CHAPTER III

RESEARCH METHOD

This chapter deals with the procedures of conducting the research. It covers research approach and design, population, sample, research instrument, research variable, data collection technique, data analysis technique.

A. Research Approach and Design

Intended for analyzing the internal consistency reliability of the TOEFL Equivalent Test by Language Development Center of English Intensive Program, the researcher will conduct a quantitative descriptive research. Sugiyono states that quantitative research is a scientific, empiric, objective, rational, and systematic method. Therefore, research data is derived in the form of numbers and statistic table. It is named quantitive for research data is shaped as numbers[1]. Creswell also defines quantitative research asks specific questions to obtain measurable data on variables through instrument then analyze those using statistical procedures[2]. Therefore, the researcher analyzed the data using descriptive quantitative through statistical procedure.

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[1] Sugiyono. (2011). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: CV Alfabeta. Page 7.

[2] Creswell, J. H. (2012). *Educational Research ''Planning, Conducting, and Evaluating Quantitative Qualitative Research Fourth Edition*. Boston: Pearson. Page 13

B. Research Stages

There are five steps the researcher does in this research. They are 1) Approaching Language Development Center, 2) Collecting Question and Answer Sheets, 3) Data Digitizing Process, 4) Pearson Product Moment and Spearman-Brown Analysis, 5) Writing Result, and 6) Final Correction. The information about months and weeks is more detailed in the table below.

Table 3.1

Research Timeline

Activities	November 2016				December 2016				January 2017			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Approaching Language Development Center		■										
2. Collecting Question and Answer Sheets		■	■	■								
3. Data Digitizing Process				■	■	■						
4. Pearson Product Moment and Spearman-Brown Analysis						■	■	■				
5. Writing Result								■	■			
6. Final Correction										■	■	

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C. Population

The population of this study is the entire first year students in Faculty of Tarbiyah and Teacher Training English Intensive Program of UIN Sunan Ampel Surabaya. The researcher is able to collecting 336 students' answer sheets from English Intensive Program lecturers. The TOEFL Equivalent Test used in this research is from the English Intensive Program Academic Year 2012 – 2013. The reason of using this answer sheet because the researcher is due to permission given by P2B.

D. Sample

In measuring the number of sample in this study, the researcher uses Slovin formula. This formula uses to determine the number of sample from this population. The sample of this study is 183 students, by using Slovin formula. Here is the Slovin formula for measuring the sample in this research:

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{336}{1 + (336)(0.05)^2}$$

$$n = \frac{336}{1 + 0.84}$$

$$n = \frac{336}{1,84}$$

$$n = 183$$

$$n = \text{sample}$$
$$N = \text{total population}$$
$$Ne^2 = \text{sampling error}$$

E. Research Instrument

According to Suharsimi Arikunto, research instrument is a useful tool for researcher to gather data systematically and easily[3]. This research uses documentation of TOEFL Equivalent Test answers' sheet as the research instrument. The degree of reliability of this instrument is indefinite; the internal consistency reliability of this instrument has never been investigated before. Therefore, the result of this research will show the internal consistency reliability value of both the subject and the instrument of the research.

F. Research Variable

A variable is a construct or a characteristic that can take on different values or scores[4]. There are two types of research variables: independent and dependent variables. According to Creswell, dependent variable is an attribute or characteristic that is dependent on or influenced by independent variable[5]. *X* represents the independent variable. *Y* represents the measure of the dependent variable. The dependent variable of this research is the internal consistency

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[3] Suharsimi Arikunto. (2000). *Manajemen Penelitian.* Jakarta: Rineka Cipta. Page: 134.
[4] Donald A., Lucy C. J. and Asghar R. (2010). *Introduction to Research in Education.* USA: Cangage Learning. Page 37.
[5] Creswell, Aisth. (2008). *Statistics as Fundamental Research.* New Jersey: Prectice Hall, Inc. Page: 126

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reliability which is symbolized as X, while the independent variable of this research is TOEFL Equivalent Test question's sheet and the students' answers which is symbolized as Y.

G. Data Collection Technique

Yoges Khumar states that research data may be obtained by administering questionnaires, testing, personal observations, interviews and many other techniques of collecting quantitative and qualitative evidence[6]. In this research, the researcher uses documentation review of TOEFL test question's and answer's sheets as the data collection technique. There are ten kinds of TOEFL test question's sheet booklets, but there is only one observable booklet due to the permission given by P2B of UIN Sunan Ampel Surabaya. The question's sheet consists of 140 test items and divides into three sections: listening, structure and reading.

H. Data Analysis Technique

The data examined in this research will be examined using Split-Half Method and Spearman-Brown Formula which measure internal consistency precisely[7]. The entire process and result is provided in the shape of numbers and tables.

$$\rho = \frac{2r}{1+r} =$$

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[6] Yogesh K. S. (2006) *Fundamental of Research Methodology and Statistics.* New Delhi: New Age International Publisher. Page: 212.

[7] James, H., Millan M.C., Schumacher S. (2012). *Research in Evidence Based Inquiry.* Pearson: Commonwealth University: Pearson. Page. 182

SPLIT_HALF (R1, R2) = split half coefficient (after Spearman-Brown correction) for data in ranges R1 and R2

SPLITHALF (R1, *type*) = split-half measure for or the scores in the first half of the items in R1 vs. the second half of the items if *type* = 0 and the odd items in R1 vs. the even items if *type* = 1.