimulation alone, therefore, does not guarantee effective writing (Berney & Bétrancourt, 2016); learners still need prompts that encourage them to notice details, distinguish relevant from irrelevant information, select vocabulary, and arrange their observations into a meaningful sequence.

Powtoon is one digital medium that can serve this purpose. It is an online video animation platform that offers animation features, cartoon characters, and dynamic transitions to boost student motivation and understanding (Althafuisa et al., 2025). Interactive animation-based media such as Powtoon have proven to be an engaging digital learning solution (Anggita, 2020) and can stimulate students' active participation in learning language materials (Agustina & Muhsinin, 2025). Previous studies have also reported that Powtoon improves students' writing of poetry (Agustina & Muhsinin, 2025) and descriptive texts at both the elementary and secondary school levels (Althafuisa et al., 2025; Triningsih et al., 2023), while enhancing motivation and learning outcomes (Lubis et al., 2023).

The potential of such media can be explained by Paivio's Dual Coding Theory, which posits that information is processed through two separate but interconnected systems, verbal and nonverbal (imagery), so that material encoded both verbally and visually is easier to understand and remember(Little et al., 2018). This theory underpins the cognitive theory of multimedia learning, which holds that learners process verbal and visual information through separate channels with limited capacity, and that meaningful learning occurs when they select relevant information, organize it into coherent verbal and visual structures, and integrate these structures with prior knowledge (Richard E. Mayer, 2022). From this perspective, an animated video that combines narration, on-screen text, and moving images can help students build a rich mental representation of an object before translating it into a descriptive text (Lubis et al., 2023).

Despite this potential, much of the international evidence on video- and animation-based learning has been generated in higher education and in the learning of conceptual or procedural knowledge (Little et al., 2018; Noetel et al., 2021), and studies that specifically examine the effect of Powtoon on elementary school students' descriptive writing skills remain limited. Therefore, this study aims to determine the effect of Powtoon audiovisual media on the descriptive writing skills of fifth-grade students at SDN Pondok Cabe Ilir 03.

METHOD

This study employs a quantitative approach using a quasi-experimental design. The experimental method is a quantitative research approach that focuses on understanding the cause-and-effect relationship between two or more variables (Putra et al., 2025). A one-group pre-test–post-test design study is a type of experimental research that does not use complete random assignment to divide participants into experimental and control groups (Setyawan, 2025)

The research design used was a one-group pre-test–post-test design. In this design, a pre-test was administered before the treatment to determine the initial conditions, which were then compared with the conditions after the treatment (post-test) (Haryanti, 2025). The research design sequence is shown in Table 1.

Table 1. One-Group Pre-test–Post-test Design

Phase	Activities
Pre-test	Assessment of descriptive writing skills prior to the intervention
Treatment	Learning using Powtoon
Post-test	Assessment of descriptive writing skills following the intervention

The independent variable in this study is the use of the Powtoon audiovisual platform, while the dependent variable is the descriptive writing skills of fifth-grade students at SDN Pondok Cabe Ilir 03.

This study employed a pre-experimental method with a one-group pre-test–post-test design. The participants were 24 fifth-grade students (Class VA) at SDN Pondok Cabe Ilir 03 in the 2025/2026 academic year, selected using a total sampling technique. The treatment utilizing Powtoon audiovisual media was administered across three structured learning sessions integrating the Problem-Based Learning (PBL) model, covering media observation, environmental object exploration, drafting, peer review, and final writing. Data were collected using essay-format writing tests administered as a pre-test (school environment theme) and a post-test (family theme) to evaluate descriptive writing skills. Student essays were assessed using

a comprehensive rubric adapted from Nurgiyantoro (Nurgiyantoro, 2016) covering seven aspects: content quality (maximum score 20), text structure (20), paragraph organization (20), vocabulary usage (15), grammar (10), spelling and mechanics (5), and writing style (10), yielding a total score of 100. Prior to implementation, the research instruments and media underwent formal expert validation by Fatkhul Arifin, M.Pd., ensuring their validity and reliability for data collection. The data were analyzed using descriptive statistics, Cohen's d effect size, normality and homogeneity tests, and a paired-sample t-test with the assistance of SPSS 25.

RESULTS AND DISCUSSION

Results

Description of the Research Data

The frequency distribution of the pre-test and post-test scores for descriptive writing skills in the experimental class is presented in Figure 1.

According to the distribution illustrated in Figure 1, 15 students (62.5%) scored below the passing grade (score < 70) in the pre-test, whereas only 1 student (4.17%) still scored below the passing grade in the post-test. Conversely, the number of students with scores ≥80 increased significantly from 1 student (4.17%) in the pre-test to 16 students (66.67%) in the post-test. The figure clearly demonstrates a substantial upward shift in the distribution of student scores after the intervention.

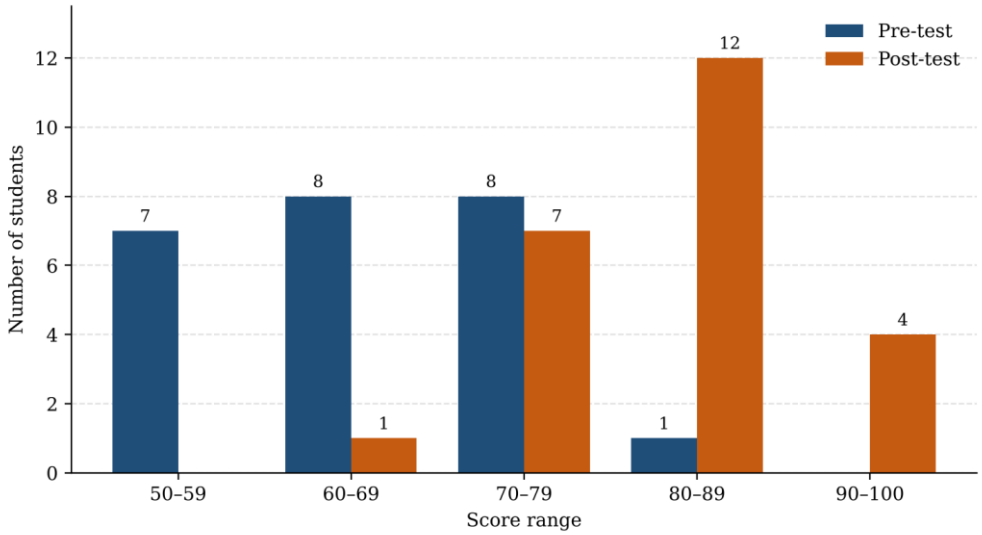

Figure 1. Comparison of Pre-test and Post-test Results

A summary of the pre-test and post-test results shows a significant difference between the results before and after the intervention. The sample size for both measurements was the same, namely 24 students. The data are presented in Table 2.

Table 2. Summary of Pre-test and Post-test Results

Statistic	Pre-test	Post-test
Number of students (*n*)	24	24
Minimum score	50	69
Maximum score	80	92
Mean	64.67	81.71
Median	65.00	80.00
Mode	50	84
Variance	76.580	44.563
Standard deviation	8.751	6.676
Range	30	23

Based on the statistical analysis, an effect size was calculated to measure the extent of the impact of Powtoon audiovisual media on students' descriptive writing skills, as presented in Table 3.

Table 3. Calculation of Effect Size Using Cohen's d

Component	Value
Pooled standard deviation (S_p)	7.78
Mean difference (M_2 - M_1)	17.04
Effect size (*d*)	2.19
Category	Very large

Based on Table 3, the effect size (*d*) was 2.19, which falls into the "very large effect" category according to Cohen's criteria. This indicates that the Powtoon audiovisual medium has a very strong impact on improving students' descriptive writing skills.

Results of the Inferential Analysis

Table 4. Results of the Normality Tests (Kolmogorov-Smirnov and Shapiro-Wilk)

Data	Kolmogorov-Smirnov[a]			Shapiro-Wilk			Result
	Statistic	df	Sig.	Statistic	Df	Sig.	
Pre-test	.104	24	.200*	.963	24	.504	Normal
Post-test	.160	24	.114	.950	24	.271	Normal

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

Based on Table 4, the Shapiro-Wilk significance values for the pre-test (0.504) and post-test (0.271) are both greater than 0.05, indicating that the data are normally distributed and H_0 is accepted.

All p-values for the homogeneity test were greater than 0.05; thus, the pre-test and post-test variances are homogeneous and H_0 is accepted.

Table 5. Results of the Hypothesis Test (Paired-Sample t-Test)

Pair	Mean	SD	SE Mean	95% CI Lower	95% CI Upper	*t*	df	Sig. (2-tailed)
Pre-test – Post-test	-17.042	7.888	1.610	-20.372	-13.711	-10.584	23	.000

Based on Table 5, a significance value of 0.000 (sig. < 0.05) was obtained, so H_0 is rejected and H_1 is accepted. The 95% confidence interval (-20.372 to -13.711) does not include zero, which reinforces that there is a significant difference between the pre-test and post-test. Thus, the use of Powtoon audiovisual media has a significant effect on improving the descriptive writing skills of fifth-grade students at SDN Pondok Cabe Ilir 03.

Discussion

Learning Using Powtoon

Powtoon was used in Class VA for Indonesian language instruction, with a focus on improving students' comprehension of text content and learning outcomes through interactive, dynamic, and engaging visualizations of the material. In the opening activity, the teacher explained the learning objectives and then showed a Powtoon presentation that included examples of descriptive essays, text characteristics, text structure, and examples of objects that can be described.

During the core activity, students watched a Powtoon presentation that combined images, animations, text, and audio. The use of audiovisual media helped students form a concrete mental image of the object to be described, thereby facilitating the development of writing ideas. The researcher served as a facilitator guiding the learning process, while the students actively listened to the explanations and watched the presentation.

After the observation, students independently wrote descriptive essays based on the objects or scenes presented. During the closing activity, the teacher and students reflected on the experience; some students read their essays aloud, and the teacher offered praise and feedback. The lesson on descriptive writing was summarized, with a particular focus on using observations to describe objects clearly and in detail.

The Effect of the Powtoon Audiovisual Medium on Descriptive Writing Skills

The results show that students' descriptive writing scores improved substantially after the Powtoon-supported learning sequence. The mean score increased from 64.67 on the pre-test to 81.71 on the post-test, a gain of 17.04 points, and the paired-sample t-test confirmed that this difference was statistically significant ($p < 0.05$), with a Cohen's d of 2.19 that falls into the very large category. The improvement was not limited to the class average. The proportion of students scoring below the passing threshold of 70 decreased from 62.5% to 4.17%, while the proportion scoring at least 80 rose from 4.17% to 66.67%. The narrower spread of post-test scores (SD = 6.676, compared with 8.751 on the pre-test) is consistent with the meta-analytic finding that writing instruction tends to produce larger effects for students with weaker writing skills (Kim et al., 2021), although it should not be interpreted as evidence that all students

benefited equally. One student still scored below 70 on the post-test, indicating that differentiated feedback and follow-up instruction remain necessary.

These findings are consistent with previous studies reporting that Powtoon improves students' writing of poetry (Agustina & Muhsinin, 2025) and descriptive texts at the elementary and secondary levels (Althafuisa et al., 2025; Triningsih et al., 2023), as well as their motivation and learning outcomes (Lubis et al., 2023). They are also in line with international syntheses of video- and animation-based instruction. A meta-analysis of 105 randomized trials found that replacing existing teaching with video produced small learning gains ($g = 0.28$), whereas adding video to existing teaching produced strong benefits ($g = 0.80$) (Noetel et al., 2021). Meta-analyses comparing animations with static pictures have likewise reported an overall advantage for animated visualizations (Berney & Bétrancourt, 2016; Noetel et al., 2021). In the present study, Powtoon supplemented rather than replaced the teacher, which may partly explain the large improvement. Nevertheless, the effect size obtained here is considerably larger than those generally reported in these syntheses and should be interpreted in light of the study design, as discussed in the limitations below.

The intervention did not consist solely of watching an animated video. The three learning sessions combined Powtoon-supported presentations with Problem-Based Learning activities, environmental object exploration, drafting, peer review, and final writing. The observed improvement should therefore be understood as the outcome of a media-supported instructional sequence rather than of the software alone: Powtoon provided an audiovisual stimulus, while the learning activities gave students opportunities to interpret that stimulus, connect it with familiar objects, organize their ideas, and express them in writing. This interpretation is consistent with meta-analytic evidence that elementary students' writing improves through several supportive practices, including the process approach to writing, creativity and imagery activities, and collaborative writing (Graham et al., 1997).

During the core activity, the combination of images, animation, on-screen text, and narration provided students with multiple forms of information about the object to be described. The images and animated scenes offered visual references, while spoken explanations and written labels supplied the language associated with the object's characteristics. This arrangement reflects the central proposition of Dual Coding Theory, which holds that verbal and nonverbal representations are interconnected and can support each other when learners link them meaningfully (Little et al., 2018). For example, seeing an object while hearing or reading words that describe its shape, color, location, or function may help students associate a perceptual feature with an appropriate word, an association they can later retrieve when writing. From the perspective of the cognitive theory of multimedia learning, such presentations are

effective when learners select relevant information, organize it into coherent verbal and visual structures, and integrate these structures with their prior knowledge (Barikliya et al., 2026).

The value of the audiovisual presentation is particularly evident in the idea-generation stage of descriptive writing (Bal, 2019). Students who have difficulty deciding what to write can benefit from a shared stimulus that directs their attention to observable features. Instead of starting from an abstract instruction to "write a description," students can first identify what is visible, discuss its characteristics, and select details that distinguish the object (Surya et al., 2025). Teacher questions about what the object looks like, where it is located, what parts it has, and which details would help a reader imagine it can turn passive viewing into purposeful observation and bridge perception and language production. This role is in line with the strong effect of creativity and imagery instruction on elementary students' writing quality (ES = 0.70).

Powtoon may also support the organization of ideas. Because the presentation introduced an object before directing attention to its specific features, it modeled a progression from general identification to detailed description that students could adapt in their own paragraphs. This sequence does not automatically produce a well-structured text; rather, it serves as an initial organizational scaffold that becomes effective when the teacher makes the structure of a descriptive text explicit, as was done in the opening activity through examples of descriptive essays, text characteristics, and text structure. The subsequent transition from viewing to independent writing was equally essential. Watching a video alone may keep learning at the level of recognition or recall, whereas producing a text requires students to select information, transform it into language, and make decisions about sentence construction. Evidence-based recommendations for writing instruction likewise emphasize that students become better writers when they are taught strategies for planning, revising, and editing (Graham et al., 2024).

The closing activity, which included reflection, reading selected essays aloud, praise, feedback, and a lesson summary, may have reinforced the relationship between the object and the language used to represent it. Reading a text aloud allows students to hear whether their description creates a clear image, while teacher feedback can draw attention to specific details, sentence connections, vocabulary choices, and writing conventions. However, this study did not separately measure the contribution of reflection, oral sharing, or feedback; these elements should therefore be regarded as components of the implemented learning sequence rather than as independently tested effects.

Several methodological limitations should be considered when interpreting these findings. First, the study involved 24 students from a single fifth-grade class in one school; although total sampling was appropriate for this population, the sample size and setting limit the generalizability of the results. Second, the one-group pre-test–post-test design did not include a control group, so the effect of Powtoon cannot be isolated from other influences such as regular

instruction, additional practice, teacher attention, or students' growing familiarity with the test. The writing interventions synthesized were evaluated through true- and quasi-experimental designs with comparison conditions, which may partly explain why the effect size in this study is larger than those typically reported. Third, the pre-test and post-test used different topics (the school environment and the family), which may differ in familiarity, emotional relevance, and available vocabulary; part of the score difference may therefore reflect task characteristics rather than learning alone. Finally, the intervention lasted only three sessions, so it remains unclear whether students retain the improvement or transfer it to unfamiliar topics and other genres. Future studies should therefore use a control group, larger and more diverse samples, parallel writing prompts of comparable difficulty, and delayed post-tests.

CONCLUSIONS

The Powtoon audiovisual medium had a significant effect on improving the descriptive writing skills of fifth-grade students at SDN Pondok Cabe Ilir 03, with an increase in the mean score from 64.67 on the pre-test to 81.71 on the post-test (an increase of 17.04 points) and a Cohen's d effect size of 2.19, which falls into the "very large effect" category. In terms of distribution, the percentage of students scoring ≥ 80 increased from 4.17% (1 student) on the pre-test to 66.67% (16 students) on the post-test, while the percentage of students below the passing score (< 70) decreased from 62.5% (15 students) to 4.17% (1 student). A paired-sample t-test yielded a significance level of 0.000 (sig. < 0.05), leading to the rejection of H_0. The success of the Powtoon medium is supported by Paivio's Dual Coding Theory, which states that audiovisual media simultaneously activate the verbal (audio) and nonverbal (visual) subsystems, thereby forming a strong mental representation of the descriptive object before writing. This study contributes to the development of Indonesian language learning strategies in elementary schools by offering an alternative learning medium that is engaging, interactive, and relevant to students' needs in the digital age.

Author's Declaration:

Artificial Intelligence Statement: The authors used AI-assisted tools (such as language refinement models) solely for grammar checking and language polishing of the manuscript.

Author Contribution Statement: Lu'luil Maknun: Conceptualization, Methodology, Formal Analysis, Investigation, Writing Original Draft, and Writing Review & Editing. Ririn Nurawalia: Conceptualization, Methodology, Supervision, Validation, and Writing Review & Editing.

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