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RESEARCH ARTICLE

Integrating 5E Learning Cycle and YouTube Shorts to Improve Procedural Text Writing

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ABSTRACT

This study addresses the difficulties students encounter in writing procedural texts, noting their struggle to articulate ideas and low interest in such writing. It evaluates the effectiveness of integrating the 5E Learning Cycle model with YouTube Shorts as a teaching aid for procedural text writing. Using a quasi-experimental design with a Non-equivalent Control Group, the research targets 7th-grade students at SMP Negeri 1 Karangsembung, Indonesia. Class VII B functions as the experimental group, while Class VII G serves as the control group, selected through purposive sampling. Data collection includes skill tests (pre-test and post-test) and student questionnaires, with statistical analysis performed using SPSS version 29. The findings reveal a significant value of <0.05, leading to the acceptance of the alternative hypothesis (Ha) and rejection of the null hypothesis (H0). Consequently, there is a significant difference in procedural text writing performance between students taught using the 5E model with YouTube Shorts and those instructed through traditional methods.

INTRODUCTION

The ability to express ideas in writing is one of the most important skills, marking an educated person and making it highly sought after by employers and higher education institutions (Tambunan et al., 2024). Developing learners as proficient writers is crucial, and this includes the specific skill of writing procedural texts, which has been a central concern for educators. Despite being perceived as simple material, procedural texts are not being effectively taught, leading to low levels of proficiency among students. According to Elfitri (2021), factors such as unengaging teaching techniques, a lack of innovative media, and limited student interest contribute to these challenges. This issue is particularly evident in junior high schools, where students struggle to select and arrange effective words and sentences, as well as use proper punctuation (Apriliani, 2022). Therefore, implementing an appropriate instructional model is essential to enhance students' understanding and active participation.

One promising instructional approach is the 5E Learning Cycle Model, which has shown the potential to increase student engagement and writing skills. Previous studies indicate that the 5E model significantly improves students' writing abilities in various contexts. For example, Putri (2023) found that applying the 5E model enhanced students' persuasive writing skills, while Onas (2020)

demonstrated its positive impact on poetry writing. Furthermore, Ginting (2023) observed that this model helps boost students' motivation and enthusiasm in the learning process and Tarawneh (2024) proved that this model improved the academic achievement of 9th grade students towards learning English reading comprehension skills.

Implementing comprehensive learning involves integrating a range of student competencies, such as knowledge, talents, and comprehensive behaviors (Abaniel, 2021) However, to maximize the benefits of the 5E model, integrating engaging and relatable media is crucial. Effective media can aid students in grasping material more easily and generating ideas during the writing process (Ginting, 2023). Mukagihana, Nsanganwimana, & Aurah (2021) found that pre-service science teachers' academic achievement was significantly impacted by the 5E instructional model. Similarly, in Behera et al. (2024), according to the study, combining the 5E model with a planned-incidental grammar teaching strategy works well for achieving a balance between language and subject learning in classrooms with time limitations.

In this context, YouTube emerges as a relevant and widely accessible medium, particularly popular among students. As per a report by We Are Social (2023), Indonesia ranks fourth in global YouTube users, with 139 million users as of October 2023. Beyond its role as an entertainment platform, YouTube can be leveraged as an innovative educational tool that aligns with students' daily experiences. Studies have shown that using YouTube in the classroom makes learning more engaging and relatable for students (Rokhyatun, 2023; Puspitasari & Rahmat, 2022). Furthermore, research indicates that utilizing YouTube videos in the teaching process significantly enhances students' narrative writing abilities (Diniyanti et al., 2022). The findings recommend that English teachers integrate YouTube media into their teaching strategies to increase student motivation and engagement in writing activities. Based on this rationale, the researcher conducted a study titled "Integrating 5E Learning Cycle and YouTube Shorts to Improve Procedural Text Writing" to evaluate the effectiveness of this combination using a quasi-experimental design with 7th-grade students. Many researches have also investigated 5E learning cycle various educational contexts, examining its effectiveness in enhancing student engagement. Study by Esen et al. (2023), examined how digital worksheets using the 5E learning cycle impact primary school teachers' practices, opinions, and classroom experiences. Foon Hew & Jia, (2022) proposed the integration of flipped learning with the 5E Model to improve writing skills in ESL courses, particularly in problem-solution writing.

The research aims to examine the effectiveness of the 5E Learning Cycle Model with YouTube Shorts in improving students' procedural text writing skills. Specifically, it seeks to address the following questions: How do students' writing skills in the experimental class compare before and after using the 5E Learning Cycle Model with YouTube Shorts? How do students' writing skills in the control class compare before and after using the direct teaching model? Is there a significant difference between the writing skills of students in the experimental and control classes after the intervention? The objective is to evaluate and describe the changes in students' writing skills and the effectiveness of each teaching approach.

This research offers several benefits, including enhancing students' procedural text writing skills through an innovative combination of the 5E Learning Cycle Model and YouTube Shorts. The findings can provide teachers with effective instructional strategies that actively engage students and improve their writing proficiency. The novelty of this study lies in the integration of a well-established learning model with a popular digital platform, demonstrating how digital media like YouTube Shorts can be leveraged to create a more interactive and relatable learning experience for students.

The novelty of this study lies in integrating the 5E Learning Cycle with YouTube Shorts as a teaching strategy to improve students' procedural text writing skills. This approach leverages the engaging format of YouTube Shorts within the 5E model's active learning framework, addressing students'

challenges and low interest in writing procedural texts. The study introduces a new combination of a well-established pedagogical model with a modern digital tool, offering an innovative solution supported by a rigorous quasi-experimental design to demonstrate its effectiveness.

LITERATURE REVIEW

This subsection explains aspects related to the 5E learning cycle model and YouTube shorts. It covers the model's concept, as well as its advantages and limitations, based on various sources and references.

The Learning Cycle Model was first introduced by Robert Karplus, based on Piaget's learning theory, Vygotsky's constructivism, and Ausubel's learning theory (Ngalimun, 2017). It encourages students to actively, creatively, and independently grasp learning concepts to achieve specific competencies through systematic stages. This student-centered model involves teachers as guides, enabling active participation that makes learning more meaningful. Karplus (1977) initially structured the Learning Cycle into three stages: exploration, concept introduction, and concept application. These stages integrate students' experiences with social interaction, promoting self-regulation.

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Miarti et al. (2023) found that it improves students' critical thinking skills, while Muliana et al. (2024) discovered that the 5E version of the model significantly enhances students' scientific literacy. The 5E Learning Cycle is not limited to school-aged students; its five stages have also proven effective with college students. The study by Lu et al. (2020) discovered that college students' Higher-Order Thinking Skills and peer interaction were both successfully improved by applying the five steps of the 5E model. On the other hand, learning achievement was not significantly impacted by the 5E training

During exploration, students engage their senses to interact with the environment through various activities like experiments, discussions, and observations, with minimal guidance from teachers. This phase encourages students to explore new ideas and formulate questions that enhance their reasoning skills (Bybee et al., 2006). In the concept introduction stage, students balance their existing concepts with new information gathered through critical thinking activities such as discussions and analysis. New terms related to the concepts are introduced, often through media or direct instruction from the teacher, helping students solidify their understanding.

In the final stage, concept application, students apply their learned concepts to real-world situations, reinforcing and expanding their understanding. This hands-on involvement enhances motivation and interest in learning. Over time, Lorsbach expanded Karplus' three stages into five: engagement, exploration, explanation, elaboration, and evaluation. These refinements aim to maximize student learning by ensuring active participation at each stage (Wena, 2010). According to Ohn-Sabatello (2020), each stage of the 5E model is strategically designed to enhance students' learning experience through active engagement and critical thinking. During the Engagement stage, real-world applications and interesting phenomena, such as video clips, online resources, and interactive tutorials, are introduced to spark interest and introduce new concepts. In the Exploration phase, students participate in hands-on inquiry and lab activities and videos embedded with questions, and interactive simulations, all of which allow students to explore and validate ideas independently. As

students move into the Explanation stage, they use tools like digital whiteboards and Google Slides to articulate their understanding collaboratively, with teachers guiding discussions to visually explain their understanding. The Elaboration stage then encourages students to use the theoretical knowledge they have learnt and apply in new contexts, such as simulations, fostering a deeper, hands-on learning experience to help recall information. Finally, in the Evaluation stage, formative assessments using interactive tools like Quizizz, Quizlet Live, and Kahoot provide feedback on misconceptions and errors, allowing for reinforcement and a clearer understanding of the material. Engagement, Exploration, Explanation, Elaboration, and Evaluation are the five stages of the paradigm, which is based on the constructivist theory of learning (Behera et al, 2024).

Engagement

Teachers stimulate students' curiosity about the lesson by posing questions relevant to their daily lives, gauging prior knowledge, and identifying misconceptions.

Exploration

Students work in groups to discuss and explore ideas without direct teacher instruction. They test hypotheses, observe, and record their findings to validate their understanding.

Explanation

Students share and clarify their findings from exploration, supporting their explanations with evidence. Teachers guide the discussion to consolidate key concepts.

Elaboration

Students apply the learned concepts in new contexts, demonstrating their ability to transfer knowledge to different scenarios. This stage strengthens comprehension and promotes deeper learning.

Evaluation

Teachers assess students' grasp of new concepts through observations, while students self-reflect by asking questions based on previous stages. The results help teachers measure the model's effectiveness and identify student progress.

Table 1 illustrates the implementation of the 5E Learning Cycle Model, showing the roles of teachers and students in each stage.

Table 1 Syntax of the 5E Learning Cycle Model

5E LC Stage	Teacher Activities	Student Activities
Engagement	Develop students' interest and curiosity by asking factual questions related to the topic to be studied. • Relate the topic to students' experiences.	• Respond to the teacher's prompting questions. • Try to connect their own experiences with the topic to be studied.
Exploration	• Form small groups and provide opportunities for independent discussion. • Guide students in activities such as experiments, observing and analyzing an object, or reviewing resources. • Ask students to record their observations and new ideas that	• Engage in group discussions to answer problem-based questions. • Observe and analyze an object presented by the teacher. • Create records of observations and new ideas that develop during the

	emerge during the discussion.	discussion.
Explanation	• Encourage students to explain concepts in their own words. • Ask for evidence and clarification of students' explanations. • Provide explanations based on students' input.	• Try to explain findings from the exploration phase. • Provide explanations based onobservations and notes. • Listen critically to the explanations from the teacher/other students.
Elaboration	• Remind students of alternative explanations and consider the evidence gathered when exploring new situations. • Encourage and facilitate students to apply concepts/skills in different contexts and new situations.	• Apply concepts/skills in different contexts and new situations. • Ask questions, suggest ideas, solve problems, express opinions, conduct experiments, and make observations.
Evaluation	• Observe students' knowledge or understanding in applying new concepts. • Encourage students to conduct self-assessments. • Motivate students to recognize their strengths and weaknesses in the learning process.	• Ask open-ended questions and seek answers through observations, evidence, and previously acquired explanations. • Make further decisions on the conducted learning activities. • Identify and reflect on personal strengths and weaknesses during thelearning process.

The 5E Learning Cycle Model offers several advantages for both teachers and students. For teachers, it broadens perspectives, enriches knowledge, and enhances creativity in designing learning activities (Ngalimun, 2017). For students, the model increases motivation by encouraging active, critical, and creative participation, helps develop a scientific attitude, promotes meaningful learning for longer retention of concepts, and improves critical thinking and problem-explanation skills (Bybee et al., 2006). However, the model also has some challenges, such as a lower success rate if teachers lack mastery of the material and stages, a need for greater creativity and dedication in preparation, more organized classroom management, and increased effort and time required for planning and implementation (Ngalimun, 2017).

YouTube Shorts

One form of progress in science and technology is the availability of YouTube as a learning medium to expand knowledge and provide innovative ideas for students. YouTube serves as a tool for conveying messages to viewers and is currently the most popular video-sharing platform, allowing users to upload, watch, search, and share video clips for free. One of YouTube's new and highly popular features is You Tube Shorts, which allows users to upload short videos ranging from 15 seconds to 1 minute, complete with music, filters, and text. This feature makes it easier for users to watch shorter videos compared to regular YouTube videos. Puspitasari and Hasanudin (2023) explained that utilizing YouTube Shorts as a learning support has the potential to improve the quality of education. This feature can inspire student creativity and provide variety in learning materials, making them easier to understand (Rivaldo et al., 2022). Youtube have been used in several experiments to measure their effects on visual and auditory learning of students (Albahiri & Alhaj, 2020). Moreover, research by Usman et al. (2023) found that YouTube significantly impacts student learning outcomes on cultural art study. Study by Jamaluddin & Abdullah (2024) suggests that YouTube videos represent an emerging tool in teaching and learning, aligning with the advancements in modern educational technology.

Based on these findings, YouTube is considered effective as a learning medium due to its relevance to students' daily lives. Learning media are used to convey instructional messages or information with the aim of achieving teaching objectives. In this context, YouTube Shorts will be used as a medium for teaching procedural text writing.

Developing Skills in Writing Procedural Texts

Writing is a fundamental language skill used to communicate indirectly without face-to-face interaction. It involves creating graphic symbols that convey language, allowing others to read and understand (Tarigan, 2008). Writing is more than just producing symbols; it represents structured linguistic expressions. Since it is a continuous activity, learning to write must also be ongoing, providing a strong foundation for further education.

Writing involves both process and product. The process encompasses gathering and organizing ideas, while the product is the final written output that readers can comprehend. According to Susanto (2013), writing integrates various elements such as processing thoughts, refining skills, gathering information, and establishing communication. These elements are essential, especially when writing procedural texts, which aim to guide or instruct readers in completing a specific task.

Procedural texts require writers to convey clear, step-by-step instructions using appropriate language and structure. This demands cognitive abilities such as sequencing actions, using precise language, and ensuring that instructions are easy to follow. Effective procedural writing involves understanding the purpose, considering the audience, maintaining a logical structure, and using clear language. It enhances students' critical thinking, problem-solving skills, and ability to communicate effectively. Mejia (2024) looked at how to help students better understand their writing abilities, presenting writing as a potent instrument for community building, academic growth, and self-discovery rather than just a practical skill.

By mastering the skill of writing procedural texts, students develop their ability to provide clear instructions and guide others. This practice sharpens their logical thinking and organization, contributing to their overall cognitive and linguistic growth. Writing, therefore, is not just a language activity but a critical life skill that supports clear communication and effective information sharing in various contexts.

5E Learning Cycle Model Assisted by YouTube Shorts and Writing Skills

The integration of the 5E Learning Cycle Model and YouTube Shorts aims to enhance students' writing skills, particularly in procedural texts. The 5E Learning Cycle Model encourages students to actively and creatively engage in learning through five stages: engagement, exploration, explanation, elaboration, and evaluation. In each stage, students are encouraged to participate actively, explore new ideas, clarify their understanding, apply concepts in various contexts, and reflect on their learning outcomes.

By incorporating YouTube Shorts as a learning medium, the process becomes more dynamic and relatable for students. According to Jamaluddin & Abdullah (2024), the use of YouTube videos is appropriate for educational purposes however, instructors should consider the duration of each video and ensure the content is interesting. Thus, YouTube Shorts provides a platform for sharing concise, focused videos, ranging from 15 seconds to 1 minute, making it effective for capturing students' attention and delivering key instructional content quickly. In this study, the use of tutorial videos through YouTube Shorts allows teachers to visually demonstrate the steps involved in writing procedural texts, thereby simplifying complex instructions and making the process more accessible.

The combination of the 5E Learning Cycle Model with YouTube Shorts provides a structured and interactive learning environment. During the engagement stage, YouTube Shorts can spark students' interest with relevant and real-life video examples. In the exploration stage, students actively discuss

and analyze the presented videos, encouraging them to explore and generate their own ideas. Moving to the explanation stage, students can use their observations to explain the steps they've learned in their own words, enhancing their understanding.

In the elaboration stage, students apply the newly acquired concepts by writing their own procedural texts, using the tutorials as a guide. Finally, in the evaluation stage, both students and teachers can assess the effectiveness of the instructional process, identifying areas of improvement and reinforcing key learning points.

Through this integrated approach, students not only engage actively in the learning process but also benefit from visual and concise instructional content. This combination enhances their ability to structure and sequence their writing, ultimately improving their cognitive skills and procedural text writing proficiency.

Based on the explanation above, the research hypotheses are as follows:

Ho: There is no significant difference in the descriptive text writing skills between the experimental class, which receives the 5E Learning Cycle Model assisted by YouTube Shorts, and the control class, which uses a direct teaching model. Ha: There is a significant difference in the descriptive text writing skills between the experimental class, which receives the 5E Learning Cycle Model assisted by YouTube Shorts, and the control class, which uses a direct teaching model.

Statistical Hypothesis:

Ho: $\mu 1 = \mu 2$

Ha: $\mu 1 \neq \mu 2$

RESEARCH METHOD

This study employs a quasi-experimental method, which is part of the quantitative approach. Quasi-experimental methods include a control group but do not entirely control the influence of external variables on the continuity of the experiment. The researchers chose the quasi- experimental type of quantitative method to examine the effect of a specific treatment on a subject under controlled conditions (Indrawati, 2015). Another reason for selecting this method is to test the research hypotheses, consisting of a null hypothesis and an alternative hypothesis.

Based on these reasons, this study aims to investigate the influence of the 5E Learning Cycle Model assisted by YouTube Shorts on the procedural text writing skills of seventh-grade students at SMP. The influence of the 5E Learning Cycle Model assisted by YouTube Shorts serves as the treatment, while the procedural text writing skills of the seventh-grade students are the controlled condition. The target of this study is the seventh-grade students at SMP Negeri 1 Karangsembung during the 2024/2025 academic year. This research was conducted at SMP Negeri 1 Karangsembung, located at Jalan Raya Karangsuwung No. 29, Desa Karangsuwung, Cirebon Regency, West Java Province.

The researchers chose to use the Nonequivalent Control Group Design in this study, as it involves two groups for comparison: the experimental group and the control group. In practice, the experimental group received a specific treatment by applying the 5E Learning Cycle Model assisted by YouTube Shorts, while the control class followed a conventional model without the same treatment as the experimental class. Both groups were given a pre-test and a post-test for comparison, enabling the researcher to determine the effectiveness of the 5E Learning Cycle Model assisted by YouTube Shorts on the procedural text writing skills of the seventh-grade students.

The data sources in this research were obtained from a sample of a population. The population in this study comprises all seventh-grade students at SMPN 1 Karangsembung. According to Indrawati (2015), a population is a generalized area consisting of objects or subjects that possess specific

qualities and characteristics determined by the researcher for study and from which conclusions are drawn.

The sample for this study consisted of two seventh-grade classes selected using a Purposive Sampling technique. Purposive Sampling is a sampling technique based on criteria set by the researcher (Indrawati, 2015). Therefore, the two selected seventh-grade classes share similar characteristics and qualities. The two classes serving as the study's sample were class VII B and class VII G. Class VII B was designated as the experimental class, while class VII G was designated as the control class. The total sample size in this study was 40 students, consisting of 20 students in the experimental class and 20 students in the control class.

The implementation of this study consisted of three stages: the pretest stage, the treatment stage, and the post-test stage. Each research process was conducted over five meetings: one meeting for the pretest, three meetings for the treatment, and one meeting for the post test. Each stage was carried out in classes VII B and VII C with an allocated time of 3 x 40 minutes.

The pretest was administered to assess the students' initial abilities in writing procedural texts, while the post-test was conducted to measure the students' skills in writing procedural texts after receiving the treatment. The treatments given to each class differed. The experimental class received a treatment involving the implementation of the 5E Learning Cycle Model assisted by YouTube Shorts tutorials in teaching procedural text writing, while the control class received a treatment using the direct instructional model in procedural text writing. However, there was no difference in the material and assessment instruments used in both the experimental and control classes.

The results obtained during the study consisted of procedural texts written by students in the experimental and control classes during the pretest and post-test. These texts were assessed based on criteria for writing procedures. The data, in the form of students' written texts, were evaluated by three assessors to avoid subjectivity in the assessment. The data were processed using Microsoft Excel and IBM SPSS version 29 software. Statistically, the data obtained in this research were analysed through four tests: inter-rater reliability test, normality test, homogeneity test, and hypothesis test. These tests are essential to ensure the validity and reliability of the research findings. The inter-rater reliability test is necessary to confirm consistency among different assessors. The normality test is conducted to verify whether the data distribution meets the assumption of normality. The homogeneity test is performed to determine if the variances between groups are equal, which is a key requirement for comparing means. Lastly, the hypothesis test is crucial for identifying significant differences between the experimental and control groups, allowing for valid conclusions about the effect of the treatment.

The reliability testing in this study was conducted using the IBM SPSS Statistics version 29 software. If the calculated r in Cronbach's Alpha is greater than or equal to the critical value r

table, it can be concluded that the item is reliable. The testing criteria are as follows: if r calculated ≥ $r\ tab$le, then the item is considered reliable, whereas if r calculated < $r\ tab$le, the item is deemed unreliable. The results of this test are compared with the Guilford scale as presented in Table 2.

Table 2 Guilford scale

Range	Criteria
0.80 – 1.00	Very high reliability
0.60 – 0.80	High reliability
0.40 – 0.60	Moderate reliability
0.20 – 0.40	Low reliability
0.00 – 0.20	Very low reliability

The normality test was conducted to determine whether the data being studied is normally distributed or not. The normality test data were obtained from the pretest and post-test scores of both the experimental and control classes. The data was processed and tested using the IBM SPSS Statistics version 29 software. The type of normality test used in this study was the Shapiro-Wilk test, with the following criteria:

a. If the sig. value (2-tailed) > 0.050, it can be concluded that the data is normally distributed.

b. If the sig. value (2-tailed) < 0.050, it can be concluded that the data is not normally distributed.

The homogeneity test was conducted to determine whether the sample used in the study comes from a population with the same variance (homogeneous) or not (heterogeneous). If the data is normally distributed, the homogeneity test uses Levene's Statistic. However, if the data is not normally distributed, the homogeneity test used is the Chi-square test.

The hypothesis test was conducted to determine whether there is a significant difference between the procedural text writing skills of the students in the experimental class after receiving the treatment and those in the control class without receiving the specific treatment. The hypothesis testing in this study employed a T-test (Independent Sample T-test) using the IBM SPSS Statistics version 29 software. The significance level for the T-test is as follows:

a) If the sig. value (2-tailed) < 0.050, then Ho is rejected and Ha_ is accepted.

b) If the sig. value (2-tailed) > 0.050, then Ho is accepted and Ha is rejected.

RESEARCH FINDINGS

This section presents the findings obtained from the research, including a comparison between the experimental and control classes, as well as an analysis of pretest and post-test scores. The purpose of the analysis is to determine the effectiveness of the 5E Learning Cycle Model assisted by YouTube Shorts in improving students' writing skills.

Description of the Pretest Results in the Experimental Class

The students' writing results in the experimental class during the pretest stage included the students' scores are shown in the Table 3 and 4.

Table 3 Pretest Results of the Experimental Class

No.	Subject Initials	Assessor 1	Assessor 2	Assessor 3	Final Score	Category
1	APGS	63	65	65	65	C
2	AWM	44	44	50	46	D
3	AH	50	50	50	50	D
4	AQA	56	56	60	57	D
5	AQA	70	70	70	70	C
6	DFH	63	65	63	64	C
7	GM	44	44	44	44	D
8	MFP	56	60	56	57	C
9	MAN	60	60	65	62	C
10	MDM	50	50	50	50	D
11	NCA	60	65	63	63	C
12	NA	50	50	50	50	D
13	PZ	50	50	55	52	D
14	RKM	63	60	65	63	C
15	SM	70	70	70	70	C

16	SDJ	50	55	50	52	D
17	TP	44	50	44	46	D
18	TAKH	81	80	81	81	B
19	YRY	63	60	63	62	C
20	YAS	63	65	60	63	C
Average	58	58	59	58	C	
Minimum Score	44	44	44	44	D	
Maximum Score	81	80	81	81	B	

Table 4 Pretest Results Interval of the Experimental Class

Category	Range	Number	Percentage
Very Good (A)	86-100	0	0%
Good (B)	76-85	1	5%
Satisfactory (C)	56-75	10	50%
Poor (D)	10-55	9	45%
Total		20	100%

Based on Table 3 and 4, the average ability of students in writing procedural texts in the experimental class before receiving the treatment was in the "satisfactory" category. This is evidenced by the average pretest score in the control class of 58, which falls into the "satisfactory" (C) category. None of the pretest scores in the control class reached the "very good" (A) category. The highest pretest score in the control class for writing procedural texts was 81, falling into the "good" (B) category, while the lowest score was 44, categorized as "poor" (D). Overall, there was only one student in the "good" (B) category, 10 students in the "satisfactory" (C) category, and nine students in the "poor" (D) category. Based on the data obtained, a figure of the distribution of pretest results for writing procedural texts in the experimental class is presented in Figure 1

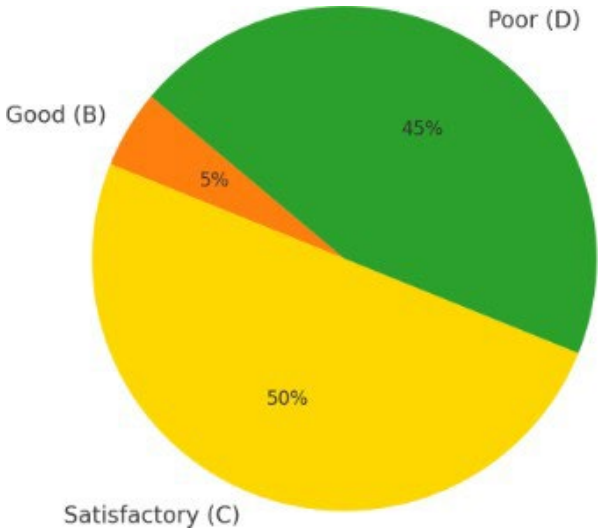

Figure 1 Pretest Results of the Experimental Class

Description of the Post-test Results in the Experimental Class

The students' writing results in the experimental class during the posttest stage are displayed in the Table 5 and 6.

Table 5 Post-test Results of the Experimental Class

No.	Subject Initials	Assessor 1	Assessor 2	Assessor 3	Final Score	Category
1	APGS	81	80	81	81	B
2	AWM	63	60	65	63	C
3	AH	75	75	75	75	C
4	AQA	81	80	81	81	B
5	AQA	81	81	81	81	B
6	DFH	94	92	95	94	A
7	GM	72	75	75	74	C
8	MFP	75	75	75	75	C
9	MAN	70	70	70	70	C
10	MDM	56	56	56	56	C
11	NCA	75	75	75	75	C
12	NA	81	80	81	81	B
13	PZ	70	70	70	70	C
14	RKM	75	75	75	75	C
15	SM	75	72	75	74	C
16	SDJ	75	75	75	75	C
17	TP	63	60	65	63	C
18	TAKH	88	90	88	89	A
19	YRY	88	88	90	89	A
20	YAS	70	70	70	70	C

Table 6 Post-test Results Interval of the Experimental Class

Category	Range	Number	Percentage
Very Good (A)	86-100	3	15%
Good (B)	76-85	4	20%
Satisfactory (C)	56-75	13	65%
Poor (D)	10-55	0	0%
Total		20	100%

Based on Table5 and 6 the average ability of students in the experimental class in writing procedural texts after receiving the treatment, which involved the application of the 5E Learning Cycle model assisted by YouTube Shorts, falls into the "good" (B) category. This is evidenced by an average score of 76, which is classified as "good" (B). The highest post-test score for students in the experimental class in writing procedural texts was 94, categorized as "very good" (A). Meanwhile, the lowest post-test score in the experimental class for writing procedural texts was 56, categorized as "satisfactory" (C). In total, there were three students in the "very good" (A) category, four students in the "good" (B) category, and 13 students in the "satisfactory" (C) category. Based on the data obtained, a figure of the distribution of post-test results for writing procedural texts in the experimental class is presented at Figure 2.

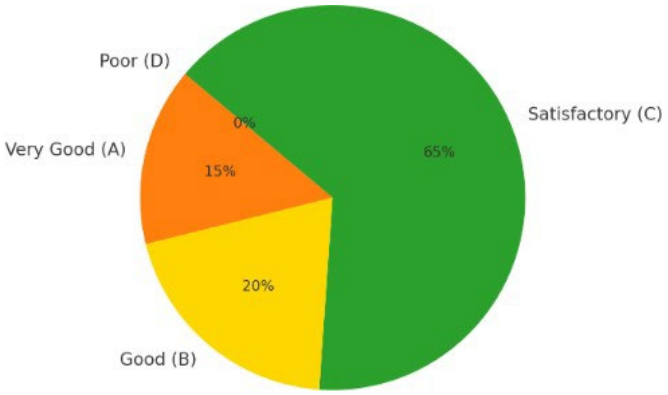

Figure 2 Post-test Results of the Experimental Class

Description of Pretest Results in the Control Class

The students' writing results in the control class during the pretest stage are displayed in the Table 7 and 8.

Table 7 Pretest Results of the Control Class

No.	Subject Initials	Assessor 1	Assessor 2	Assessor 3	Final Score	Category
1	AFH	44	44	44	44	D
2	AM	60	60	60	60	C
3	CC	50	50	50	50	D
4	FN	55	55	55	55	D
5	GRW	60	62	60	61	C
6	KMD	50	50	50	50	D
7	KRP	65	70	65	67	C
8	LP	56	60	56	57	C
9	MN	44	44	50	46	D
10	MAD	60	60	65	62	C
11	MRN	60	65	60	62	C
12	MS	56	60	60	58	C
13	NAW	44	44	50	46	D
14	NL	65	65	70	67	C
15	NNL	44	44	44	44	D
16	OMS	60	65	60	62	C
17	RSP	60	65	65	63	C
18	RPR	55	55	60	57	C
19	SM	60	65	65	63	C
20	ZRU	70	70	70	70	C
Average	56	58	58	57	C	
Minimum Score	44	44	44	44	D	

No.	Subject Initials	Assessor 1	Assessor 2	Assessor 3	Final Score	Category
Maximum Score	70	70	70	70	C	

Table 8 Pretest Results Interval of the Control Class

Category	Range	Number	Percentage
Very Good (A)	86-100	0	0%
Good (B)	76-85	0	0%
Satisfactory (C)	56-75	13	65%
Poor (D)	10-55	7	35%
Total		20	100%

Based on Table 7 and 8, the average ability of students in writing procedural texts in the control class before receiving the treatment falls into the "satisfactory" category. This is evidenced by an average pretest score of 57, which falls into the "satisfactory" (C) category. None of the pretest scores in the control class reached the "very good" (A) or "good" (B) categories. The highest pretest score in the control class for writing procedural texts was 70, categorized as "satisfactory" (C), while the lowest score was 44, categorized as "poor" (D). In total, 13 students were in the "satisfactory" (C) category, and seven students were in the "poor" (D) category. Based on the data obtained, a figure of the distribution of pretest results for writing procedural texts in the control class is presented at Figure 3.

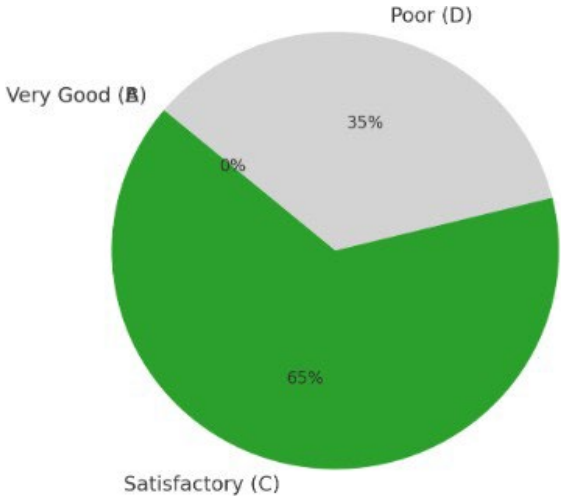

Figure 3 Pretest Results of the Control Class

Description of Post-test Results of the Control Class

The students' writing results in the control class during the post-test stage are displayed in the Table 9 and 10.

Table 9 Post-test Results of the Control Class

No.	Subject Initials	Assessor 1	Assessor 2	Assessor 3	Final Score	Category
1	AFH	50	50	50	50	D

2	AM	65	65	60	63	C
3	CC	56	50	50	52	D
4	FN	62	60	62	63	C
5	GRW	62	60	60	61	C
6	KMD	56	56	56	56	C
7	KRP	75	75	75	75	C
8	LP	65	60	65	63	C
9	MN	50	50	56	52	D
10	MAD	70	70	70	70	C
11	MRN	60	65	65	63	C
12	MS	60	60	62	61	C
13	NAW	56	56	56	56	D
14	NL	74	75	75	75	C
15	NNL	50	50	50	50	D
16	OMS	74	75	75	75	C
17	RSP	70	74	70	72	C
18	RPR	56	60	60	59	C
19	SM	74	70	70	71	C
20	ZRU	74	75	75	75	C
Average	63	63	63	63	C	
Minimum Score	50	50	50	50	D	
Maximum Score	75	75	75	75	C	

Table 10 Post-test Results Interval of the Control Class

Category	Range	Number	Percentage
Very Good (A)	86-100	0	0%
Good (B)	76-85	0	0%
Satisfactory (C)	56-75	15	75%
Poor (D)	10-55	5	25%
Total		20	100%

Based on Table 9 and 10, the average ability of students in writing procedural texts in the control class after receiving the treatment using the direct instructional model remained in the "satisfactory" (C) category. However, the average score increased from the pretest average of 47 points to 63 points. The highest post-test score for students in the control class in writing procedural texts was 75, categorized as "satisfactory" (C), while the lowest score was 50, categorized as "poor" (D). Overall, 15 students fell into the "satisfactory" (C) category, and five students fell into the "poor" (D) category. The post-test results for writing procedural texts in the control class did not include any students in the "very good" (A) or "good" (B) categories. Based on the obtained data, a figure of the distribution of post-test results for writing procedural texts in the control class is presented at Figure 4.

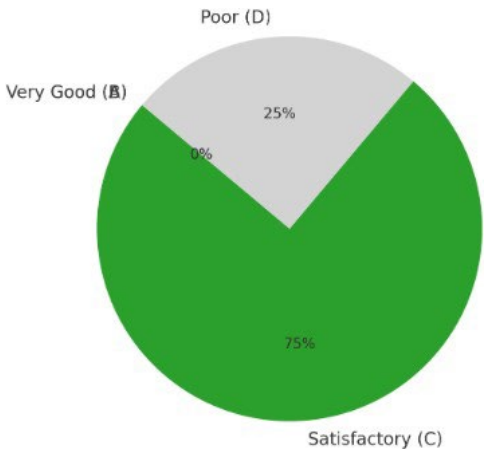

Figure 4 Post-test Results of the Control Class

Reliability, Normality, Homogeneity and Hypothesis Test Result

Statistically, the data obtained in this research were analysed through four tests: inter-rater reliability test, normality test, homogeneity test, and hypothesis test as has been explained in research methodology.

Based on the reliability test conducted using Cronbach's Alpha in SPSS on the pretest scores in the experimental class, the researchers obtained the Cronbach's Alpha value was 0.984. The post-test scores in the experimental class, the pretest and post-test of control class respectively are 0.995, 0.978, and 0.984. According to the Guilford scale, these values fall into the category of very high reliability. Therefore, it can be concluded that there was no subjectivity in the assessments made by the three assessors.

The normality test aims to determine whether the data being studied are normally distributed. The normality test data are derived from the pre-test and post-test scores in both the experimental and control classes. The data were processed and analyzed using IBM SPSS Statistics version 29. Given that the sample size in this study is less than 50, the Shapiro-Wilk test was used to assess normality. The criteria for this test are as follows:

a. If the sig. (2-tailed) value is greater than 0.050, it indicates that the data are normally distributed.

b. If the sig. (2-tailed) value is less than 0.050, it indicates that the data are not normally distributed.

The results of the Shapiro-Wilk test indicate that the pre-test and post-test scores in the experimental class, as well as the pre-test and post-test scores in the control class, yielded sig. values of 0.318, 0.543, 0.186, and 0.063, respectively, all of which are greater than 0.050. This confirms that all test data are normally distributed.

A homogeneity test is conducted to determine whether the data variance in the control and experimental classes is similar. In this study, the homogeneity test was carried out using IBM SPSS Statistics version 29. This test helps to show whether the data in the control and experimental classes are homogeneous or not. The decision-making criteria for the homogeneity test are as follows:

a. If the sig. (2-tailed) value is greater than 0.050, it can be concluded that the data are homogeneous.

b. If the sig. (2-tailed) value is less than 0.050, it can be concluded that the data are not homogeneous.

The results of the homogeneity test show that the pre-test data in the experimental and control classes produced a sig. value of 0.495. Since this value is greater than 0.05, it indicates that the pre-test data in both classes are homogeneous. Thus, it can be concluded that the variance of the pre-test data is consistent between the control and experimental classes. Similarly, the homogeneity test results for the post-test data revealed a sig. value of 0.798. As this value is also greater than 0.05, it indicates that the post-test data in both classes are homogeneous. Therefore, it can be concluded that the variance of the post-test data is consistent between the control and experimental classes.

The hypothesis test is conducted to determine whether there is a significant difference in the ability to write procedural texts between students in the experimental class, who received treatment using the 5E Learning Cycle model, and students in the control class, who did not receive the 5E Learning Cycle model treatment. The hypothesis testing in this study uses a T- test (Independent Sample T-test) with the help of IBM SPSS Statistics version 29 software. The significance level for the T-test is as follows:

a. If the sig. (2-tailed) value is greater than 0.05, there is no significant difference in the ability to write procedural texts between students in the experimental class, who were given treatment using the 5E Learning Cycle model assisted by YouTube Shorts, and those in the control class, who were given traditional teaching methods.

b. If the sig. (2-tailed) value is less than 0.05, there is a significant difference in the ability to write procedural texts between students in the experimental class, who were given treatment using the 5E Learning Cycle model assisted by YouTube Shorts, and those in the control class, who were given traditional teaching methods.

Based on the results of the T-test presented in Table 11, the sig. (2-tailed) value for Equal Variances Assumed is 0.001. Since this value is less than 0.05, it indicates a significant difference between the groups. Consequently, H0 is rejected, and Ha is accepted, which means that there is a significant difference in the procedural text writing skills between the students in the experimental class and those in the control class. Therefore, it can be concluded that the 5E Learning Cycle model assisted by YouTube Shorts effectively improves students' ability to write procedural texts.

Table 11 Independent Samples Test Result

	Levene's Test for Equality of Variances		t-test for Equality of Means							
					Significance				95% Confidence Interval of the Difference	
	F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.066	.798	4.384	38	<.001	<.001	12.500	2.852	6.727	18.273
Equal variances not assumed			4.384	37.918	<.001	<.001	12.500	2.852	6.727	18.273

CONCLUSION, SUGGESTION AND IMPLICATION

This section presents the conclusions derived from the research findings, the implications of the study for educational practices, and suggestions for future research and application.

Conclusion

Based on the study conducted using the 5E Learning Cycle Model assisted by YouTube Shorts on the procedural text writing skills of seventh-grade students at SMP Negeri 1 Karangsembung, the following conclusions were drawn:

Experimental Class: The initial writing skills in the experimental class were categorized as average, with a pre-test score of 58. After receiving treatment using the 5E Learning Cycle Model with YouTube Shorts, students' writing skills improved, with a post-test average score of 76, categorized as good. This indicates an 18-point increase, demonstrating the positive impact of the 5E Learning Cycle Model assisted by YouTube Shorts on improving students' procedural text writing skills. The improvement was seen in content relevance, structure, language rules, and proper grammar.

Control Class: The initial writing skills in the control class were also categorized as average, with a pre-test score of 57. After receiving conventional teaching, students' writing skills increased slightly, with a post-test average score of 63, still categorized as average. This shows a positive improvement of 6 points.

Hypothesis Testing: The SPSS analysis showed a significance value of <0.001, which is less than 0.05, indicating that Ha is accepted and H0 is rejected. This signifies a significant difference in procedural text writing skills between students in the experimental class using the 5E Learning Cycle Model and those in the control class using conventional methods. Thus, the 5E Learning Cycle Model assisted by YouTube Shorts proves to be effective in improving students' procedural text writing skills.

Implications

The study has several implications:

For Teachers: This study offers an innovative and interactive teaching strategy for procedural text writing. The 5E Learning Cycle Model provides a structured approach—engage, explore, explain, elaborate, and evaluate—that helps students systematically develop their ideas. YouTube Shorts can also support learning as a practical and technology-based tool.

For Students: The application of the 5E Learning Cycle Model with YouTube Shorts helps students overcome challenges in writing procedural texts. This model makes it easier for students to understand the material, develop their ideas, and enjoy the learning process, leading to better comprehension and practical application of their knowledge in everyday life.

For Future Researchers: This study can serve as a reference for future research by further developing or refining the 5E Learning Cycle Model with new innovations.

Recommendations

Based on the results, the 5E Learning Cycle Model assisted by YouTube Shorts has proven to be effective in teaching procedural text writing. Therefore, it can be used as an alternative teaching strategy. Additional recommendations include:

1. The 5E Learning Cycle Model with YouTube Shorts can also be applied to other text genres, allowing future studies to explore its application in various writing tasks.

2. The model can be paired with other media such as TikTok, Canva, and Quizizz. Future research could explore creative and innovative uses of different media alongside the 5E Learning Cycle Model.

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