

## CHAPTER FOUR

### RESULTS, ANALYSES AND INTERPRETATION OF THE STUDY

The results of this study will be presented in this chapter. This research conducted with the target group of 48 students, Engaging Mathayom Suksa 3 Students in Multiple Intelligences-Based Activities to Promote English Language Skills and Self-Directed Learning has the following objectives: (1) To compare the English language skills of the students before and after engaging students in multiple intelligence-based activities, and (2) To explore students' self-directed learning while engaging them in multiple intelligence-based activities.

This chapter is composed of two sections. Section 1 contains the results of the English language skills before and after the experimentation and section 2 contains the narrative report about students' self-directed learning progress.

#### Section 1 English Language Skills

This section presents the results of the pretests and posttests of listening, speaking, reading and writing skills. The results of the students' English language skills pretests and posttests are discussed as follows:

**Table 5** Mean and standard deviation of students' listening test scores and percentage of passers obtained before and after engaging students in multiple intelligence-based activities.

Students	Pretest		Posttest	
	Score 16	Comment	Score 16	Comment
1	10	Passed	10	Passed
2	8	Passed	10	Passed
3	13	Passed	10	Passed
4	13	Passed	14	Passed
5	7	Failed	11	Passed
6	11	Passed	14	Passed
7	10	Passed	18	Passed
8	13	Passed	18	Passed
9	10	Passed	11	Passed
10	13	Passed	11	Passed
11	14	Passed	15	Passed
12	7	Failed	9	Passed
13	11	Passed	13	Passed
14	12	Passed	10	Passed
15	12	Passed	12	Passed
16	9	Passed	9	Passed
17	11	Passed	9	Passed
18	13	Passed	18	Passed
19	10	Passed	12	Passed
20	9	Passed	18	Passed

**Table 5** (Continued)

21	10	Passed	15	Passed
22	11	Passed	15	Passed
23	11	Passed	18	Passed
24	10	Passed	11	Passed
25	11	Passed	16	Passed
26	10	Passed	12	Passed
27	14	Passed	13	Passed
28	10	Passed	13	Passed
29	11	Passed	15	Passed
30	12	Passed	10	Passed
31	8	Passed	14	Passed
32	10	Passed	18	Passed
33	11	Passed	14	Passed
34	12	Passed	14	Passed
35	8	Passed	12	Passed
36	12	Passed	18	Passed
37	11	Passed	17	Passed
38	10	Passed	12	Passed
39	9	Passed	14	Passed
40	11	Passed	19	Passed

**Table 5** (Continued)

41	8	Passed	17	Passed
42	14	Passed	16	Passed
43	10	Passed	13	Passed
44	12	Passed	13	Passed
45	12	Passed	14	Passed
46	11	Passed	13	Passed
47	12	Passed	14	Passed
48	11	Passed	12	Passed
<b>TOTALS</b>	<b>518</b>	<b>95.82%</b>	<b>654</b>	<b>100%</b>
<b><math>\mu</math></b>	<b>11.00</b>		<b>13.66</b>	
<b><math>\sigma</math></b>	<b>1.73</b>		<b>2.84</b>	

Table 5 shows the students' scores in English listening skill pretest and posttest before and after engaging them in multiple intelligences-based activities. The listening skill pretest has the mean score of ( $\mu = 11$ ). It is shown that 95.82% of the students passed and 60.04% of the students were above the mean with the standard deviation ( $\sigma = 1.73$ ). Consequently, after the treatment of multiple intelligences-based activities, the students' scores improved relatively with the mean score of ( $\mu = 13.66$ ). Apparently, 100% of the students passed the posttest with the standard deviation of ( $\sigma = 2.84$ ). This follows the assumption that multiple intelligences-based activities promote English language skills.

**Table 6** Mean and standard deviation of students' speaking scores and percentage of passers obtained before and after engaging them in multiple intelligences-based activities.

Students	Pretest		Posttest	
	Score 16	Comment	Score 16	Comment
1	9	Passed	10	Passed
2	5	Failed	13	Passed
3	9	Passed	14	Passed
4	9	Passed	14	Passed
5	7	Failed	12	Passed
6	10	Passed	12	Passed
7	13	Passed	13	Passed
8	7	Failed	11	Passed
9	12	Passed	15	Passed
10	8	Passed	13	Passed
11	10	Passed	12	Passed
12	5	Failed	11	Passed
13	8	Passed	9	Passed
14	8	Passed	11	Passed
15	9	Passed	10	Passed
16	7	Failed	13	Passed
17	7	Failed	12	Passed
18	7	Failed	12	Passed
19	8	Passed	12	Passed
20	6	Failed	11	Passed

**Table 6** (Continued)

21	9	Passed	12	Passed
22	7	Failed	10	Passed
23	8	Passed	12	Passed
24	6	Failed	11	Passed
25	10	Passed	14	Passed
26	4	Failed	12	Passed
27	13	Passed	15	Passed
28	5	Failed	10	Passed
29	4	Failed	11	Passed
30	5	Failed	13	Passed
31	8	Passed	10	Passed
32	10	Passed	15	Passed
33	9	Passed	15	Passed
34	13	Passed	15	Passed
35	12	Passed	11	Passed
36	12	Passed	13	Passed
37	9	Passed	13	Passed
38	10	Passed	12	Passed
39	5	Failed	11	Passed
40	8	Passed	10	Passed

**Table 6** (Continued)

41	10	Passed	15	Passed
42	5	Failed	12	Passed
43	5	Failed	11	Passed
44	6	Failed	13	Passed
45	10	Passed	12	Passed
46	8	Passed	12	Passed
47	8	Passed	10	Passed
48	10	Passed	11	Passed
<b>TOTALS</b>	<b>393</b>	<b>62.50%</b>	<b>581</b>	<b>100%</b>
$\mu$	8.19		12.10	
$\sigma$	2.41		1.60	

Table 6 illustrates the scores of the students in English speaking skill before and after engaging them in multiple intelligences-based activities. It is shown that in the pretest the mean score is ( $\mu = 8.19$ ) wherein 62.50 % of the students passed with the standard deviation of ( $\sigma = 2.41$ ). Whereas in the posttest the mean score is ( $\mu = 12.10$ ). Transparently, 100% of the students passed the posttest with the standard deviation of ( $\sigma = 1.60$ ). Thus, the students' scores improved, which subsequently conforms with the assumption that multiple intelligences-based activities enhance the English language skills of the students.

**Table 7** Mean and standard deviation of the students' reading test scores and percentage of passers obtained before and after engaging them in multiple intelligences-based activities.

Number of Students	Pretest		Posttest	
	Score 30	Comment	Score 30	Comment
1	18	Passed	22	Passed
2	16	Passed	19	Passed
3	17	Passed	24	Passed
4	17	Passed	22	Passed
5	19	Passed	22	Passed
6	22	Passed	22	Passed
7	17	Passed	23	Passed
8	21	Passed	22	Passed
9	17	Passed	19	Passed
10	15	Passed	21	Passed
11	15	Passed	20	Passed
12	16	Passed	19	Passed
13	21	Passed	20	Passed
14	11	Failed	21	Passed
15	22	Passed	25	Passed
16	11	Failed	16	Passed
17	21	Passed	20	Passed
18	20	Passed	21	Passed
19	25	Passed	26	Passed
20	15	Passed	18	Passed

**Table 7** (Continued)

21	15	Passed	19	Passed
22	18	Passed	22	Passed
23	16	Passed	19	Passed
24	11	Passed	12	Passed
25	23	Passed	25	Passed
26	14	Failed	15	Passed
27	16	Passed	21	Passed
28	12	Failed	16	Passed
29	9	Failed	20	Passed
30	19	Passed	23	Passed
31	23	Passed	23	Passed
32	27	Passed	27	Passed
33	22	Passed	23	Passed
34	13	Failed	15	Passed
35	15	Passed	19	Passed
36	16	Passed	20	Passed
37	19	Passed	24	Passed
38	22	Passed	24	Passed
39	10	Passed	13	Failed
40	18	Passed	21	Passed

**Table 7** (Continued)

41	11	Failed	17	Passed
42	9	Failed	10	Failed
43	15	Passed	18	Passed
44	13	Failed	16	Passed
45	21	Passed	23	Passed
46	15	Passed	19	Passed
47	21	Passed	21	Passed
48	17	Passed	17	Passed
<b>TOTALS</b>	<b>816</b>	<b>81.25%</b>	<b>964</b>	<b>95.83%</b>
<b><math>\mu</math></b>	<b>17</b>		<b>20.08</b>	
<b><math>\sigma</math></b>	<b>4.28</b>		<b>3.58</b>	

Table 7 shows the scores of the students reading skill before and after engaging them in multiple intelligences-based activities. It is revealed that in the pretest the mean score is ( $\mu = 17$ ), wherein 81.25% passed the test with the standard deviation of ( $\sigma = 4.28$ ). Evidently, there is a considerable improvement on the students' scores in the posttest as the mean score increased to ( $\mu = 20.10$ ) wherein 95.83% passed the test with the standard deviation of ( $\sigma = 3.58$ ). This accordingly affirms the assumption that multiple intelligences-based activities have positive effects in the English language skills of the students.

**Table 8** Mean and standard deviation of students' writing test scores and percentage of passers obtained before and after engaging students in multiple intelligences-based activities.

Students	Pretest		Posttest	
	Score 16	Comment	Score 16	Comment
1	6	Failed	8	Passed
2	7	Failed	10	Passed
3	8	Passed	7	Failed
4	9	Passed	14	Passed
5	8	Passed	10	Passed
6	10	Passed	9	Passed
7	6	Failed	10	Passed
8	8	Passed	9	Passed
9	9	Passed	11	Passed
10	8	Passed	11	Passed
11	9	Passed	11	Passed
12	7	Failed	9	Passed
13	6	Failed	7	Failed
14	6	Failed	7	Failed
15	9	Passed	10	Passed
16	7	Failed	9	Passed
17	7	Failed	8	Passed
18	10	Passed	12	Passed
19	7	Failed	9	Passed
20	7	Failed	7	Failed

**Table 8** (Continued)

21	7	Failed	11	Passed
22	7	Failed	8	Passed
23	8	Passed	12	Passed
24	5	Failed	8	Passed
25	9	Passed	12	Passed
26	6	Failed	8	Passed
27	8	Passed	7	Failed
28	6	Failed	8	Passed
29	5	Failed	6	Failed
30	7	Failed	10	Passed
31	6	Failed	9	Passed
32	9	Passed	11	Passed
33	6	Failed	7	Passed
34	7	Failed	7	Failed
35	7	Failed	7	Failed
36	9	Passed	10	Passed
37	9	Passed	11	Passed
38	10	Passed	12	Passed
39	5	Failed	10	Passed
40	5	Failed	7	Failed

**Table 8** (Continued)

41	11	Passed	11	Passed
42	6	Failed	11	Passed
43	7	Failed	15	Passed
44	6	Failed	8	Passed
45	9	Passed	13	Passed
46	6	Failed	8	Passed
47	8	Passed	9	Passed
48	9	Passed	10	Passed
<b>TOTALS</b>	<b>357</b>	<b>43.75%</b>	<b>454</b>	<b>81.25%</b>
$\mu$	7.44		9.46	
$\sigma$	1.51		2.04	

Table 8 illustrates the English writing skill scores of the students before and after engaging them in multiple intelligences-based activities. It is shown that the students' scores in the pretests has the mean score of ( $\mu = 7.44$ ), in which 43.75% passed the test with the standard deviation of ( $\sigma = 1.51$ ). Accordingly, students' posttest has slightly improved with the mean score of ( $\mu = 9.46$ ) in which 81.25% of the students passed the posttest with the standard deviation of ( $\sigma = 2.04$ ). This corresponds with the assumption that multiple intelligences-based activities boost the English language skills of the students.

**Table 9** Summary of the means and standard deviations of the pretests and posttests of the students' English language skills:

English Language Skills	Total Scores	Pretests		Posttests	
		Mean $\mu$	SD $\sigma$	Mean $\mu$	SD $\sigma$
Listening	20	10.79	1.75	13.63	2.85
Speaking	16	8.19	2.41	12.10	1.60
Reading	30	17.00	4.28	20.08	3.58
Writing	16	7.44	1.51	9.46	2.04

Table 9 indicates the comprehensive results of the English language skills of the students before and after engaging them in multiple intelligences-based activities. The overall results suggest that the independent variables which are listening, speaking, reading and writing skills of the students were promoted after the treatment of the multiple intelligences-based activities. However, the amount of the increase in each skill is notably different.

## Section 2 Self-directed Learning Description

The self-directed learning questionnaire was formulated in order to monitor students' progress, observe how they manage their task and their attitude towards their tasks and their independence in doing their learning task in every lesson plan. The questions were written in English and Thai in order to acquire accurate descriptions. The reflection was written each time students accomplished their task. Students' reflection papers were then translated, categorized and summarized. Each question has derived the following narrative report of students' self-directed learning progress:

### 1. How did you begin doing your project?

Most of the students said that they began doing their task by reading and studying the instructions carefully in order to understand them thoroughly. For individual tasks, firstly they tried to understand the tasks by themselves. Then they explained and / or discussed the

tasks with their classmates and friends, and finally, consult with their subject teacher if they needed more clarifications.

For pair or group work, students said that they gathered with their pairs or group members to discuss and elicit each other's ideas, opinions and suggestions, plan the procedure on how to organize ideas, information and details contributed by the members. Finally, each pair or group member was assigned responsibilities.

#### 2. What did you do?

After each member was assigned with their job, students find information, details and materials needed for the task. After gathering information, they organized the details by making an outline or use graphic organizer such as mind mapping. Then they summarized, concluded, and finally, evaluated their task, polished it and submitted or presented their task to the subject teacher.

#### 3. Who helped you?

At the onset of the task, most students said that at first they sought the help of their pairs, group members, friends and classmates. However, if they were not clarified, they asked for the help of their subject teacher and/or other people who were knowledgeable or experienced about the topic of the task assigned to them. Those who brought the unfinished projects at home, they asked help from their parents and/or other family members. Consequently, majority of them tried to do their tasks by themselves.

#### 4. What were your sources of information or details?

All of them stated that their major sources of information were the library, Internet, magazines, textbooks, newspapers, television, bookshops, by observing their environment, dictionaries for vocabulary learning and their personal experiences and other people knowledgeable about the task.

#### 5. What were the problems that you encountered?

The common problems students have encountered were the lack of time in finding information and details, and in practicing the presentation of their task and the lack of cooperation among some members of the groups. They further stated that they had insufficient vocabulary. They had a lot of grammar and spelling mistakes that leads to their difficulty in constructing good sentences and using appropriate words. They said that some

steps in doing the tasks were time consuming. They had not enough information and details. They were undecided whether to consider the information or not due to unreliable and incomplete information gathered. The presentation of the task was slow. They further mentioned that they had a lot of incorrect pronunciation. In addition, they said that translating English to Thai, and Thai to English also made the work slow.

6. How did you solve problems you encountered?

Most of the students said that they handled the problems on their own by asking their group members to do their part and encouraging them to cooperate and help those who were slow, and by helping each other find information and details, correct spelling, grammar and sentences. They kept reminding and encouraging each other of their responsibilities especially to finish their work on time, find more reliable information using other sources such as by reading books in the library and bookshops, asking the subject teacher for help in translating difficult words or sentences, seeking help of the knowledgeable person, studying the topic well to understand better, using talking dictionary for correct pronunciation and practicing reading aloud, constructing good sentences and checking or evaluating the task cautiously.

7. How did you feel about the problem?

Many expressed that they felt pressured and worried whether they could finish the task on the deadline or not. For a while, some felt bad for the members who were uncooperative, but when they got started and saw the progress of their tasks, they enjoyed and had fun doing them. They also felt shy during the presentation of the tasks, however, as the time went by, they got used to the tasks given to them, they developed self-confidence and they felt proud of themselves after they had solved the problems and completed the task on their own.

8. What did you learn from the problem that you encountered?

Most students mentioned that from the problems they encountered help them learn how to develop strategies in solving problems, improve their procedure, organize their group and became more cautious in doing certain tasks assigned to them. They have learned how to do their tasks more systematically. They also learned how to compose themselves, use their common sense and be more observant and resourceful in searching for information and

collecting details by themselves. They became aware of their strengths and weaknesses, learned to share and work together, listen and accept ideas, opinions and suggestions of their classmates. They also said that they became more confident in solving problems by themselves. They also mentioned that they became more patient, more diligent, considerate, helpful and kind to their friends. They said that they also learned how to work as a team which is more enjoyable than working alone.

9. Did the problems you encounter make you learn better?

100% of the class answered yes to this question. They said that they were able to make better decision making and judgment, knew how to manage and solve problems they encountered by themselves thus they were proud of themselves, became more confident, diligent, patient, and more responsible in learning the English language such as in practicing their language skills on their own. The experience taught them to be more resourceful and creative.

10. What did you learn in doing the task personally, as partners or as a group?

Most students stated that personally, they learned to work on their task and solve problems on their own. They learned how to organize their learning and present their task logically. As partners or team, they learned to encourage each other, interact more, cooperate with each other, organize their group and work as a team. They also mentioned that they knew each other better, made deeper relationships and friendship with each other. They became more responsible. They divided their work equally, and learned from each other.

11. Did this task make you learn better? Why?

Almost all of the students answered yes to this question. They said that the variety of tasks given to them made their learning more fun and gained more knowledge both inside and outside the classroom. Moreover, they learned the lessons in different ways using their strengths. They had the opportunities to express themselves freely as the classes were dynamic and not boring therefore improving their weaknesses. Furthermore, they mentioned that they were able to gain new knowledge on their own and learned to be organized and systematic in their learning. The various activities and tasks they have done helped improve their language skills, and encourage them to be more confident in using the English language.

Some stated that music made them feel light and relaxed while reading or performing their activities.

### **Summary of the Results**

Results of the study consisted of two research objectives which are to compare students' English language skills: listening, speaking, reading and writing before and after the intervention of multiple intelligences-based activities, can be summarized as follows:

1. There was a strong indication that there was an increase in the English language skills of the students as the mean of each skill has increased.
2. There was a strong evidence that students' self-directed learning has developed and improved as described and reported on the students' reflections descriptions.

In general, there were trends worth noting. First, the intervention did not promote students' English language skills equally as noted in the pretests and posttests scores, mean and standard deviation in the foregoing illustrations. It can be concluded that among the four language skills the speaking skill was promoted the most followed by the reading skill, then by the listening skill and finally the writing skill.