

## CHAPTER III

### RESEARCH METHODS

#### A. Research Design

This study is a Classroom Action Research (CAR) which will collaborate between researcher and accounting subject teacher of SMKN 1 Bantul. Arikunto (2008: 2) determines there are three study points that can be explained by the action research. Understanding is the first point, which refers to an intensive activities of an object by using the means and rules specific methodology to obtain data or information that is useful in improving quality of a thing that interest and importance to researchers. The second study focus is the act, implies something and then deliberate motion activities with a specific purpose. In this research the act is shown by student activity through each cycle that going to be taken. Then the third point is class, in this case is not bound to a classroom sense, but in a more specific sense. As has long been recognized in the field of education and teaching process, which is meant by the term of class is a group of students at the same time, receive the same lessons from the same teacher as well.

Experts and practitioners are very interested in action research in a couple years. This study is the part of a participatory research. The ideal purpose of all teachers as practitioners is to improve the professional practice along with improving students' performance in learning (Mertler: 2011). This research activity that will be conducted departs from the real problems that exist in class X AK 3 SMKN 1 Bantul academic year 2014

which is faced by the teacher in the learning process, then researcher solve the problem through reflection on alternative solutions to the problem with planned and measured action research.

This study uses action research model developed by Koshy (2005: 4), the spiral shape of one cycle to the next cycle. Each cycle includes planning, action, observation and reflection. Researcher carried out research on two cycles consisting of eight stages: first planning, first acting, first observation, first reflection, first revisions and then go through the same step in second stage. The research stages can be better displayed in the following picture:

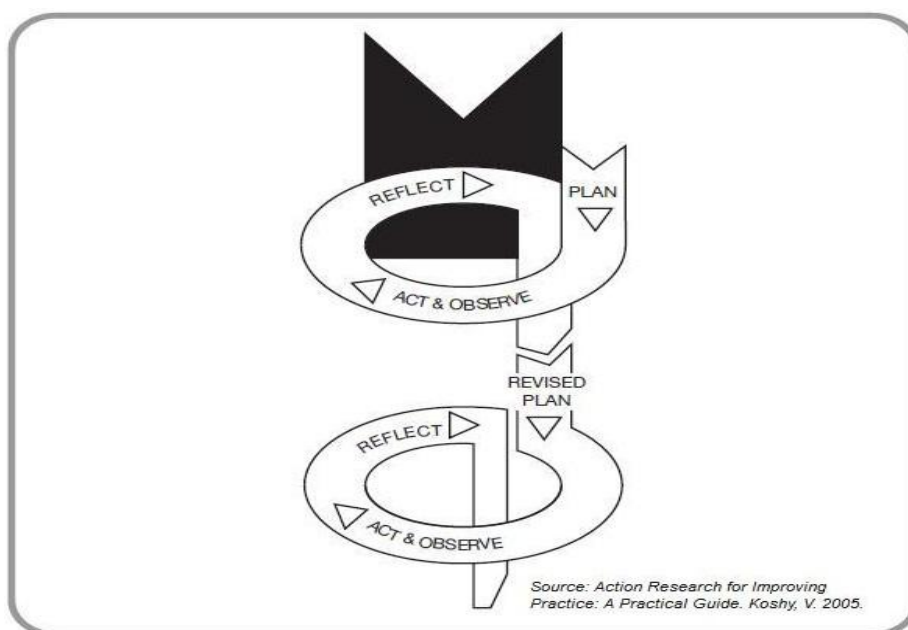


Figure 4 Action Research Protocol (Koshy, 2005:4)

There are some key characteristics in action research that derived from the research studies of the connections between research and practice and the apparent failure of educational research to affect teaching. There are

some negative insights in previous educational research that did not give successful effect on class problems that drive the five classroom action research characteristics. The characteristics are that CAR should be persuasive and authoritative, relevant, accessible, a challenge to the intractability of reform of the education system and not a fad (Gay, Millis and Airasian, 2009: 486).

#### **B. Research Subjects and Objects**

The subjects were all 33 students in class X AK 3 SMKN 1 Bantul Academic Year 2014. The objects of this research were learning motivation and activity in accounting which implement active learning using Domino Card Learning Media.

#### **C. Research Place and Time**

##### 1. Research Place

This classroom action research was conducted at SMKN 1 Bantul which is located in Jl. Parangtritis Km. 11 Sabdodadi Bantul Yogyakarta.

##### 2. Research Time

The research was conducted in January to March 2014.

#### **D. Operational Definitions of Variables**

##### 1. Motivation

Motivation is defined as processes that stimulate our behaviour to take action (Arends, 2009: 140). Motivation to learn accounting in this research is a form of conscious desire of students to learn accounting. Teacher as facilitator will greatly affect the student's

motivation to learn accounting. Therefore, teachers should organize teaching and learning activities as attractive as possible.

The motivation indicators that should be achieved are: diligently do the tasks, steadfast in facing the adversities, show interest in variety problems, prefer to work independently, quickly bored on routine tasks, can maintain their opinion and glad to find and solve problems.

## 2. Learning Activities

This research is not only emphasizes on improving motivation, but also on improving student learning activity in accounting learning. Student learning activities include internal and external activity (physical and mental activity). Learning activity can be defined in which students engage the material they study through reading, writing, talking, listening, and reflecting. (University of Minnesota: 2008).

It is different from motivation measurement that cannot easily seen by the naked eye, more learning activities can be seen from the activities that carried out by students during the learning process takes place. The indicators of activity that meant to be accomplished are visual activities, oral activities, listening activities, listening activities, drawing activities, metric activities, mental activities and emotional activities.

## **E. Data Collection Techniques**

### 1. Observation

Observation is a technique of collecting data by observing any ongoing events and recording every single thing that is meant to be

observed through observation tools. The observation that is conducted is the type of non-participative observation. This is the observation that is performed when the observers do not involved in daily activities or situations that done by the observant. Observers record, analyze and make conclusions about what observant show during the research as independent observers. (Sugiyono, 2010: 204).

The observation that used are in the form of observation sheet and field notes. Observation is conducted aimed to determine the emergence of motivation and learning activities during the learning process. The observation will help to get the data which is going to be described later to measure student motivation and learning activities in the first and second cycle. Observations also used to make surveillance during a learning process that will also be recorded in the field notes where the data will be considered on the reflection stage.

## 2. Questionnaire

Questionnaire is used to measure students' motivation and learning activity in accounting at class X AK 3 SMKN 1 Bantul. Questionnaire is a data collection technique done by giving a set of statements or written questions to the respondents to be answered (Sugiyono, 2010: 199).

## 3. Documentation

Document is the recorded events that have already passed. Document can be in the form of pictures, or other documented works. Document is the part of data collection techniques that complement the

observation and questionnaire. (Sugiyono, 2010: 329). This research uses the documentation technique to collect SMK N 1 Bantul profile and students' name list.

## F. Research Instruments

### 1. Observation Guidelines

This study uses a sheet-shaped observation check list: observation that contains a list of all the aspects to be observed, so that observers stay signalled by the presence or absence of a check mark (√) on the observable aspects (Wina Sanjaya, 2010: 95). In this study, aspects or activities that will be observed is an activity that reflects the motivation and learning activity in accounting. The following observation indicators will be used to measure student motivation:

Table 1 Students' Motivation Observation Guideline

No.	Indicator	Number
1	Diligently do the tasks (a student can work continuously for a long time, never stopped before completion).	1
2	Steadfastly face the adversity (not quickly despair).	2
3	Show interest in a variety of problems.	3
4	Prefer to work independently.	4
5	Interested in new teaching model, method and technique.	5
6	Can maintain their opinion.	6
7	Glad to find and solve problems.	7 and 8.

It is not only students' motivation that is going to be measured by observation, but also students' activity as well. These are the following guidelines:

Table 2 Students' Activity Observation Guideline

No.	Indicator	Number
1	Visual activities such as reading the materials, slides and notes.	1
2	Oral activities, such as stating facts, formulating and asking questions, giving advice and opinions and interruptions.	2
3	Listening activities include listening to the materials delivery, listening to the game instruction.	3
4	Writing activities, such as writing the materials and taking notes based on exercises and discussions.	4
5	Drawing activities, such creating coulombs or tables.	5
6	Motor activities, includes the activity of conducting experiments, executing tasks and games.	6
7	Mental activities such as solving problems in helping each other beating the game.	7
8	Emotional activities, such as taking interest in certain topics or subjects, being brave, keeping calm or nervous, feeling happy, and being passionate.	8 and 9.

The rating scale is numerical rating scale to gain the raw data in the form of numeral digits. The important point in arranging this observation guideline is the one who take the numerical rate (the observers) should understand what criteria for each indicator that is being scaled (Sugiyono, 2010:141).

Table 3 Alternative Criteria in Scoring the Observation Checklist

Criteria	Score
Very Good	3
Good	2
Bad	1
Very Poor	0

## 2. Questionnaire

In this study, the questionnaires are used to collect data on student's motivation and learning activities in accounting. The questionnaires are prepared based on the indicators of motivation and activity in learning accounting according by experts.

These following points will be used as the basis of developing questionnaire about students' motivation in accounting:

Table 4 Students' Motivation Questionnaire Guideline

No.	Questionnaire Indicators	Item	Total
1	Diligently do the task (a student can work continuously for a long time, never stopped before completion).	1, 2, 3*, 4 and 5*	5
2	Steadfastly face the adversity (not quickly despair).	6, 7, 8 and 9	4
3	Show interest in a variety of problems.	10 and 11	2
4	Prefer to work independently.	12, 13 and 14*	3
5	Interested in new teaching model, method and technique.	15, 16, 17, 18, 19, 20 and 21	7
6	Can maintain their opinion.	22, 23, 24* and 25*	4
7	Glad to find and solve problems.	26 and 27	2
Total			27

\*) Negative Aspects

Besides measuring and improving students' motivation, this action research is also measuring and improving students' learning activity.



Here are the guidelines that will be used for the preparation of the student activity questionnaire:

Table 5 Students' Activity Questionnaire Guideline

No.	Questionnaire Indicators	Item	Total
1	Visual activities such as reading the materials, slides and notes.	1, 2 and 3*	3
2	Oral activities such as stating facts, formulating and asking questions, giving advice and opinions and interruptions.	4, 5*, 6*, 7, 8, 9 and 10	7
3	Listening activities include listening to the materials delivery, listening to the game instruction.	11, 12, 13* and 14*	4
4	Writing activities, such as writing the materials and taking notes based on exercises and discussions.	15, 16*, 17* and 18	4
5	Drawing activities such creating coulombs or tables.	19	1
6	Motor activities, includes the activity of conducting experiments, executing tasks and games.	20, 21, 22, 23, and 24	5
7	Mental activities such as solving problems in helping each other beating the game.	25 and 26*	2
8	Emotional activities, such as taking interest in certain topics or subjects, being brave, keeping calm or nervous, feeling happy, and being passionate.	27, 28, 29 and 30	4
Total			30

\*) Negative Aspects

Questionnaire that filled by the respondents assessed using scoring rules as follows:

Table 6 Alternative Questionnaire Answers

Alternative Answers	Score	
	Positive Statement	Negative Statement
Always	4	1
Often	3	2
Sometimes	2	3
Never	1	4

This score rule is known as Linkert Scale which is accordance by the theorem issued by Sugiono (2010: 134) that customized to measure attitude, opinion, and people perception or group of people about the determined phenomenon which is called as variable.

### 3. Field Notes

Field notes are used as form to record the events happen in the implementation of active learning model using Domino Card Learning Media. This instrument will be used to write variety of research-related events that occur in the classroom. The events might be interactions between students and teachers, students and researchers; as well as the interaction between students.

## **G. Instrument Testing**

Validity and reliability are the two most important psychometric properties to consider in using a test or assessment procedure. Validity refers to the accuracy of the inferences or interpretations we make from the test scores, and reliability refers to the consistency and stability of the test scores. (Johnson and Christensen: 2014: 165).

The validity and reliability test will be conducted on X AK 4 SMKN 1 Bantul academic year 2014 which consists of 33 students and has the similar characteristic to this action research subject. It is conducted in order to obtain the research instruments that can be trusted and consistent.

### 1. Validity Test

The validity test on this action research is meant to conduct the data inferences based on the motivation and activity to be accurate and appropriate. It requires collecting validity evidence to validate the

inferences that we make. According to Johnson and Christensen (2014:172) validity evidence is the empirical evidence and theoretical rationales that support the interpretations and actions that we take on the basis of the scores we get from assessment procedure. In this research case, because it is meant to measure the increasing of students' motivation and activity in learning accounting, so for example if the result in motivation and activity of a student reach at 85% and 95%, it can be inferred from that score that the action research is successfully implemented as it resulted high scores on both variables of the research. To validate this evidence, it is supposed to collect evidence indicating that a student obtaining those scores on this test really performs the concrete motivation and activity indicators ranging from internal to external motivation; visual to emotional activities.

There will be two questionnaires; the students' learning motivation questionnaire and students' learning activity questionnaire. The total aspects on each questionnaire are 35 items. According to Arikunto (2010:144) Validity can be measured through this formula:

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

Descriptions:

$r_{xy}$  = coefficient correlation between x and y

N = total respondents

$\Sigma X$  = the total score of aspect or point x

$\Sigma Y$  = the total score

$\Sigma XY$  = the total multiplication of X and Y

$(\Sigma X)^2$  = the total scores of squared aspect or point

$(\Sigma Y)^2$  = the total squares of total scores

The questionnaire validity will be analyzed through *SPSS Statistics 17.00*. The aspects or items will be categorized as valid if the  $r_{\text{count}}$  is bigger or at least the same as the  $r_{\text{table}}$ . This action research uses the significance level of 5% with  $N = 30$  students; because 3 students did not attend the class while the test instrument was conducted. The  $r_{\text{counts}}$  have to be bigger or at least the same at the amount of 0,361 so that it can be stated that an aspect or point is valid.

Based on the test analysis through *SPSS Statistics 17.00* some points are not valid so that it needed to eradicate the invalid points. From the students' learning motivation questionnaire there are 8 invalid aspects and from the students' learning activity questionnaire the invalid aspects are 5 points. These are the tables of validity test on students' learning motivation and activity questionnaire:

Table 7 Validity Test Result on Students' Learning Motivation  
Questionnaire Instrument

Indicators	Original Points Numbers		Total Deleted Points	Number of Deleted Points	Total Valid Points	
	Positive	Negative			Positive	Negative
Diligently do the tasks	3	2	-	-	3	2
Steadfastly face the adversity (not quickly despair).	4	1	1	10*	4	0
Show interest in a variety of problems.	4	1	3	13*, 14, 15	2	-
Prefer to work independently.	2	2	1	18*	2	1
Interested in new teaching model, method or technique.	7	0	-	-	7	0
Can maintain their opinion.	2	2	-	-	2	2
Glad to find and solve problems	3	2	3	33, 34*, 35*	2	0

\*) Negative Aspects

Source: Primary Research Data Processed

There are 8 invalid points which deleted and it left the others 27 valid points. The invalid numbers are quite many but the valid points it still consist of all indicators that are going to be measured so the instrument can continuously be used. The valid points that are going to be used on this students' learning motivation questionnaire are 27 items consists of 22 positive points and 5 negative points.

Table 8 Validity Test Result on Students' Learning Activity  
Questionnaire Research Instrument

Indicators	Original Points Numbers		Total Deleted Points	Number of Deleted Points	Total Valid Points	
	Positive	Negative			Positive	Negative
Visual activities	2	1	-	-	2	1
Oral activities	5	2	-	-	5	2
Listening activities	2	2	-	-	2	2
Writing activities	4	2	2	16,17	2	2
Drawing activities	2	1	2	22, 23*	1	0
Metric activity	5	0	-	-	5	0
The mental activities	2	1	1	31	1	1
Emotional activities	4	0	-	-	4	0

\*) Negative Aspects

Source: Primary Research Data Processed

From the students' learning activity questionnaire instrument test, there are 5 invalid points which deleted and it left the others 30 valid points. The valid points that are going to be used on this students' learning activity questionnaire are 30 items consists of 22 positive points and 8 negative points.

## 2. Reliability Test

Reliability test on this action research is meant to make sure that the instruments that are used have sufficient degree of consistency. According to L.R. Gay, et.al. (2009:378) reliability is the degree to which study data consistently measure whatever they measure. The questionnaire that are going to be tested consist of range answer of responses; the 4-point scale (*always, often, sometimes and never*). The

suitable reliable formula for this action research is coefficient alpha which have strength as it can be used for test items that allow for a range of responses. The alpha formula is described as follows:

$$\sigma = \frac{R}{R-1} \left( 1 - \frac{\sum \sigma_i^2}{\sigma_x^2} \right)$$

Where:

R = total aspects or points

$\sigma_i^2$  = variant items

$\sigma_x^2$  = total score varians

(Zainal Arifin, 2012: 249-250)

According to Johnson and Christensen (2014:170) the popular rule of thumb is that the size of coefficient alpha should generally be at minimum or equal to .07 for research purposes. The reliability test that is taken using *SPSS Statistics 17.00* resulted the alpha coefficient at the amount of .858 for the students' learning motivation questionnaire and .920 for the students' learning activity questionnaire. It means both questionnaires are reliable and continue to be used in conducting the action research.

## H. Research Procedures

This research will be conducted collaboratively with accounting teacher at SMKN 1 Bantul. This study will be carried out in two cycles. This research uses the reference from Action Research Process Model Kemmis and Taggart (Arikunto, 2008:16). Hereby the figure of the cycle that are going to be conducted:

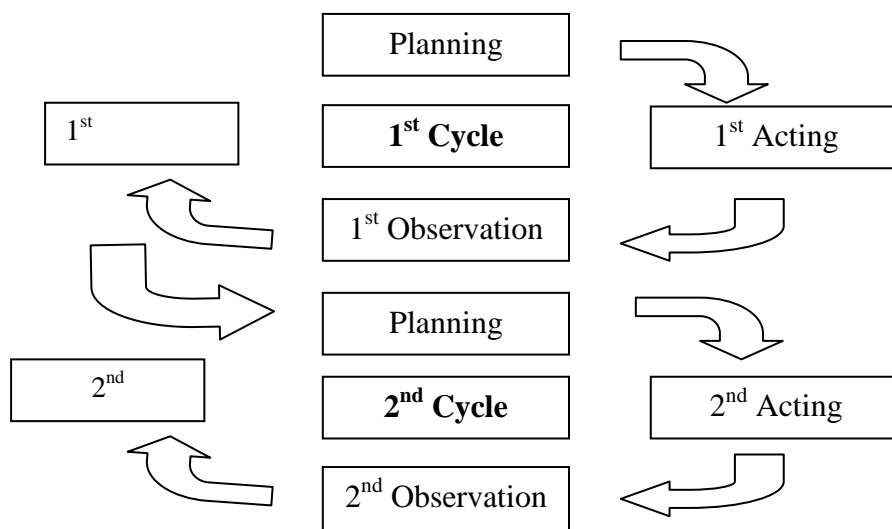


Figure 5 The Action Research Cycle

The following implementation procedure is as follows:

1. Planning of Action

At the planning stage researchers prepare everything needed during implementation. The planning points are:

- a. Conducting dialogue with related accounting teacher to find out the right time for first observation to see the class condition and discussing what are the best ways to increase students' motivation and activity in accounting using active learning model.
- b. Preparation of lesson plan to be used as a learning scenario in accounting subject with Domino Card Learning Media.
- c. Making the learning materials that will be used in the learning process including the Domino Card Learning Media to understand the basic competency understanding the trading company.



- d. Making the pre-test and post-test that will be used to strengthen students' activity and motivation.
- e. Making observation sheet that will be used to record the appearance of activity and motivation from students.
- f. Making the field note record format that will be used to record the events taking place during the learning process.
- g. Making a questionnaire that will be used to determine the student's motivation and activity.

## 2. Implementation

The implementation of the action in the classroom is accordance with lesson plans that has been prepared. Things to be done at this stage are:

- a. Teacher will run the lesson plan made by the researcher including practicing the Domino Card Learning Media during the teaching and learning process in accounting basic competence understanding the trading company.
- b. Students follow a learning process using Domino Card Learning Media.

## 3. Observation

Observations made through observation during the learning process takes place. Researchers observe and take notes in the observation sheets and field notes. Observations is made by looking at the various actions that arise during learning and reflect the aspects of

students' motivation and activity in learning accounting, as well as the strengths and deficiencies of the action research implementation that can be used as material for reflection.

#### 4. Reflection

The materials gained from field notes, sheets of observation and questionnaire during the first cycle implementation are then reflected together with accounting subject teacher and the observers. Those materials, conducted an evaluation of learning, and to identify potential problems, the shortcomings steps or techniques and subsequently compile solutions to the problems that arise in the next cycle of the action research implementation.

On the second cycle, the sequence processes are the same as the first cycle. It also consists of planning, implementation, observation and reflection. The expected difference from cycle I to cycle II is surely on class condition in which on the cycle II improves significantly.

### **I. Data Analysis Techniques**

#### 1. Descriptive Qualitative Data Analysis

In qualitative research, there is more focused analysis of the data during the process in the field. Data analysis in qualitative research is an ongoing activity that occurs throughout the investigate process rather than after process (Sugiyono, 2010:336).

Conducting the qualitative data analysis, researcher starts with specific surveillance, inspecting every pattern inside the observed data, formulate one or more hypothesis, and finally set the conclusion and the general theorem (Mertler, 2011: 249). This data analysis is more emphasizing on data gained from field notes. The data presented in the form of field notes report in paragraphs recording any occurrence in class.

## 2. Descriptive Quantitative Data Analysis

Quantitative research begins with identifying a certain interesting topic and then narrowed into specific questions which can be answered or becoming the hypothesis that can be tested (Mertler: 2011). In this study, the quantitative data obtained from questionnaires and observation expected to show the appearance and improvement of activity and motivation that reflect from accounting learning process with predetermined criteria. The data obtained then analyzed to determine the percentage of student motivation and activity scores. These are the steps to analyze and determine the percentage summed up from the guidelines given by Sugiyono, 2010: 144:

- a. Determining the scoring criteria for each indicator on every aspect of motivation and activity observed.
- b. Summing the scores for each of the motivational and activity aspects that are observed.

- c. Calculating scores motivation and activity observed in every aspect of the formula:

$$\% = \frac{\text{Students' score of accounting learning motivation}}{\text{maximum score}} \times 100\%$$

$$\% = \frac{\text{Students' score of accounting learning activity}}{\text{maximum score}} \times 100\%$$

#### 1) Data Presentation

Presentation of data can be done in the form of tables, graphs, pictogram, calculation of mode, median, mean (measures of central tendency) and so on (Sugiyono, 2010: 208). Presentation of data in tables, graphs certainly would be easier to understand. Data observation and questionnaire as a whole without reduction will be presented in the form of tables and graphs. The data reflects the motivation in learning accounting and accounting learning activities will be presented in the table. The increasing of both indicators will be described in graphic form.

#### 2) Conclusion Withdrawal

Conclusion is the final stage of the data analysis phase. Inferences made by examining the essence of the various data that obtained and presented. The conclusions expressed in asserting statements.

### **J. Indicator of Action Successfulness**

Criteria of success in this action is that after the application of active learning model using Domino Card Learning Media there are increases in

students' activity and motivation which is the output is also enhancing students' desire to study enthusiastically in accounting subject. The increasing motivation and activity is calculated based on the results of observations and questionnaires with the indicators of motivation and activity in learning accounting. In terms of process, quality of learning is successful if the whole or at least 75% of the students actively engage to learn and demonstrate high enthusiasm, the spirit of great learning and high confidence (Mulyasa, 2006: 174). To find out the final score result of the action taken; the scores are added up and then calculated into percentage by dividing the total score with the maximum score and finally multiplied by 100%. This is the score that will reflect the condition of students' motivation and learning activities in accounting after the action has been performed. This action declared successful if it is obtained at least 75% of motivation and learning activities in accounting.

This research also categorizes students into grades based on the result in performing learning motivation and activity. The grading rule is accordance and modified from Sugiyono (2007:231). The motivation achieved grades categorized into three levels: highly motivated, fairly motivated and less motivated. Students who get  $\geq 65\%$  categorized as highly motivated grade, those who get 30% - 64% categorized as fairly motivated grade and students who get 0% - 29% categorized into less motivated grade. The activity achieved grades categorized into three levels as well: highly active, fairly active and less active. Students who get  $\geq 65\%$

categorized into highly active grade, those who get 30% - 64% categorized as fairly active grade and students who get 0% - 29% categorized into less active grade.