CHAPTER 4
RESULTS OF RESEARCH

This chapter explains the symbols for data analysis, the steps to present data analysis results and data analysis.

4.1 The Symbols for Data Analysis

Researcher set the symbols for easy understanding in data analysis.

$\bar{x}$ for   Mean

S.D.   for   Standard Deviation

D   for   The difference between posttest and pretest

Df   for   Number of sample – 1

P   for   The item difficulty index

4.2 The Steps to Present Data Analysis Results

The steps of presenting the data were as follows:

4.2.1 The effectiveness of the instructional plan to improve Matthayom Suksa 3's English vocabulary learning ability by using games was analyzed by the effectiveness index (E.I.)

$$\text{E.I.} = \frac{P_2 - P_1}{(number\ of\ student \times number\ of\ test\ item) - P_1}$$

P_2 means   Summation of Posttest Score

P_1 means   Summation of Pretest Score

4.2.2 The comparison of the English vocabulary learning ability of students by using games for developing vocabulary learning was analyzed by comparing the students' mean score between pretest and posttest by using mean, standard deviation (S.D.) and t-test (dependent sample)

4.2.3 The attitudes of students when using games for learning vocabulary were investigated by agreement level, rating scale from strongly disagree to strongly agree and analyzed by mean, standard deviation (S.D.)

4.3 Data analysis

4.3.1 The effectiveness of the instructional plan to improve Matthayom Suksa 3's English vocabulary learning ability by using games.

Table 4.1

The effectiveness of the instructional plan to improve Matthayom Suksa 3's English vocabulary learning ability by using games

Number of students	Total score of the test	Pre-test	Post-test	Effectiveness Index : E.I
30	50	482	1078	0.5854

Table 4.1 demonstrates the effectiveness index was 0.5854 that mean the English learning ability of students after used the instructional plans rose up at 0.5854 levels or 58.54%.

4.3.2 The Comparison of an Achievement between Pretest and Posttest.

The researcher compared the English vocabulary of the students after learning by the difference between pre-test score and posttest score. The statistics used in this step were mean, standard deviation (S.D.) and t-test (dependent sample).

Table 4.2

The comparison of the achievement between pretest and posttest scores

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
premixed - postmixed	15.76667	7.10358	1.29693	18.41919	13.11414	12.157	29	.000

Table 4.2 demonstrates the result of comparison of mean scores before learning and after learning. The achievement scores of pretest and posttest are significantly different at the 0.05 level of statistic. The different mean scores of posttest and pretest were 15.76667, t-test was 12.157 and the stand deviation was 7.10358.

Table 4.3

The achievement scores between pretest and posttest in each instructional plan

Descriptive Statistics					
Test	N	Minimum	Maximum	Mean	Std. Deviation
Family relationships pretest	30	3.00	15.00	8.1000	3.19860
Family relationships posttest	30	7.00	19.00	13.6667	3.38693
Where's the fire? Pretest	30	3.00	11.00	7.6000	2.07780
Where's the fire? Posttest	30	9.00	19.00	14.8667	2.44573
let's call an ambulance! Pretest	30	2.00	13.00	7.6333	2.39947
let's call an ambulance! Posttest	30	11.00	19.00	15.3000	2.23066
A ransom or a reward? Pretest	30	3.00	15.00	8.4333	2.93238

(continued)

Table 4.3 (continued)

		Minimum	Maximum		Std.
Test	N	m	m	Mean	Deviation
A ransom or a reward? Posttest	30	9.00	19.00	14.3667	2.70992
Eating the rainbow pretest	30	2.00	15.00	7.9333	2.77841
Eating the rainbow posttest	30	8.00	18.00	13.5333	2.92119
What's it made of? Pretest	30	3.00	11.00	7.4000	2.45792
What's it made of? Posttest	30	8.00	18.00	13.5000	3.03713
Mixed pretest	30	7.00	37.00	16.0667	6.21418
Mixed posttest	30	21.00	46.00	35.9333	6.90793

Table 4.3 Shows the number of students doing the test and the mean scores of pretests and posttests. The mean scores of the posttest are higher than the mean scores of pretest in every lesson.

Table 4.4

Comparison of mean score between pretest and posttest in each instructional plan

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	tailed)
Pair1	family relationships pre & family relationships post	5.56667	2.12835	.38858	4.77193	6.36141	14.326	29	.000
Pair2	Where's the fire? Pre & where's the fire? post	7.26667	2.69013	.49115	6.26216	8.27118	14.795	29	.000
Pair3	let's call an ambulance! Pre & let's call an ambulance! post	7.66667	2.91646	.53247	6.57764	8.75569	14.398	29	.000

(continued)

Table 4.4 (continued)

					95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	lower	upper			
Pair4	A ransom or a reward? Pre & A ransom or a reward? post	5.93333	2.98194	.54442	4.81986	7.04681	10.898	29	.000
Pair5	Eating the rainbow pre & Eating the rainbow post	5.60000	2.90778	.53089	4.51422	6.68578	10.548	29	.000
Pair6	What's it made of? Pre & What's it made of? post	6.10000	1.76850	.32288	5.43963	6.76037	18.892	29	.000
Pair7	mixed pre & mixed post	15.76667	7.10358	1.29693	18.41919	13.11414	12.157	29	.000

The header row above "Mean | Std. Deviation..." spans under "Paired Differences".

Table 4.4 demonstrates the result of comparison of mean score before learning and after learning in each lesson. The achievement scores of pretest and posttest in every lesson are significantly different at the .05 level of statistic. And in the topic let's call an ambulance; the different scores of posttest and pretest were more different than other topics.

4.3.3 The attitudes of students toward games for English vocabulary learning vocabulary.

After the researcher taught the participants through game activities, the participants' attitude was evaluated by using questionnaire and the data from the questionnaire were rated by 5 rating scale as in the table below.

Table 4.5

Students' attitudes towards English vocabulary learning by games

The attitudes of students towards the English vocabulary learning by games	Rating				
	5 strongly agree	4 agree	3 neutral	2 disagree	1 strongly disagree
1. Vocabulary is important for English learning	11	17	2	-	-
2. Language learning makes me understand other cultures around the world.	9	19	2	-	-
3. Learning English will helps me to improve myself in the world community.	12	16	2	-	-
4. I always learn English through reading magazines or watching the news.	3	11	16	-	-
5. I like learning English.	-	24	6	-	-
6. I like playing Games.	30	-	-	-	-
7. Learning English vocabulary through games is not boring / is interesting	9	21	-	-	-
8. Learning English vocabulary through the game is good for remembering vocabulary.	12	16	2	-	-
9. I am enthusiastic when I am learning vocabulary through the games.	23	7	-	-	-
10. I am able to use vocabulary in daily life	21	9	-	-	-
11. Learning vocabulary through game makes me better understand the lesson.	23	6	1	-	-
12. I can use English vocabulary to communicate with my friends while playing games.	19	9	2	-	-
13. I am not worried about using English whether it is right or wrong.	24	4	2	-	-
14. I like learning vocabulary through games	20	10	-	-	-
15. My language learning attitude is good.	17	13	-	-	-

Table 4.5 shows the number of students answering the questionnaire and the scores of each rating scale.

Table 4.6

The results of students' attitudes towards English vocabulary learning by games

The attitudes of students towards the English vocabulary learning by games	$\bar{x}$	S.D.	Rating scale
1. Vocabulary is important for English learning	4.3	0.59	Agree
2. Language learning makes me understand other cultures around the world.	4.2	0.77	Agree
3. Learning English helps me to improve myself to the world community.	4.3	0.80	Agree
4. I always learn English through reading magazines or watching the news.	3.5	0.96	Agree
5. I like learning English.	3.8	0.40	Agree
6. I like playing games.	5	0.00	Strongly agree
7. Learning English vocabulary through games is not boring / is interesting	4.3	0.46	Agree
8. Learning English vocabulary through games is good for vocabulary remembering.	4.3	0.80	Agree
9. I am enthusiastic when I am learning vocabulary through games.	4.7	0.90	Strongly agree
10. I am able to use vocabulary in daily life	4.7	0.46	Strongly agree
11. Learning vocabulary through game makes me better understand the lesson.	4.7	0.76	Strongly agree
12. I can use English vocabulary to communicate with my friends while playing game.	4.6	0.27	Strongly agree
13. I am not worried about using English whether it is right or wrong.	4.7	0.80	Strongly agree
14. I like learning vocabulary through games	4.7	0.28	Strongly agree
15. My language learning attitude is good.	4.6	0.28	Strongly agree
Total	4.42	0.28	Agree

Table 4.6 demonstrates the attitude of students after learning English vocabulary with games. The results show that the students' attitude toward learning vocabulary through the games rated at 4.42. The question that all students gave their opinion in strongly agrees or in 5 rating scale was the question number 6; I like playing games. The question number 4; I like learning English was the question that students gave the lowest scale at 3.8 mean score or agree. Moreover students gave further opinions about the 3 most interesting and admired games these are "Slap", "guess the card" and "who am I?" They are also keenly waiting for other games that the teacher will provide for them.