

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter provides the methodological aspects. The discussion involves the research method, research design, sample, hypothesis, participants, research procedures, data collection, data analysis, and clarification of terms.

#### **3.1 Research Method**

The method used in this research was the experimental method with single subject research.

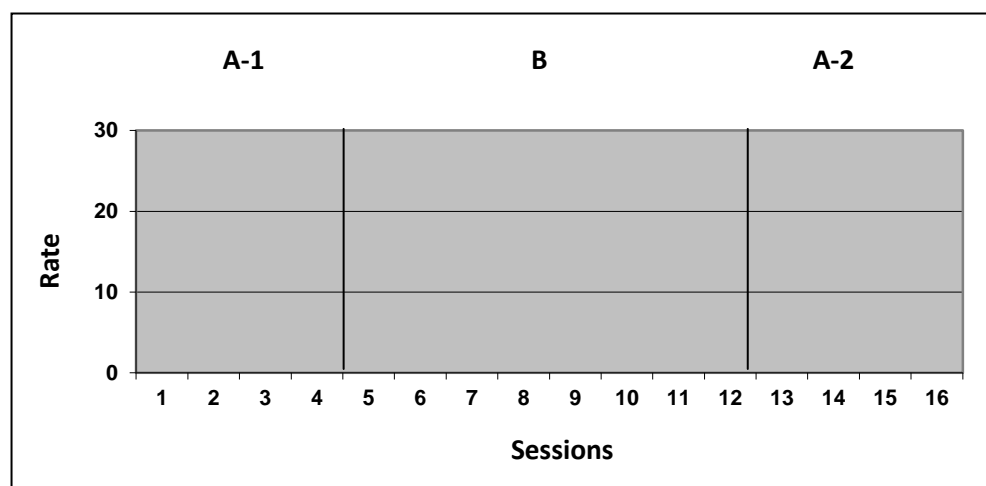
Fraenkel (2012, p.265) states that “The experimental research is the only type of research that directly attempts to influence a particular variable, and when properly applied, it is the best type for testing hypotheses about cause-and-effect relationship.” This method is used with the consideration of the willing to observe a phenomenon that appears accurately, until that is resulted with the finding of the relationship between cause and effect that the phenomenon appears. Moreover, Fraenkel (2012, p.302) also states the strength of the single subject research.

Researchers who wish to study children who suffer from multiple disabilities (who are both deaf and blind, for example) may have only a small number of children available to them, say six or less. It would make little sense to form two groups or three in such an instance. Further, each child would probably need to be observed in great detail.

The use of this experimental method aims to see the influence of storytelling towards cerebral palsy students for their ability in mastering vocabularies.

### 3.2 Research Design

This research used A-B-A design. The data process in this design was used to investigate whether or not the storytelling technique would improve the students' ability in mastering the English vocabularies by using single subject research. A-B-A design has three steps, those are: A-1 (baseline-1), B (treatment), A-2 (baseline-2).



**Chart 3.1**  
**A-B-A Design**

A-1 = Baseline-1

It is the condition where the vocabulary mastery of cerebral palsy students before the treatment (pre-treatment).

B = Treatment

It is the treatment condition where the vocabulary mastery of cerebral palsy students during the treatment sessions using storytelling technique.

A-2 = Baseline 2

It is the condition of the student's ability in mastering the vocabulary after the treatment (post-treatment).

### **3.3 Sample**

The sample of this research was taken from the participants' change of vocabulary mastery. They were given six stories in mastering some vocabularies of nouns and verbs. After the treatment, it was expected that their vocabulary mastery is significantly improved.

### **3.4 Hypothesis**

The hypothesis that guided the data analysis of conducting this research was that the storytelling will improve the ability of cerebral palsy students' English vocabularies.

### **3.5 Participants**

This research took place in one of SLBs in Bandung. Two students with cerebral palsy were the participants of this research. The two participants in this research are 13 years old. They are in eighth grade of junior high school. These cerebral palsy students are classified as cerebral palsy spastic quadriplegia. It means that a whole body is affected. Both of them use wheelchairs, one of them can use his hands little bit to use the wheelchair; another participant should get help from others to operate it.

### **3.6 The Research Procedures**

In this research, the research procedures that were used to gather the data for A-B-A design are:

- a. In the beginning of baseline-1 (A-1), the pre-tests were given to see the prior knowledge of the students with cerebral palsy in considering the

choice of the stories that delivered to them. The pre-tests consist of one part. They were oral tests by asking the participants separately the English language of ten vocabularies of nouns and verbs. The participants were given three pre-tests to see their prior knowledge accurately.

- b. In the treatment sessions (B), the storytelling was given to the participants of this study in six sections. The stories were ‘Where’s Spot?’, ‘The Hungry Dragon’, ‘Where’s the Drug Store?’, ‘Dear Zoo’, ‘The Moon and The Cap’, and ‘Gingerbread Man’. After each of the stories given, the cerebral palsy students were given a test of ten vocabularies that were belonging to the story.
- c. After the treatment of storytelling given, the post-test was held. It was in baseline-2 sessions (A-2). It was also an oral test of asking the English language of ten vocabularies to see whether or not there is an improvement of their ability in mastering the vocabularies even they were no longer in the treatment. The measurement principal of this step was the same as in the baseline-1 sessions.

### **3.7 Data Collection**

The data in this study were collected from the responses of the participants. This study used several techniques to support the collection of the data. Those are:

#### **3.7.1. Classroom Observation**

The first technique in collecting the data was classroom observation. According to Fraenkel, Wallen and Hyun (2012, p.445), this technique is used to observe a more accurate indication of participants’ activities by observing how people act or how things look. The classroom observation took place in an English

classroom in one of special needs schools for students with physical disability in Bandung for two weeks. It was one meeting in the classroom for each week. The researcher took field-notes while observing the class activities to make a record of what happen in the observation settings. It was used to give detailed information about the students' characteristics and the teaching learning process style for deciding the strategies in doing the experiment, and the stories selection.

### **3.7.2. Test**

To see the prior knowledge of the participants, they were given the test in baseline-1 (A-1). The result of the test was the consideration to choose the stories that delivered to them. Furthermore, they were also given the test in the treatment (B). After the treatment, they were given the test again in baseline-2 (A-2) to see whether or not storytelling is effective to improve English vocabulary of students with cerebral palsy.

In every test, there were ten vocabularies that should be tested. There were two points that were highlighted for the students' assessment; the content and the pronunciation. The choice of vocabularies was based on the story given. There were several vocabularies that were different between pre- and post-test. But they are in the same classification based on 'Word by Word Picture Dictionary' by Molinsky & Bliss (1994).

### **3.7.3. Document Analysis**

This document analysis technique was the technique where the researcher collected, recorded information and all important documents about the participants in supporting the research. The documents were psychological reports and physical reports of both students.

## **3.8 Data Analysis**

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This section explains the steps after collecting the data to come up with the answers to the research questions. The analysis of the data was conducted through several steps.

According to Sunanto (2005, p. 121), there are three main points in analyzing the data with single subject research: the creation of graphs; the use of statistical descriptive analysis; and the use of visual analysis.

Two steps were used in analyzing the data. There are analyses within particular condition, and between the conditions.

In analyses within a condition, the data are analyzed in one condition, for instance, in only baseline condition. The components that were analyzed within condition include:

a. Condition Length

The interval length represents the amount of the session in every stage such as in Baseline-1 (A-1), Treatment (B), and Baseline-2 (A-2).

b. Estimate of Trend Direction

Estimate of trend direction is the way to see the development of target behavior by using split-middle to make an increase line, parallel, or decrease. Firstly, the researcher split the baseline stage or treatment into two parts. Second, each of the right side and the left side are divided into two parts. Lastly, the researcher made a horizontal line that connects meeting point between the right split line and the left split line.

c. Stability Trend

In determining the stability trend of cerebral palsy students' ability in baseline stage and treatment stage used stability criteria of 15%. In general, if 80% - 90% of the data is in the range of 15% upper and lower the mean, it can be said that the data is stable (Sunanto, 2005, p.97).

In calculating the stability trend, the researcher firstly calculated the range stability (the highest score was multiplied by 0.15). Second, the mean level was calculated (amount of the score is divided by the amount of the session). Third, the upper limit was decided (mean level is added with a half of range stability). Fourth, the lower limit was then also calculated (mean level is subtracted with a half of range stability). Last, the data point of stability trend could finally be decided (the sum of the data that included in the range of upper limit and lower limit was counted and the researcher divided it with the amount of the session).

d. Data Path within Trend

In deciding the data path within a trend, it was still the same with the trend direction. In that case, the result of data path was the same with the trend direction.

e. Level Stability and Range

In defining level stability and range, the researcher put the lower score and highest score from baseline-1 (A-2), treatment (B), and baseline-2 (A-2).

f. Level Change

In defining level change, the researcher put the first data (first session) and the last data. Then, the difference from both data (the last data was subtracted with the first data) was counted and the direction was determined, whether it is an increase (+) or a decrease (-).

In analyses between conditions, the data was analyzed between two conditions of baseline-1 (A-1) and treatment (B) for instance. The components that were analyzed include:

a. The Total Number of Changed Variable

The total number of changed variable determined the data variable that was changed from baseline (A) condition to the treatment condition (B).

The data variable that was changed was 1.

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b. The Change in Trend Direction and Effect

In determining the change in trend direction, it was done by comparing the trend direction of baseline (A) and treatment (B), then, negative effect or positive effect was determined.

c. The Change in Stability Trend

The change in stability trend compared the change of stability trend in baseline (A) stage and treatment (B).

d. Change in Level

The change of level can be seen from the change between the last session in baseline-1 (A-1) and the first session in treatment (B). The difference from both data was counted (the first session in treatment was subtracted with the last session in baseline-1) and the direction was determined, whether the direction is an increase ( + ), a decrease ( - ), or stable ( = ).

e. Percentage of Overlap

Overlap is the similarities between baseline (A) condition and treatment condition (B). In other words, the least the percentage of overlap, the least also the effect of intervention towards the target behavior. Overlap in baseline-1 (A-1) and treatment (B) is the way to see whether in treatment (B) stage there is a score in between upper limit and lower limit of baseline-1. Overlap in treatment (B) and baseline-2 (A-2) is the way to see whether in baseline-2 (A-2) stage there is a score in between upper limit and lower limit of treatment.

### **3.9 Clarification of Terms**

In this section, the clarification of some terms used in the research will be presented in the following. Those terms in this case can be defined as:



- a. Storytelling is one of the teaching techniques to master English vocabulary by telling the students with cerebral palsy six stories and highlighting some vocabularies by doing some repetitions in the story given. The stories are 'Where's Spot?', 'The Hungry Dragon', 'Where's the Drug Store?', 'Dear Zoo', 'The Moon and The Cap', and 'Gingerbread Man'.
- b. Vocabulary is noun and verb words in the story given which were highlighted and should be mastered by the students with cerebral palsy.
- c. Cerebral Palsy is a physical disability that is caused by brain damage. The students with cerebral palsy have not only a disorder movement and posture that can retard their activities, but also some of them have a disorder with their cognitive skills.