#### **CHAPTER III**

#### **RESEARCH METHOD**

In this chapter, researcher described the research design which would be used in this study, hypothesis, population and sample, setting and subject of the study, data and source of data, data collection technique, research instrument, and data analysis technique. To make them clear, the researcher elaborated them one by one in the following part of this thesis.

## A. Research Design

The methodology of this study was quantitative. Mertler stated that the general purpose of quantitative research is to investigate a particular topic or activity through the measurement of variable in numerical data.<sup>37</sup>A major concept of pragmatism is that quantitative and qualitative methods are balance. It could help to get good answer for the statement of problem. In this research, descriptive quantitative was used.

In quantitative research, the data was gathered on an instrument that measures attitudes, and the information was examined using statistical procedures and hypothesis testing. <sup>38</sup>The researcher collected the data using some

<sup>&</sup>lt;sup>37</sup> Craig A. Mertler, *Introduction to educational research*. (United States of America: SAGE Publications, 2014), 213.

<sup>&</sup>lt;sup>38</sup> John W Creswell. *Research Design Qualitative, Quantitative, and Mixed Method Approach.* (Singapore : SAGE, 2009:third edition), 32.

instruments and analyzed it statistically. It purposed to test whether the hypothesis is accepted or not.

#### **B.** Hypothesis

- Ha : More than 70% students in critical reading class of English Teacher Education Department of Faculty of Education and Teacher Training of State Islamic University Sunan Ampel Surabaya have high ability to think critically.
- Ho : Less than 70% students in critical reading class of English Teacher Education Department of Faculty of Education and Teacher Training of State Islamic University Sunan Ampel Surabaya have high ability to think critically.

Statistical Hypothesis:

Ha :  $\mu_0 > 70\%$ 

Ho :  $\mu_0 \le 70\%$ 

The creations are: Ha accepted if t-value > t-table Ho accepted if t-value < t-table

## C. Setting and Research Subject

This research would be conducted in State Islamic University Sunan Ampel Surabaya. Select the students of critical reading class of English Education Department as the subject. The researcher selected the class because of the reason that based on researcher study; critical reading class serves the students to learn how to think critically.

#### **D.** Population and Sample

Population means the entire subject which want to be researched drawn by the researcher. As Arikunto said that population is the whole subject of research.<sup>39</sup> In this research, the population was all students of critical reading class at faculty of education and teacher training of state islamic university of sunan ampel surabaya 2015.

In this study, researcher did not have sample. All of the population is researched because the number of population was fewer than 100. It is based on Arikunto statement that for presupposition, if the subject was less than 100, it would be better to take all of the subjects. It was population research.<sup>40</sup>

## E. Data Collection Procedure

This research was quantitative research. To obtain the data, the researcher conducted a written assessment for the students to do and distributed questionnaires. The procedure to collect the data as follow:

 <sup>&</sup>lt;sup>39</sup>Suharsimi Ariikunto. Prosedur Penelitian Suatu Pendekatan Praktek, (Jakarta: Bina Aksara, 1987),
130

<sup>&</sup>lt;sup>40</sup>Suharsimi Arikunto. Prosedur Penelitian Suatu Pendekatan Praktik, (Jakarta : Rineka Cipta, 2006), 134

- 1. After reading the article given, the students were given questions to answer to look at their critical thinking ability. The test type is written test individually.
- 2. Then, the students are asked to fill in the questionnaire based on their experiences.

## F. Data And Source Of Data

- 1. The data which are needed are:
  - a. The students` ability to think critically score.
  - b. The students` response to the self assess of ability to think critically.
- 2. Source of Data

The students of critical reading class of English Education Department.

3. Data collection Technique

Data collection was the process of gathering information in a disciplined and systematic way about the research problems.

The data that the researcher would get are from test questionnaire that would be given to the students of Critical Reading Class. The data would be taken from the data that the researcher got from test and questionnaire.

a. Assessment (test)

This assessment was aimed to measure students' ability to think critically after reading the article given from external perspective.

b. Questionnaire

Questionnaires were usually related with correlation field study (survey) projects, of which the mail (postal) questionnaire was the most popular.<sup>41</sup> In this research, the students were given some questions about some problems that have purpose to get opinion of the students. The students must answer the question based on what they got. The question was to know the information about the students` ability to think critically from internal perspective.

#### G. Research Instrument

The researcher needed instruments in order to be easier to collect the data.

1. Assessment (test) sheet

This instrument was used to answer the research question "What is the students' ability to think critically on critical reading class of English Teacher Education Department of Faculty of Education and Teacher Training of State Islamic University Sunan Ampel Surabaya 2015." It contained some questions to measure the students' ability to think critically whether their ability was high, fair or low from external perspective. The researcher conducted the test after giving the article.

<sup>&</sup>lt;sup>41</sup> Tharenou, Donohue, Cooper. *Management research* Methods. (New York: Cambridge University Press, 2007), 102.

2. Critical thinking rubric

This instrument was used for evaluating the students` answer of critical thinking test given. It was used to find out the students` ability to think critically score. The rubric was adapted from *Critical thinking rubric*.<sup>42</sup>

3. Questionnaires

To bring together data by means of questionnaire, the researcher must make some questions. This instrument was used to gather other information related to the students' ability to think critically from internal perspective. The researcher provided the questionnaire that consists of some questions related to it. This questionnaire was also used as self assessment for the students whether their critical thinking ability was on beginner, developing, competent, or accomplished.

#### H. Data Analysis Technique

1. Students` result of the test of critical thinking ability

The researcher conducted a think aloud in an effort to model and reveal how they think critically about a passage from the text. As a whole class group, the students were asked to practice to inference several passages from the article.

 <sup>&</sup>lt;sup>42</sup> Dawn M. Zimmaro, Ph.D. *Critical thinking rubric*. Retrieved May 3, 2004 from Rio Salado College Online (Website: <u>http://www.rio.maricopa.edu/distance\_learning/critical\_think\_rubric.shtml. 2003</u>), 10.

To know whether the students` answer was good or not, an analyzing to the answer should be done. There were three ways to analyze the students` answer of the critical thinking test: <sup>43</sup>

- a. Find the reason or reasons progressive to justify the demand. All statements of reason will answer the question, "why are you demanding what you've demanded?" They can connect to the demand with because. As with demands, reasons may be implied. Excavate them out and utter them in your own words.
- b. Consider each reason progressive. Is the reason well-behaved in itself? Is the reason relevant to the thesis? Note any problems.
- c. The researcher analyzed the students' answers on the reading quiz (Appendix A) based on expression of critical thinking. An answer expressing critical thinking would be given 4 points. A criticallythought out answer made inferences and assumptions about the text. Basic answers were factual and grounded within the article only, with little evidence of profound, personal reflection and thinking.

The researcher would find out the higher score, the lowest score, and the average of the students` ability to think critically score. The students` ability to think critically is high when they get 25 to 32 (maximum score). If they get 18 to 25 their ability to think critically

<sup>43</sup> Timothy W. Crusius and Carolyn E. Channell. 2006. *The Aims of Argument: a brief guide.* . (McGraw-Hill. New York, 200), 53.

is fair and if they get score under 18 their ability to think critically is low. Those score was based on critical thinking rubric below.

# **Critical Thinking Rubric**<sup>44</sup>

- 4 = High level excellence in evidence of critical thinking ability and performance at the college level
- 3 = Demonstrable, competent, expected evidence of critical thinking ability and performance at the college level
- 2 = Minimally acceptable, inconsistent evidence of critical thinking ability and performance at the college level
- 1 = Poor, unacceptable evidence of critical thinking ability and performance at the college level

# Table 3.1Critical Thinking Rubric

Point	Criteria					
4	A. Analyzes key information, questions, and problems clearly and precisely					
	B. Evaluates material with insight					
	C. Uses inference to reason carefully from clearly stated					
	premises to important implications and consequences					
	D. Uses deductive and inductive reasoning and problem-					

 <sup>&</sup>lt;sup>44</sup> Dawn M. Zimmaro, Ph.D. *Critical thinking rubric*. Retrieved May 3, 2004 from Rio Salado College Online (Website: <u>http://www.rio.maricopa.edu/distance\_learning/critical\_think\_rubric.shtml. 2003</u>), 10.

		solving skills consistently and with ease					
	3	A. Analyzes key information, questions, and problems					
		competently					
		B. Evaluates material competently					
		C. Uses inference to reason competently from clearly stated					
		premises to important implications and consequences					
		D. Uses deductive and inductive reasoning and problem-					
		solving skills competently					
	2	A. Analyzes some key information, questions, and problems					
		competently					
		B. Evaluates material inconsistently					
		C. Uses inference to reason inconsistently from clearly stated					
		premises to implications and consequences					
		D. Uses deductive and inductive reasoning and problem-					
		solving skills inconsistently and weakly					
	1	A. Is unable to analyze information, questions, and problems					
		or does so superficially					
		B. Is unable to evaluate material or does so superficially					
		C. Is unable to or infrequently uses inference to reason from					
		clearly stated premises or recognize implications and					
		consequences					

D. Is unable to or infrequently uses deductive and inductive

reasoning and problem-solving skills

To count the students' average score, the procedure was formulated as follows:

Formula: Mean = 
$$\frac{\sum FX}{N}$$
 or =  $\frac{Total \ of \ students^{`}}{The \ Number \ of \ Students^{`}}$ 

Note:

Mean = Students' Average Score

 $\sum FX = Total of Students' Score$ 

N = Number of Students

After knowing the average of the students` score, the researcher found the average percentage of the students` score, the following formula was used.

The average percentage of students' score = 
$$\frac{the \ total \ of \ percentage}{The \ number \ of \ students}$$

2. Students` response of questionnaire

The researcher will use the result of questionnaire to get the information about the students` ability to think critically from internal perspective.

To make it clear, researcher used three steps to analyze the questionnaire. The steps were discussed in the following part.

a. Grading items of the questionnaire

The questionnaire consisted of 5 questions, each of them had four choices. The score ranges is from 1 to 4 as shown in the table below.

No.	Option	Point	Meaning
1.	A	1	Beginning
2.	В	2	Developing
3.	С	3	Competent
4.	D	4	Accomplished

Table 3.2Point Range of Questionnaire

The explanation of the range from 4-1 is as follow.

- 1) If the students chose A, the score would be 1.
- 2) If the students chose B, the score would be 2.
- 3) If the students chose C, the score would be 3.
- 4) If the students chose D, the score would be 4.
- b. Finding the Mean

To found the average of the students' response of questionnaire,

the following formula will be used:

The Number of Students Who Chose The Option The Number of All Students X 100% Then, the researcher concludes the students` level based on the questionnaire result into four levels (beginning, developing, competent, accomplish).

# I. Hypothesis Analysis

Using t-test, the researcher tests whether the hypothesis are accepted or rejected.

Table 3.3

		One sample statistic			
	N	Mean	Standard deviation		
Students` ability to think critically					
		/			

	Test Value = 100		
	Т	Df	Sig. (1 tailed)
Students` ability to think critically			

Table 3.4One sample t-test

From the result, if t value is higher than t table, it means that Ho is rejected and Ha is accepted. In contrast, if t table is higher than t hitung, it means that Ha is rejected and Ho is accepted. From those verifications, it can be concluded whether the students` ability to think critically on critical reading class of English Teacher Education Department of Faculty of Education and Teacher Training of State Islamic University Sunan Ampel Surabaya 2015 is high or not.