

CHAPTER IV

DATA ANALYSIS, RESEARCH FINDINGS, AND RESEARCH DISCUSSION

4.1. Data analysis

The data was taken from the results of the vocabulary test. The research design for this thesis is a quantitative experiment which is divided into two classes, namely the control class and the experimental class. The control class and the experimental class were instructed to answer the same vocabulary test. the test given is in the form of 20 items with a multiple choice test type as the pre-test and 20 questions as post-test scores for both classes namely control and experiment. The second step is the researcher, teaching without using Word Wheel Games in the control class, and using Word Wheel Games in the experimental class. The next step, the researcher gave a test in the form of a match test or filled in the answers correctly for the two classes, namely the experimental and control classes. The total pre-test and post-test scores are shown in table 4.1.

Table 4.1**Scores of Experimental class**

No	NAME	PRE-TEST	POST- TEST	Gained
1	AG	45	85	40
2	DFS	35	85	50
3	DF	60	80	20
4	FF	30	80	50
5	FM	35	75	40
6	FR	70	100	30
7	GA	35	90	55
8	HB	40	85	45
9	IM	30	75	45
10	KHA	55	95	40
11	KA	40	80	40
12	LC	65	85	20
13	MS	80	100	20
14	MRF	50	85	30
15	MDN	30	80	50
16	MI	45	80	35
17	PTA	45	80	35

18	RM	40	95	55
19	RS	30	85	55
20	RA	35	80	45
21	RAH	45	90	45
22	SA	50	95	45
23	SEG	55	100	45
24	SN	60	80	20
25	SD	55	85	30
26	STK	40	80	40
27	SDA	40	85	45
28	SMD	55	95	40
29	UR	55	95	40
30	ZBR	50	85	35
31	ZS	50	90	40
32	ZTN	85	100	15
33	ZA	55	100	45
34	ZAS	35	75	40
35	ZZA	70	95	25
	Total	1695	3050	1350
	Mean	48.43	87.14	

Based on the table above, it can be concluded that the experimental class experienced an increase in the post-test; this can be seen from the total score. The total score on the Pre-test was 48.43 and the total score on the Post-test was 87.14. The data above shows that

a. Pre-test

1. The average was 40
2. The highest score was 85
3. The lowest score was 30

b. Post-test

1. The average was 90
2. The highest score was 100
3. The lowest score was 85

The following can be seen in table 4.2 below which the researchers know about the scores or pre-test and post-test of control class students to find out the comparison between the control class and the experimental class.

Table 4.2

Scores of control class

NO	NAME	PRE-TEST	POST-TEST	GAINED
1	AFH	65	80	15
2	AD	40	75	35
3	AN	50	85	35
4	AA	45	75	30
5	AZA	55	80	25

6	DA	35	75	40
7	DKW	40	75	35
8	FI	40	85	40
9	FDA	40	75	35
10	HR	45	80	35
11	KA	40	75	35
12	KRM	45	75	30
13	LAM	45	80	35
14	MFDI	40	80	40
15	MFH	45	75	30
16	MHR	45	75	30
17	MZ	50	75	25
18	NAS	50	80	30
19	NM	55	85	30
20	NUH	55	80	25
21	NBA	60	85	25
22	NA	45	75	30
23	PA	60	80	20
24	PH	65	75	10
25	PAPS	45	75	30
26	PRA	50	75	25
27	RAS	35	75	40

28	RH	65	75	10
29	RA	45	75	30
30	RPA	50	75	25
31	RR	45	75	30
32	SB	70	75	5
33	SL	55	75	20
34	YK	65	80	20
35	JH	50	75	25
	MEAN	1730	2710	
	TOTAL	49.43	77.43	

Based on the table above, we can see that control class students experienced an increase in the post-test. The total pre-test score was 49.43 and the post-test total score was 77.43. This is indicated by the student's score on the pre-test and post-test, the data above shows that:

a. Pre-test

1. The average was 45
2. The highest score was 70
3. The lowest score was 30

b. Post-test

1. The average was 75
2. The highest score was 85
3. The lowest score was 75

4.1.1. Score analysis

Data were analyzed by calculating the average score and deviation of students to find out whether the use of Word Wheel media games significantly affected students' vocabulary mastery. Data was obtained by giving vocabulary tests to students to determine their vocabulary mastery. Calculated using vocabulary test scores in the control class and experimental class. This analysis intends to get a significant difference between teaching with Word Wheel Games and conventional techniques to influence students' vocabulary mastery here the researcher has conducted research for both classes and found the results of the pre-test and post-test. In the experimental class, as well as in the control class, from the data above, this study found that the control class's average score in the pre-test was 51.14 and the post-test average score was 82.14, while the experimental class's average score was on the pretest was 48.43 and the average score on the post-test was 87.14.

4.2 Fulfillment of Statistical Assumptions

Fulfillment of statistical assumptions consists of testing reliability and validity, normality and homogeneity of student scores.

4.2.1 Validity test

Researchers have calculated the validity test using SPSS 25, the validity test is used for the accuracy of an instrument in the measurement which will be shown in the table below:

TABLE 4.3

Table validity test "Pre-test

No	R count	R table	Status
1	0.396	0.344	Valid
2	0.348	0.344	Valid
3	0.635	0.344	Valid
4	0.376	0.344	Valid
5	0.467	0.344	Valid
6	0.442	0.344	Valid
7	0.590	0.344	Valid
8	0.418	0.344	Valid
9	0.539	0.344	Valid
10	0.735	0.344	Valid
11	0.431	0.344	Valid
12	0.551	0.344	Valid
13	0.397	0.344	Valid
14	0.627	0.344	Valid
15	0.504	0.344	Valid
16	0.415	0.344	Valid
17	0.467	0.344	Valid
18	0.423	0.344	Valid
19	0.735	0.344	Valid
20	0.545	0.344	Valid

From the result of the table above, if $r \text{ count} > r \text{ table}$ so the test was valid. But, if $r \text{ count} < r \text{ table}$ the test was invalid. So, from 20 tests that have been tested, 20 valid tests. So, the researcher took 20 tests as the research instrument. It can be concluded that the instrument used in the study was valid.

$$DF = N-2$$

$$= 35 - 2 / (0.334 - 2)$$

$$= 33 (0.344)$$

TABLE 4.4

Table validity test "Post-test

No	R count	R table	Status
1	0.665	0.344	Valid
2	0.351	0.344	Valid
3	0.513	0.344	Valid
4	0.462	0.344	Valid
5	0.446	0.344	Valid
6	0.446	0.344	Valid
7	0.449	0.344	Valid
8	0.445	0.344	Valid
9	0.591	0.344	Valid
10	0.701	0.344	Valid

11	0.495	0.344	Valid
12	0.496	0.344	Valid
13	0.385	0.344	Valid
14	0.611	0.344	Valid
15	0.496	0.344	Valid
16	0.436	0.344	Valid
17	0.494	0.344	Valid
18	0.480	0.344	Valid
19	0.694	0.344	Valid
20	0.555	0.344	Valid

From the result of the table above, if $r \text{ count} > r \text{ table}$ so the test was valid. But, if $r \text{ count} < r \text{ table}$ the test was invalid. So, from 20 tests that have been tested, 20 valid tests. So, the researcher took 20 tests as the research instrument. It can be concluded that the instrument used in the study was valid.

DF = N-2

$$= 35 - 2 / (0.334 - 2)$$

$$= 33 (0.344)$$

4.2.2. Reliability Test

Reliability test conducted to determine the reliability of the instrument was analyzed by using SPSS 25. It would be shown below:

TABLE 4.5

Reliability of Pre-Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.832	20

a test is declared reliable if it gives a Cronbach alpha value > 0.60 so that we can see from the results of the reliability test it shows that all tests have a fairly large alpha coefficient that is > 0.60 so that it can be said that all the test concepts carried out are reliable so that then the test items on each test concept can be used as a measuring tool.

TABLE 4.6

Reliability of Post-Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.852	20

From the result of reliability, if $r \text{ count} > r \text{ table}$ so the instrument of test was reliable. But, if $r \text{ count} < r \text{ table}$ the instrument of the test unreliable. So from the result above, $r \text{ count } 0,852 > 0,344$ so the instrument of the post-test was reliable.

TABLE 4.7**Normality test**

Respondents	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pretest Eksperimental	.125	35	.181	.933	35	.035
Posttest Eksperimental	.206	35	.092	.902	35	.014
Pre-test Control	.142	35	.073	.947	35	.093
Post-test Control	.265	35	.007	.819	35	.025

a. Lilliefors Significance Correction

It is said to be normality distributed if the data obtained is > 0.05 . In the Kolmogorov – Smirnov table above it can be seen that the significant value in the pre-test control is 0.142, in the post-test 0.265. In the pre-test experiment 0.125 and the post-test experiment 0.206. All significant results were obtained. > 0.05 , then the Kolmogorov smirnov result are normality distributed. In the Shapir- Wilk table, the significant value obtained in the pre-test control was 0.093 in the post-test control 0.025, in the pre-test experiment it was 0.035 and in the post-test experiment it was 0.014, so it can be seen in the Shapiro- Wilk table that the result was > 0.05 , so it can be concluded the results are normally disribured.

TABLE 4.8**Test of Homogeneity of Variances**

Equal variances assumes	.366	.547	2.652 68	.000	5.000	1.885	1.238	8.762
Equal variances not assumes			2.652 67.96 2	.000	5.000	1.885	1.238	8.762

In the post-test the average score in the experimental class was 87.14, while in the control average score in the post-test 82.14. From this table it can be seen that there is an influence on the average value in the control and experimental classes. In the independent sample test table, the t-table shows (n-1) which means (35-1=34), namely t-table shows 2.032 at a significant level of 0.05 the hypothesis shows that t-count (2.652) > t-table (2.032) and the 0.000 < 0.05. From this description it can be said that the Null hypotheses (H₀) is rejected and the Alternative Hypotheses (H_a) is accepted. Which means that there is a significant effect of Word Wheel on Students' Vocabulary mastery.

4.3 Research Finding and Discussion

4.3.1 Research Finding

Based on data analysis, it was found that teaching vocabulary mastery with the word wheel game at Budi Agung Medan High School was effective. There is a significant difference between the experimental class taught using word wheel games and the control class taught using conventional methods.

This can be seen from all the test results. The reliability test results show that everything is reliable because the test results are higher than 0.05. The results of the validity test show that they are completely valid because they are greater than the r table (0.344). The results of the normality and homogeneity tests show normal and homogeneous. It can be seen from tables 4.7 and 4.8 that all significant values are greater than the last 0.05. Based on the T-test, the calculated t -value is 2,652.

The Word Wheel Game was successful when researcher used it to master students' vocabulary. It can be said that by using the Word Wheel Game, the learning process in the experimental class is more effective than the control class. This was seen after the author gave a post-test and calculated the scores.

4.3.2 Research Discussion

From the data analysis, the aim of this research is to find out whether there is a significant effect of used the Word wheel Games on class X students at Budi Agung High School, Medan. Researcher divided students into two classes, namely X-IB and X-AB. In this research, X-AB is the control class and X-IB is the experimental class. The researcher gave a pre-test for both classes and after the next meeting the researcher taught the control class used the convention method and in the experimental class the researcher used the Word Wheel Game as a

treatment and at the last meeting students can increase their vocabulary with the word wheel game. Based on the explanation above, using the word wheel game can students' affect vocabulary vocabulary mastery. After they were taught using the word wheel game, during the learning process, students became more active in learning vocabulary. This can be seen in their post-test scores which have increased compared to the pre-test scores. During the pre-test, the students' average score were low with an average of 35 and with the total of 48.42 after played the Word Wheel Games, the scores 85 with the total mean 87.14. So, it can be concluded that the Word Wheel Games that effective to students' vocabulary mastery in class.