

CHAPTER III

RESEARCH METHOD

A. Research Design

The design of this study is classified as descriptive quantitative. The aim of this study is to describe the level of pre-service English teachers' readiness in implementing about the readiness of pre-service English teachers in the implementation of TPACK (Technological Pedagogical and Content Knowledge) in the classroom. Descriptive quantitative research involves collecting numerical data to test hypotheses or answer questions concerning the current status conducted either through self-reports collected through questionnaires or interviews or through observation. Quantitative descriptive or survey research involves collecting data in order to answer questions about the current status of the subject or topic of study and obtain information about preferences, attitudes, practices, concerns, or interests of some group of people (Airasian & Gay, 2005). In addition, a common goal of survey research is to collect data representative of the population. (Barlett, Kotrilk, & Higgins, 2001)

In this study, after collecting the data from numerical data, the researcher will analyze the data, and then the researcher describes the result of

the data. Therefore, quantitative research was used in this study to collect the data by using a questionnaire as a research instrument. This research is concerned with the readiness of pre-service English teachers in implementation TPACK in the classroom.

B. Research Setting

This was conducted in the English Education Department of Antasari State Islamic University Banjarmasin. it is located in the city of Banjarmasin, South Kalimantan, Indonesia. The researcher chooses English Education Department of Antasari State Islamic University Banjarmasin because in early observations, the researcher asked for some regarding the technological pedagogical content knowledge (TPACK), the researcher founded many students who did not know what Technological Pedagogical And Content Knowledge (TPACK). The data collection was started from March 2021 to May 2021. The researcher distributed the questionnaire via Google Form on March 23, 2021, and all participants have completed it on May 4, 2021.

C. Population And Sample

1. Population

The population is the entire subject of research (Arikunto, 2008). The population of this research was the students of the English Education

Department year 2016. The total number of students is 129 students which consist of five classes.

2. Sample

Samples is part of the number and characteristics of which are owned by the population (Sugiyono, 2015). The sample is just partly or totally from the whole population (Arikunto, 2008). The sample was carried out because the researcher had limitations in conducting research both in terms of, manpower, funds, and a large population. Then the researcher must take a sample that is truly representative. To determine the size of the sample taken from the research population using the formula proposed by Slovin (Neolaka, 2014)

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

n = number of samples

N = total of population

e = Error tolerance (1%, 5%, 10%)

$$n = \frac{129}{1 + 129 (5\%)^2} = 97,7 \approx 98$$

Based on Slovin's formula can be calculated the number of samples from 129 population is 98.

The sampling technique used is in this study is probability sampling. Probability sampling is a sampling technique that provides opportunities

or the same for each element or member of the population to be selected as a sample. Probability sampling consists of simple random sampling, proportionate stratified random sampling, disproportionate stratified random, sampling area (cluster) sampling. In this study, the researcher used simple random sampling. Simple random sampling is a technique of taking sample members from the population at random without regard to the existing strata in that population (Sugiyono, 2015).

D. Data Collection Technique

The data collecting technique is the most important step in the research because the main purpose of the research is to get the data. For collecting the data the researchers use a questionnaire as the instrument. (Sugiyono, 2015)

The questionnaire is a data collection technique by presenting a number of written statements to the respondents and will respond by respondents (Sukmadinata & Syaodih, 2006). The questionnaire is used to get information from respondents, which is, in this case, are used to know the readiness of English teachers training in implementation TPACK (Technological Pedagogical and content knowledge) in the classroom.

E. Research Instruments

A research instrument is a tool used to measure both natural and social phenomena observed. Specifically, those phenomena are called research variables (Sugiyono, 2015). In this study, the questionnaire is used to gather data from the respondents. Closed-ended questions are widely used in the questionnaire as they offer numerous advantages. This type of question enhances the consistency of responses across the respondents. Moreover, it is easier and faster to tabulate the data collected. (Fraenkel & Wallen, 2009)

1. Questionnaire

The questionnaire that used in this study was adapted from the journal by Muntaha (2018) who are adapted the TPACK framework set by Koehler, Mishra, Kereluik, Shin, & Graham (2014) that are adjusted to the material of English teaching. The respondents were required to indicate their perceptions based on a five-point Likert scale with the following anchors: Strongly agree (SS), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD).

The survey questionnaires are divided into 7 TPACK components. TK consists of 10 items, PK consists of 8 items, CK consists of 7 items, TPK consists of 5 items, TCK consists of 4 items, PCK consists of 4 items, and TPACK consists of 9 items. As for the total of 47 items.

Table 1			
TPACK Levels category			
No	Variable	Indicator	Labels
1	Technological Knowledge	I know how to solve my own technical problems on a computer.	TK1
		I know about the basic of computer components.	TK2
		I can use computer without problem.	TK3
		I am adept in Microsoft Word.	TK4
		I am adept in Microsoft Excel.	TK5
		I am adept in Microsoft Power Point.	TK6
		I am good at using a printer.	TK7
		I am good at using a projector/lcd.	TK8
		I know many different types of techonolgy.	TK9
		I use the internet as a communication media.	TK10

2	Pedagogical Knowledge	<p>I know how to assess a student activities in the classroom.</p> <p>I can adjust teaching models based on what students currently understand or not.</p> <p>I can adjust my teaching style to different students condition.</p> <p>I can assess students learning in various ways.</p> <p>I can use a variety of teaching approaches in classroom management</p> <p>I am familiar with the understanding and misconception of the student in general</p> <p>I know how to manage a classroom</p> <p>I take reflective steps to enhance the quality of my learning</p>	<p>PK1</p> <p>PK2</p> <p>PK3</p> <p>PK4</p> <p>PK5</p> <p>PK6</p> <p>PK7</p> <p>PK8</p>
3	Content Knowledge	<p>I have many strategies to develop knowledge and language skill.</p> <p>I can speak English very well.</p> <p>I can listen English conversation very well.</p> <p>I can read English very well.</p> <p>I can write in English very well.</p> <p>I have a good knowledge of grammatical and English vocabulary .</p> <p>I used the latest resources to improve my English skills.</p>	<p>CK1</p> <p>CK2</p> <p>CK3</p> <p>CK4</p> <p>CK5</p> <p>CK6</p> <p>CK7</p>

4	Technological Pedagogical Knowledge	<p>I can select technology that can improve language teaching approach.</p> <p>I can select technology that can improve students learning in grammatical and vocabulary.</p> <p>Teachers training program made me think more deeply about how technology might affect the teaching approach I use in my classroom in the future.</p> <p>I can use the technology I was learned to different classroom activity.</p> <p>I can thinking critically about how to use technology in my class</p>	<p>TPK1</p> <p>TPK2</p> <p>TPK3</p> <p>TPK4</p> <p>TPK5</p>
5	Technological Content Knowledge	<p>I use computer to develop my study</p> <p>I know about technologies I could use to understand and do grammatical and vocabulary.</p> <p>I know about technologies I could use to understand and learn English skills.</p> <p>I know about technologies I could use to understand and practice English.</p>	<p>TCK1</p> <p>TCK2</p> <p>TCK3</p> <p>TCK4</p>

6	Pedagogical Content Knowledge	<p>I know how to creat lesson plan</p> <p>I know how to choose effective teaching approaches to guide students learn grammar and vocabulary.</p> <p>I know how to choose an effective teaching approach to guide students in English skills.</p> <p>I know how to choose effective teaching approaches to guide students in English practice.</p>	<p>PCK1</p> <p>PCK2</p> <p>PCK3</p> <p>PCK4</p>
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7	Technological Pedagogical and Content Knowledge	<p>I can teach lessons appropriately by combining, learning materials, technology, and teaching methods.</p> <p>I can use strategies that combine the materials, technology, and teaching learning I had learned to my classroom in the future.</p> <p>I can select technology that can improve the quality of teaching materials.</p> <p>I can select the appropriate technology to be use in classroom so that I can improve students English skills.</p> <p>I understand what I teach and how I teach.</p> <p>I can teach lessons that properly combined grammatical, vocabulary, technology, and teaching methods.</p> <p>I can use teaching materials that combine english skills, technology, and teaching approaches.</p> <p>I can help others to use technology in teaching methods and materials in classroom</p> <p>I can combine teaching methods, technology, and materials exactly when I'm teaching</p>	<p>TPACK1</p> <p>TPACK2</p> <p>TPACK3</p> <p>TPACK4</p> <p>TPACK5</p> <p>TPACK6</p> <p>TPACK7</p> <p>TPACK8</p> <p>TPACK9</p>
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Questionnaire in this study was used to classify Pre-service English teachers by the criteria into three group of high, medium, and low. To make decisions on the level of data interpretation using a category approach that utilizes the total score as reference. (Muntaha, 2018)

No	Category	Mean
1	High	4.00 - 5.00
2	Medium	3.00 - 3.99
3	Low	1.00 - 2.99

2. Validity and Reliability

The main instrument in this study was a questionnaire while the aim of giving the questionnaire is to obtain the data at knowing the pre-service English teachers' readiness to implementation TPACK. But before collecting the data, the researcher has to analyze and measure whether it was valid and reliable or not by using SPSS 28.0 program.

a. Validity

Validity is given to measure whether the instrument is valid or not before doing the data collecting. Validity relates to the results of a measuring instrument, shows the level, and is specific in accordance

with the purpose of the measurement to be carried out. (Gronlund, Linn, & Miller, 2009)

Pearson Product Moment is used to determine the validity of the question item.

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\}\{N \sum Y^2 - (\sum Y)^2\}}}$$

Explanations:

r_{xy} : Corelation coefficient between X variable with Y variable

N : Total of test participant

X : Score of each item

Y : Total score

b. Reliability

Reliability refers to the consistency of the scores obtained, how consistent they are for each individual. Reliability pointed a sense that an instrument is pretty trustworthy. (Fraenkel & Wallen, 2009) To determine the reliability of the research instrument in the form of a questionnaire, the alpha formula is used (Arikunto, 2008). The researcher uses the alfa formula with SPSS 28.0 program.

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma_i^2}{\sigma_i^2} \right)$$

Explanations:

r_{11} : Reliability

$\sum \sigma_i^2$: Total of score variant for each item

n : total of item

Criteria of Reliability	
$r_{11} < 0,20$	Very low
$0,20 < r_{11} < 0,40$	Low
$0,40 < r_{11} < 0,70$	Enough
$0,70 < r_{11} \leq 0,90$	High
$0,80 < r_{11} \leq 1,00$	Very high

F. Data Collection Procedure

In the data collecting procedure, there are several techniques used:

1. Checking incoming questionnaires, because is the possibility of one's incoming questionnaires not being answered completely, errors, etc.
2. Editing, doing back check on data, and correcting the data if there is an error
3. Tabulation, a process by which a chart lists all the information needed for analysis in this study

4. The final checking, checking on tabulated data as there may be an error in the tabulation process
5. Data interpretation, it is to explain the data obtained so that it is easy to understand

G. Data Analysis

Data analysis is the process of gathering, modeling, and transforming data with useful information, suggesting conclusions, supporting decision making (Moleong, 2001). In this study, data were collected using a questionnaire that is a closed-ended question. After collecting the data, it will be analyzed. After getting the questionnaire which has been filled by the participant, for the next step, the researcher will analyze the data, in a closed-ended question it needs to calculate the data, and the researcher uses the SPSS (Statistical Package for Social Science) 28.0 program. In analyzing the data, the researcher used descriptive statistical analysis by searching for data averages (mean).