

USING HERRINGBONE GRAPHIC ORGANIZER STRATEGY TO ENHANCE STUDENTS' READING COMPREHENSION

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ABSTRACT

This research aims at investigating the use of Herringbone Graphic Organizer Strategy (HGO) to enhance students' reading comprehension and their responses toward the application of HGO. The true experimental design was used in this research in which the population involved four classes at Private Senior High School of SukmaBangsaLhokseumawe, consisting of 86 first grade students, while two classes were selected by using cluster random sampling as samples, namely X/Volcano as an experimental class, consisting of 18 students and X/Hargowilis as a control class, consisting of 20 students. The experimental class was taught by using HGO, whereas the control class was taught by using conventional strategy. The instruments used for data collection were tests and questionnaires. The tests were given for both the experimental and control class but the questionnaire was only distributed for experimental class students. The data obtained from the tests were analyzed by using the SPSS (statistical package for the social science) version 23 and the questionnaire was analyzed by using Likert scale. The analyses results indicated that HGO is able to enhance students' reading comprehension proven by the significance value of the t-test on the identifying main idea ($p = 0.003$), specific detail (0,001), and inference aspect (0.001). Therefore, since the probability is $\text{Sig.} < 0.05$, then H_0 is rejected. In addition, the students responded positively (79.16%) to the application of HGO. It can be concluded that HGO could enhance reading comprehension and develop the positive responses of the students.

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INTRODUCTION

Reading comprehension is one of the English compulsory skills that must be taught by the English teachers and mastered by the students. According to Cremin (2009), reading is the main instrument in a learning process. Reading activity can stimulate readers to give their responses such as critics, acceptance or refusal from what they have read. Reading gives a big impact in learning process. Reading is also considered a very important activity in life by which one can update his/her knowledge. In the other words, the reading skill is important for academic success.

However, the reading skill still seems to be a serious problem for the students. To prove this phenomenon, the writers did a preliminary study at Private Senior High School of Sukma Bangsa Lhokseumawe to get information about the students' problems in reading comprehension on the EFL text. The test was administered to the first year students. Based on the result of the test, the writers found that many students got under minimum passing grade criteria (75). It proved that the reading skill still encountered the difficulty in answering the questions related to the text.

Moreover, based on the observation, the researcher found out most of the first grade students faced difficulties in finding main idea, supporting detail, reference and inferences of the given texts. They only translate the texts word by word without analyzing it. Besides, the reading became a hard struggling activity for students because they were hard to focus on what they read. Consequently, it took much time for them to answer the comprehension questions since they had to read many times in trying to understand the text. The phenomenon also effected the teaching process because of too much time taken in reading session, so that the teacher had not had enough time for discussion, giving feedback or explaining another aspect of language. Automatically, the objective of teaching and learning process that day could not be accomplished.

Having known the condition above, the writers proposed herringbone graphic organizer (henceforth HGO) as a solution to improve the students' performance in reading comprehension because this technique offers the framework for students on how to focus and to understand the text, content or other sources. By using the technique, the learners can find detail information in the text by asking six

comprehension questions; Who, What, When, Where, Why and How. Moreover, they can find the main idea by synthesizing it.

Some studies have been conducted regarding HGOuse in teaching the reading skill. Asnita (2013) conducted a study entitled “Using Herringbone Technique to Improve the Reading Comprehension Ability of the Students of SMU Bhakti Ibu 1 Palembang”. Based on the findings, the results of t-test and interpretations, she concludes that there was a significant difference between reading comprehension ability of students who were taught by using HGO technique and those who were taught by using the traditional approach. Thus, HGO was applicable to improve the students’ reading comprehension.

Furthermore, Kurniawan and Indrawati (2016) conducted an experimental study entitled “The Effectiveness of Herringbone Technique to teach Reading of Narrative Text”. This study is to determine the effect of using HGO to eight grade students of SMP Negeri 24 Semarang on comprehending narrative text. It proved that the HGO use is effective as a strategy to improve the students’ reading comprehension of narrative text.

Moreover, Yulia and Yuswin (2012) conducted a research entitled “A Comparative Study Between Teaching Reading Comprehension of Narrative Text by Using the Herringbone and the Context Clues Strategy to the Eighth Grade Students of SMP Negeri 3 Padang Sidempuan in 2011-2012 Academic Year”. From the result of their research, they concluded that HGO technique and the context clues strategy are good to be implemented in teaching the reading skill. The reading skill of the students who were taught by using HGO and the context clues strategy could be categorized into the capable category.

Additionally, Martin (2006) conducted an action research entitled “Using WH - Fish Diagram in teaching reading”. This research focuses on the use of a visual representation of ideas in order to help science stream students to understand reading texts. Based on the data collected, the introduction of the diagram produced positive results in terms of students’ understanding of the reading text and their ability to present a completed diagram orally.

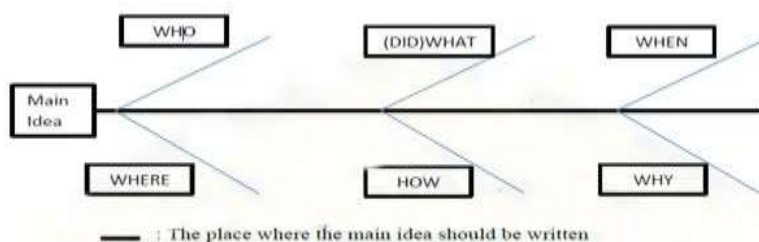
Considering the discussions above, the writers believe that HGO can be used to improve students’ reading comprehension. For this reason, the writers are interested to apply HGO to improve the students’ reading comprehension at private senior high school of Sukma Bangsa Lhokseumawe.

LITERATURE REVIEW

Herringbone Graphic Organizer (HGO)

There are various definitions of HGO proposed by experts. Alshatti, Watters, and Kidman (2012) say that HGO is members of the directional GO group. It is designed to show a main topic and to provide details information. Similarly, Manoli (2012) continues that GO is originally called advance organizers and then structured overviews, which are primarily initiated by Richard Barron but have their root in Ausubel's work. According to Ausubel's cognitive theory of meaningful verbal learning, the use of advance organizers enhances the students' learning and retention of unfamiliar but meaningful materials. It is a student-directed study method that outlines the main ideas of a piece of writing that is used to help students understand and organize what they read from their text. This strategy is used after pre-reading, or skimming, a chapter/section. Pre-reading is important to understand what the reading is going to be about, the main ideas, key words, and a general idea of what the reading will discuss.

Moreover, Mcknight (2010) explains that HGO provides readers with a framework for recognizing and recording main ideas and supporting details during and after reading. The categories included in the diagram are often the main idea (the spine of the fish) and "who, where, what, why, when, and how" (the ribs), but they can be altered to fit the particular text which students are reading. The illustration is as the following.



(Adapted from McKnight, 2010:50)

In term of usage, Sadosky (2004) expressed that HGO is used for establishing supporting hard details for a main idea. It can be used to organize information for all content areas for 4 until 12 grade students. Students can use this graphic organizer when taking notes for assigned reading as a way to organize and classify new information.

Reading Comprehension

The Definition of reading comprehension can vary, but most of them have the same point. Johnson (2008) states that reading is a practice of using text to create meaning. The two important keywords here are creating and meaning. If there is no meaning being created, reading activity does not take place. Meanwhile, comprehension as defined by Denton (2007, p. 65) is the ability to gain meaning from text and essentially the ultimate goal of reading. Moreover, Johnson (1982, p. 2) defines comprehension as an active process which requires readers to think about the author's message and decide whether to accept, reject, or modify the author's ideas. Furthermore, Harris (2007) asserts that reading comprehension is the process of constructing meaning by coordinating a number of complex processes that include word reading and world knowledge, and fluency. Hanum (2001) defines reading comprehension as the act of understanding what you are reading. It is an intentional, active, and interactive process that occurs before, during and after a person reads a particular piece of writing, such as a recount text.

Recount Text

According to Anderson, recount is a piece of writings that retells past events or experience in the order in which it happens. Grace (2006) says that recount text is divided into two kinds: factual recount and personal recount. The factual recount is by telling the events in the story while the personal recount is by telling personal experiences. Recount text fulfills some language functions such as journal, diary, newspaper article, historical recount, letter, log, timeline, incident reports, newspaper report, police report, articles, and biography.

In short, recount text has a purpose to tell readers a certain type of information. It has three parts. The first part is called orientation found in the beginning of a recount text which tells about setting of the event including participant, time and place. The second part is events which tell what happens in correct time orders. The last part is reorientation which consists of conclusion or interpretation built by a writer. Identifying these generic structures of recount text will help figure out the meaning of the text. Thus, a proper teaching technique, such as HGO, is needed to teach it to students.

HGO in Teaching Reading Comprehension

The classroom implementation of HGO consists of activities that are attached to reading stages mentioned earlier. They are:

a. Pre-reading

First the teacher greets the learners and then tells goals and basic competencies to be achieved in the learning process. The teacher should select a text that is appropriate to the learners. The material as well must be interesting and can improve understanding; it can be taken from books, internet, and other resources according to the ability of learners. Then the teacher introduces the form of HGO to the learners. The teacher finally asks some questions to stimulate students' background knowledge.

b. Whilst-reading

After the pre-reading activities, the teacher asks learners to read text, think and write important information about the course of the story based on guided keywords of what, when, where, who, why, and how from HGO ribs. Then, they are instructed to synthesize the information to draw inference and main idea from the texts.

c. Post-reading

In this stage, the teacher asks the students to summarize information they record from HGO pattern. After they complete the assignment, the teacher appoints one of the students to share their work to the class. Next, the teacher re-confirms the comprehension and then concludes the lesson. This is done by the teacher to avoid misinformation obtained by learners.

RESEARCH METHODOLOGY

This study employed an experimental research to find out if the students who were taught by HGO enhanced their reading comprehension ability or not and their responses toward the application of the strategy.

This study was done from April to June 2018 at private senior high school of SukmaBangsaLhokseumawe. Separated into 4 classes, all first year students of this school served as the population. The total numbers of the first year students were 86. Using cluster random sampling technique, two classes were taken randomly to be the samples. One of these classes became the experimental group which was given the treatment with HGO (experimental class), while the other class was assigned as the control group taught without the HGO (control class).

Data Collection

The data were collected by means of tests and questionnaires. There were two tests involved in this research. The first test was pre-test. It was administered to the experimental group and the control group to know the students' initial ability prior to the treatment. After that, the experimental group was taught the reading skill by using the HGO, while the control group was taught the same skill by employing conventional technique (teacher-centered). After all treatments were complete, the post test was given to both groups to know effect of the treatment on the students' reading ability. In addition, both pre- and post-test consisted of questions related to the main idea, specific detail and word inference. After the data through the test were successfully obtained, the questionnaires were distributed for the students. The questionnaires consisted of ten statements pertaining the use of HGO technique in teaching reading comprehension skill.

Data Analysis

To get a valid and reliable result, the data of this study were analyzed systematically by using valid and reliable techniques. The results of the tests were analyzed by using SPSS statistical procedure to get mean, standard deviation, and T-test result. Meanwhile, the data derived from the questionnaire were analyzed by means of Likert Scale.

RESULT AND DISCUSSION

This section provides the comparison of the students' pre-test and the post-test results for both experimental class and control class. Such analysis is important to answer the first research question regarding the effect of HGO on students' reading comprehension ability at Sukma Bangsa senior high school.

The table presented below is the raw pre-test and post-test scores of the experimental class in reading comprehension aspects namely main idea, specific detail, and inference that were focused on this research.

Table 1. The Score of Reading Aspects for Experimental Class

NO	NAME	MAIN IDEA		DETAIL		INFERENCES	
		PRE	POST	PRE	POST	PRE	POST
1	Student 1	25	75	33.34	100	20	80
2	Student 2	25	100	16.67	83.35	20	60
3	Student 3	75	50	66.68	83.35	60	80
4	Student 4	50	75	33.34	33.34	40	40
5	Student 5	25	75	50.01	100	40	80
6	Student 6	0	25	50.01	66.68	40	40
7	Student 7	50	75	33.34	33.34	20	40
8	Student 8	50	50	16.67	50.01	20	40
9	Student 9	25	75	50.01	100	80	60
10	Student 10	25	75	16.67	83.35	20	60
11	Student 11	50	100	50.01	83.35	20	40
12	Student 12	100	100	100	100	80	100
13	Student 13	50	25	66.68	83.35	60	80
14	Student 14	25	75	50.01	66.68	20	40
15	Student 15	100	100	83.35	100	80	80
16	Student 16	25	100	66.68	83.35	60	80
17	Student 17	25	75	50.01	66.68	20	40
18	Student 18	75	75	50.01	100	0	40
	TOTAL	800	1325	883.49	1416.83	700	1080
	AVERAGE	44.44	73.61	49.08	78.71278	38.88	60

Clearly, the Mean Scores of pre-test and post-tests obtained by the students in the experimental class for each aspect of reading comprehension can be seen in the following chart.

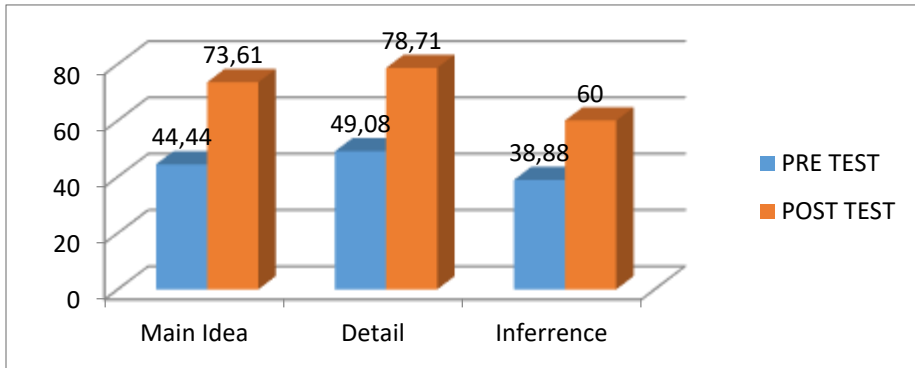


Chart 2. The Comparative Scores of Reading Aspects for Experimental Class

Chart 2 above presents the raw scores of reading aspects for experimental class before and after the treatment was given by HGO in the class. The mean score of pre-test on main idea aspect was 44.44 and the post-test score was 73.61, whereas the mean score of pre-test on specific detail was 49.08 and the mean score of post-test was 78.71. In case of inference aspect, the mean of pre-test score achieved by the students was 38.88, while the post-test score was 60.00. The total mean score of pre-test for the three aspects was 44.13, while the total mean score of post-test was 70.77. It means there was an improvement in terms of reading comprehension skill of the experimental class after the treatment by using HGO.

Having looked at the raw scores of pre and post-tests of the experimental class, we will now turn to the table presenting the raw scores of pre-and post-tests of the control class on each aspect in reading comprehension.

Table 2. The Raw Scores of Reading Aspects for Control Class

NO	NAME	MAIN IDEA		DETAIL		INFERENCE	
		PRE	POST	PRE	POST	PRE	POST
1	Student 1	25	25	33.34	33.34	20	20
2	Student 2	50	75	33.34	16.67	40	40
3	Student 3	0	25	33.34	16.67	20	20
4	Student 4	50	50	33.34	66.68	20	60
5	Student 5	25	75	33.34	33.34	0	20
6	Student 6	75	75	33.34	33.34	60	40

7	Student 7	0	0	50.01	33.34	20	40
8	Student 8	0	25	16.67	33.34	0	20
9	Student 9	50	75	16.67	16.67	0	20
10	Student 10	25	25	33.34	33.34	20	20
11	Student 11	25	25	16.67	33.34	40	40
12	Student 12	25	25	83.35	83.35	40	40
13	Student 13	50	75	16.67	33.34	40	20
14	Student 14	25	25	16.67	50.01	60	20
15	Student 15	25	25	16.67	16.67	0	40
16	Student 16	50	25	16.67	16.67	40	20
17	Student 17	25	50	16.67	16.67	0	20
18	Student 18	75	75	83.35	83.35	60	60
19	Student 19	50	25	50.01	83.35	40	20
20	Student 20	75	50	66.68	66.68	40	40
	TOTAL	725	850	700.14	800.16	560	620
	AVERAGE	36.25	42.5	35.01	40.01	28	31

Related to the table above, the mean scores of pre-test and post-tests obtained by the students in the control class for each aspect of reading comprehension can be seen on the following chart.

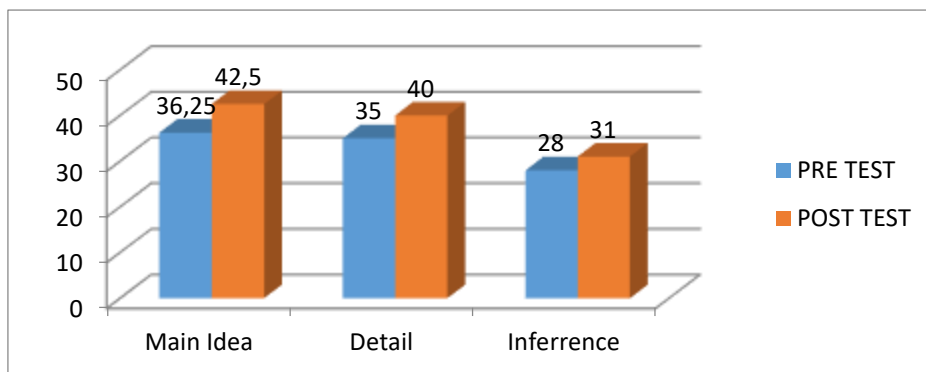


Chart 3. The Comparative Mean Score of Reading Aspects for Control Class

From the Chart 3 above, we can discern that there is a slight improvement of the control class students' post-test, compared to their pre-test scores in which the mean score of pre-test on main idea aspect

was 36.25, while the post-test score mean was 42.50. Moreover, the mean score of pre-test on specific detail aspect was 35.00, while the mean score of post-test was 40.00. Lastly, the mean score of post-test on inference aspect was 28.00, while the post-test score mean was 31.00. The total mean score of pre-test was 33.08, whereas the total means score of post-test was 37.83.

The Data was statistically analyzed using Wilcoxon paired independent t-test. The purpose of this test is to discover whether the application of HGO has a significance impact on students' reading comprehension scores by comparing pre-test score to post-test score obtained by both experimental and control classes in identifying main idea, specific detail, and inference of recount text.

Table 3. Wilcoxon Paired Independent T-Test on Pre/Post Test Scores of Experimental and Control Class

Sig.	Pre/Post tests of Experimental Class on Main Idea	Pre/Post Tests of Control Class on main idea	Pre/Post Tests of Experimental Class on detail	Pre/Post Tests of Control Class on detail	Pre/Post Tests of Experimental Class on inference	Pre/Post Tests of Control Class on inference
Z	-2.976 ^b	-1.387 ^b	-3.436 ^b	-1.473 ^b	-3.211 ^b	-.660 ^b
Asym p. Sig. (2-tailed)	.003	.166	.001	.141	.001	.509

According to the level of significance degree, it is found that the p value of the pre-test and post-test score of the experimental class on the main idea was 0.03, but the p value of pre-test score and post-test score of the control class on main idea was 0.166. This result indicates that the difference between main idea pre-test score and post-test score of the control class was not significant, but the difference between main idea

pre-test score and post-test score of the experimental class was significant.

Moreover, it is found that the p value of the pre-test score and post-test score of the experimental class on specific detail was 0.01, but the p value of the pre-test and post-test score of the control class on specific detail was 0.141. This result indicates that the difference between pre-test score and post-test score of the control class was not significant, but the difference between pre-test score and posttest score of the experimental class was significant.

Moreover, it is found that the p value of the pre-test score and post-test score of the experimental class on inference was 0.01, but the p value of inference pre-test score and post-test score of the control class inference was 0.509. This result also indicates that the difference between pre-test score and post-test score of the control class was not significant, but the difference between pre-test score and posttest score of the experimental class was significant.

From the Wilcoxon paired independent T-test, it can be summarized that the experimental class students had better scores in reading comprehension in all reading aspects after they were treated by using HGO strategy compared to the scores of the control class students that were treated by using conventional teaching strategy.

Besides the tests, the questionnaire was given to the experimental class students in order to answer the second research question related to the students' responses toward the implementation of HGO in the process of teaching reading comprehension. The questionnaire data were then statistically analyzed by using Likert scale as it is seen in table below.

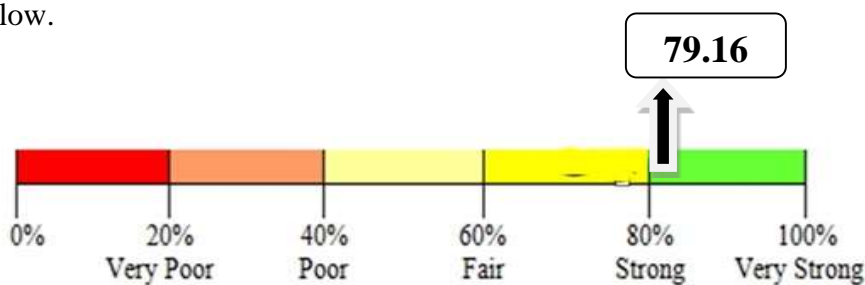


Figure 1. The Result of Likert Scale Analysis

Based on the Likert scale above, it can be seen that the total score of Likert scale was 570. The interpretation of the students' responses was 79.16%. It shows that the interpretation of the questionnaire was quite

positive. Referring to those results of analyzing questionnaire table and the range scale of the questionnaire by Likert, it can be concluded that HGO could enhance the students' motivation to learn reading comprehension skill.

Discussion

This study is to determine whether there is different ability in understanding the recount text in terms of finding main ideas, specific details and drawing inference from the text between the experimental groups treated with HGO and the control groups treated without using HGO technique. In addition, this study also aims at determining the students' responses to the application of that technique over the teaching and learning of the text recount.

Moreover, the treatments were given to the experimental class for three times, whereas the control group was also taught three times without the treatment. The texts used for both classes were recount text pertaining to personal experiences, biography, and historical recount. After the treatment process ends, the post-tests in experimental and control groups were undertaken.

Based on the findings, the students' ability in reading comprehension was higher after the instruction of HGO given the fact that the total mean score of all aspects of reading in experimental class increased from 44.44 to 73.61. Specifically, the comparisons of p value between pre- and post-tests on three aspects of reading comprehension skills were as follow: the p value of main idea $0.03 < 0.05$, specific detail $0.01 < 0.05$ and inference that are significant 0.001 for experimental class. Meanwhile, in control class, main idea, specific detail, and inference aspects were not significant (Main Idea = $0.166 > 0.05$, Specific Detail = $0.141 > 0.05$, Inference = $0.509 > 0.05$).

The findings above are confirmed by other researchers. Firstly, the study done by Arriyani and Aryanti (2014) found that HGO significantly improved students' ability in reading comprehension. Secondly, a research done by Apriasih (2014) showed that the students' average score improved from 63 to 75 after applying HGO. Thirdly, a classroom action research by Listiyanti (2017) discovered that the post-test of the reading class students taught by using HGO was higher than pre-test in cycle I ($69.33 \geq 67.23$) and in cycle II ($84.03 \geq 75.33$). The t calculation (2.80) also shows that it is higher than t table 2.04.

The finding above means that the students had a better score in reading comprehension after they were taught by implementing HGO than by implementing conventional technique.

Besides, based on the questionnaire, it is proved that the students in the experimental class had positive perspective on the use of HGO in reading comprehension. Therefore, it can be concluded that the application of HGO strategy is effective in teaching reading comprehension in tenth grade student of the private senior high school of Sukma Bangsa Lhokseumawe.

CONCLUSIONS AND SUGGESTIONS

Conclusions

This research concludes that HGO technique improved students' ability in finding main idea. The data of pre-test compared to post-test of experimental class for main idea aspect showed that the result was significant ($p = 0.003$). Based on the data from pre-test and post-test scores, the students were able to increase the score of main idea aspect from 44.44 in pre-test to 73.61 in post-test.

Furthermore, HGO technique improved students' ability in finding specific detail. This can be seen from the data of pre-test compared to posttest of experimental class. For specific detail aspect, it showed that the result was significant ($p = 0.001$). Based on the data from pre-test and post-test scores, the students were able to increase this aspect from 49.08 in pre-test to 78.71 in post-test.

In addition, HGO technique improved students' in drawing inference, because data of pre-test compared to post-test of experimental class for inference aspect showed the significant improvement ($p = 0.001$) where the mean scores of pre-test was 38.86, while post-test 60.00.

Besides the test score, the findings from questionnaire showed that the students had positive responses toward the application of HGO technique in learning reading comprehension. It means that this strategy is strongly effective in teaching reading comprehension.

Suggestions

It is suggested that for other researchers who will conduct a similar study in other schools, this result of the study can be additional reference related to the implementation of HGO. In addition, those who are interested in conducting the study regarding to the similar topic are

advised to be more creative to include other variables such as students' need and levels of their ability. However, this study is still limited in terms of the number of the treatments given, which was only three times.

Therefore, it can be more meetings that fit with the study so that the time could be sufficient in getting the data needed. The result of this study is only representing the activity of teaching reading for X graders of The Private Senior High School of Sukma Bangsa Lhokseumawe. It means that this finding cannot be generalized to all X graders of all high schools.

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