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The graphic organizer's effect on the students' writing achievement in argumentative paragraph

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ABSTRACT

The Graphic organizer strategy is visually mapped to organize the general into a particular idea in an argumentative paragraph to develop students' writing scores. The purpose of this research is to enrich theoretical and practical strategies in writing paragraph argumentatively. This research is a quasi-experimental study with a Pretest-post-test non-equivalent group and non-random sampling technique to determine the experimental group consisting of 23 participants and the control group consisting of 23 participants. The expert who validated the test was senior English lecturers. And the researcher used Cronbach's Alpha to measure the reliability, and the result was 0.721 (acceptable). As the result, graphic organizer strategy significantly affected the students' writing achievement in argumentative paragraphs, especially on the organization aspect. Additionally, this strategy also allowed them to explore their ideas independently and unconsciously builds some connecting words up.

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1. Introduction

Some previous studies on the implementation of graphic organizer strategy have intentionally been conducted to test its effect on writing skills. Statistically, there are various results that researchers academically reported in the points of view research-based. For instance, the graphic organizer effectively encouraged a process of selecting, organizing, and integrating cognitively in concluding (Ponce & Mayer, 2014), it can be an effective strategy in argumentative texts in computer-based instruction application (Boykin et al., 2019), and also in narrative texts without technology's support (Aswita et

al., 2018). In addition, the graphic organization specifically promotes students to be able to distinguish the main type of each text (Torres, 2015) and influence the students' writing aspects, namely vocabulary (Dau, 2015), content, and mechanics (Styati & Irawati, 2020).

The graphic organizer strategy is a conceptual form of knowledge to manage systematically each part of an idea in a paragraph sequentially (Anggrainy et al., 2016; Pratama et al., 2017) which consists of content, organization, grammar, and mechanics (Styati & Irawati, 2020) in language learning of writing. In this case, a graphic organizer is an intensive attempt or technique to run down the students' argumentative idea from general information to specific one by structuring a mean, controlling, supporting, and concluding idea (Lasaka et al., 2018). Besides, some factors also support the students' process of writing argumentative paragraphs including interest, self-confidence, topic, and media (Aswita et al., 2018). It means that graphic organizer aids the students to arrange descriptive and informative knowledge, appropriate technique, particularly map the idea, and ensure the students write a paragraph freely (Anggrainy, 2017).

Practically, the procedure of graphic organizer strategy is by warming the students' up to access the previous opinion, outlining it into the real pattern of paragraph structure, drafting the sentences into an outlined paragraph, evaluating each aspect of paragraph by correcting and revising, finishing the submitted texts, and publishing on the site (Pratama et al., 2017). This procedure was digitally conducted in paragraph writing learning by using Learning Moodle System (LMS). Students not only write the paragraph in free writing technique or explore their ideas in written texts, but also unidentified academic paragraph (Anggrainy et al., 2016) .

In addition, most of the previous researchers investigate the graphic organizer in the descriptive and narrative paragraph. Thus, this current research conducted to know the effectiveness of the graphic organizer strategy in the argumentative paragraph by formulating the research questions "is there any significant effect of graphic organizer strategy on students' writing achievement in the argumentative paragraph?". The hypothesis testing is the alternative hypothesis (H_a) that the graphic organizer strategy significantly affects students' writing achievement in the argumentative paragraph, which means H_a is accepted. Contrastly, the null hypothesis (H_o) that the graphic organizer strategy does not significantly affect students' writing achievement in the argumentative paragraph, means H_o is rejected.

2. Method

In this research, the researcher used quantitative research to find out the significant differences between participants who used a graphic organizer strategy and those who had free writing in writing an argumentative paragraph. The population was 123 students. The researcher used a non-random sampling technique to determine the experimental group consisting of 23 participants and the control group consisting 23 of participants. The researchers selected whole groups using convenience sampling or available samples to be taught (Fraenkel et al., 1993). This research used a quasi-experimental with Pretest-post-test non-equivalent group design (Cohen et al., 2007). In this type, pre-tests were given before treatment to know the real ability of the two groups. The treatment was given to

the experimental group by using graphic organizer strategy as the independent variable, then the control group used freewriting to train participants' writing skills. The last, both groups were also tested after conducting the treatment.

Additionally, the test was only one question which distributed to participants by making an argumentative paragraph by using the graphic organizer strategy and it takes 50 minutes to complete the test, then researcher analyzed the data from the pre and post-test score, the scoring rubric of writing skills developed by Oshima and Hogue (2007).

Table.1. writing rubric

Aspect	Maximum Score
Format – 5 Points	
There is a title.	1
The title is centered.	1
The first line is indented.	1
There are margins on both sides.	1
The paragraph is double-spaced.	1
Total	5
Punctuation and Mechanics-5 points	
There is a period after every sentence.	1
Capital letters are used correctly.	1
The spelling is correct.	1
Commas are used correctly.	2
Total	5
Content-20 points	
The paragraph fits the assignment.	5
The paragraph is interesting to read.	5
The paragraph shows that the writer used care and thought.	10
Total	20
Organization-35 points	
The paragraph begins with a topic sentence that has both a topic and a controlling idea	10
The paragraph contains several specific and factual supporting sentences that explain or prove the topic sentence, including at least one example.	20
The paragraph ends with an appropriate concluding sentence.	5
Total	35
Grammar and Sentence Structure-35 points	
Estimate a grammar and sentence structure score	35
Total	35
Grand Total	100

The expert who validate the test are senior English lecturer which focus on language assessments. And the researcher used SPSS 23 to measure the reliability by using Cronbach's Alpha which the result was 0,721 (acceptable).

3. Results and discussion

This study statistically explains the results of collecting data through descriptive statistics, the test of normality, paired sample statistics and paired sample t-test to answer the research question.

Table. 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experimental	23	33	58	45.52	6.775
Post-test Experimental	23	62	81	69.17	5.158
Pre-test Control	23	34	57	44.09	6.735
Post-test Control	23	55	81	65.13	6.483
Valid N (listwise)	23				

The lowest score of student's pre-test in experimental class was 33 and the highest was 58 which the mean was 45.52 and standard deviation was 6.775. For the students' post-test score, the lowest was 62 and the highest one was 81 which its mean was 69.17 and standard deviation was 5.158. In control group, student's free writing score in pre-test score was 34 as the lowest and the highest was 57 which its mean is 44.09 and standard deviation is 6.735. And the post-test score was 55 the lowest and the highest one was 81 which its mean was 65.13 and standard deviation was 6.483.

Table.3 Tests of Normality

Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Students' Pre-test Experimental (GO)	.124	23	.200*	.970	23	.699
Achievement Post-test Experimental (GO)	.098	23	.200*	.959	23	.449
Pre-test Control (FW)	.102	23	.200*	.960	23	.473
Post-test Control (FW)	.151	23	.192	.961	23	.486

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

a. Lilliefors Significance Correction

The statistical result of Kolmogorov- Smirnov proved that the significance (sig.) value of both pre and post-test in graphic organizer tests are .200 and .192 in post-test of free writing. it means that the significance value is higher than the probability value or standard of statistics value (> 0.05). As a result, the tests are normally distributed and uses paired sample t-test and independent t-test to analyze this research.

Table. 4 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test Experimental	45.52	23	6.775	1.413
	Post-test Experimental	69.17	23	5.158	1.076
Pair 2	Pre-test Control	44.09	23	6.735	1.404
	Post-test Control	65.13	23	6.483	1.352

The data presents the result of the level of significant effect of graphic organizer technique on students' writing skill in the argumentative paragraph which the mean of the pre-test is 45.52 and the post-test 69.17. Thus, the level of significant effect of graphic organizer technique on students' writing skill in the argumentative paragraph is 23.65.

Table. 5 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test Experimental - Post-test Experimental	-23,652	5,015	1,046	-25,821	-21,484	-22,620	22	,000
Pair 2	Pre-test Control - Post-test Control	-21,043	5,076	1,059	-23,239	-18,848	-19,880	22	,000

The result of paired sample t-test explains that the significance (2 tailed) value is .000 which is lower than .5. It can be conclude that there is a different mean between the pre-test and post-test score of graphic organizer technique on students' writing skill in argumentative paragraph and also in free writing technique.

4. Discussion

The result of paired sample t-test points out that the graphic organizer strategy increased the students' writing skill in argumentative paragraph especially on organization aspects of writing. It is statistically proven after conducting a treatment in an experimental class, the mean of post-test score is higher than the mean of pre-test score. The effectiveness of graphic organizer as effective as the previous research that the implementation of teaching increases students' vocabulary, mechanics and content (Aswita et al., 2018; Boykin et al., 2019; Ponce & Mayer, 2014; Styati & Irawati, 2020; Torres, 2015).

The implementation of graphic organizer also well applied based on the procedure which encourages the students to think independently, outline the line on each paragraph such as a main idea,

controlling idea, supporting idea, and concluding idea (Lasaka et al., 2018), revising the incorrect word, sentences, and grammar, and submitting on LMS (Anggraini, 2017; Pratama et al., 2017). In addition, it also motivates the students to write an argumentative paragraph because it is new strategy to direct their idea to academic writing (Anggrainy et al., 2016). In line to this, studies mention the use of an interesting strategy proved to be increased students' achievement and motivation (such as Lailiyah & Setiyaningsih, 2020; Lutviana & Mafulah, 2018; Shaumiwaty, 2020). In conclusion, the researcher identified the chronological words to connect between one paragraph to the next ones which support the coherence of the whole texts.

3. Conclusion and Suggestions

The graphic organizer strategy is an effective teaching strategy in improving students' writing achievement of an argumentative paragraphs. The most influenced aspect of writing is organization of main idea, supporting idea, and concluding idea. Other than that, it is also unconsciously relates to the paragraph with the connecting words, such as the first, the second, therefor, and addition. It also stimulates students to be more interested and challenged to explore their idea in writing paragraph argumentatively. As suggestions, the reearcher suggests for the future researchers or practitioners to determine a specific topic and generic structure of paragraph before conducting graphic organizer strategy and using qualitative research design to gain more detail description of graphic organizer strategy.

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