

Demonstration Method with TPACK Approach to Improve the Writing Ability of Procedure Text in Fourth Grade

Rizka Mulyanah

Universitas Pendidikan Indonesia

Farid Rizqi Maulana

Universitas Pendidikan Indonesia

Deni Wardana

Universitas Pendidikan Indonesia

Address: Jl. Ciracas No.38, Serang, Kec. Serang, Kota Serang, Banten 42116

Correspondensi: rizkamulyanah@upi.edu

Abstract. *This research investigates whether integrating the demonstration method with a TPACK (Technological Pedagogical Content Knowledge) approach in classroom learning can improve students' ability to write procedure texts. A quasi-experimental pre-test post-test control group design was employed to examine this effect. The target population for this study included all fourth-grade students at SDN Kedaung Wetan 2. A sample of 40 students was selected, with 20 students from class 4A assigned to the control group and 20 students from class 4B assigned to the experimental group. The instrument used in this study was a written test. Data analysis was performed using the SPSS 27 program. Both the Paired Sample T-Test (Sig. (2-tailed) = 0.001) and the Independent Samples T-Test (Sig. (2-tailed) = 0.075) yielded statistically significant results ($p = 0.05$), indicating that the null hypothesis (H_0) can be rejected in favor of the alternative hypothesis (H_a). This suggests a significant difference between the learning outcomes of students receiving traditional instruction. Furthermore, the N-Gain Score analysis revealed an average improvement of 56% in the learning outcomes. This finding supports the notion that the TPACK integrated method has a positive influence on students' ability to write procedure texts.*

Keywords: *Procedur Text; TPACK; Demonstration Method, Quasi Eksperimental Design*

INTRODUCTION

The rapid and sophisticated development of science and technology is a hallmark of the globalization era. 21st-century learning flips the script in classrooms. Instead of teachers acting as the sole source of knowledge, the curriculum now empowers students to take center stage in their own learning journeys. Students are now expected to develop various thinking skills necessary for learning. Communication, problem-solving, critical thinking, and collaboration – these aren't just buzzwords, they're the essential tools students need to thrive in the 21st century. (Nofrion et al., 2018). Professional teachers are also required to master several competencies as stated in Law No. 14 of 2005, Article 10, Paragraph 1, including pedagogical, professional, social, and personal competencies. In addition to these competencies, 21st-century teachers also have the distinctive characteristic of being able to optimize technology.

In 2005, research indicated that besides teaching materials and pedagogy, technology plays a crucial role in the success of learning (Durdu & Dag, 2017; Esposito & Moroney, 2020; Koehler & Mishra, 2006). To create engaging and effective learning, a suitable learning model

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* Rizka Mulyanah, rizkamulyanah@upi.edu

tailored to the characteristics of children is necessary. A learning model is a plan used for curriculum design (long-term learning plans), instructional material design, and classroom teaching (Mirdad: 2020 in Widaningsih et al., 2023). In the classroom, the demonstration method is often used by teachers as it is believed to effectively achieve learning objectives (Anitah in Rina et al., 2020). The term "method" itself comes from the Greek word *methodos*, meaning a way or manner. A method is a way used to achieve predetermined goals (Sulaeman in Latif et al., 2022).

The demonstration method involves presenting a process or situation being studied through a performance or demonstration, either in its original form or as a model, delivered by the educator or an expert in the topic being demonstrated. According to Suprijono, the steps in applying the demonstration method are as follows: the teacher conveys the competencies to be achieved, provides an overview of the material to be presented, presents the necessary materials or tools, selects a student to perform the demonstration according to the prepared scenario, all students observe and analyze the demonstration, each student expresses their analysis and experiences demonstrated, and the teacher concludes (Agus, 2015). When using the demonstration method, teachers not only show how a concept or skill is applied in a real context but also integrate technology to facilitate better understanding. In the context of TPACK (Technological Pedagogical Content Knowledge), teachers blend technological, pedagogical, and content knowledge to create a comprehensive and meaningful learning experience for students. By using technology as a demonstration tool, teachers can broaden the scope of learning, present diverse resources, and facilitate active student engagement.

Thus, a demonstration method integrated with the TPACK approach not only enhances students understanding of the material but also strengthens their technological skills and enriches the overall learning experience. In 2006, Mishra and Koehler introduced the TPACK framework. In integrating the TPACK approach, collaboration involves combining three main components: technology, pedagogy, and content knowledge. According to Shulman in Khoerunisa (2022), Pedagogical Content Knowledge (PCK) reflects a teacher's understanding of how a specific topic and issues can be presented and adapted to students' interests and abilities in the learning process. The TPACK framework recognizes that effective learning in the 21st century goes beyond just knowing the subject matter. Teachers who understand the power of technology can transform the classroom experience, becoming tech wizards who weave technology seamlessly into their lessons to boost student engagement and understanding. It focuses on the integration of general pedagogical knowledge and content knowledge, resulting in new insights into delivering subject matter (Rahman & Harun, 2018).

Language skills are divided into two categories: written and spoken. Studies on written language encompass the components of reading and writing skills, which are fundamental skills taught from early grades in elementary school (Siahaan et al. 2020; Musaddat et al. 2021). Writing, as defined by Tarigan (Ramadhani, 2020), is a superpower that lets you communicate across distances, crafting messages that resonate without needing a face-to-face encounter. According to Dalman in Nurlatifah et al. (2020), "Writing is a creative process in which ideas are realized in written form with a specific purpose, such as informing, convincing, or entertaining. Writing proficiency requires mastery of various language elements to produce correct and coherent writing, especially in terms of logical sequence." Ability is defined as "capability; proficiency; strength." Writing ability refers to the capability to generate new ideas and present them in complete, clear, and coherent written form.

Consequently, these ideas become easy to understand and comprehend by others for communication or documentation purposes. To improve writing skills, various text types formulated in Indonesian language learning are implementations of cultural systems, social systems, personality systems, and behavioral systems prevalent in society. Cultural contexts, such as values and norms, are present in various text types, such as observation reports, descriptive texts, and procedure texts (Hapsari & Wulandari, 2020). According to the Ministry of Education, Culture, Research, and Technology in Kurniawati et al. (2023, p. 5), procedure texts explain the steps to be followed so that readers or viewers can accurately follow a process to create something, perform a task, or use a tool. In everyday life, we often encounter procedure texts in the form of electronic device manuals, furniture assembly instructions, or software usage guides.

Through procedure texts, readers are guided to perform tasks clearly and in detail. The overall success or failure of executing a process often depends on how well the procedure text is structured and followed. Procedure texts begin to be taught in the 4th grade of elementary school. A procedure text is a type of text that provides step-by-step sequence of instructions, typically presented in a clear and logical order, to guide the read completing a task or activity. Utami in Alvidril & Ratna (2021) states that one of the forms of writing that often poses a challenge for students is procedure text. This difficulty arises because students often find writing procedure texts challenging, as they are not accustomed to writing texts that adhere to the correct structure. Additionally, it is known that some students take a long time to articulate their ideas, they lack language development skills, and many students do not fully understand the rules of writing.

Therefore, a good understanding of the structure and use of procedure texts is essential to ensure effective and efficient execution. Analysis of student work reveals a significant boost in their ability to write effective procedure texts. Evaluation is conducted on four main aspects: content, structure, writing conventions, and language features.

The first aspect is structure. According to Suherli in Yanuarista & Safitri (2021), a procedure text's structure consists of goals, materials and tools, steps, and closing. The goal section serves as an introduction explaining the instructions to be conveyed in the discussion section, which can be identified through the procedure text's title. For recipes or instructions involving materials and tools, this section includes explanations of the tools used, materials along with their quantities. The steps section provides systematic instructions on how to perform an action, arranged chronologically. The closing section contains simple closing sentences, not conclusions. Here, the writer can include a few sentences to mark the end of the text.

The second aspect evaluated is content. According to Priyatni in Dakhliyah (2019), the content of a procedure text includes: The title should be relevant and reflect the topic or activity explained in the procedure text. A proper title helps readers immediately understand what the text is about. The content should have ideas supporting the chosen topic and title. Each step or information presented must be directly related to the main topic and contribute to the reader's understanding. A procedure text must have a clear purpose, providing instructions or methods to do something through a series of actions or steps. Each step must be logically and chronologically arranged to ensure readers can easily follow the instructions and achieve the desired result.

The third aspect is writing conventions. In Indonesian, this refers to the rules that must be followed when writing words in the language. According to Alek & Achmad in Herawati et al. (2022), these conventions involve correct writing procedures, including spelling, punctuation, articles, standard word usage, word segmentation, writing numbers and figures, and the use of loanwords. Following these conventions makes writing in Indonesian clearer, more structured, and easier to understand.

The fourth aspect is language features. According to Harsiati in Budianti et al. (2018, p. 6), these features must be considered when writing procedure texts, consisting of: the use of imperative sentences, adverbs of manner, adverbs of tools, and adverbs of purpose, the use of suggestion and prohibition sentences, conjunctions, and suffixes *-i* and *-kan*. Using these language features makes procedure texts clearer, more structured, and easier for readers to follow.

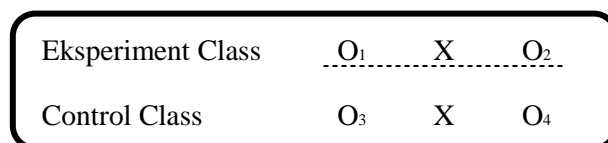
The researcher developed a learning account named bilmu.id, designed to be as engaging as possible, driven by students' curiosity to learn using social media. Instagram is widely known and used by various age groups, from teenagers to adults. Even elementary school children are familiar with Instagram and have their own accounts. Therefore, the researcher is interested in conducting an experiment using the Instagram social media platform to educate students that using social media is not inherently negative and can be directed towards positive activities, such as following educational accounts..

This study investigates the effectiveness of the demonstration method using the TPACK approach for improving these skills among fourth graders at SDN Kedaung Wetan 2. The results are expected to provide teachers with practical strategies for integrating TPACK skills into their instruction, ultimately enhancing students ability to write clear and concise procedure texts.

METHOD

This study employs a quasi experimental design, specifically a pre-test or post-test design with a control group. Students were not randomly assigned to groups, but both the experimental and control groups received a pre-test to measure their procedure text writing skills. Following the intervention (the demonstration method using TPACK), both groups were given a post-test to assess any improvement. While this design allows us to examine the potential effect of the intervention, it's important to acknowledge that external factors beyond the research setting may also influence student learning outcomes (Sugiono: 2018).

The research design uses a non-equivalent control group design and is structured by providing treatment to the experimental class while the control class does not receive the treatment. The experimental class is the group that receives the treatment using the demonstration method with the TPACK approach, whereas the control class is the group that does not receive the treatment. In this context, subjects are not randomly assigned. The experimental design can be illustrated as follows:



(Sugiyono 2012: 116)

Description :

- O1 : Pre-test results of the class with treatment
- O3 : Pre-test results of the class without treatment
- X : Treatment in the class

- O2 : Post-test results of the class with treatment
 O4 : Post-test results of the class without treatment
 ----- : Indicates that subjects were not randomly selected

This research was conducted at SDN Kedaung Wetan 2, Tangerang City, Banten. The research was carried out over four days. The population for this study included all fourth grade students at SDN Kedaung Wetan 2 during the 2023/2024 academic year. A sample was drawn from this population, consisting of 20 students each from classes 4A and 4B.

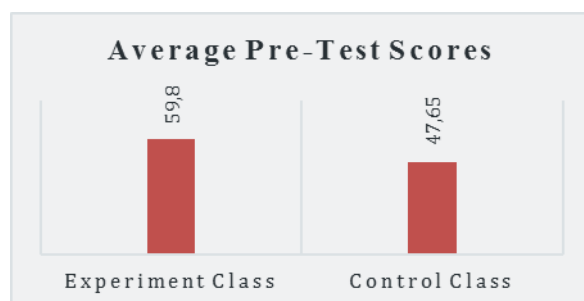
The instrument used in the research include both test and non-test instrument. The test instrument served to assess students knowledge of procedure writing concepts before and after the intervention. The test instrument consists of an objective multiple-choice test with 10 questions and one writing skill question.

This data will be used to assess students' abilities before and after the treatment. Prior to the main analysis, data underwent prerequisite tests for normality and homogeneity to ensure adherence to assumptions. Subsequently, paired samples and independent samples t-test were employed to asses pre-test and control group, respectively. Additionally, N-gain score analysis was conducted to quantify the magnitude of improvement for each participant.

RESULT AND DISCUSSION

Pre-Test Result

A pre-test is an evaluation conducted before implementing any treatment when the learning process begins. We give a pre-test at the beginning to see what participants already know or can do before they start learning the new stuff. The pre-test evaluation consists of a written test with 10 multiple-choice questions and 1 writing skill question. The following is a visual representation of the processed data in the form of a diagram.



Picture 1. Diagram average pre-test scores of the class with treatment and class without treatment

From these results, the researcher found that many students still do not understand the aspects of writing procedure texts correctly. Issues arise from several aspects. Firstly, in terms of structure, students often skip crucial parts such as the title and steps. The title is a part of the purpose of a procedure text, and without it, the text lacks a clear objective. Many students write only one or two steps without completing the process.

The second aspect is content. Students often choose to write only the materials and tools along with brief steps, without including a closing sentence or conclusion. The next aspect is writing conventions, where most students do not use proper writing conventions. Many do not use periods (.) to end sentences, fail to capitalize the first letter of sentences and titles, and use incorrect standard language. The last aspect is linguistic features, where many students ignore the characteristic features of procedure texts, such as command sentences, tool adverbs, and the use of suffixes -i and -kan.

To choose the appropriate learning media, indicators that consider the relationship between the media and learning objectives, as well as the uniqueness of the media, are necessary. This aims to prevent students from feeling bored and to help them engage in a more impressive and effective learning process (Sa'adah et al., 2022, p. 39).



Picture 2. Learning bilmu.id account view on

The researcher used different treatments in each class. In the experimental class, a demonstration method with a TPACK approach was applied. The TPACK approach involved students learning through the Instagram account (@bilmu.id) developed by the researcher. This learning account provides material on procedure texts, including examples, steps, linguistic features, and writing conventions. The content on the learning account can be expanded beyond the research material.



Picture 3. Implication of demonstration method with TPACK approach in the classroom

The TPACK approach includes the following steps: beginning with an aperception that social media can have a positive impact, followed by students observing the procedure text material available on the learning account. Students attentively follow the explanations with high enthusiasm and discipline. The teacher demonstrates the process of composing a procedure text by showing a video posted on the social media account bilmu.id. During the demonstration, students remain orderly as they focus on the video projected on the screen, which aids the teacher in explaining additional material. After observing the demonstrated material, students individually compose their own procedure texts.

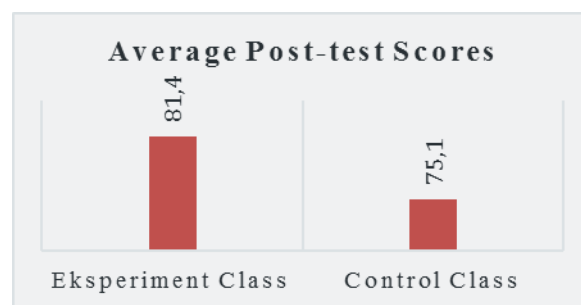


Picture 4. Implication of demonstration method with conventional approach in the classroom

In contrast, the control class used a conventional demonstration approach. The class began with an aperception, followed by a demonstration activity where the teacher showed how to make a piggy bank from a used can, which the students then followed directly. Students were very enthusiastic during the demonstration as they created their own crafts. Procedure text material was explained throughout the demonstration to ensure that students could follow the steps correctly. After completing the craft, students wrote a procedure text titled according to the craft they made.

Post-Test Result

A post-test is an evaluation conducted after the treatment when the learning process begins. We use the post-test to see how much participants learned after the program or abilities after they have been exposed to the learning material. In the experimental class, a demonstration method with a TPACK approach was applied, whereas the control class used a conventional demonstration approach. The post-test evaluation consists of a written test with 10 multiple-choice questions and 1 writing skill question. The following is a visual representation of the processed data in the form of a diagram.



Picture 5. Diagram average post-test scores of the class with treatment and class without treatment

The average post-test scores showed an improvement in both the class with treatment and class without treatment. However, the with treatment using the TPACK approach had an average score of 81.4%, which scored higher than the average score in the class without treatment 75.1%, indicating a difference of 6.3%. The aspects of writing procedure texts were understood and applied by students in their writing.

Normality Test Result

Before performing complex statistical test, we need to make sure that our data is healthy. We perform a normality test, which is basically like taking the temperature of the data. A good regression model requires data that is spread out in a good, normal way for reliable analysis. The normality test in this study used the Saphiro-Wilk test since the data involved 20 respondents. A population distribution is considered normal in the Shapiro-Wilk test if the significance value is greater than 0.05 (Santoso in Agustin & Permatasari, 2020).

Pair 1	Pre Test- Post Test Class With Treatment	- 21,600	12,271	2,744	-27,343	-15,857	-7,872	19	<,001
Pair 2	Pre Test- Post Test Class Without Treatment	- 27,450	11,133	2,489	-32,660	-22,240	- 11,027	19	<,001

The paired sample t-test results show a Sig. (2-tailed) value of $0.001 < 0.05$, the results show a clear difference in how well students learned after using the TPACK demonstration method, compared to before. This indicates that the TPACK approach positively affects students' writing skills. Therefore, The analysis yielded statistically significant results, leading to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_a).

2. Independent Sample Test

An independent samples t-test is employed to investigate whether there is a statistically significant difference in the effectiveness of the TPACK approach and the conventional approach in enhancing students procedure writing skills.

Table 6. Descriptive Statistic N-gain score of class with treatment and class without treatment

	Class	Mean	Minimum Value	Maximum Value
N-Gain Score	Eksperimen	56,3273	15,38	74,29
	Kontrol	52,9034	25,00	90,00

Table 6 shows the N-gain score calculation, the class with treatment having an average N-gain score of 56.3273 or 56%, categorized as quite effective, with a minimum score of 15% and a maximum score of 74%. The class without treatment had an average N-gain score of 53%, categorized as less effective, with a minimum score of 25% and a maximum score of 90%.

Table 7. The result of independent sample test

		Levene's Test for Equality of Variances					t-test for Equality of Means		95% Confidence Interval of the Difference	
		F	Sig				t	df	Sig. (2-tailed)	Mean Difference
Student Learning Outcomes	Equal variances assumed	,015	,903	1,828	38	,075	6,300	3,447	-,678	13,278
	Equal variances not assumed			1,828	36,366	,076	6,300	3,447	-,688	13,288

The independent samples t-test analysis revealed a statistically significant difference between the post-test scores of the experimental and control group ($t(df) = 1.828$, $p = 0.075$). This suggests that the TPACK demonstration method may have influenced the learning outcomes of fourth graders at SDN Kedaung Wetan 2. The results conclusively demonstrate that the TPACK demonstration method significantly improves learning outcomes for fourth graders at SDN Kedaung Wetan 2. The TPACK approach used Instagram as a learning medium. From the pre-test and post-test data collected from the treated and untreated classes, the researcher conducted paired sample t-tests, independent sample t-tests, and N-gain score tests. The paired samples t-test and the independent samples t-test, along with the N-gain score analysis, provided a comprehensive picture of the intervention's effect. The paired test revealed significant differences within each group, while the independent test confirmed our hypothesis across groups. Finally, the N-gain score quantified the magnitude of this improvement.

The results of the paired sample t-test indicate that the demonstration method with the TPACK approach, applied through an Instagram account in teaching procedure text writing, significantly boost learning results for students in grade four. This is proven by the Sig. (2-tailed) value of $0.001 < 0.05$. In conclusion, the findings of this study demonstrate a statistically significant effect of the demonstration method integrated with the TPACK framework on approach on improving learning outcomes in procedure text writing skills. Our analysis yielded

statistically significant results, leading to the rejection of the null hypothesis (Ho) and the acceptance of the alternative hypothesis (Ha).

Both the independent samples t-test and the N-gain score showed a clear improvement in students ability to write procedure texts. The research hypothesis "There is a difference in effectiveness between the demonstration method with the TPACK approach and the demonstration method with the conventional approach in improving procedure text writing skills" is accepted. This means that the demonstration method with the TPACK approach is considered quite effective in improving procedure text writing skills in the 4th grade. This is reinforced by the percentage of the average N-gain score of the class with treatment, which is 56%, categorized as quite effective. Meanwhile, class without treatment has an average N-gain score percentage of 53%, indicating it is less effective.

CONCLUSION AND SUGGESTION

Conclusion

The TPACK (Technological Pedagogical Content Knowledge) approach significantly influences the process and improvement of procedure text writing skills in Indonesian language learning for 4th grade students. Learning outcomes using the TPACK approach are better than those using conventional approaches. During the learning process, the atmosphere in the experimental class was very orderly, yet it did not diminish the students' enthusiasm for the ongoing lessons. Throughout the learning process, students felt very happy because they were learning with the TPACK approach. Based on the post-test results given to the students, the researcher found that the students were able to write procedure texts much more accurately according to the aspects compared to the pre-test results.

This study concludes that all three tested hypotheses showed significant and consistent differences in the results of procedure text writing skills using the demonstration method with the TPACK approach. The experimental class saw a clear advantage in their procedure writing skills compared to the control group. This proves that the demonstration method with the TPACK approach is quite suggests this method leads to improvements in procedure text writing among students. This indicates that the experiment conducted by the researcher was quite effective in enhancing the ability to write procedure texts.

Suggestion

According to researchers, the TPACK approach can be further explored and developed more extensively. For instance, it can be applied in the development of applications or websites that students can use both at home and at school. For future research, a classroom action

research method can be employed to obtain a comparative analysis of learning outcomes. Researchers also suggest that classroom teachers should adopt teaching methods and approaches that align with the characteristics of their students to ensure that the material is easily understood.

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