

## IMPROVING STUDENTS' DESCRIPTIVE WRITING ACHIEVEMENT BY USING CLUSTERING TECHNIQUE AT SMA IBA PALEMBANG

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**Abstract:** This study aimed to find whether there was a significant improvement in students' descriptive writing achievement and whether there was a significant difference between students taught with the clustering technique and those not. A quasi-experimental design with pre-test and post-test non-equivalent was used in this study. 40 students were sampled, with 20 students from X.1 as the experimental class and 20 students from X.2 as the control class. The analysis results showed the p-output of the paired sample t-test was 0.000 and the t-output was -9.109, indicating a significant improvement. Then, the result of the independent sample t-test was 0.005 which is lower than 0.05 with a t-output of 2.999 which indicates there was a significant difference. Based on the results of this study, the researcher suggests that clustering techniques can be implemented as one of the appropriate techniques for improving students' descriptive writing achievement.

**Keywords:** writing skill, descriptive writing achievement, clustering technique.

We are currently living in the era of globalization. According to Appadurai (2001) globalization is a multidirectional process that involves increasingly large and broad impacts on every aspect of life, including technology, transportation, education, and other areas. In this era of globalization, it can be said that international communication will increasingly develop because it involves people around the world (as cited in Mohammed, 2020). Therefore, in this era of globalization, the ability to speak English is something that must be mastered. Therefore, in this era of globalization, everyone in Indonesia must be familiar and able to speak English. In addition, to help people get used to communicating with English, teaching English can be used as the first step to mastering it.

In the process of teaching English, there are four skills that student must be mastered it, namely reading, listening, writing, and speaking. One of the skills is writing. Writing is an active skill because through writing students indirectly create new products. According to Royani and Sadih (2019), writing is a process that requires a strong thought process to formulate one idea with another idea to form a sentence and sentence into a paragraph by paying attention to good and correct writing.

Writing is one of the skills that provides many benefits. According to Pulak (2023), writing can develop students' thinking and imaginative abilities in finding new ideas and developing them. In addition, writing can also have an impact on communication skills, because through writing students can prepare ideas or drafts that can be used to improve presentation skills. Apart from Pulak opinion, according to Raimes (1983), writing is an important skill to master for several reasons. First, writing can assist students in reinforcing their understanding of grammatical structures and vocabulary that have been introduced by the teacher. Furthermore, when students engage in writing, they are given the opportunity to be bold and experiment with language. Finally, when they write, they have to engage with new language, in which case they can express ideas by using their eyes, hands, and brain continuously to reinforce learning (as cite in Dewi & Ayunisa, 2020).

Although writing provides benefits, students often experience some difficulties in writing. There are several difficulties in writing based on Dewi and Ayunisa (2020), including students must develop expertise in vocabulary, grammar, structure, and language mechanics as their main priority to be able to develop their ideas. When creating written material, they should meticulously organize words into sentences and sentences into paragraphs. In the final stage, they need to transform their ideas into coherent, readable text. Difficulties in writing are not only experienced by students, but also experienced by teachers when teaching writing skills. Teachers often experience difficulties in teaching English due to their mistakes in choosing teaching methods or techniques, this is stated by Habibi et al. 2017, the challenges in teaching writing in English also stem from selecting unsuitable teaching methods for the subject.

Writing skills are taught in senior high school by a genre-based approach. Husna (2017) explains that senior high school students are taught twelve different genres, such as descriptive, recount, narrative, procedure, explanation, discussion, exposition, news item, information report, anecdote, and review. Descriptive text is one of the texts that has to be learned by students in the tenth grade of senior high school. Potradinata (2018) states that descriptive text is one of the factual genres that serves purpose to describe about person, things, and places. It means that descriptive text is part of factual genres that aim to explain about person, things, and places.

One of the right techniques in dealing with this problem is the clustering technique. According to Dhanya and Alamelu (2020), the clustering technique is a pre-writing activity that allows the writer to connect the ideas around the topic or to explore the relationship between ideas, and this technique provides more benefits to students, because with the clustering technique students can search for and write down more related aspects or sub-ideas from clusters of ideas on a topic that has been determined at the beginning. There are several stages that can be done in using clustering technique



according to Dewi and Ayunisa (2020), namely clustering technique can be performed using pen and paper or a marker and whiteboard with the student begins by placing the main topic in the center of the paper and drawing a circle around it. Next, they add related words and ideas that come to mind, circling each one and connecting it with lines to the main topic. The teacher may conclude the activity after a designated time, allowing students to review the cluster and choose subtopics of interest.

Talking about difficulties and clustering technique, research related to improving students' writing descriptive by using clustering technique has been conducted by Hanafiawi et al. (2020) found significant improvement in students' descriptive writing abilities through the use of the clustering technique. The study showed an increase in average student scores from 45.7 in the pre-test to 53.7 in the first post-test and 79.3 in the second post-test, indicating the technique's success in enhancing writing skills. Similarly, Dewi and Ayunisa (2020) reported that the clustering technique had a significant positive effect on students' writing abilities, particularly in developing their thoughts before expressing them in paragraph form. However, Puspitasari and Ayuni (2020) found that while students did not show significant improvement in their writing abilities, their interest in writing descriptive texts using the clustering technique increased. Thus, the effectiveness of the clustering technique in improving descriptive writing skills appears to vary, though it generally enhances student engagement and thought organization.

In accordance with the explanation above, the researcher chooses the clustering technique to assist students in addressing challenges encountered when writing descriptive texts. Consequently, the writer selects this study with aimed to find the answer of two hypotheses, namely whether clustering technique could gave significant improvement and whether clustering technique could gave significant differences between students who taught with that technique and with who were not.

## **METHOD**

This research employed a quantitative method to examine whether the clustering technique could improve students' descriptive writing achievement and whether there was a significant difference between the experimental and control groups. The study was conducted at Senior High School IBA Palembang, involving tenth-grade students as the population. Specifically, two classes were selected: Class X.1, which served as the experimental group with 20 students, and Class X.2, which functioned as the control group with 20 students. Thus, the total sample consisted of 40 students.

The study employed a total sampling technique, meaning that the entire population of the selected classes was included as the sample. This approach ensured that all students in both groups participated, allowing for a comprehensive comparison of the effectiveness of the clustering technique in writing instruction.

To collect data, the study utilized descriptive essay writing tests, which were conducted in three stages: pre-test, treatment, and post-test. The pre-test was administered to both the experimental and control groups to assess their initial writing proficiency. Following this, the experimental group received instruction using the clustering technique, whereas the control group was taught using conventional writing instruction without clustering. After the intervention, the post-test was conducted to measure improvements in students' writing performance.

In assessing students' writing, the study employed five key assessment aspects as proposed by Brown (2004): content, which evaluates the relevance and depth of ideas; organization, which measures logical structure and coherence; grammar, which assesses the accuracy of language use; vocabulary, which examines word choice and variety; and mechanics, which checks for correct spelling, punctuation, and capitalization.

For data analysis, statistical tests were conducted using SPSS 26 to determine the significance of the findings. A paired sample t-test was used to measure whether there was a significant improvement within the experimental group from pre-test to post-test. Meanwhile, an independent sample t-test was used to compare the post-test results between the experimental and control groups to determine whether there was a statistically significant difference. These analyses provided empirical evidence regarding the effectiveness of the clustering technique in enhancing students' descriptive writing skills.

## **FINDINGS AND DISCUSSION**

The results of this study are presented in the two test tables below. Table 1 was paired sample T-test that the authors used to measure the significant improvement and Table 2 was independent sample t-test that the authors used to measure a significant difference.

### **The Result of Paired Sample T-test**

To evaluate the improvement in students' descriptive writing performance before and after using the clustering technique, a paired sample t-test was conducted. The results of the paired sample t-test are presented in Table 1.



**Table 1. The result of Paired Sample T-test**

By Using Clustering Technique	Paired Sample T-test			H <sub>0</sub>	H <sub>a</sub>
	t	df	Sig. (2 tailed)		
	-9.109	19	0.000	Rejected	Accepted

Based on Table 1, the statistical analysis reveals a significant improvement in students' writing performance. The paired sample t-test yielded a significance value (p-output) of 0.000 with a degree of freedom (df) of 19 and a t-value of -9.109. Since the p-output is lower than the 0.05 significance level and the t-value (-9.109) is greater in absolute terms than the critical t-table value (2.093), the null hypothesis (H<sub>0</sub>) is rejected in favor of the alternative hypothesis (H<sub>a</sub>).

This result indicates a statistically significant improvement in students' writing scores from the pre-test to the post-test. The negative t-value suggests that the post-test scores were significantly higher than the pre-test scores, reinforcing the notion that students improved after receiving instruction using the clustering technique.

The findings from the paired sample t-test suggest that clustering effectively enhances students' ability to generate and organize their ideas when writing descriptive texts. This aligns with previous research by Sari and Wahyuni (2018), who found that clustering enables students to systematically develop and connect ideas, resulting in higher writing scores. Similarly, Eramona and Al Hafizh (2014) emphasized that clustering techniques aid in motivating students to write by making the writing process more structured and less intimidating.

The observed improvement can be attributed to the visual and interactive nature of clustering, which allows students to brainstorm and expand their ideas without the constraints of linear writing. Instead of facing a blank page, students begin with a central idea and branch out to related concepts, creating a clear framework for their descriptive paragraphs. This approach fosters greater engagement and confidence in writing, which is crucial for language learners.

#### The Result of Independent Sample T-test

To compare the descriptive writing performance of students taught using the clustering technique versus those who were not, an independent sample t-test was conducted. The results are shown in Table 2.

**Table 2. The result of Independent Sample T-test**

By Using Clustering Technique	Independent Sample T-test			H <sub>0</sub>	H <sub>a</sub>
	t	df	Sig. (2 tailed)		
	2.999	38	0.005	Rejected	Accepted

As presented in the table above, it could be seen that the p-output was 0.005 with df 38 = (2.711), and the t-output was 2.999. It could be stated the p-output (0.005) was lower than 0.05 and the t-output (2.999) was higher than the t-table (2.711). It could be concluded that research question number two has been answered that there was a significant difference between students' descriptive writing achievement who were taught by using the clustering technique and those who were not. The results from the independent sample t-test demonstrate that students who received instruction with the clustering technique outperformed those who did not. The mean difference between the two groups suggests that clustering provides a more effective approach to teaching descriptive writing.

This finding is consistent with previous studies that highlight the advantages of clustering in enhancing students' writing skills. According to Sari and Wahyuni (2018), clustering facilitates idea generation and organization, leading to improved writing performance. Furthermore, Eramona and Al Hafizh (2014) noted that clustering not only improves the structural quality of writing but also increases student motivation by making the writing process more accessible and engaging.

The significant difference between the experimental and control groups can be attributed to the structured brainstorming process that clustering provides. In contrast to traditional methods, where students often struggle with structuring their ideas, clustering allows them to see the relationships between concepts before drafting their paragraphs. This structured approach minimizes the cognitive load associated with writing and enables students to focus on developing coherent and well-organized descriptions.

The findings of this study provide strong evidence for the effectiveness of the clustering technique in teaching descriptive writing. The paired sample t-test results show a substantial improvement in students' writing scores after implementing the technique, while the independent sample t-test results confirm that students taught using clustering



outperform those who were not exposed to the technique. These findings support the hypothesis that clustering enhances both the process and the product of writing.

Several factors may contribute to the success of clustering in writing instruction: (1) Enhanced Idea Generation: Clustering helps students visualize their ideas and identify key themes before drafting their paragraphs, making the writing process more efficient. (2) Improved Organization: By structuring their ideas in a hierarchical manner, students can create more cohesive and logically connected descriptions. (3) Increased Motivation: Clustering provides a less stressful way for students to begin writing, as they can first focus on generating ideas rather than constructing full sentences immediately. (4) Better Retention of Concepts: Since clustering encourages students to actively engage with their ideas, they are more likely to remember and use them effectively in their writing.

The results of this study highlight the practical benefits of incorporating clustering into writing instruction, particularly for students struggling with descriptive writing. Teachers can integrate clustering into their lessons by: (1) Encouraging students to brainstorm ideas using clustering before writing their drafts. (2) Providing structured examples of clustering diagrams to guide students in their writing process. (3) Allowing peer collaboration in clustering exercises to facilitate idea exchange and critical thinking. (4) Using clustering as a tool for revision, enabling students to refine and expand their ideas before finalizing their writing assignments.

In conclusion, the results of both the paired sample t-test and the independent sample t-test confirm that clustering is an effective technique for improving students' descriptive writing performance. The paired sample t-test demonstrated significant improvement in students' writing scores after receiving clustering-based instruction, while the independent sample t-test confirmed that students taught with clustering performed significantly better than those who were not. These findings align with existing literature, reinforcing the idea that clustering enhances idea generation, organization, and motivation in writing. Given its effectiveness, clustering should be integrated into writing instruction to support students in developing their descriptive writing skills more effectively. Future research could explore the long-term impact of clustering on writing proficiency and investigate its applicability to other types of writing beyond descriptive texts.

## **CONCLUSIONS AND RECOMMENDATION**

Based on the results and interpretations from the previous sections, several conclusions can be drawn regarding the effectiveness of the clustering technique in teaching descriptive writing. First, there was a significant difference between students taught using the clustering technique and those who were not. This is evidenced by the mean values in the post-test of both groups, with the experimental group showing a more significant increase. The p-value obtained was 0.005, which is lower than 0.05, indicating a significant difference in improving students' descriptive writing achievement using the clustering technique. The statistical analysis confirmed that students exposed to the clustering technique demonstrated better writing proficiency, reinforcing the technique's effectiveness in structuring and developing ideas in descriptive texts.

Secondly, during the implementation of the clustering technique in the tenth grade at Senior High School IBA Palembang, there was a notable improvement in students' descriptive writing achievement. The analysis showed that the mean value of the pre-test was 66.91, and the post-test mean was 81.45 in the experimental group, indicating an increase of 14.54 points. Additionally, the paired sample t-test results, with a p-value of 0.000, confirm that the improvement in writing scores was statistically significant. These findings suggest that clustering facilitated the brainstorming process, allowing students to generate and organize ideas more effectively, which ultimately led to better writing performance.

Furthermore, qualitative observations during the study suggest that students became more confident and engaged in their writing tasks after using the clustering technique. The structured visualization of their ideas helped them overcome common challenges such as writer's block and lack of organization. As a result, students were able to produce more coherent and detailed descriptive texts, demonstrating the practical benefits of incorporating clustering into writing instruction.

Therefore, using the clustering technique had a positive effect, helping students address their vocabulary issues before turning their ideas into descriptive text. By visually mapping their thoughts, students were able to expand their vocabulary and improve the coherence of their descriptions. Consequently, it can be concluded that applying the clustering technique in teaching descriptive writing is an effective method. Given its success in this study, teachers are encouraged to adopt clustering as a prewriting strategy to enhance students' writing skills, particularly in descriptive text composition.

While the findings of this study provide strong evidence for the effectiveness of the clustering technique in improving students' descriptive writing, several limitations must be acknowledged. They are limited sample size, short duration of intervention, focus on a single text type, external factors, and lack of quantitative insights. The study was conducted with a relatively small sample size, consisting of students from a single high school. A larger sample from multiple schools would be needed to enhance the generalizability of the findings. The study was carried out over a limited period, focusing on short-term improvements in students' writing skills. Longitudinal research is necessary to determine whether the positive effects of clustering persist over time. This research specifically examined the impact of clustering on descriptive writing. Further studies should explore its effectiveness in other types of writing, such as narrative, argumentative, or expository texts. Several external factors, such as students' prior writing proficiency, motivation levels, and individual learning styles, may have influenced the results. Future research should control for these variables to obtain more precise conclusions. While the study relied on quantitative data to measure improvement, qualitative insights from





student reflections or teacher observations could provide a deeper understanding of how students perceive and engage with the clustering technique.

To build upon the findings of this study, future research should: (1) conduct a large-scale study with diverse participants to confirm the effectiveness of clustering in different educational settings, (2) investigate the long-term impact of clustering on writing proficiency by tracking students' progress over an extended period, (3) compare clustering with other prewriting strategies to determine its relative effectiveness in enhancing different aspects of writing, and (4) incorporate qualitative methods such as interviews and classroom observations to gain richer insights into students' experiences with the clustering technique.

Despite these limitations, the study provides valuable insights into the role of clustering as a powerful prewriting strategy for improving descriptive writing skills. By addressing these limitations, future research can further validate and refine the use of clustering in writing instruction.

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