

CHAPTER 3

RESEARCH METHODOLOGY

This chapter elaborates the method employed for the research and it covers the research design, the statement of the problems, the participants, the research procedures, the research instruments and the data analysis.

3.1 Statement of the Problems

The study is aimed to answer the following formulated questions:

1. How much will the implementation of personalised learning help students to improve their listening ability?
2. What are students' perceptions of the implementation of personalised learning?
3. How is personalised learning implemented in teaching listening skills?

3.2 Research Design

To answer the questions in this study, the researcher chose to employ a method that was commonly called as mixed method. Mixed method is a method that mixes both qualitative and quantitative method in one study (Creswell, 2003). It focuses on research questions that call for real-life contextual understandings, multi-level perspectives, and cultural influences (Creswell, Klassen, Clark & Smith, 2011).

Mixed method needs to be used when the problems in the study fit with the method itself, when a qualitative or a quantitative study only will not suitable enough for answering the problems (Creswell et al., 2011). This method allows the researcher to choose the methods that are best suited for the study (Kumar, 2014). Moreover he adds, when a study uses two different quantitative or qualitative methods, it can be said to be using a mixed method approach. Thus according to Kumar (2014) to be called as using the mixed

method approach, the research does not necessarily need to employ both qualitative and quantitative method at the same time. Because using multiple methods for data collection will qualify a study to be classified as mixed methods (Kumar, 2014).

This study was conducted to find out how personalised learning is implemented in the classroom, the students' perspectives towards it, as well as if it could help students improve their listening skill. Clearly, this study had three questions that comprised of two questions that needed to be analysed qualitatively, and one question which should be answered by using numbers and statistical methods, where a pre-test and a post-test would be given to the participants. Thus a mixed method study was chosen to solve the questions. Moreover, this method was chosen because the researcher would have more freedom in choosing what instruments that she needed to use to answer the questions.

Many limitations made a true experimental research design difficult if not impossible to be arranged. Kowalczyk (n.d) explained that in a true experimental research, the researcher needed to assign people in a random group and everyone had the same chance to be in the experimental group. Hatch and Farhady (1982) agrees to Kowalczyk's statement by saying that in a true experimental research, the students are randomly selected and assigned to either the control group or experimental group. Meanwhile in a quasi-experimental study, people will not be assigned randomly. They further add that since in a research we are also dealing with the most complex human's nature, quasi experimental designs are practical compromises between true experimental designs and the nature of human behaviour.

There are also some things that make the researcher cannot assign people randomly to the groups. For example when we want to ask the director of courses to assign students to different groups for the benefit of our research (Hatch & Farhady, 1982). Thinking of several aspects, such as the fact that the participants had already belonged to a certain class and the limited time for conducting the research, the researcher decided to use a quasi-

experimental research design with a pre-test, a post-test and a control group to be employed for the study (Hatch & Farhady, 1982).

Two groups were involved in this study which one was assigned to be the control group and the other one was chosen to be the experimental group. First, both groups were given a listening test to check if their English initial proficiency was equal or nearly equal. After the pre-test was conducted, the experimental group was given a series of treatments of personalised learning before a post-test was finally conducted. The control group, on the other hand, was only given some lessons without special treatments as what the experimental group had.

The following represented the design of the study:

$$\frac{A1 \times A2}{A1 \quad A2}$$

notes A1 : Students' score in listening pre-test
 A2 : Students' score in listening post-test
 X : Treatments

3.3 Population and Sample

This study was conducted at a university in Bandung. Two classes of first year English students were taken as population. Each class consisted of about 25 students or about 50 students in total, but only 48 were taken as samples to anticipate students' absence. First year students were taken as samples because they were considered to have just received listening exercises to prepare them for the national examination (UN) from their previous English teacher in 12th grade.

3.4 Data Collection

3.4.1 Research Instruments

The instruments used to collect the data for this study were questionnaires, a post-test, a pre-test and written documents (video transcriptions, field

notes, and students' PLPs). Those instruments were aimed to help the researcher to collect the data needed during the study.

The following were the instruments of this study.

a. Pre-test and post-test

The pre-test and post-test were conducted to measure students' initial listening skill in both control group and experimental group if they are equal or nearly equal and the students' skills after treatments. While the treatments were only given to the experimental group in order to find out if the implementation of personalised learning could make any difference to students' listening score in the post-test.

b. Questionnaire

The questionnaire was given to both the control group and the experimental group after all of the treatments were done. The aim of the questionnaire was to know students' opinions towards personalised learning.

The distributed questionnaire was using close-ended questions. This was chosen because it was easier for the students to answer than if open-ended questions were used. The questionnaire had 14 questions and based on the framework DfES has proposed in 2004.

Table 3.1

Questionnaire Framework

NO	MAIN POINTS	NUMBER OF STATEMENTS	TOTAL
1	Assessment for Learning (AfL).	1-8	7
2	Effective teaching and learning.	9-14	7
TOTAL QUESTIONS			14

(Adapted from DfES framework of personalised learning, 2004b)

A Likert Scale was used to score the questionnaire. However instead of providing five different answers, this scale only provided four different responses for each statement. The “uncertain” response was eliminated to avoid students from choosing neutral responses. Thus, there were only four responses: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD) in the questionnaire.

c. Written Documents

The written documents (video transcriptions, field notes, and students’ PLPs) were used to gather data to answer the research questions. Videos from in all of the meetings were taped, transcribed and then analysed. The video tapings were done to record the natural interaction in the classroom which lasted for about 90 minutes for each meeting. The video taping itself were done five times in each class during the study.

In this study, a classroom observation was used to collect the data related to the implementation steps of personalised learning in the classroom. An observer would be present at the time the researcher was implementing the method. The observer was there to help the researcher to observe the classroom. The one who observed the students’ learning process was given some briefings about the method to make sure that the observer understood personalised learning better. Since the researcher was not involved at all in the observational process, the type of observation done was a non-participant observation.

The non-participant observation is the process of enabling the researcher to stay as an outsider and let the researcher watch the natural interaction as well as describing the practices of the everyday life (Fitzpatrick & Boulton, 1994). The reason why the non-participant observation was chosen because it provided the

neutrality and objectivity of the interaction and judgement (Choudhury, n.d) and to avoid what was called as the Hawthorne effect.

The following checklist was used as a guideline for the teacher when she was doing the classroom observation.

Table 3.2

Observation Checklist Guidelines

No	Activities	Yes	No	Evidence
1	Students create a learning plan (personal learning plan/ PLP)			
2	Students choose to work in a group or individually			
3	Students have more choice and voice in learning (self assessing themselves through the PLP)			
4	Teacher identify students' misconceptions			
5	Teacher gives clear instructions			
6	Teacher interacts with students			
7	Teacher manages the time well			
8	Teacher knows her aims in the classroom			

Adapted from Coe, et.al (2014), Bray and McClaskey (2015)

The classroom observation guideline itself was adapted from Bray and McClaskey (2015) and Coe, et.al (2014). Mainly, the observed activities in the classroom were related to students and teacher's activities when personalised learning was implemented during the lesson. These field notes were described and narrated later in the research findings.

3.4.1 Research Procedure

The research procedures included administering pre-test and post-test, conducting treatments, and distributing questionnaires. After all of the steps were done, the collected data were analysed and described for a further explanation.

3.4.1.1 Administering a pre-test

A pre-test was administered to find out the students' initial listening ability. It was given at the first meeting before any treatments were done. The students were asked to listen to a recording played by the teacher and answer a couple of questions based on the video. The recording was a compilation of six different recordings which was played only twice during the pre-test.

3.4.1.2 Conducting treatments

During the treatments, the researcher acted as the teacher. Before the teacher did the first treatment, the teacher was instructed to give the students materials related to recount text by the real lecturer. In order to meet this, the teacher sorted and chose some videos about past events, such as videos about holiday and 'draw my life' of popular artists. The next thing the teacher did was uploading the videos to an online storage so the students may choose and download the videos that they want to use in the first meeting. To deal with some students who had no internet at home, the teacher had given the videos to the chairman of the class so he could distribute the videos to his classmates as well as putting all of the videos into a flash disk.

Firstly, in the first meeting, the teacher gave the students a personal learning plan (PLP) sheet. In the PLP sheet, the students could write the difficulties they had as well as their plans to solve the problems. After that, the teacher asked the students to think of the difficulties they usually had when they were doing a listening exercise. The teacher also gave them examples of difficulties that were commonly mentioned, such as the

speech speed and background noises. Next, the teacher asked the students to write down their own difficulties in their own personal learning plan sheet as well as their plans to solve them. Then, the students were instructed to watch a video that they had chosen before while anticipating the difficulties they usually had and doing an exercise based on the video. Most of the students used their own phone, laptop or tablet to play the videos. Some of them also shared their devices with their friends so everyone could watch the video in the classroom.

In the next meetings, the students were mostly still instructed to do the same thing as in the first meeting. They were also always reminded to do their plans whenever or wherever they like.

The following table shows the research timetable for this study.

Table 3.3
The Research Timetable

No	Activities	Meeting(s)				
		1	2	3	4	5
1	Introduction and administering pre-test	√				
2	Treatment 1		√			
3	Treatment 2			√		
4	Treatment 3				√	
5	Administering post-test and distributing questionnaire					√

The following is the summary of the topics given in both classes during the teaching periods.

Table 3.4

Lesson Summary

Date		Topics
Experimental	Control	
1st meeting 13 October 2015	1st meeting 14 October 2015	My Vacation Story
2nd meeting 20 October 2015	2nd meeting 21 October 2015	Draw My Life
3rd meeting 27 October 2015	3rd meeting 28 October 2015	Detective Conan

3.4.1.3 Conducting a post-test

The aim of this was to evaluate students' listening ability after they were given the treatments. The post test was conducted after all of the treatments were given. The form of the post-test was similar to the one conducted in the pre-test. The students were asked to listen to a compilation of six different recordings and answer 30 multiple choice questions. The recording was only played twice and the post-test scores would not only be a part of the researcher's data but also would be used as their middle test scores.

3.4.1.4 Distributing questionnaire

Distributing the questionnaire was aimed to discover students' perceptions of personalised learning. The questionnaire was given right after the post-test was done in both classes. The questionnaire was written in Indonesian to make the students easier when they are giving their opinion for each statement. The questionnaire itself had 14 statements and the students only had to put a check in one of the boxes according to their opinion of each statement.

3.4.2 Data Analysis

Pre-test and post-test results were the main instruments to collect the quantitative data. These data were analysed using SPSS application for Windows 7 and presented in the form of a graph. The data gained from the questionnaire were analysed using SPSS 19.0 as well.

The gathered pre-test and post-test data would be analysed using either parametric or non parametric test. The data showed normal distribution, thus a parametric test would be used.

Meanwhile the questionnaire and written documents were used to gather the data related to the qualitative part of this research. Alwasilah (2000) explained that to interpret the raw data, the data were analyzed in three steps: coding, categorization, and interpreting the data. Thus, the data gathered from the questionnaire and written documents were presented in the form of descriptive explanation to fulfil this requirement.

3.4.2.1 Homogeneity of Variance Test

When the pre-test and post-test results were collected, the homogeneity of variance needed to be tested. This was tested by using Levene Test Formula in SPSS 19.0. The procedures were as follows.

Firstly, the researcher stated the hypothesis between the two groups where H_0 meant the data between both of the group were homogenous. Secondly, the homogeneity of the data were calculated using a Levene's test. Lastly, the probability (Asymp. Sig) for testing the hypothesis were compared. If the significance value exceeds the level of significance which was 0.05, the findings, then H_0 would be accepted. However, H_0 would be rejected if the significance level was below 0.05.

3.4.2.2 Normality Distribution Test

The aim of this test was to measure the normality of score distribution of pre-test and post-test. Kolgomorov-Smirnov's statistic calculation was used to test the normality as explained below.

First, the hypothesis was set, where H_0 means the normal distribution between the experimental and the control group and the level of significance was also set at 0.05. Next, the data distribution was analysed using a Kolgomorov-Smirnov test. After that, the data were compared. If the probability was greater than 0.05, then the null hypotheses were accepted. However if the probability was less than 0.05 then the null hypotheses were rejected.

3.4.2.3 Independent T-test

An independent t-test was used to find out the differences between the pre-test and the post-test scores. The test itself was calculated by using SPSS 19.0 for windows. The steps for conducting the test were as follows.

First, the hypothesis was set. For this test, the hypothesis was H_0 : there is no significance difference between the pre-test and post-test scores. Next, the significance level was set at 0,05 and then the data were calculated using SPSS.

3.4.2.4 Effect Size

Effect size was calculated manually to see how far the treatments could make any difference between both classes, especially about how far they could impact the experimental group's scores. The larger the value of the effect size, the better the impact of the treatments were. The formula that was used to count it was

$$r = \sqrt{\frac{t^2}{t^2 + df}} \quad \text{notes : } r = \text{effect size}$$

t = the obtained t from the t -test

df = degree of freedom $[(N_1 + N_2) - 2]$

The following table gives a better explanation of effect size categorisation based on Coolidge (2012).

Table 3.5

Effect Size Classifications

Effect Size	r Value
Small	0,100
Medium	0,243
Large	0,371

Based on Coolidge (2012)

3.4.2.5 Gain Test

As the name, gain test is used to see how much gain the students get after a treatment was conducted. It is used to have a rough analysis of the effectiveness of course in promoting a conceptual understanding (Hake, 1998). A gain test can be calculated by using the following formula.

$$\frac{G}{G_{max}} \quad \text{Note : } G = \text{post-test score} - \text{pre-test score}$$

$$G_{max} = \text{max score} - \text{pre-test score}$$

Table 3.6
The Gain Criteria

Gain Value	Criteria
$g > 0,7$	High
$0,3 < g \leq 0,7$	Medium
$g \leq 0,3$	Low

Hake (1998)

3.4.2.6 Analysis of Written Documents

The analysis of the written documents was needed to achieve a deeper understanding of this study. Moreover, the data gained from this instrument could support some of the findings for this study.

Additionally, the students' personal learning plans, the teacher's field notes and video recordings were also analysed to give the researcher an evaluation of the implementation of the research. The transcribed videos were marked and compared to teacher's notes. The teacher's talk was marked as T, while student's talk was signed as S.

The data gathered from these instruments are very beneficial to help the researcher to elaborate the findings of this study and this could benefit the researcher when writing the next chapter of this study.

3.4.2.6 Analysis of Classroom Observation

The data were gained from the recorded videos. The recorded videos were transcribed and labelled T for teacher talk and S for students talk. The videos were very beneficial for the researcher to find out more about the students' and teacher's behaviour during the sessions. They would be played again as well to be compared to the teacher's observation sheet.