

## The Effect of Applying Venn Diagram Strategy on Students' Achievement in Reading Comprehension at the Twelfth Grade Students of SMK N 5 Medan

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This research is intended to find out whether Venn diagram Strategy significantly Affects the students' achievement in reading comprehension or not. In this thesis, the writer conducted experimental quantitative research. The population of this research was the twelve grade of SMK N 5 Medan. The samples of this research were two classes, which were selected by the technique of sample Cluster in random sampling. They were 48 students. The first class was 24 students of the experimental class who had been taught by Venn Diagram Strategy and the second one was 24 students of the control group who had been taught by conventional Strategy. The instrument for collecting the data was multiple choice testing. To obtain the reliability of the test, Kuder Richardson Formula (KR-21) was used. The calculation showed that the reliability of the test was 0.92. The data were analyzed by using the t-test formula in order to see whether Venn Diagram Strategy significantly effect students' reading comprehension or not. The finding indicates that the value of the t-test exceeds the value of the t-table ( $3.07 > 1.67866$ ), at the level of significant  $p = 0.05$  and the degree freedom  $df = 46$ . The finding implies that the alternative hypothesis is accepted. In other words, there is a significant effect of applying the Venn Diagram Strategy on the students' Achievement in reading comprehension..

Keywords: Reading Comprehension, Venn Diagram Strategy

### 1. Introduction

In many countries, English is the second language but in Indonesia, English is a foreign language. English is used in school as one of the important subjects. Although English is just a foreign language, many people learn English outside of school. They know the importance of English is so much. English is used in business, economics, and so on. English has been though starting from elementary until university. Study English there are four language skills. They are listening, speaking, writing, and reading. In learning a foreign language, one language skill that enables students to gain information and knowledge is reading. However, the importance of the reading skill is often neglected.

Reading is a perceptive skill whose process takes place inside than brain. Reading comprehension is the process of simultaneously extracting and contrasting meaning through interaction and involvement with written language. It consists of three elements; the reader, the text, and the activity or purpose for reading (Bouchard, 2005; Beatrice S. M and Linda, 2007). Teachers should help the students not only how to read but the way to comprehend and to get the meaning of the text itself. Reading passages seems to be too difficult for them because of some conditions. The conditions here refer to the failure of understanding the words, the sentences, the sentences' unity and organization, and the lack of interest or concentration. reading comprehension is the interaction between the readers with the written text to get meaning and message or information from the text (Andrew, 2008). In the reading activity, the students do not only read but also comprehend the text in order to catch some ideas from the text. The ability or skill of comprehending a message in the text is the goal of reading in language instruction. It means that reading comprehension is an active cognitive process in which one will interact with the written symbols and interpret them to get the meaning or idea (Ginting, et al., 2021).

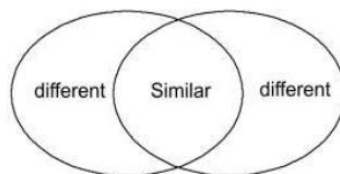
The observation showed that most of the students were not able to read and comprehend the text, although some students could read or pronounce the words well but they could not understand to comprehend the text well because they could not identify the meaning of difficult words in the text. Therefore, if they can only read the words without comprehending or understanding the text or what they are reading, it means that they are not really reading. This condition really proves how bad the students' achievement in reading is. It caused, they lack vocabulary, less of motivation and also the strategy of the teacher is not interested.

Dealing with the fact previously mentioned, the writer needs to try to carry out research in teaching reading. In this case, the writer believes that Venn diagram is a very good strategy to be applied in teaching reading. Teachers who include Venn diagram in their instructional practice can improve their students' academic performance. It means that Venn diagram has been successful to be an interesting strategy. By applying this strategy, the students will be situated to discuss the upcoming topics which have relation to their prior knowledge and then enable them to compare and contrast the meaning in each paragraph. This case will help the students to build up a comprehension of reading passage that they have read. Therefore, they can achieve the goals of the learning process.

Based on the background above, the objective of this research is then specified: to find out whether the effect of Applying the Venn Diagram Strategy improves the reading achievement of the twelfth-grade students of SMK N 5 Medan. Because there are many strategies that can be used to increase students' reading achievement, the writer limited the strategy which used Venn Diagram Strategy in teaching Reading. The students have to think not only translating the words, phrases, sentences or even paragraphs, but also comprehending the meaning, tenses, text structure, and etc. (Pardede, 2021; Simbolon, 2020; Jingga, et al. , 2022).

The result of this research is expected to be useful information to 1) theoretically, the findings of the research are expected to be useful in alternative in teaching reading and the Venn diagram strategy is a new perspective in teaching research. 2) practically, the findings of the study are expected to be useful for English teacher, as an addition to knowledge about the strategy of teaching reading. Furthermore, they will be easier in teaching reading, and then for students, to assist the students to build reading comprehension competency, the last for another researcher, to help the research to get the information of Venn Diagram in teaching reading when they conduct the same research.

Lems, & Tenena (2010:171) states that reading comprehension is not a static competency; it varies according to the purposes for reading and the text that is involved. It means that a reader not only read the text but must be able to understand what they are reading. Or in other words, the reader also needs to read all levels of comprehension (Berry, 2005). In this case, levels of comprehension mean different depths of understanding, and a different analysis of what is meant. There are some strategies to improve students' achievement in reading comprehension such as Semantic Mapping Strategy, Quick Write Strategy, Rule-base Summary Strategy, and Venn Diagram Strategy. Feeney (2006:203) states that a Venn diagram is a graphic organizer consisting of two overlapping circles. Students use the diagram to compare and contrast two entities: characters, elements of the plot, settings, and experience. Goudvis (2000:162) states a Venn diagram, often referred to as a compare/contrast diagram, is made up of two or more overlapping circles. Students describe, compare, and contrast attributes and characteristics of things, people, places, events, characters, stories, and nonfiction texts using a visual representation. The Venn diagram is a good way for students to see how ideas. By using Venn diagrams, the teacher can evaluate students' comprehension of comparing or contrasting between two items. This graphic organizer consists of overlapping circles that show similarities and differences properties of two or more categories. Furthermore, they are now used across many other disciplines, not only in math subject. The Venn diagrams can be seen as follows:



**Figure 1.** Picture of Venn Diagrams

From the figure above, the “different” region on the left side of circle consists all of the specifications from the first item. The “different” region on the right side of the circle consists all of the specifications from the second item. Furthermore, the “similar” side in the intersection between the first item and the second item will be the similarities specification both of them (Kadaive, S., S., Wijaya, 2015).

### **The Advantages of the Venn Diagram Strategy**

There is a huge cognitive benefit in examining the similarities and differences among concepts. In such activities, young children search for patterns to make connections between new information and their own background knowledge and therefore process thoughts more deeply (Dreher & Gray, 2009:132-141). Using Venn Diagrams:

1. Can help students become more active in the reading process because they are being asked to analyze a text in a focused manner. As they organize their responses into the chart, they link information across sentences, paragraphs and the whole text.
2. Venn Diagrams can also be useful when asking students to compare and contrast ideas represented in different texts.
3. This focus helps them interpret information in relation to a broader context. For example, using a Venn diagram to compare the ideas in two texts that have been written from different perspectives, periods of history or fields of study can lead students to deeper understanding of both texts.

### **The Disadvantages of Venn Diagram Strategy**

Although Venn diagram strategy is suited for teaching reading. It has some disadvantages for students. They are:

1. Growing complexity if more than four circles are drawn (especially if all circles have to be intersected with each other).
2. A Venn diagram is often a snapshot of a group interaction and negotiations; a facilitator is sometimes needed to capture the discussion leading to it and exposing power dynamics within the group.
3. If the Venn diagram is done by groups, the views of weaker actors are likely to be submerged

## **2. Method**

The design of the research was quantitative research. Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity Kothari (2004:3). In quantitative research there are experimental and non-experimental research designs. The research was conducted by using Experimental Research. Experimental Research was an observation in order to know the effect of Venn Diagram Strategy on students' achievement in reading comprehension, where the sample was divided into two groups: experimental group and control group. The experimental group was the group that receives treatment by using Venn Diagram Strategy, while the control group was the one that receives the treatment by using the conventional method. This research had one dependent variable and one independent variable. The dependent variable of this study was Venn diagram while the independent variable was reading comprehension.

To collect data, the instruments to be used: multiple-choices test. The test consists of 25 items to measure students' reading comprehension. Researchers realize that multiple choice test were the most widely used and highly regarded among the selection type of items for test development. The

researcher was used test as the technique of collecting data. The researcher was used pre-test and post-test to experiment class in order to know the effect of using Venn diagram strategy toward reading comprehension, at the twelfth-grade students and control class used by conventional teaching. Pre-test was given before treatment and post-test given after doing treatment in experiment class. Test was used to find out how the students' reading comprehension is.

**Table 1.** The Framework of Research

No	Experimental Group	Control Group
1	<p><b>Opening phase</b></p> <ol style="list-style-type: none"> <li>1. Teacher was greeted the students to open the class (introduction)</li> <li>2. Teacher motivated the students and gave instruction to the students before the test</li> </ol> <p><b>Main activities</b></p> <p><b>Pre-Test</b></p> <ol style="list-style-type: none"> <li>3. Teacher gave pre-test to the students by giving reading test and asks the students to answer the questions with total of the questions are 25 items multiple. Times given 30 minutes.</li> <li>4. Teacher collected the students' answer sheet.</li> </ol> <p><b>Closing activity</b></p> <ol style="list-style-type: none"> <li>5. Teacher gave conclusion about the lesson.</li> <li>6. Teacher closed the class</li> </ol>	<p><b>Opening phase</b></p> <ol style="list-style-type: none"> <li>1. Teacher was greeted the students to open the class (introduction)</li> <li>2. Teacher motivated the students and gave instruction to the students before the test</li> </ol> <p><b>Main activities</b></p> <p><b>Pre-Test</b></p> <ol style="list-style-type: none"> <li>3. Teacher gave pre-test to the students by giving reading test and asks the students to answer the questions with total of the questions are 25 items multiple choice. Times given 30 minutes.</li> <li>4. Teacher collected the students' answer sheet.</li> </ol> <p><b>Closing activity</b></p> <ol style="list-style-type: none"> <li>5. Teacher gave conclusion about the lesson.</li> <li>6. Teacher closed the class</li> </ol>
2	<p><b>Opening phase</b></p> <ol style="list-style-type: none"> <li>1. Teacher was greeted the students to open the class (introduction)</li> <li>2. Teacher motivated the students</li> </ol> <p><b>Main Activities</b></p> <p><b>Treatment</b></p> <ol style="list-style-type: none"> <li>3. Teacher gave a text to students and help the students to select two items or ideas/characters from the reading material and can be compared and constructed.</li> <li>4. Teacher asked the student to take separately, brainstorms a list of characters/descriptions/opinion and ask them to write that under the item and idea.</li> <li>5. Teacher asked the students to identify a set of criteria to compare and contrast the item.</li> <li>6. Teacher asked the students to draw 2 circles to the material being determined to be compared and contrasted. From the two lists previously brainstormed, helped them to make a list of characters or description of the two ideas which is completed in the step two, have students select the words that include information in the interesting area in the interesting circle. From those same two lists, have student to determine information on how the items differ from the others.</li> </ol> <p><b>Closing activity</b></p>	<p><b>Opening phase</b></p> <ol style="list-style-type: none"> <li>1. Teacher was greeted the students to open the class (introduction)</li> <li>2. Teacher motivated the students</li> </ol> <p><b>Main Activities</b></p> <ol style="list-style-type: none"> <li>3. Teacher gave a text to the students</li> <li>4. Teacher read and explained the reading passage while the students should listen carefully, because they have to be able to comprehend the text.</li> <li>5. Teacher asked the students to find the difficult words from the text and look for the meaning from dictionary.</li> <li>6. Teachers asked the students to translate the text and ask the students to do exercise by answer the question based on the text.</li> <li>7. Teacher asked the students to tell the content of the text. Teacher will be given some explanation about how to differentiate the fact and opinion</li> </ol> <p><b>Closing activity</b></p> <ol style="list-style-type: none"> <li>8. Teacher asked the students to tell the content of the text. Teacher will be given some explanation about how to differentiate the fact and opinion</li> <li>9. Teacher closed the class.</li> </ol>

	<ol style="list-style-type: none"> <li>7. Teacher asked the students to tell or present the result of their work.</li> <li>8. Teacher and students made conclusion about the material that they have learned, then teacher close the class</li> </ol>	
3	<ol style="list-style-type: none"> <li>1. Teacher greeted the students and motivates them in facing post-test</li> <li>2. Teacher gave the direction related to the test</li> <li>3. Teacher gave post-test</li> </ol>	<ol style="list-style-type: none"> <li>1. Teacher greeted the students and motivates them in facing post-test</li> <li>2. Teacher gave the direction related to</li> <li>3. Teacher gave post-test the test</li> </ol>

#### 4. Results and Discussions

##### Data Requirements

The data of this research were obtained after conducting the pre-test and post-test in experimental and control class. In this research, the sample was divided into two classes: the experimental class and the control class. The experimental class was the class that was taught by using Venn Diagram Strategy, while the control class was taught without using Venn Diagram Strategy. Pre-test was administered to the both classes. Treatment by using Venn diagram Strategy was only given to the experimental class. Post-test were given to the both classes to see the differences of their score.

The data of pre-test and post-test two classes were computed by using test formula.

**Table 2.** The Score of Pre-Test and Post-Test of Experimental Class

No	Students' Initial	Pre-test	Post-test
1	RA	64	96
2	DW	49	88
3	MLN	60	84
4	MGA	60	84
5	NS	64	84
6	KR	44	80
7	P	44	80
8	PN	56	80
9	APS	40	76
10	MAH	36	76
11	R	52	72
12	AZH	28	72
13	I	48	72
14	ALH	40	72
15	DA	40	72
16	MF	36	68
17	MA	20	68
18	RA	36	64
19	RAFH	48	64
20	AP	36	64
21	NIS	24	64
22	SB	40	64
23	AH	40	60
24	FN	28	60
	Total ( $\Sigma$ )	1028	1764
	Mean	42.83	73.5

From table above, the total score of pre-test experimental group is 1048 and the mean score is 42.83. And the total scores of post-tests of experimental group is 1764 and the mean is 73.5. In this research, the writer saw that the score of the students is rising. It is caused by using Venn diagram strategy in teaching reading comprehension.

**Table 3.** The Score of Pre-Test and Post-Test of Control Class

No	Students' Initial	Pre-test	Post-test
1	T	52	80
2	TMA	64	72
3	SPP	32	72
4	VNT	72	76
5	MAF	60	72
6	FKN	28	72
7	EWP	68	72
8	GAS	56	72
9	LPM	36	64
10	AS	44	64
11	MBS	20	60
12	MA	36	60
13	EM	40	60
14	W	48	60
15	FBM	28	60
16	AL	28	60
17	TAH	48	56
18	MIA	32	56
19	MFR	28	56
20	BAS	36	56
21	PNS	24	56
22	TVG	48	52
23	SSN	24	52
24	LM	24	48
	Total ( $\Sigma$ )	980	1504
	Mean	40,83	62,66

In pre-test of control group, it is obtained that the total score is 980 and the mean score is 40.83. The highest score is 76 and the lowest one is 20. In the post – test of control group, the total score is 1504 and the mean score is 62.66. The highest score is 80 and the lowest one is 48.

To know the difference between the students in the experimental group and control group, whether the use Venn diagram strategy has significant effect on students' reading comprehension, the result of the test is calculated by using t-Test formula as in the following

**Table 4.** The Calculation of Experimental Group

No	Initial Name	PreTest	Post-Test	Deviation	Square of deviation	$dx = d-mx$	$dx^2$
		$x_1$	$x_2$	$d=x_2-x_1$	$d^2$		
1	RA	64	96	32	1024	0.92	0.84
2	DW	44	88	44	1936	12.92	166.92
3	MLN	60	84	24	576	-7.08	50.12
4	MGA	60	84	24	576	-7.08	50.12
5	NS	64	84	20	400	-11.08	122.76
6	KR	44	80	36	1296	4.92	24.20
7	P	44	80	36	1296	4.92	24.20
8	PN	56	80	24	576	-7.08	50.12
9	APS	40	76	36	1296	4.92	24.20
10	MAH	52	84	32	1024	0.92	0.84
11	EHS	36	76	40	1600	8.92	79.56
12	AZH	28	72	44	1936	12.92	166.92
13	I	48	72	24	576	-7.08	50.12
14	ALH	40	72	32	1024	0.92	0.84



15	DA	40	70	30	900	-1.08	1.16
16	MF	36	68	32	1024	0.92	0.84
17	MA	20	68	48	2304	16.92	286.28
18	RA	36	64	28	784	-3.08	9.48
19	RAFH	48	64	16	256	-15.08	227.40
20	AP	36	64	28	784	-3.08	9.48
21	NIS	24	64	40	1600	8.92	79.56
22	SB	40	64	24	576	-7.08	50.12
23	AH	40	60	20	400	-11.08	122.76
24	FN	28	60	32	1024	0.92	0.84
<b>Total</b>		<b>1028</b>	<b>1764</b>	<b>746</b>	<b>24788</b>		<b>1599.68</b>
<b>Mean</b>		<b>42.83</b>	<b>73.5</b>	<b>31.08</b>			

**Table 5.** The Calculation of Control Group

No	Initial Name	Pre-Test	Post-Test	Deviation	Square of deviation	dy = d-my	dy <sup>2</sup>
		y <sub>1</sub>	y <sub>2</sub>	d=y <sub>2</sub> -y <sub>1</sub>	d <sup>2</sup>		
1	T	52	80	28	784	5.83	33.99
2	TMA	64	72	8	64	-14.17	200.79
3	SPP	32	72	40	1600	17.83	317.90
4	VNT	72	76	4	16	-18.17	330.14
5	MAF	60	72	12	144	-10.17	103.42
6	FKN	28	72	44	1936	21.83	476.54
7	EWP	68	72	4	16	-18.17	330.14
8	GAS	56	72	16	256	-6.17	38.06
9	LPM	36	64	28	784	5.83	33.99
10	AS	44	64	20	400	-2.17	4.70
11	MBS	20	60	40	1600	17.83	317.90
12	MA	36	60	24	576	1.83	3.34
13	EM	40	60	20	400	-2.17	4.70
14	W	48	60	12	144	-10.17	103.42
15	FBM	28	60	32	1024	9.83	96.62
16	AL	28	60	32	1024	9.83	96.62
17	TAH	48	56	8	64	-14.17	200.79
18	MIA	32	56	24	576	1.83	3.34
19	MFR	28	56	28	784	5.83	33.99
20	BAS	36	56	20	400	-2.17	4.70
21	PNS	24	56	32	1024	9.83	96.62
22	RPS	48	52	4	16	-18.17	330.14
23	SSN	24	52	28	784	5.83	33.99
24	LM	24	48	24	576	1.83	3.34
<b>Total</b>		<b>980</b>	<b>1504</b>	<b>532</b>	<b>14992</b>		<b>3199.18</b>
<b>Mean</b>		<b>40.83</b>	<b>62.66</b>	<b>22.17</b>			

After calculating the data into t-test formula above, it is obtained that  $t_{\text{observed}}$  is 3.07 and the t-table is 1.67866. The t-observe is bigger than the t-table (1.67866;  $p=0.05$ ;  $df: N_x+N_y-2=46$ ). It means that using Venn diagram strategy significantly Effect on the students' reading comprehension.

Based on the data analysis, the two score of both experimental and control group were different. The mean score of the post-test of experimental group was higher than control group (31.08>22.17).

However, the differences were tested by using t-test. The result of the t-test calculation showed that t-observed value (3.07) was higher than t-table value (1.67866) at  $\alpha=0.05$ ,  $df=46$ . The differences indicate that Venn diagram strategy significantly Effects on students' achievement in reading comprehension.



#### 4. Conclusions

After analyzing the data, it is found that Venn diagram strategy significantly affects the students' achievement in reading comprehension. There is significant difference of mean score obtained from both of the experimental (31.08) and control group (22.17). The  $t$ -observed  $>$   $t$ -table ( $p = 0.05$  with  $df$  46), or  $3.07 > 1.67866$  ( $p = 0.05$ ). It means that  $H_a$  is accepted. Thus, it can be concluded that there is significant effect of Venn diagram strategy on students' achievement in teaching reading comprehension. The students who are taught by using Venn diagram strategy have higher improvement than the students who are taught without using Venn diagram strategy.

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