

CHAPTER III

RESEARCH DESIGN

This chapter explains the methodology of this research. It includes the research design, participants, and data collecting and data analysis techniques.

3.1. Research Design

This study was designed to describe thinking styles in English Language Education Department. This study will describe entirely about the condition and situation as well as possible. This study was quantitative research. Based on Creswell (2014), “quantitative research is an approach for testing objective theories by examining the relationship among variables”. Quantitative is all about examining theory, calibrate with numbers, and then analyzed using statistical techniques. This study focused on survey. Survey study provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2014).

3.2. Population and Sample

The population in this study was undergraduate learners from English language Education Department major in one of the Islamic private university. This study only took batch 2018 as the population. Based on Arikunto (2006) population is whole of the group that will be the subject of the research. The population could be seen on the table below.

Table 3.1 Research Participant

BATCH 2018	Male	Female
109	39	70
TOTAL	109	

Sample according to Shearer & Webster (1985) is a limited part of the statistical population who used to gain information about the whole part. So, sampling could be concluded to be an act, technique, and method to obtain representative information from a population which is researched. Hence, this study used voluntary sampling and Slovin form to draw precision sample from the population.

Slovin form:

$$n = \frac{N}{1+N(e)^2}$$

Explanation:

n = Number of sample

N = Population

e = Error rate (5% = 0.05)

This study used 5% of error rate to determine the number of samples. The smaller the error rate, the more the number of sample sizes. From the

calculation of the population above used 109 students, so the results are as follows:

$$n = \frac{109}{1+(109)(0,05^2)}$$

$$n = \frac{109}{1,2725}$$

$$n = 85,658 \text{ or } 86 \text{ students}$$

3.3. Data Collection Techniques

This sub-chapter will explicate data collecting techniques. It includes instrument, validity, and reliability.

3.3.1. Instrument

According to Arikunto (2006), the instrument is facilities in data collection in systematic research. It aimed to achieve well result and facilitate the researchers. The Thinking Styles Inventory was used as an instrument for this study. To obtain student's thinking styles, Thinking Style Inventory from black's (2008) was used. It consisted 32 items that corresponded to 5 scales. Then participants were asked how well the statements representing or describing them then responding to the statements by choosing a point of 7 Likert – scale.

3.3.2. Validity and Reliability

According to Brown, (1996), there are two types to measure the validity in quantitative research that is content validity and construct validity. Content validity was checked through review the theories from Sternberg (1988, 1997) and

black's (2008) study. Meanwhile construct validity of the instrument, was consulted continuously to the expert judgment and SPSS v.22 was used to analyze the items and considered valid. Moreover, 32 items was tested to 15 students at 30th of October. The reliability score was .94 with 6 items (TSI 89, TSI 76, TSI 62, TSI 72, TSI 59, and TSI 33) were omitted due to the item-scale correlation score that unacceptably low. Then, 26 items in Indonesian language was tested to 16 students at 02nd of November. The item-scale correlation showed that 2 (TSI 4 and TSI 87) of 26 items were unacceptably low. Hence, the items were omitted. The reliability of thinking style inventory in Indonesian was .95.

Table 3.2 Reliability of Indonesian TSI

Reliability Statistics	
Cronbach's Alpha	N of Items
.954	24

The rest of 24 items then was checked for validity and the result showed that all items were valid. The value calculated (Pearson Correlation) > r table of 0.514, for $df = 15 - 2 = 13$; $\alpha = 0.05$ then the item is valid and vice versa (Sujarweni, 2014). The result could be seen in the table below.

Table 3.3 Item Validity

Item	Pearson Correlation	R-Table	Criteria
1	0.689	0.514	Valid
2	0.622	0.514	Valid
3	0.722	0.514	Valid
4	0.644	0.514	Valid
5	0.733	0.514	Valid
6	0.722	0.514	Valid
7	0.722	0.514	Valid
8	0.678	0.514	Valid

Item	Pearson Correlation	R-Table	Criteria
9	0.756	0.514	Valid
10	0.756	0.514	Valid
11	0.722	0.514	Valid
12	0.800	0.514	Valid
13	0.756	0.514	Valid
14	0.722	0.514	Valid
15	0.722	0.514	Valid
16	0.689	0.514	Valid
17	0.767	0.514	Valid
18	0.756	0.514	Valid
19	0.678	0.514	Valid
20	0.700	0.514	Valid
21	0.644	0.514	Valid
22	0.656	0.514	Valid
23	0.700	0.514	Valid
24	0.756	0.514	Valid

According to Sukardi (2007), the level of data validity is measured from the extent to which the accuracy of data taken from quantitative studies. An instrument is called valid if the instrument is measured accurately and under expectations. Furthermore, the instrument's validity had been shown following the standard of testing in the study. The score of Cronbach's Alpha from both 32 and 24 items were highly reliable by .94 and .95. It could be seen from the table below.

Table 3.4 The Criteria of Cronbach's Alpha

Cronbach's alpha	Criteria
> 0.90	Very highly reliable
0.80 – 0.90	Highly reliable
0.70 – 0.79	Reliable
0.60 – 0.69	Minimally reliable
< 0.60	Unacceptably low reliability

3.4. Data Analysis Techniques

3.4.1 Data Indicator

This study Analysis Technique, it included taking data and step of processing data.

1. Respondent Identity

In this section, the respondents were asked to fill in personal data such as gender and student number.

2. Thinking Styles Inventory (Black, 2008)

To take respondent thinking style, thinking styles inventory distributed using the media Google form administrative time can be traveled very efficiently. By using the Google form, each score can be summed up automatically by transferring scores from Google Form answers into Microsoft Excel.

3. Steps of Data Analysis Techniques

The steps of data analysis technique in accordance with this study:

- a) Literature review was done for this study. Then, Thinking Style Inventory in Black's (2008) study finally was chosen to be the instrument.
- b) Thinking Style Inventory was tested to 15 students and 6 items were omitted before translating to Indonesian language.
- c) Thinking Style Inventory was adopted as an instrument by translating the English questions content into Bahasa Indonesia.
- d) Thinking Style Inventory in Bahasa Indonesia was then tested to 16 students and 2 items were omitted before taking the real data.

- e) Checking the item (expert judgment) periodically in the questionnaire to make sure it is easy to understand.
- f) Using the Google form web for the data collection. Afterward, link for Google form was shortened into:
<https://tinyurl.com/TSIINDO>
- g) Share the link of questions of questionnaires through Line Apps and directly face to face in class.
- h) Using Microsoft Excel to analyze the data descriptively and calculating the amount data received from Google form.
- i) After the data collected, the researcher uses standard deviation (SD) and Mean by using the formula = STDEVA and = AVERAGE for overall students

