

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter refers to the research design and methodology based on two purposes of the research. The first purpose is to compare students' English reading ability before and after learning through jigsaw reading and semantic mapping activities. The second purpose is to study students' English writing ability after learning through jigsaw reading and semantic mapping activities. This chapter will present the research methodology in the following order:

1. Target Group
2. Research Instruments
3. Experimental and Data Collecting Procedures
4. Data Analysis

#### **1. Target Group**

The target group was 20 students from Mathayom Suksa 4 at Chomthong School, Chiang Mai, Thailand. They enrolled in Reading and Writing English Course (E30203) in the first semester of the academic year 2015.

During the process of jigsaw reading and semantic mapping activities, students were divided into 4 or 5 home groups. Each home group was composed of 4 or 5 students who represented a cross-section of the class in terms of academic performance, sex, and race or ethnicity. Each home group should have a high performer, a low performer and two or three average performers. Students of each home group were assigned randomly to the expert group, ensuring that there were high, average and low achievers in each expert group.

## 2. Research Instruments

The research instruments were divided into two categories, which were experimental instrument and data collecting instruments.

### 2.1 Experimental Instrument

The experimental instrument included ten lesson plans based on jigsaw reading and semantic mapping activities. Each lesson plan was conducted in two periods. There were 20 periods in total. Each period took 50 minutes. The class met four times a week.

The lesson plans were designed according to the following steps:

1) Study and analyze the course description of English reading and writing course (E30203) at Chomthong School. According to the course description, the design of lesson plans should meet the requirements of English learning strands, standards and indicators as follows:

Strands	Standards and Indicators
Language for Communication	Standard 1.1 M4/2
	Standard 1.1 M4/3
	Standard 1.1 M4/4
	Standard 1.2 M4/4
	Standard 1.3 M4/2
Language and Culture	Standard 2.1 M4/2
	Standard 2.2 M4/2
Language and Relationship with Other Learning Areas	Standard 3.1 M4/1
Language and Relationship with Community and the World	Standard 4.1 M4/1

2) Study the theories and principles of jigsaw reading and semantic mapping activities.

3) Select ten reading texts from reading textbooks as follows: *Laughter Really Is the Best Medicine*, *The Psychology of Color*, *Body Language*, *Spiders*, *Strange Foods*, *Cosmetic Surgery*, *The Sphinx*, *Speed Dating*, *White Sands*, *Left-Handedness*.

4) Ask for suggestions from two specialists in terms of teaching aims, contents, important and difficult points and teaching time arrangement according to students' ability.

5) Design 10 lesson plans with the following stages:

Pre-reading: a. Teacher greeted students.

b. Lead in the topic of the reading text.

c. Make a brainstorm of topic to activate the prior knowledge of students.

d. Teach new vocabulary and phrases through definitions, pictures and context sentences.

While-reading: a. Teacher divided students into home groups and named the groups.

b. Each student was given one segment of reading text. Students who got the same segment formed expert groups.

c. Students learned the reading text through jigsaw reading activity.

d. Students in each expert group read their passages, which they were responsible by themselves to make sure that they understood the information in the passages and they could retell their passages.

e. Students in each expert group read the passage and discussed about the information then answered their expert questions.

f. Students returned to their home groups and shared the information they studied in expert groups, explained their findings in order to help each other understand the reading text better.

Post-reading: a. Students completed the reading comprehension test by themselves.

b. Teacher announced the scores of the students and gave prizes or bonus points to the students.

c. Students completed a semantic map in the home group according to the reading text and presented in front of the class.

- d. Each student wrote a summary individually according to the semantic map and shared in home group.
- 6) The lesson plans were investigated by advisor, co-advisor and two experts.
- 7) Revise the lesson plans based on suggestions from the advisors and experts.
  - a. The way to teach new vocabulary and phrases.
  - b. The design of activities in the process of pre-reading, while-reading and post-reading.
  - c. The design of questions for expert group and reading comprehension test for the reading text.
  - d. The design of semantic map.
- 8) Apply the lesson plans with the target group.

## 2.2 Data Collecting Instruments

There were two data collecting instruments:

### 1) English reading ability test

English reading ability test was 40 multiple choices test based on Bloom's revised Taxonomy to evaluate students' English reading ability. The test consisted of four levels of reading comprehension including remembering, understanding, applying and analyzing as follows:

Levels of Reading	Items	Total
Comprehension		
Remembering	2, 3, 10, 12, 14, 15, 25, 32	8
Understanding	1, 4, 7, 8, 9, 16, 17, 22, 23, 24, 26, 28, 33, 34, 35, 36	16
Applying	6, 13, 20, 21, 27, 31, 38, 39	8
Analyzing	5, 11, 18, 19, 29, 30, 37, 40	8

The scores of English reading ability were analyzed for mean, standard deviation and percentage. They were compared with the criteria of Bureau of Academic Affairs and Educational Standards (2008) for the quality as follows:

The Range of the Scores	Levels of Quality
80-100	Excellent
65-79	Good
50-64	Passed
0-49	Failed

## 2) English summary writing evaluation form.

Students wrote one summary after each two lesson plans. In total, there were five pieces of summary writing for each student. There were 20 scores for each summary. Their summaries were evaluated with the adapted Gillam's criteria (2004). It included five aspects: main idea, supporting details, use own words, grammar and mechanics. There were four different points for different summary writing performances with each part. The rubrics of summary writing were as follows:

	4 points	3 points	2 points	1 point
Main idea	Describe main idea effectively.	Include most of main idea correctly.	Identify an important idea but not a main idea.	Identify a detail but not the main idea.
Supporting details	State 2 or more important details using own words correctly.	State at least 2 important details with paraphrase.	State at least 1 important detail with little paraphrase.	Include unnecessary details and have no paraphrase.
Use own words	Use own words. Avoid copying phrases and sentences from the text.	Use mostly original language. Avoid copying phrases and sentences.	Copy some phrases and sentences.	Copy many phrases and sentences.

	4 points	3 points	2 points	1 point
Grammar	Use correct tenses and phrases.	Most of tenses and phrases are correct.	Some of tenses and phrases are correct.	Several tenses and phrases are correct.
Mechanics	Contain few or no errors in capitalization, spelling and punctuation.	Contain several errors in capitalization, spelling and punctuation.	Contain many errors in capitalization, spelling and punctuation.	Contain many errors in capitalization, spelling and punctuation.

The scores of English writing ability were analyzed for mean, standard deviation and percentage. The full scores of each summary were 20 points. The total scores of summary writing were 100 points. According to the requirement of the course (E30203), the scores of English summary writing ability must pass the pre-set criteria of 50% or at the passed level. They were compared with criteria of Bureau of Academic Affairs and Educational Standards (2008) for the quality as follows:

The Range of the Scores	Levels of Quality
80-100	Excellent
65-79	Good
50-64	Passed
0-49	Failed

### 3. Experimental and Data Collecting Procedures

The research was conducted with a target group of 20 students from Mathayom Suksa 4 at Chomthong School. The treatment was one-group pre-test and post-test design learning through jigsaw reading and semantic mapping activities. The design of the experiment was as follows:

R1	L1L2W1, L3L4W2, L5L6W3, L7L8W4, L9L10W5	R2
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R1: Pre-test of English reading ability

L1 - L10: Ten lesson plans

W<sub>1</sub> - W<sub>5</sub>: Five pieces of English summary writing

R<sub>2</sub>: Post-test of English reading ability

The experimental and data collecting procedures for the research were as follows:

1) The researcher introduced the learning purpose and procedures of jigsaw reading and semantic mapping activities, English summary writing and assessment for the target group.

2) The target group took one and half an hour to do pre-test of English reading ability on September 11, 2015.

3) Students were taught using 10 lesson plans based on jigsaw reading and semantic mapping activities from September 14 to October 16, 2015.

4) Students' summary writings were collected from lesson plan 2, lesson plan 4, lesson plan 6, lesson plan 8 and lesson plan 10.

5) After completing all the experimental instrument, the target group took the post-test of English reading ability on October 19, 2015.

6) Collect and analyze all the data.

#### **4. Data Analysis**

The data analysis was divided into two categories as following:

1. Reliability of English reading ability test was analyzed by Kuder-Richardson Formula 21.

2. The scores of English reading ability and English summary writing ability were analyzed for mean, standard deviation and percentage.

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