CHAPTER III
RESEARCH METHODOLOGY

This chapter describes the method used in this study. This chapter also explains the research procedures undertaken to answer the two questions contained in chapter 1. It covers all points, including research design population and sample, variable of research, research instrument, validity and reliability, research hypothesis, data collection, and data.

3.1 Research Design

This study uses one-group experimental pretest-posttest design as a method by quantitative approach to find out the improvement in students' speaking skills through the use of puppet in storytelling. According to Sugiyono (2006) experimental research is research that aims to find cause-effect relationships between variables under controlled conditions. It is aims to find out whether or not the effect of the variable studied (Arikunto, 2010). Besides, quantitative approach is the research that emphasizes numbers in data collection and analysis (Bryman, 2001). The data that has been obtained in the form of numbers, can be calculated and carried out by computers through the use of statistical packages (SPSS) that can save energy and resources (Gorard, 2001 in Connolly, 2007).

The researcher conducted one group experimental through pre-test post-test, and interview. In one group pre-test and post-test design was observed not only after being exposed to a treatment, but also when applying the pre-test. As mentioned by Cresswell (2008) the pre-test measure the characteristics that the researcher assess for participants in the experiment before the group receives treatment, while the post-test test some of the characteristics assessed for participants in the experiment after treatment. The following are test illustrations from one group pre-test and post-test design (Sukardi, 2003).

Table 3. 1
The Ilustration of Research Design

Pre-Test	Treatment	Post-Test
Y1	X	Y2

Y1: Pre-test before using puppet as a media in storytelling.

X: Using puppet as a media in storytelling treatment.

Y2: Post-test after using puppet as a media in storytelling.

The pre-experimental research procedure that uses pre-test and post-test design one-group in this study is described as follows:

1. Administering a pre-test (Y1) with the aim of measuring the speaking skills of ninth grade students of junior high school before applying the treatment.

2. Applying students' speaking skills to the experimental treatment (X) by using puppet as a media in storytelling for ninth grade students of junior high school.

3. Administering a post-test (Y2) with the aim of measuring the speaking ability of ninth grade students after applying treatment.

The researcher used pre-experimental design with qualitative approach in this study, to find out the improvement of students' speaking skills by using puppet in storytelling.

3.2   Population and Sample

This study was conducted at a Junior High School in Bandung. This school was chosen for two reasons. First, the school allowed the researcher to conduct the research, therefore, this can increase eligibility for the researcher. Second, the school has fulfilled the criteria needed in this study, among them, there are students who are willing to be participant in this research, English teacher has agreed that the class is used for conducting the study and the material delivered by the

researcher is in line with that delivered by the teacher. During the study, the researcher took one class of grade nine. The total population is thirty-three students in one class. On this occasion, the teacher also explained at the beginning of the meeting about puppet, its function, and how to use them.

The sample determined by the researcher is ten students which is part of the total population in the study. Sampling is a process carried out to select samples correctly from the population so that it can be used as a valid representative. Some students included in this sample conducted interviews with the researcher to obtain data. This technique is carried out by determining the subject as a sample that is not based on strata or randomly but is based on consideration of specific objectives.

3.3 Variable of Research

Variables are objects of research that are of concern to the study. There are two types of variables, the dependent variable (Y) and the independent variable (X). The dependent variable is the focus variable whose existence is influenced by other variables while the independent variable is a variable that affects the cause of changes in the dependent variable (Widyanto, 2013). In this study, here are two variables in it, including them;

1. Independent variables (X) is variable that affect changes in the dependent variable. The independent variable in this study is the use of puppets in storytelling. During experimental research conducted by teaching narrative texts in the form of storytelling using the puppet.
2. The dependent variable (Y) is a variable that is influenced by the independent variable. The dependent variable in this study was an increase in students' speaking ability in storytelling the using puppet.

3.4 Research Instrument

The instrument has an important function in research to measure variables in research. In addition, in developing the instrument consists of several steps such as identifying the purpose of the instrument, reviewing the literature, determining questions and testing questions with individuals who are similar to them (Cresswell,

2012). In this study, the instruments used by the researcher were pre-test, post-test, and interview. The test is a form of activity that aims to obtain information (Isnawati, 2012). The expected information varies from situation to situation. This instrument is used to determine students' speaking skills scores. The test is conducted by the researcher to get a score from students on each test that occurs.

In this test, there are pre-test and post-test. Both pre-test and post-test have the same topic and type of the text. The selected text title has been adjusted based on the material in the Junior High School curriculum. Pre-test is given to measure their speaking skills before giving treatment, meanwhile post-test is given after giving treatment. Types of pre-test and post-test are given in the form of storytelling in groups. This test is to find out the improvement of students' speaking skills individually.

3.5   Validity and Reliability

The first criterion of good test is validity which aims to find out the extent to which a test is measured, what it is should be measured. It means, the use of valid instruments is very important to determine the validity of the data (Gay, 1992). It is the most important consideration in evaluating measuring treatment. Furthermore, validity serves as a measure of the extent to which the instrument measures what is claimed to be measured (Ary, 2006). To measure whether the test has good validity, there are several types of validity tests including content validity, construct validity, and face validity. In this study, the researcher have chosen content validity which refers to the validity seen from the contents of the test as a representation of language skills and the test carried out appropriate with grade. A test that is said to have content validity if the content is a representative example of structural language or content that is relevant to the purpose of the test (Isnawati, 2012). In addition, the researcher made a test based on the objectives of the syllabus so it does not go out of content.

Reliability is a test its consistency. Thus, reliability is a measure of the accuracy, consistency, and fairness of scores that result from the administration of a particular examination (Johnson, 2001). In this study, reliability is a required

characteristic of each test for it to be valid at all and the test must be reliable as an instrument measurement. Furthermore, reliability is expressed numerically, it is usually because of the high coefficient it indicates high reliability. In this study, there were significant differences between pre-test scores and post-test scores. To measure the reliability of the test, researcher provide tryout to see whether the test results are reliable or not. Tryout are conducted to ensure that the instrument is clear and the test is not too easy or too difficult.

Before giving a post-test, the researcher have made a test to be tested by students knowing the extent of instrument reliability. Then the researcher analyzed each instrument item and counted it using SPSS version 20.0. Then the computational results can be seen below:

Table 3. 2
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.606	.614	5

Normality test is a vital condition in parametric analysis. The aim is to find out whether the data is normally distributed or not. Data normality is important, to know data in normal distribution, data is considered to represent the population. The researcher used one of the normality testing methods performed on pre-test and post-test scores that were obtained during the research. The data attached below is the result of normality test;

Table 3. 3
Tests of Normality

Saphiro-Wilk		
Statistic	df	Sig
923	32	026

The table 3.3 shows that the result normality testing by using sample Shapito-Wilk. According to Field (2005), if the value (Asymp.Sig) is higher than 0.05 (Asymp.Sig > 0.05) the assumption of normality is accepted. Moreover, as explained above, two tests consisting of pre-test and post-test are valid. The test consisted of 32 students, both in the pre-test and post-test.

3.6   Research Hypothesis

The hypothesis is a prediction or explanation that can be tested, which is a brief summary of the researcher' predictions about the research findings. Intended, to test hypothesis in the research or can be called alternative hypotheses (Ha), in addition the researcher must also formulate what is called the null hypothesis (Ho) (Fraenkel & Wallen, 2009). Furthermore, the null hypothesis predicts there is no positive or negative relationship between storytelling and using puppets to improve students' speaking skills.

1.7   Data Collection

To obtain data in this study, the researcher conducted pre-test, treatment, post-test, and interview. This test is conducted to measure students' speaking skills in learning from the beginning to the end of the study. In addition, interviews were conducted to determine students' perceptions about the use of puppets as media in storytelling.

The researcher have carried out pre-test and post-test including starting from the pre-test as a starting point to find out students' skills in learning before the meeting is held and post-test to see the progress of students during using puppet in learning. During the study, the researcher should consider the students' characteristic in choosing teaching material, time arrangement and media. In addition, the researcher can choose the media type. One of them is the puppet that will be used for teaching activities in this study. The researcher can also ask students to prepare themselves in the previous class. So, that students acknowledge and prepare first.

After the researcher is convinced that the students has understood the type of learning, it can ask students to directly practice as a way of measuring their ability to speak English. From the pre-test and post-test through treatment also held to find out an improvement in students storytelling through the puppet.

The researcher directs students to be able to use puppet as a media for storytelling delivered in front of the class. Students should showcase his/her talent performance through storytelling using puppet that their stories and characters have freely chosen according to their interests. In this case, the media is considered to be able to help students to improve their speaking skills.

The data of this research was carried out through several techniques, such as, pre-test, treatments, post-test, interviews, and documentation. The instruments used in this study were in the form of interview guidelines, and speaking rubrics assessment. The researcher also use the camera for photos and videos to document during the learning process.

3.5.1 Test

This research has conducted tests in two forms, which are pre-test and post-test. The researcher conducted a speaking test to obtain data in this research. Speaking tests are also conducted to obtain information about students' speaking skills during the use of puppet in the teaching and learning process of speaking.

Pre-test was held to measure students' initial knowledge and abilities about narrative texts. The researcher conducts a pre-test by asking students to choose the title of the narrative text freely. The researcher at the beginning only conveyed the type of narrative text that would be used as a guide by students. Besides, post-test was held to examine whether the use of the puppet in storytelling was effective in improving students' speaking abilities. Moreover, to carry out the post-test the teacher has given the title of narrative text along with the puppet and students are asked to make stories according to their respective roles.

The researcher uses the scoring rubric of speaking to find out the score of students' speaking performance. After that, the results are applied to see whether

there is improvement after the treatment or not. The following is the scoring rubric framework used during the test.

Table 3. 4
The Scoring Guide of Speaking Assessment

(1) Scale Criteria

Aspect to be Evaluated	Category				
	Very Poor 1	**Poor** 2	**Average** 3	**Good** 4	**Very Good** 5
Pronunciation	Many wrong pronunciation	Frequent incorrect pronunciation	Occasional errors in pronunciation	Some errors in pronunciation	No errors/minor errors
Grammatical Accuracy	No mastery of sentence construction	Major problems in structure	Several errors in structure	Minor problems in structure	Demonstrate mastery of structure (few errors)
Vocabulary	Little knowledge of English words	Frequent errors of word choice	Occasional errors in pronunciation	Minor errors in word choice	Effective/appropriate word choice
Fluency	Dominated by hesitation	Frequent hesitation	Occasional hesitation	Minor hesitation	No hesitation
Interactive communication	Message unclear	Disconnected idea	Ideas stand out but loosely organized	Clear and organized ideas	Well organized and clear ideas

Adopted from: Mukminatien. 2000. *The advantages of using of an analytic*.
TEFLIN Journal, Volume XI Number 1.

Table 3. 5
Description of Scoring Assessment

Aspects to be Evaluated	Description
1. Pronunciation	1. Sound pronunciations and individual words. 2. Pronounced sentences with the right intonation and correct

2. Grammatical Accuracy	The use of structure accurately, or how students make their speech true
3. Vocabulary	The ability of students to choose the right words and how to solve problems when students cannot find words that match by explaining around the word.
4. Fluency	1. The ability to keep the conversation going 2. Read the text smoothly without hesitation or repeating words / lines.
5. Interactive Communication	The ability to get meaning that crosses the listener.

Adopted from: Mukminatien. 2000. *The advantages of using of an analytic*.

TEFLIN Journal, Volume XI Number 1.

The scoring guide above was adopted from the journal title the advantages of using of an analytic consists of two parts (1) the scale criteria to find out the categories described above in accordance with the aspects that have been determined and (2) a description of the aspects of speaking skills that are subject to assessment.

In this study, students were assessed through the categories described above. The assessment is carried out by the researcher after making sure the student can be adjusted to the categories already contained in the scale criteria chart. This is different from previous studies, which conducted two assessments with different scores. Two sets of scores correlate to find out reliability among inter-rater. Therefore, the researcher make a difference with previous studies, because in this study during the assessment only carried out by one person, then there is no comparison that must be made.

The research carried out in five meetings, four meetings for pre-test and post-test, one meeting to conduct interviews based on selected samples. The researcher took five meetings to retrieve the data briefly. There are two meetings for treatment. In addition, to avoid miscommunication between the researcher and students, at each meeting the researcher always describe the purpose and process of activities in detail.

3.5.2 Interview

The interview conducted in this study aimed to gather information about perceptions, responses, difficulties, and expectations of students regarding the use of puppet in learning the ability to speak during observation. Patton (1990) states that informal conversation interviews are the most open interview approach because they are very responsive to individual differences and situational changes. Therefore, this interview was conducted in an informal way in order to get information as expected by the researcher. The main task in an interview is to understand the meaning of what is being said by the person being interviewed (McNamara, 2009).

The interview is a classic way of research for conducting conversation that explore focus areas. This describes them as "purposeful conversations" the number of people chosen for the interview depends on the time available (Burgess, 1984). The researcher chose representatives from each group of ten students as respondents who were interviewed after the observation was made. It was delivered in English language followed by Indonesian language, to make it easier to interpret about what the researcher said because the participants were students, and can easily get responses from them according to what was asked. The questions are presented by the researcher to students and answered verbally by students. The interview was conducted based on the following question raised by the researcher;

Table 3. 6
The Questions of the Interview

No.	Questions
1.	What do you think about learning English?
2.	What do you know about storytelling?
3.	Where do you usually do storytelling?
4.	Did you concern about grammar, vocab, and fluency during storytelling?
5.	Are you familiar with puppet?
6.	How is your opinion in using puppet for storytelling?

7.	Does puppet make it easier for you to learn English?
8.	When do you like to use puppet?
9.	What is your favorite part in learning English using puppet?
10.	Does a puppet make you improve in English skills?
11.	What do you think of the teacher who uses puppet during the learning process?

1.8 Data Analysis

After completing data collection, the next step in this research is analyzing the data. Data analysis is an explanation of the type of statistical analysis that will be used during research (Cresswell, 2009).

In experimental design, data analysis is a one-group experiment, used pre-test and post-test. To answer the research question one, the researcher analyze data by conducting tests on students. In this study, the researcher used speaking test to measure students' abilities in storytelling. To assess the test, the researcher used analytic scores which were categorized by several categories by Mukminatien. As explained above there are five aspects, including; pronunciation, grammatical accuracy, vocabulary, fluency, and interactive communication. The whole aspects are combined in the assessment of one student.

The table below is a detailed description of the distribution of scores according to the criteria. It aims as a final criterion for each student in accordance with the value obtained.

Table 3. 7
Criteria of Score

No	Total Score	Criteria
1	90-100	Excellent
2	70-89	Good

3	50-69	Fair
4	30-49	Poor
5	0-29	Low

Students have received scores that will later be seen about their progress during learning. Then, the criteria described above is a measure of students' skills starting from pre-test, treatment, and post-test. The total score will be matched with the criteria to find out how the student learning process in storytelling using puppet.

During this research, several activities were carried out, which are; first, the researcher conducted a pre-test. Then after the pre-test, the researcher provides treatment. The researcher was taught storytelling by using puppets as a media. After treatment, students were tested again. Finally, the means of the two tests were compared to find that there were significant differences. The researcher used the t-test to find the average pretest (x) and post-test average (y), the formula is;

$$x = \frac{\sum x}{N} \qquad y = \frac{\sum y}{N}$$

In detail;

$\sum x$: Total Score of pre-test

$\sum y$: Total score of post-test

N   : Total number of students

Then, the researcher find out the mean that distinguishes pre-test post-test, the formula used was as follows:

$$Md \quad = \frac{\sum d}{N}$$

In detail;

Md   : The mean of differential pre-test and post test

Σd   : Sum of different between post-test and pre-test

N   : Total number of students

To analyze research question two, the interview was held at the end of the meeting to determine students' perceptions while learning to use puppets in storytelling. These steps are applied to find out the research questions two. The researcher in the process of observation in charge of providing materials directly to students while observing the activities of students in the classroom by summing up important points that occur during the learning process. Then, the teacher and student interviews are immediately recorded to make the process easier to remind and understand. The questions that will be asked during the interview about the students' perception in using puppet as learning media. After the interview was carried out in a non-test form. The researcher conducted the test in three times, namely the one session of pre-test and two sessions of post-test. In post-test and post-test to see the development of students' skills in speaking conducted twice to achieve maximum scores.

3.9   Concluding Remarks

This chapter has presented methodology related to the topic of this study. This research was conducted on the basis of two research questions. The method used in pre-experimental design by quantitative approach is research design, population and sample, variable of research, research instrument, validity and reliability, research hypothesis, data collection through (pretest, post-test and interview) and the last is data analysis.