

CHAPTER III

RESEARCH METHODOLOGY

A. Research Variables

According Y.W, Best edited by Sanpiah Faisal called the research variable is conditions by the researchers manipulated, controlled or observed in a research. While the *Direktorat Pendidikan Tinggi Depdikpud* explained that the research variable is the everything that will be the object of research observation. Of understanding can be explained that the research variables include factors that play a role in the event or phenomenon to be studied.¹ In this experimental research variable is divided into two independent variables and dependent variable. Independent variable (Y) are the conditions or characteristics by the researchers manipulated in order to explain the relationship with the phenomenon observed. Therefore, the function of this variable is often called a variable effect, because other variables influence function. While the dependent variable (X) is a condition or characteristic that appears when changing or introducing research, modifiers, or replace independent variable. According to the function variable is influenced by other variables, therefore, often called the influenced variable or affected variable.²

Independent variable (Y) is a stimulus variable or variables that affect other variables. Independent variable is a variable that the variable is measured, manipulated or selected by the researcher to determine their relationships with symptoms were observed. While, dependent variable (X) is a variable that gives the reaction or response in relation to the Independent variable. Variables are

¹ Cholid narbuko dan Abu Achmadi, *Metodologi Penelitian*, (Jakarta: PT. Bumi Aksara, 2005), p. 118.

² *Ibid*, p. 119.

observed and measured to determine the effect caused by the independent variable.³ In this research, researchers identified the independent variable (Y) and the dependent variable (X).

In this case, Meditation as an independent variable (Y) and concentration as the dependent variable (X). In this research meditation act as variables that affect students' concentration.

B. Operational Definition

Operational definition is a definition that makes the variables being researched become operational in relation to the measurement of these variables. Operational definition allows an abstract concept that is used as an operational making it easier for researchers to take measurements.⁴

In this research the operational limitations of the research variables the effects of meditation toward student concentration in SMK Darul Deliberation Nglumosari Bangsri Jepara are:

1. Meditation

Meditation is a technique or training methods used to train attention in order to increase the level of awareness, which in turn can bring mental processes more controlled consciously. The term meditation refers to a group exercise to limit of mind and attention.

To provide of convenience, in this research using a particular object of meditation is to focus constantly in training to improve the mood become calm and concentration increased by using several stages are relaxation, gratitude meditation, and confidence meditation.

2. Concentration

³ Jonathan Sarwono, *Metode Penelitian Kuantitatif & Kualitatif*, (Yogyakarta: Graha Ilmu, 2006), p. 54.

⁴ *Ibid*, p. 27.

Concentration is a centralize of mind or attention to something. Concentration is focusing of mind on one thing; centralize of power, strength, force, etc. somewhere. While concentration on student learning is the process of focusing on behavior change that is expressed in the form of control, use of, or the assessment of attitudes and values, knowledge and skills base that occurs in the process of learning.

To measure the concentration levels of students, researchers use the Wechsler adult intelligence scale (WAIS) test. Wechsler Adult Intelligence Scale or WAIS is the combined intelligence tests administered in a format battery individually. WAIS test to assess the areas of different intellectual abilities and create a situation that can observe aspects of personality. This test gives an overall score, as well as the specific index scores can be calculated using various combinations of sub-test. This test gives an overall score, as well as the specific index scores can be calculated using various combinations of sub-test. Wechsler intelligence scales considered is one of the best among all the psychological tests because those properties have good psychometric and produce relevant information for practitioners.

C. Types of Research

This research is a field research that uses type of experiments research. An experimental research is the research conducted by manipulation that aimed to know the effect of manipulation on individual behavior is observed. Manipulation can be a situation or a certain action was given for the individual or groups, and then sees the effect. This experiment was conducted to know the effects of caused a treatment intentionally by the researchers.⁵ In this case, the researcher conducted a research about the effect of meditation toward student's concentration in SMK Darul Musyawarah Nglumosari Bangsri Jepara.

⁵ Latpun, *Psikologi Eksamperimen*, (Malang: Penerbitan Universitas Muhammadiyah Malang, 2010), p.5.

The characteristics of the experimental research is essential, as follows:⁶

1. Deliberate manipulation by researchers. This manipulation can also be referred to treatment, intervention, and the provision of the situation. This manipulation is a free variable and is the main characteristic of an experiment as well as a differentiator with other types of research.
2. Monitor the consequences or effects that caused of a manipulation. Effect of this treatment in the form of specific targeted behaviors. In general, the effects of concern in psychology can be a physiological effects, behavioral learning, perception, and motivation.
3. Variables control effects unwanted. In this case experiment conducted on the unwanted variables, so it can be understood that the "indication" is caused by the manipulation factor.

D. Experimental Design

Experimental design is all the processes required to plan and carry out an experiment. The experimental design includes planning and sequential steps and comprehensive, as well as how the implementation of the experiment. Thus researchers can analyze the data objectively and can be used to hold a valid inference with respect to the problem under investigation. With appropriate experimental design, then setting variables and experimental conditions can be done carefully.⁷

As in this research, researchers used a single case experimental design. Single case experimental design is a design research to evaluate the effect of a treatment or intervention with single cases (Kazdin, 1992). Single case can be multiple subjects in one group or the subjects studied were single ($N = 1$).⁸ To know the effect of a treatment on this single case experimental design by

⁶ *Ibid*, p. 9-10.

⁷ *Ibid*, p. 57.

⁸ *Ibid*, p. 85.

comparing the condition or performance of the subject from time to time. The subject behavior was observed in the absence of treatment, and with treatment by turns. Observed behavior was measured repeatedly during a certain period before treatment and after treatment.⁹

Excerpted from the book *pengantar psikologi klinis* written by Suprapti Slamet and Sumarmo Markam, who mentions that according to Phares experimental design is the embodiment of behavioral approach, which prioritizes real behavior, as recommended in operant learning.¹⁰ Single case experimental design is a type of case study where the subject that researched used as its own control. It is described in the book *Psikologi Abnormal Edisi Kelima*, written by Jeffrey S. Nevid, Spencer A. Rathus, Greene Beverly.¹¹

Research with this ($N = 1$) is widely used in behavior oriented research.¹² Mark Durand in essence the book *intisari Psikologi Abnormal*, said that a single case experimental design studies where the tactic is the independent variable manipulated for an individual, allowing causal inferences taken, but has a limited power generalizability. This method involves the systematic study the same individuals on a number of different experimental conditions. People who formalized the concept of a single case experimental design as a scientific methodology are BF Skinner.¹³

Single case experimental design, both samples group as well as $N = 1$, in certain cases considered particularly suitable for human research, especially if the

⁹ *Ibid*, p. 86.

¹⁰ Suprapti Slamet I.S, Sumarmo Markam, *Pengantar Psikologi Klinis*, (Jakarta: Universitas Indonesia Press, 2003), p.160.

¹¹ Jeffrey S. Nevid, Spencer A. Rathus, Beverly Greene, *Psikologi Abnormal Edisi Ketiga*, (judul asli: *Abnormal Psychology in a Changing World, Fifth Edition*), terj. Tim Fakultas Psikologi Universitas Indonesia, (TanpaTempat Terbit: Erlangga, 2005), p. 28.

¹² Norman D. Sunberg, Allen A. Winebarger, Julian R. Taplin, *Psikologi Klinis "Perkembangan Teori, Praktik dan Penelitian"*, Judul Asli: *Clinical Psychology "Evolving Theory, Practice, and research"*, terj. Helly Prajitno dan Sri Mulyantini Soetjipto, (Yogyakarta: Pustaka Pelajar, 2007), p. 163.

¹³ Mark Durand dan David Barlow, *Intisari Psikologi Abnormal*, judul asli: *Essential of Abnormal Psychology*, (Yogyakarta: Pustaka Pelajar, 2006), p. 135.

observed behavior can not be allowed take the average. In some cases, most of the group can not reflect the behavior of individuals within the group. Therefore, the average groups do not always reflect the condition of the individuals in the group. Thus, in the current research, researchers performed the same measurements and repeatedly to prove how much do the changes in the dependent variable from the start until the end of the research baseline. Researchers chose this design because pressing or focus on this research is on the therapeutic effect or the effect of a given treatment. Another reason is present the data in the single case with individually. So every subjects have different result.

Sumanto explained that a single case experimental design can be classified into three categories, namely A-B-A withdrawal design, Compound Baseline design, Baseline of treatment change. As used in this research is the A-B-A withdrawal design. The definition of withdrawal design is to eliminate the treatment to see the effectively of treatment. In a single case experimental design, a behavioral of measured (baseline), a treatment introduced (*intervention*), and then the intervention is withdrawn or eliminated. Because such behavior was measured continuously (repeated measurements), then any effect of the intervention can be recorded. The understanding of the baseline (beginning situation) is the result of the behavior before it provides a measurement of treatment (intervention), which allows for benchmarking and measuring the effects of the intervention.¹⁴

A-B-A withdrawal design basically involves the baseline phase (A) is the beginning condition and the treatment phase (B). Withdrawal means stop the treatment and returned to baseline (A) is the beginning condition. While the A-B-

¹⁴ *Ibid.*, p. 137.

A withdrawal designs it has a variations number of the simplest and commonly used in the behavioral research are A-B, A-B-A, and A-B-A-B design.¹⁵

A-B-A withdrawal design of this experiment research using a second design is the A-B-A design. A-B-A design is done by adding the baseline phase (beginning condition) after the second treatment phase. If during the treatment phase of the observed behavior showed differences compared with the behavior during the baseline phase, it was considered as a treatment effect. A-B-A design can be described as follows.

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Phase A Phase B Phase A

The A-B-A design consists of repeated measurements on the behavior of clients through three phases are done sequentially, i.e.:

1. Phase A1 baseline (beginning condition).

Baseline phase is the phase that occurs before given the treatment and is characterized by repeated measurement from problem behavior that targeted at periodic intervals. These measurements allow researchers to determine the behavior baseline before treatment begins. In this phase the researchers took behavior measurements for client as long as two consecutive times in order to obtain stable results making it easier for future researchers to generate beginning measurement before do the treatment.

2. Phase B treatment

In this phase, the target behavior was measured during the treatment of the client is given the form of meditation.

Phase of treatment was given for 3 times after the baseline phase. In the treatment phase the researcher give a treatment is meditation. So, before starting the lesson, first subjects do the treatment is meditation. In this

¹⁵ *Ibid*, p. 91.

treatment, the researchers directly involved in the provision of meditation for 3 sessions with a duration of 15 minutes.

3. Phase A2 treatment withdrawal (returns to the beginning condition)

In the withdrawal phase of treatment, the treatment was stopped and then does another measurement to determine how much influence of the treatment given. Measurement of student concentration accordance with the first baseline. Measurements were taken once to know how many effect obtained after receiving treatment.

In this single case experimental design, the researchers also noticed that some of the characteristics of the research conducted can have high internal validity. It is in the adoption of the book *Metode Penelitian Pendidikan* written by Nana Syaodih Sukmadinata.¹⁶ These characteristics are:

- a) reliable measurement. In the single case experimental, observation or measurement performed several times. In practice, measurements or data collection techniques used, experimental conditions which include situation, location, time of observation, and the observer, is prevented from bias. So can give the objective results.
- b) repeated measurement. In this experiment measurements were performed several times throughout the research. Repeated measurements performed to control the normal variation that is expected to occur within a short time interval, and so ensured a clear description and steady.
- c) Description of condition. In a single experimental subject, all of conditions relating to the exercise experiments described. That research can be applied to other individuals. Thus the internal and external validity can be maintained.
- d) The baseline, condition, treatment, time span and stability. In the span of this experiment are given the same treatment, the condition and the duration of time is same.

¹⁶ Nana Syaodih Sukmadinata, *Metode Penelitian Pendidikan*, (Bandung: Remaja Rosda karya, 2010), p. 210.

- e) Single variable rule. During the experimental period, the variable is modified on the subject is just one variable, for if more than one, it is difficult to determine which variables are influential.

E. Place and Time of Research

The places and time used in this research are the details as follows:

Table 1.1. Schedules of Research Activities

Date	Place	Time	Phase
13-Nov-2013	Mosque SMK Darul Musyawaroh	09:00 to 10:00	Baseline A1 (before treatment)
14-Nov-2013	Mosque SMK Darul Musyawaroh	09:00 to 10:00	Baseline A1 (before treatment)
15-Nov-2013	Subject home	19:00 to 20:30	Giving Meditation
16-Nov-2013	Subject home	19:00 to 20:30	Giving Meditation
17-Nov-2013	Subject home	19:00 to 20:30	Giving Meditation
18-Nov-2013	Mosque SMK Darul Musyawaroh	09:00 to 10:00	Baseline A2 (after treatment)

F. Research Subjects

Suharsimi Arikunto explained that, subject research is something very central position because as the research subjects that the data and the variables studied was observed by the researchers.¹⁷ While in a book entitled “*Metode Penelitian Ilmu Sosial, Pendekatan Kualitatif dan Kuantitatif*” written by Muhammad Idrus, said that; Amirin describe research subject, as someone or something that want to obtain information about it.¹⁸

Subjects in this research are subject MF, subject FF and subject OS with the characteristics as the following:

1. Male or female
2. Class XII
3. Domiciled in Bangsri
4. The student experience of difficulty in concentration

G. Data Collection Method

Data collections in this experimental research uses two method are:

1. Test Method

According to Ary, test is a set of stimuli given to the subject or the object to be examined. While Kerlinger explain that, the test is a systematic procedure in which the tested individual is represented by set of stimuli that can demonstrate their answers into numbers. The subjects in this case, must be willing to fill in the test items that have been planned in accordance with the hearts and minds of choice to describe the response of subjects to a given item. The response given by subject, and then processed by the researcher or tester systematically toward a conclusion that describes the direction of the subject's behavior. According the type of research to be used, the response is

¹⁷ Suharsimi Arikunto, *Managemen Penelitian*, (Jakarta: Rineka Cipta, 2010), p. 90.

¹⁸ Muhammad Idrus, *Metode Penelitian Sosial “Pendekatan Kualitatif dan Kuantitatif” Edisi Kedua*, (Yogyakarta: Penerbit Erlangga, 2009), p. 91.

generally subject to quantitative research through the numbers, and not through the numbers if the option is through qualitative research. Whereas, in this research the researcher uses numbers to describe the subjects behavior.¹⁹

In this test, researcher uses a Wechsler Adult Intelligence Scale test to measure of concentration level for subject. Wechsler Adult Intelligence Scale or WAIS is the combined intelligence tests administered in a format battery individually. WAIS test to assess the areas of different intellectual abilities and create a situation that can observe aspects of personality. This test gives an overall score, as well as the specific index scores can be calculated using various combinations of sub-test. Wechsler intelligence scales considered is one of the best among all the psychological tests because those properties have good psychometric and produce relevant information for practitioners.²⁰

Intelligence tests often provides measures of line-basalt to clinicians, educators, and researchers to use in determining the degree of change that has occurred in individuals from time to time and how an individual when compared with the others in the field or certain capabilities. Such differences may have important implications for evaluating the effectiveness of an educational program or to access a student's ability to change. In addition, IQ assessment is also important in research and understand more adequately the effect on cognitive function environment variables, such as education program, family background, and fulfillment of nutrition. So, this assessment provides useful information about cultural differences, biological, or maturity-related differences in treatment between individuals.²¹

This test have excess and give some functions are very useful and respected. Among others, can adequately predict the short-term scholastic performance; accessing one's strengths and weaknesses relative; predict

¹⁹ Ibid., p. 138.

²⁰ Gary Groth-Marnat, *Handbook Of Psychological Assessment fifth edition*, translated by Helly Prajitno Soetjipto and Sri Mulyantini Soetjipto, (Yogyakarta: Pustaka Pelajar, 2009) p. 111

²¹ Ibid, p. 112

occupational achievement; revealed various important personality variables; and allow researchers, educators, or clinicians to track the various possible changes to an individual or a population.²²

Things or guidelines that should be considered when administering the test are follows:²³

- a) Muster the extra effort to ensure that the client feels comfortable and well received
- b) Muster an extra effort to increase motivation; give support to the client for the work as well as possible
- c) Make sure that the communication clearly as possible
- d) Various resources out test (teacher reports, discussions with parents, history, behavioral observation) may have a higher significance for diverse clients than for the majority of clients
- e) Sub-subtests that seem less influenced by culture and language should be the focus of interpretation
- f) When accessing people from different cultures not give emphasis on fast task execution, reduce emphasis on sub-subtest speed (processing speed index, coding, symbol search, cancellation)
- g) Be careful in interpreting the differences in someone

Abilities are measured in the Wechsler Adult Intelligence scales or WAIS are divided into several index and subtests that would show different result. namely:

Table 1.2. Organization of Index and Subtests WAIS

Index	Core Subtests	Supplemental subtests
Verbal Comprehension	Similarities Vocabulary	Comprehension

²² Ibid, p. 113

²³ Ibid, p. 124

	Information	
Perceptual Reasoning	Block design Matrix Reasoning Visual Puzzles	Figure Weights Picture Completion
Working Memory	Digit Span Arithmetic	Letter-Number Sequencing
Processing Speed	Symbol Search Coding	Cancellation

In this research, to determine the extent which the level of concentration that owned the subject, the researcher used the working memory index and used with Digit Span as a core subtest in WAIS test. Working memory index is the construct more complex and controversial than constructs that measured in other index. Working memory has been correlated with concentration, attention and short term memory. In addition, the subtests focused on those aspects of the auditory or verbal working memory rather than visual components. Wielkiewicz say that low scores on the working memory can reflect not only the concentration, memory, and sequencing of the bad but also the difficulties in executive functioning.²⁴

From working memory, researcher uses Digit Span that gives to the subject because digit span have some characteristics, namely:²⁵

- a) Rapid rote
- b) Reversibility, the ability to change patterns of thinking (of the forward digits to the backward digits)
- c) Concentration and attention
- d) Auditory ordering
- e) Rote learning

²⁴ Ibid., p. 148-149

²⁵ Ibid., p. 149-150

Digit span is considered as a test of short-term memory and attention. Subjects have to remember and repeat auditory information in the correct order. Nannatyne further described as auditory vocal sequencing memory. Correct response requires a two-step process. First, the information must be received by accurately that require attention and encoding. Second, the examinee must remember, sort, and saying with accurate information. The people who able to receive the information correctly can still have problems with this phase if they have short-term memory difficulties, because they cannot keep a memory trace in a long period of time. Sometimes the digit previously forgotten by the time they are trying to say that now.²⁶

Forward digit is a task that is more easily understood which requires rote memory than digits backward. Examinee usually keeps his memory longer and also transforming before making restatements. So, a good performance on the backward digit likely reflect someone who is flexible, able to concentrate, and tolerant of stress. Lower scores on the digit span showed difficulty in concentration, which may be the result of anxiety or thought processes are not uncommon.²⁷ Below is a measurement procedures digit span, ie:

DIGIT SPAN

Forward and backward Number test is given separately. The distance of mentioning numbers is one second, and should not be grouped categorized. Lower the tone of voice on the last digit in each series. Every Series indicates the number of digits in each question.

FORWARD (F) DIGIT

INTRUCTION start with trial 1 from the 3 series for all subjects. Start by saying: **"I would say some numbers. Listen carefully, and when I'm done, immediately of Imitate. "**

²⁶ Ibid, p. 150

²⁷ Ibid, p. 150

In each series, when the subjects imitate in trial I correctly, continue with the next series. When subjects failed in the trial I, gave the trial I at the series same, then proceed to the next series if he is successful. Trial II of a circuit is only granted when the subject failed in the trial I. STOP after the second failed trial in a series.

VALUE is the digits in the longest series that said against without fault in the trials I or II.

Highest score: 9

Table 1.3 Sample Question of Forward Digits

Series	Trial I	Trial II
3	5-8-2	6-9-4
4	6-4-3-9	7-2-8-6
5	4-2-7-3-1	7-5-8-3-6
6	6-1-9-4-7-3	3-9-2-4-8-7
7	5-9-1-7-4-2-8	4-1-7-9-3-8-6
8	5-8-1-9-2-6-4-7	3-8-2-9-5-1-7-4
9	2-7-5-8-6-2-5-8-4	7-1-3-9-4-2-5-6-8

BACKWARD DIGIT

INSTRUCTION start this test by saying: " **now I will say a few numbers again, but now when I am done I want you to imitate from back. For example, if I say 7-1-9, what you should imitate? "**

When subjects answered correctly, say: "**The Other**" and continue with the trial I test with a series 3 of number.

When the subjects do not answer correctly or do not understand, given the correct answer and another example, saying: "**Remember, you have to mention from the back: 3-4-8.**"

Fit in at this time the subject eminently successful; continue with the test using the trial I with a series 3 of numbers. But if he failed in the second

example, start again with the trial I with the series 2 of number. When the subject success on example but failed to succeed in both of trial with a series 3 of numbers give again 2 number, and stop the test. STOP after the second trial failed in a series.

VALUE is the sum digit of longest series successfully simulated of backward without any fault in trial I or II.

Highest score: 8

Table 1.4 Sample Questions of Backward Digits

Series	Trial I	Trial II
2	2-4	5-8
3	6-2-9	4-1-5
4	3-2-7-9	4-9-6-8
5	1-5-2-8-6	6-1-8-4-3
6	5-3-9-4-1-8	7-2-4-8-5-6
7	5-8-1-9-2-6-4-7	4-7-3-9-1-2-8
8	9-4-3-7-6-2-5-8	7-2-8-1-9-6-5-3

Number of values for a Digit Span test is the sum of the numbers on forward and backward numbers are pronounced without any fault.

Highest score: 17

Table 1.5 Digit Span Answer Sheet

Forward (F)	Value	Backward (B)	Value
5-8-2	3	2-4	2
6-9-3	3	5-8	2
6-4-3-9	4	6-2-9	3
7-2-8-6	4	4-1-5	3
4-2-3-7-1	5	3-2-7-9	4
7-5-8-3-6	5	4-9-6-8	4

6-1-9-4-7-3	6	1-5-2-8-6	5
3-9-2-4-8-7	6	6-1-8-4-3	5
5-9-1-7-4-2-8	7	5-3-9-4-1-8	6
4-1-7-9-3-8-6	7	7-2-4-8-5-6	6
5-8-1-9-2-6-4-7	8	8-1-2-9-3-6-5	7
3-8-2-9-5-1-7-4	8	4-7-3-9-1-2-8	7
2-7-5-8-6-2-5-8-4	9	9-4-3-7-6-2-5-8	8
7-1-3-9-4-2-5-6-8	9	7-2-8-1-9-6-5-3	8
F + B = High Number Range			

2. interview

Interview in this research is a data collection technique to perform a preliminary study to find problems to be researched and to know the things related of respondents deeper and a little number of respondents. Interviews in this research used an unstructured interview, the interview is free, in which the researchers did not use a arranged interview guide that has been systematically and complete for data collection. Interview guides are used only in the form outlines the problems that will be asked.²⁸

H. Research Procedures

The research procedure conducted by Researcher can be described as follows. Held a meeting to approach and consultation to the principal, teachers and staff of SMK Darul Musyawarah Nglumosari bangsri Jepara about the plan that will carry out of research . Then the researchers with a research permit from the Department of Ushuluddin faculty which contains about research permits that have been implemented and ready to head SMK Darul musyawarah Deliberation. After getting permission, the researcher then search and find XII

²⁸ Sugiyono, Metode Penelitian Pendidikan, (Bandung: Alfabeta, 2012) p. 193

class student data that will be the subject of research by interviewing the principals, and teachers to obtain as complete information related to the students who have trouble concentrating during the learning process takes place. Students as research subjects were students who had stepped on class XII, male or female, domiciled in bangsri and have difficulty concentrating during the learning process takes place.

Having determined the subject, further researcher is conducted to determine the research schedule which includes preparation for initial measurement instrument, prepare the meditations module which will be performed three times treatments.

To carry out a series of research to be conducted, the procedure is that researchers take measurements of behavior in the form of student concentration on the beginning condition or Baseline (A1) twice as many in order to result in a stable measurement. Beginning condition or baseline phase (A1) is a measurement aspects of the subject's behavior for some time before treatment is given. This measurement of the beginning condition as a function of pre-test. Further treatment of the subject is given in the form of meditation that is performed three times on the provision of treatment or intervention phase (B). Once completed, and then given again the measurement of behavior or a second baseline phase to determine the results obtained after administration of treatment or referred to as a posttest.

The next procedure is to analyze the data that has been generated from experimental research that have been done to the three subjects are Subject MF, Subject FF and Subject OS from class XII students from SMK Darul Musyawarah Nglumosari Bangsri Jepara.

I. Data Analysis Method

Analysis of data from this single case experimental design research (single case experimental design) is use a graph analysis. This graph present the result, it is made an assessment of the effectiveness of treatment.²⁹

²⁹ Latpun, *Psikologi Eksperimen*, (Malang: Penerbitan Universitas Muhammadiyah Malang, 2010), p. 94.