

CHAPTER III

RESEARCH METHODOLOGY

This research employed in SMPN in Serang Banten to improves the students' skill in writing procedure text. To collect the data, the researcher used tests (pre and post test) for arranging & creating procedure text, and questionnaires as the research instruments. The observation was used to measure the students' characteristics during the application of the teaching writing procedure text using video game, and the questionnaires were administered to support the data of the student's improvements in the writing procedure text in English.

In the first meeting the author used the basic teaching methods without using video game and in the second treatment the researcher used video game in the teaching process. The statistical analysis of the research used Wilcoxon signed rank test and the scores of the pre-test and the post-test were used to determine the improvement. The significance of the test was analyzed by using computer programmed of Statistical Product and Service Solutions (SPSS).

3.1 Research design

The goals of this research is to identify the students' improvement in writing procedure text by using video game. This research also analyzes the students' perceptions towards the use of the video game in the teaching of writing procedure text. In conducting the research, the author uses mixed method research design. Onwuegbuzie and Collins (2007) state that mixed method research is a research that involves collecting, analyzing and interpreting both of quantitative and qualitative data in a single study or a series of the studies investigating the same underlying phenomenon. Creswell (2009) explains that mixed method is defined as the procedure of research for collecting, analyzing and mixing quantitative and

qualitative data at the stage of research process in a single study to understand a problem more completely. In this research, the author collected numerical information by using quizzes, pre-test and post test. The qualitative data in this research was collected by using questionnaire.

There are advantages and disadvantages of mixed method. Frechtling and Sharp (1997) state that a mixed method approach can increase both of the validity and the reliability of a study. They also state that this method can build the strength of each type of the data collection and also can minimize the weaknesses of any single approach. Furthermore, they state that by combining the quantitative and qualitative method, the understanding of research findings can be sharpened.

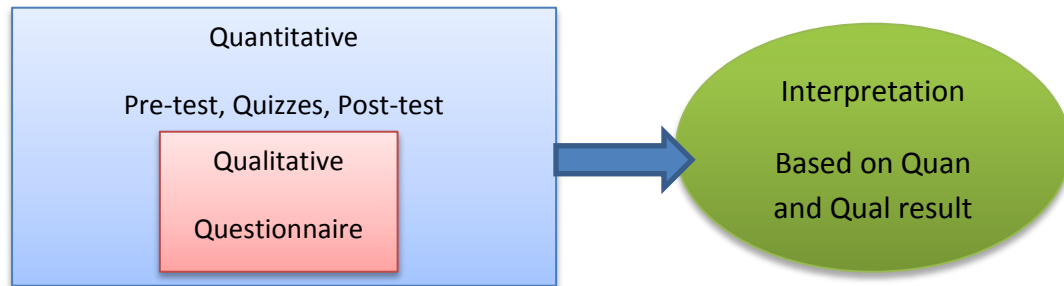
In spite of the advantages of mixed method research, Creswell (1994) shows that there are disadvantages in using mixed method. The disadvantages are listed below.

- It is time consuming and expensive.
- The researcher must learn both quantitative and qualitative approaches.
- It is equipped with the lengthy reporting requirements.

Fortunately, the disadvantages of mixed method research did not pose any serious inadequacies for the collection of the data in the current research.

The author applies the embedded design in conducting the mixed method research. Creswell (2014) states that the embedded mixed method design nests one or more forms of data (quantitative or qualitative or both) within a larger design. Creswell (2014) also states that the embedded mixed method is a popular design when the investigator tests a program in an applied setting. For example, testing teaching method in the school. In this research the author collected quantitative data from pre-test, post-test, and quizzes. Meanwhile, the qualitative

data was collected through questionnaire. Figure 3.1 below presents the visual diagram of the embedded design procedures for the research.



Figures 3.1 Embedded design procedures

3.2 Population of sample

This research was conducted at SMPN in Serang Banten. The respondents are 20 students of second grade from class A, B and C. It was based on the discussion and agreement with the headmaster.

The other reasons for using second grade students as the subject of the research are as follow:

1. The researcher considered that it was better to give chance to the second grade students in improving writing procedure text using video game in order to enrich them with advance knowledge about writing procedure text than the other student at their level.
2. The researcher intended to engage students with interesting activity because according to the teacher the students tend to get distracted while producing text in English .

3. This research is hoped to prepare the subject students with the writing skill they need to continue their study to senior high school or especially vocational school.

3.3 Validity and reliability of the research

To ensure the validity and reliability of the data, the researcher used some validity checks. The researcher followed the criteria of the validity proposed by Anderson in Burn (1999: 161-162) as the followings:

1. Democratic validity

Democratic validity refers to the chance of the stakeholders to give their opinion, idea and comment about the implication of the research. To obtain this validity the researcher provided questionnaire to the students. Here the students were given chances to give their opinion about the problems occurred.

2. Process validity

The process validity is related to the competency and reliability of the researcher. To get the process validity, during the implementation of the research, the researcher made the observation using observation checklists and field notes.

3. Outcome validity

Outcome validity is related to the action leading to the result achieved in the research. Identifying the problems of the second grade students in SMPN in Serang Banten was one of the schemes applied in this research to obtain this validity. The reflection on the end of every meeting was also provided by the researcher to obtain the validity.

4. Dialogic validity

In order to obtain the dialogic validity, the researcher conducted dialogues with the students and the observer to give comments about the implementation of treatment in every meeting as evaluation. This was done to know the strength and the weakness of the action to enable the researcher to do better in the next meeting.

In achieving trustworthiness this research also used the triangulation technique. The researcher uses the Burns (1999:164) triangulation as follows:

1. Time triangulation

The meaning of time triangulation is that the data are collected in a period of time to get the sense of the factors involved in the research process. In this research, the researcher did the action from April 3rd, 2017 to April 13th, 2017.

2. Investigator triangulation

In this research, there were more than one observer in the same research settings to avoid the observation bias. There were two observers in the research; the researcher and the headmaster of the school.

3.4 Research procedure

The procedures of the research follow several steps that were described as follows:

a. Preparation;

At this point the researcher prepared all the material and quizzes for the research.

b. Collecting data; classroom observation and conducting pre-test;

In the first meeting, the researcher conducted a pre-test. The purpose of the test was to determine the students' understanding to produce procedure text. The

researcher asked the students to produce the procedure text by providing a picture and clue.

- c. Giving the students first questionnaires;

At this point the questionnaire was distributed to the students to determine what subject that the students like or dislike, along with the reason.

- d. Conducting treatment by using videogame in teaching writing procedure text;
The researcher implemented the treatment to the students and gave several sets of tests and quizzes at the end of the sessions to the students. In the first meeting, the teacher taught the students how to make a good procedure text. In the next meeting, the teacher used Cooking Academy video game to improve students' skill in writing procedure text.

- e. Conducting posttest;

After all the treatments had been done, the researcher conducted a post test to figure out if there was an improvement of the students' writing abilities. The post test result would be compared with the pre-test to see the improvement.

- f. Giving students second questionnaire after the treatment.

The students received a second questionnaire at the end of the research. The questionnaire would show whether the students like the teaching method by using video game in writing procedure text. The questionnaire would also find the weakness of this method.

The framework of this research in general is illustrated in the following figure:

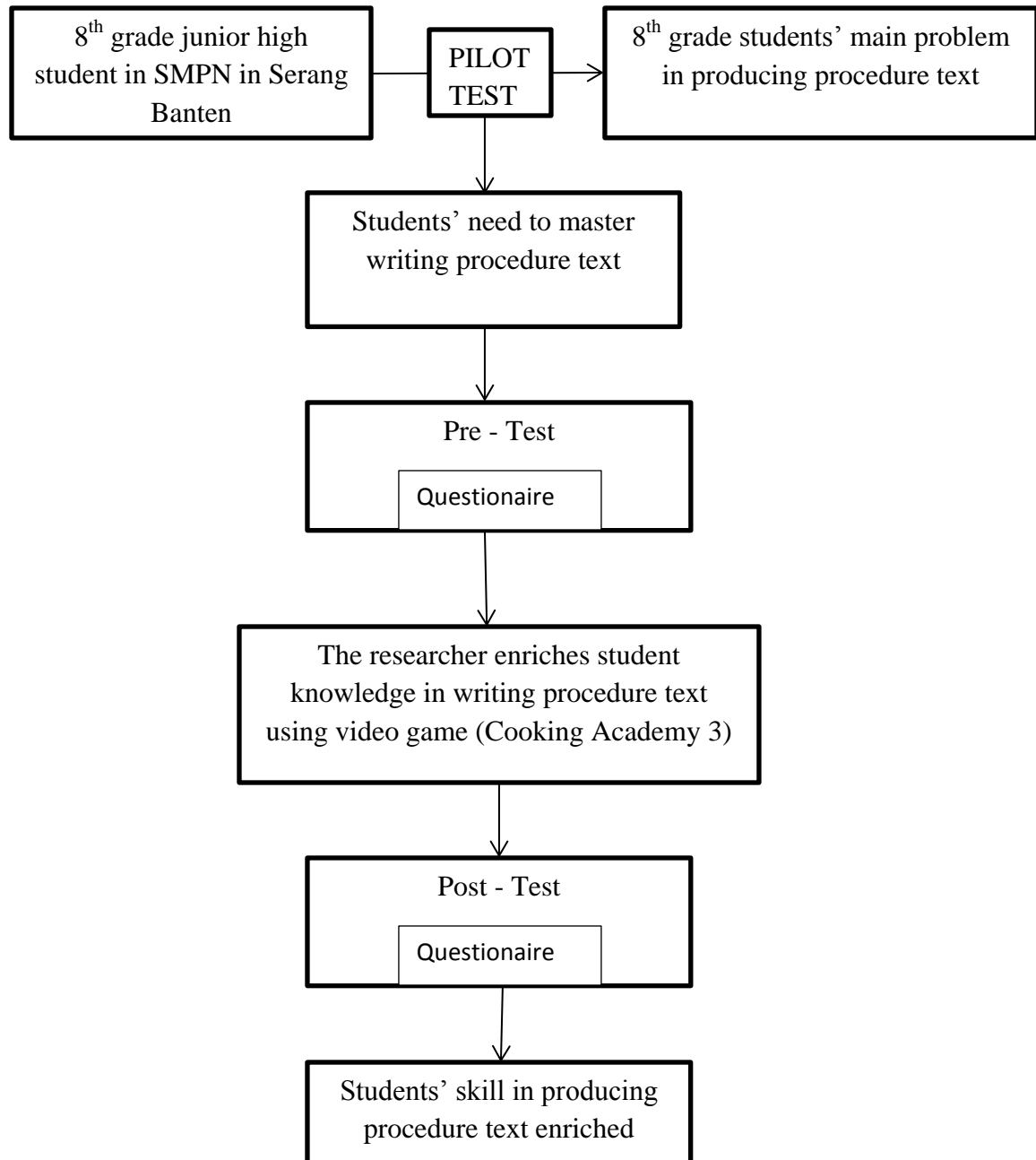


Figure 3.2 Research Framework

Based on the framework the procedures of the research are described as follows:

3.4.1 Preparation

- 1) The researcher provided a pilot test to the second grade students of SMPN in Serang Banten to determine their level of writing procedure text skill.
- 2) The author decided which chapter in Cooking Academy 3 video game that was able to improve students' skill in writing procedure text based on the pilot test.
- 3) In this section, the research was conducted only in one cycle.

3.4.2 Implementation

In the implementation session, the researcher took part as the teacher of the class to apply the plan. In this session, the researcher was observed by the School Headmaster. Meanwhile, the researcher also recorded the teaching session using field note to record important points such as the students' behavior, abilities, and attitudes. The research was conducted in a computer laboratory. Here is the sequence of research:

1) Pre test

Pretest was conducted at the beginning of the teaching session to determine the students' capability in writing procedure text. The researcher will ask the students to put the sequence in order based on the picture of cooking recipe and to make their own cooking recipe.

2) Activity

- a) The students would be asked if they were familiar with the procedure text.
- b) The students were introduced to the Cooking Academy 3 video game. Every two students would use one computer with the videogame installed in each computer.

- c) The researcher demonstrated how to play the video game.
- d) Each of the students would be asked to play 1-4 chapter/s or recipe/s and to try to understand the game and caption in each picture.
- e) At the end of the activity, there would be a quiz to measure the writing procedure text skill while playing the video game.

3) Post test

At the end of the treatment session, the students had to make their own cooking recipe and the result would be compared with the pre-test score to measure the improvement of the students' skill in writing procedure text.

3.4.3 Reflection

In this phase, the researcher evaluated and described the effect of the action in the implementation session in order to learn the students' behavior and ability. This information would be used to develop the next session of the implementation phase.

3.5 Type of data

This research uses mix method which is this design involving the collection and analysis of the quantitative data and supported by the collection and analysis of qualitative data.

The following explanation is the data elaboration method by using quantitative and qualitative data. Both types of the data are designed to meet the researcher's objective.

3.5.1. Quantitative

Quantitative data is a research data which can be measured in numerical form. In this research the quantitative data are the results of the test which were pre test, quizzes, and post test. Burns (2010: 118) stated that “quantitative data analysis means presenting your data in numerical form ... Quantitative data can have a very important place in the way we discover things and present our finding.”

3.5.2. Qualitative

Qualitative data is the data that the researcher must use their intellect to analyze and interpret the collected information. In short, as Burns (2010: 106) states, the qualitative data are those that are analyzed without using numbers. In this research, the qualitative data collection was done by giving the students a set of questionnaires.

3.6 Data collection

The data were gathered through classroom observation, testing and questionnaires.

a. Classroom Observation

The researcher used the direct observation in observing the teachers' techniques. The data were used to elicit students' prior skill in writing procedure text. The purpose of this observation was to understand the whole data and to get a holistic situation of data.

b. Testing

At the beginning, the students received a pre-test to measure their proficiency in writing procedure text. In the next meeting, the teacher led the students to play video game (Cooking Academy 3) for one chapter and the students continued the next chapters while doing the quiz about writing the recipes. There were two quizzes provided for the students for every two meetings. At the end of the meetings, the students received post-test on

writing the next procedure text (recepies). The post-test was held after the students had given some feedback about their pre-test and lecture. The scoring used these criteria as general.

- Assesment for the tests and quizzes

Table 3.1

The Assesment table for the tests and quizzes

no	Criteria	Point
1	Correct answer	1
2	Almost correct	0.5
3	Incorrect answer	0

The score was counted using this following way:

Score : correct answer x 10

Maximum score : 10 x 10 = 100

- Finding the students means score of pre-test and post-test

The mean score is the sum of the students' score devided by the total number of the students. The mean score or average score can be folmulated as follows:

$$X = \frac{\sum x}{N}$$

X = The mean score (Adopted from Hadi :2004)

$\sum x$ = The total of the students

N = The number of the students who take the test

- The interpretation of the result of the pre test and post test. In the interpretation, the author uses this criteria:

Table 3.2

Interpretation of the test and quizzes result

Range	Qualification
80-100	Good to Excellent
60-79	Average to Good
50-59	Poor to Average
0-49	Poor

To be specific, this is the scoring assessment rubric framework modified from Emilia (2014):

Table 3.3

The scoring assesment rubric

Categories	Score		
	20-49	50-99	100
Lexico-grammatical structure			
Grammar	Have more than 5 grammatical errors.	Have 1-5 grammatical errors.	No grammatical errors.
Vocabulary	Student's vocabularies used in text are not accurate.	Student's vocabularies used in text are accurate enough.	Student's vocabularies used in text are accurate.
Steps of	Have more than 5	Have 1-5 miskates in	no miskates in

procedure text	miskates in steps of procedure text	steps of procedure text	steps of procedure text
Task Response			
Content, format, and length	Contents do not correspond to task requirement. Format and length are deficient	Contents fulfill the task requirement sufficiently well. Format and length are overall on target.	Contents fulfill the task requirements. Format and length are overall on target.

c. Questionnaires

The questionnaires were distributed in the first meeting and after the post-test to collect information about the students' weaknesses and their reaction towards the method the teacher used in teaching procedure text. There were five question in the questionnaire. The items of this questionnaire is an open-ended. The definition of open-ended questionnaire, according to Burns (2010:85), is aset of "items that look for a free-form response."

The research activities are listed in the following table below:

Table 3.4

The research activity timeline

No	Activities	Date							
		Oct, 19 th 2016	Apri 1, 3 rd 2017	April , 4 th 2017	April , 5 th 2017	April , 6 th 2017	April , 10 th 2017	April , 11 th 2017	April , 13 th 2017
1	Pilot Test or								

	Preliminary research								
2	Pre test								
3	Questionnaire 1								
4	Classroom activity and Quiz 1								
5	Classroom Activity and Quiz 2								
6	Post – Test								
7	Questionnaire 2								

Table 3.5
Research Outline

No	Activities	Date	Details	Time Allocation
1	Pilot test or Preliminary research	October, 19th 2016	<ul style="list-style-type: none"> • Researcher asks the students about procedure text. • Reseracher asks the students about their difficultis in learning English especially in writing procedure text. • Reseacher gives the students pilot test and collect the result. 	1 x 45 minutes
2	Pre – Test	April, 3 rd	<ul style="list-style-type: none"> • Students are given a pre-test question sheet. 	1 x 45 minutes

		2017		
3	Questionnaire 1	April, 3 rd 2017	<ul style="list-style-type: none"> Students are given a questionnaire sheet after all of the students finished with their pre-test question set. 	1 x 15 minutes
4	Classroom activity and Quiz 1	April, 4 th 2017	<ul style="list-style-type: none"> In the computer laboratory, every two students have one computer in to use. Teacher gives an explanation about Cooking Academy. The Cooking Academy game is demonstrated using projector in front of the class. The students are asked to play the game for three cooking recipes. Teacher and students review the menus and the cooking procedure. 	1 x 45 minutes
5		April, 5 th 2017	<ul style="list-style-type: none"> Students are asked to continue to play the game. In the last twenty minutes, students are asked to do the 1st quiz while playing the game. 	1 x 45 minutes
6	Classroom activity and Quiz 2	April, 4 th , 5 th & 11 th 2017	<ul style="list-style-type: none"> In the computer laboratory, every two students have one computer in to use. Teacher gives an explanation about Cooking Academy. The Cooking Academy game is demonstrated using projector in 	1 x 45 minutes

			<p>front of the class.</p> <ul style="list-style-type: none"> • The students are asked to play the game for three cooking recipes. • Teacher and students review the menus and the cooking procedure. 	
7		April, 5 th 2017	<ul style="list-style-type: none"> • Students are asked to continue to play the game. • Teacher and students review some of the difficult vocabularies in the game. • Students make a simple procedure text about how to cook one of the menus. 	1 x 45 minutes
8		April, 11th 2017	<ul style="list-style-type: none"> • Students are asked to continue to play the game. • Teacher and students review some of the difficult vocabularies in the game. • In the last twenty minutes, students are asked to do the 2nd quiz while playing the game. 	1 x 45 minutes
9	Post – Test	April, 13th 2017	<ul style="list-style-type: none"> • Students are given a post-test question sheet. 	1 x 45 minutes
10	Questionnaire 2	April, 13th 2017	<ul style="list-style-type: none"> • Students are given a questionnaire sheet after all of the students finished with their pre-test question set. 	1 x 45 minutes

3.7 Data analysis

The data from both pre-test and post-test treatments were used to find the improvement of students' skill in writing procedure text. The observation was used to find the students' response towards the process of teaching. Meanwhile, questionnaires were administered to support the data of the students' improvements in writing procedure text. Then, the significance of both of the tests was analyzed by using the Wilcoxon signed rank test using a computer program named Statistical Product and Service Solution (SPSS).

The test in this research was formulated as follows:

NOTE:

$T1 \times T2$

T1: Students writing score in pre-test

T2: students writing score in post test

X: treatments