

CHAPTER II

REVIEW OF RELATED LITERATURE

A. Previous Studies

The writer reviewed some related previous studies. These previous studies gave a view about the issues discussed in the study. There were three previous studies related to this study, some related studies about using personal vocabulary notes in teaching vocabulary.

The first was Jo Dee Walters's thesis (2009). Result of his study showed that using of vocabulary notebooks was effective in enhancing vocabulary development. It helped the students to learn the target vocabulary in a set of course material. It increased students' focus on the target words and enhanced attention. Result of the experiment group's better performance on target notebook words than non-notebook words.¹

The second was Timotius's thesis (2013). Result of his study showed that using of personal vocabulary notes could improve the students' vocabulary achievement when it was used frequently in the classroom. Personal vocabulary notes also could motivate and help the students more easy to find out the new words systematically not only for its meaning but also its forms. It proved by each student's average score which all of the students had reached the minimum level

¹Jo Dee Walters, Nepal Bozkurt, *The Effect of Keeping Vocabulary Notebooks on Vocabulary Acquisition*, Unpublished Thesis, Turkey: Bilkent University, 2009.

of achievement score was 65 points and mean score of students vocabulary test was 72.²

The third was Priska's thesis (2014). Result of her study showed that students' score after was given the treatment of using personal vocabulary notes was higher than the students' score before given the treatment. It showed that personal vocabulary notes technique had a significance influence on students' vocabulary understanding. The students were enthusiastic, fun and also enjoy while learning vocabulary. It can be seen from the mean of pre test was 31.60 and the mean of post test was 65.60 in experiment class. In control class, the mean of pre test was 30.20 and the mean of post test was 46.60.³

Based on explanation the previous study above, the writer did the different study. In this study, the writer had different subject and research method. In this study, the writer's subject was the students of SMP Muhammadiyah Palangka Raya. The writer took seventh grade students. The previous study used classroom action research. Meanwhile, this study was quasi experiment research.

B. Nature of Vocabulary

1. Definition of Vocabulary

Vocabulary is an important aspect of language, without knowing vocabulary, we will have difficulty in understanding what we see, we read, and we learn. If someone wanted to learn about vocabulary, he/she must know and understand

²Timotius, *Improving Students Ability' In Vocabulary Mastery Through Personal Vocabulary Notes*, Pontianak: Tanjungpura University, 2013.

³Priska Aprillianty N. F, *The Effectiveness of Personal Vocabulary Notes on students' vocabulary understanding*, Jakarta: Syarif Hidayatullah State Islamic University, 2014.

about definition of vocabulary first. In some literature, we could find the meaning of vocabulary. There were some definitions of vocabulary.

In Leny's thesis, Harimurti Kridalaksana stated that vocabulary is a component of language that maintains all of information about meaning and using word in language.⁴

In Dewi Nurhamida's thesis, Harmer stated that vocabulary is one of the most obvious components of language and one of first things applied linguist turned their attention.⁵

Grams David in Andi Saputra Tanjung thesis, vocabulary is defined as a list words defined and alphabetically as in dictionary or specialized glossary, complete word stock of language, some corpus of word used in a sub language or by a group, class or individual, scope of diction, command of words or range of expression.⁶

Based on the explanation above, the writer concluded that vocabulary is total number of words that has meaning. So, if we wanted to master English, we must master in vocabulary too.

2. Important of Vocabulary

Vocabulary is very important to be learned. Vocabulary is one of language components which has important role in learning English. Vocabulary is a basic

⁴Leny, *Teaching Vocabulary through Pictures to the Kindergarten Students*, Unpublished Thesis, Jakarta: Syarif Hidayatullah State Islamic University, 2006, p. 7.

⁵Dewi Nurhamida, *Improving Students' Vocabulary Mastery through Word Wall*, Unpublished Thesis, Salatiga: State Islamic Studies Institute, 2012.

⁶Andi Saputra Tanjung, *Reinforcing Students' Vocabulary through Scrabble Game*, Unpublished Thesis, Jakarta: Syarif Hidayatullah State Islamic University, 2006, p. 7.

and a foundation to learn English. In David Nunan's book, Hocket argued that vocabulary was the easiest aspect of a second language to learn and that it hardly required formal attention in the classroom. Rivers also argued, vocabulary is essential for successful second language use because, without an extensive vocabulary, we will be unable to use the structures and functions we may have learned for comprehensible communication.⁷ According David Wilkins in Norbert's book, he summed up the important of vocabulary learning, "without grammar very little can be conveyed, without vocabulary nothing can be conveyed".⁸ It meant that if someone had little grammar, he still could convey something, but if he had not vocabulary, he could not convey anything. It showed that how vocabulary important for the students in mastering English.

3. Kinds of Vocabulary

According to Thornbury, there were two kinds of vocabulary, such as:⁹

a. Grammatical Words (Function Words)

Grammatical Words (Function Words) are words that have little lexical meaning or have ambiguous meaning, but instead serve to express grammatical relationships with other words within a sentence, or specify the attitude or mood of the speaker.

⁷ David Nunan. *Language Teaching Methodology*. Prentice Hall International. 1998. p. 117.

⁸ Norbert Schmitt. *Researching Vocabulary: A Vocabulary Research Manual*, University of Nottingham: Palgrave Macmillan, 2010, p. 3.

⁹ Scott Thornbury. *How To Teach Vocabulary*, England: Pearson Education Limited, 2002, p. 4.

1) Prepositions

Prepositions are a word that connects one thing with another, showing how they are related. Some prepositions tell you about position or place.¹⁰ Examples of prepositions: in, of, on, under, into, behind, near, beside, between, at, from, etc.¹¹

2) Conjunctions

Conjunctions are words or phrases which join parts of a sentence together.¹² Examples of conjunctions: and, but and or.¹³

3) Determiners

Determiners are definite article, indefinite article, possessives, demonstrate, and quantifiers. Example of determiners: this, those, my, their, which, a, an, the.¹⁴

4) Pronouns

We can classify or group pronouns into some categories:¹⁵

- a) Personal pronouns refer to people, places, things, and ideas. Example: *I, me, you, your, they, us, and it* are all personal pronouns.

¹⁰Anne Seaton. *Basic English Grammar for English Language Learners Book 1*, United State: Saddleback Educational Publishing, 2007, p. 132.

¹¹Ann Hogue. *First Steps in Academic Writing*, New York: Longman, 1996, p. 81.

¹²Stephen Bailey. *Academic Writing Handbook for International Students Third Edition*, London: Routledge, Taylor and Francis Group, 2011, P. 192.

¹³Howard Sargeant. *Basic English Grammar for English Language Learners Book 2*, United State: Saddleback Educational Publishing, 2007, p. 109

¹⁴Anne Seaton. *Basic English Grammar for English Language Learners Book 1*, United State: Saddleback Educational Publishing, 2007, p. 71.

¹⁵Jack Umstatter. *The Teacher's Activity-a-Day*, United States : Jossey-Bass A Wiley Imprint, 2010, p. 9

- b) Reflexive pronouns are formed by adding “-self” or “-selves” to certain personal pronouns. They “reflect” back to the person or thing mentioned in the sentence. Example: *myself, himself, herself, itself, yourself, yourselves,* and *themselves* are reflexive pronouns. There is no such word as *theirselves*.
 - c) Demonstrative pronouns can be singular or plural. They point out a specific person, place, or thing. *This, that, these,* and *those* are demonstrative pronouns. Interrogative pronouns, like their name suggests, are used when asking a question. *Who, whom, which,* and *whose* are interrogative pronouns.
 - d) Indefinite pronouns do not refer to a specific person, place, or thing. Some indefinite pronouns are *another, both, everyone, most, no one,* and *several*.
- b. Content Words (Lexical Words)

Content words (lexical words), are words that carry the content or the meaning of a sentence and are open-class words.

1) Nouns

A noun is a word used to name a person, place, thing, or idea. We can classify or group nouns into the categories:¹⁶

- a) Proper nouns label specific people, places, or things. The first letter must be capitalized. Example: Susan.
- b) Common nouns label general groups, places, people, or things. Example: School.

¹⁶Gabriele Stobbe. *Just Enough English Grammar Illustrated*, United States: McGraw-Hill, 2008, p. 2-3.s

- c) Concrete nouns label things experienced through the senses of sight, hearing, taste, smell, and touch. Example: Hamburger.
 - d) Abstract nouns label things not knowable through the senses. Example: Love.
 - e) Collective noun label groups as a unit. Example: Family.
- 2) Verbs

A Verb is a word that shows action (*runs, hits, and slide*) or state of being (*is, are, was, were, and am*).¹⁷

3) Adjectives

Adjectives describe nouns and pronouns.¹⁸ Adjectives tell what things or people look like, what kind they are. Examples of adjectives: size (*large*), color (*yellow*), shape (*round*), appearance (*pretty*), etc.¹⁹

4) Adverbs

Adverbs are words that modify verbs, adjectives, and other adverb. Example of adverb:²⁰

Adjectives	Adverb
Beautiful	Beautifully
Quick	Quickly

¹⁷Jane Straus. *The Blue Book of Grammar and Punctuation, An Easy-to-Use Guide with Clear Rules, Real-World Examples, and Reproducible Quizzes Tenth Edition*, United States: Jossey-Bass A Wiley Imprint, 2008, p. 1

¹⁸Phyllis Dutwin. *English Grammar Demystified*, United State: McGraw-Hill, 2010, p. 36.

¹⁹Howard Jackson. *Good Grammar for Students*, London: Sage Publications, 2005, p. 18.

²⁰Eugene Ehrlinch. *Schaum's Outline of English Grammar Second Edition*, United State: McGraw-Hill, 1991, p. 107-108.

Based on the explanation above, the writer concluded that vocabulary has two kinds; they were function (grammatical) and content (lexical) words. The writer only focused on noun, adjectives and verb, because it based on the material and the syllabus of school.

C. Nature of Vocabulary Knowledge

1. Definition of Vocabulary Knowledge

Vocabulary knowledge is not something that can ever be fully mastered, it is something that expands and deepens over the course of a lifetime. According to Steven Stahl in Priska thesis, vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the a world.²¹ J L Shanker stated that vocabulary knowledge is defined as the ability to go from the printed form of a word to its meaning.²²

Based on the explanation above, the writer concluded that vocabulary knowledge is students' understanding about form of word and meaning of word.

2. The Important of Vocabulary Knowledge

Vocabulary knowledge has been considered a basic part of foreign language learning and communication.²³ There is a strong connection between vocabulary

²¹ Priska Aprillianty N. F, *The Effectiveness of Personal Vocabulary Notes on students' vocabulary understanding*, Jakarta: Syarif Hidayatullah State Islamic University, 2014, p. 6.

²²J L Shanker, *Developing Vocabulary Knowledge*, 2010, (online).

(<http://www.education.com/reference/article/developing-vocabulary-knowledge/>, accessed on September 28, 2014)

²³ Inga Maarit Pulkka, *Vocabulary Knowledge and Vocabulary Testing*, Unpublished Thesis, University of Jyvaskyla, 1999, p. 5.

knowledge and reading comprehension. If the students are not familiar with most words they meet in print, they will undoubtedly have trouble understanding what they read.²⁴ The importance of vocabulary knowledge in communicative competence has similarly been stressed by Meara who has argued that "*lexical competence is at the heart of communicative competence*" and that "*vocabulary knowledge is heavily implicated in all practical language skills*."²⁵ It meant that if someone understanding meaning of word, he or she will understand what they read. It showed that how vocabulary knowledge important for the students.

3. Assessing of Vocabulary Knowledge

According to J L Shanker, there were two main purposes for assessing a reader's vocabulary knowledge.²⁶ The first was to assess the general level of a reader's vocabulary knowledge to determine if it is sufficient for her grade level. The second purpose was to determine if she knows the meaning of a specific word or set of words to guide immediate instruction.

According to Scott Thornbury, there were three aspects of vocabulary knowledge that are measurable quantitatively.²⁷ They were lexical density

²⁴ A A Milne, *Literacy and Learning Across the Curriculum*, Pearson Education, 2005, p. 264.

²⁵ Meara, *The Importance of Vocabulary Knowledge*, (online), (<http://www.ukessays.com/essays/linguistics/the-importance-of-vocabulary-knowledge.php#ixzz3Eb7DbPn7>, accessed on September 28, 2014)

²⁶ J L Shanker, *Developing Vocabulary Knowledge*, 2010, (online). (<http://www.education.com/reference/article/developing-vocabulary-knowledge/>, accessed on September 28, 2014)

²⁷ Scott Thornbury. *How To Teach Vocabulary*, England: Pearson Education Limited, 2002, p. 135-137P.

(measure of the proportion of content words in a text), lexical variety (measure of different words in the text), and lexical sophistication (assessed by counting the number of relatively infrequent words in a text). These three measures provide an objective way of assessing vocabulary knowledge, and may be helpful as a means of evaluating a learner's progress over time.

In Sarvenaz Hatami's article, Wesche and Paribakht stated that there were various types of assessment tool with varied formats have been used to measure of vocabulary knowledge, including test that require the learner to identify a synonym or definition for a particular word, to translate a word into L1, or to use checklist.²⁸ J L Shanker also stated that there were two methods for assessing of vocabulary knowledge.²⁹ One method of measuring the general level of a student's vocabulary was to look at the results of the vocabulary subsection of a standardized test. Another method of testing students' general knowledge of vocabulary was to ask them the meaning of several words that appear in textbooks at their grade level. The most widely used format was the multiple-choice measure in which the student selects, from among several choices, a short definition or a synonym for a target word. Two methods that can be used to determine if a group of students knows the meanings of a specific set of words are a self-check assessment or a multiple-choice assessment. In the self-check

²⁸ Sarvenaz Hatami, *The Role of Depth versus Breadth of Vocabulary Knowledge in Success and Ease in L2 Lexical Inferencing*, TESL Canada Journal, Vol. 30, No 1, Canada: Winter, 2012, p. 3.

²⁹J L Shanker, *Developing Vocabulary Knowledge*, 2010, (online).

(<http://www.education.com/reference/article/developing-vocabulary-knowledge/>, accessed on September 28, 2014)

assessment, the student simply looked at a list of words and places a check mark by the words of which she knew the meaning. In the multiple-choice assessment, a teacher provided the target word and a choice of several possible meanings or synonyms.

Based on the explanation above, the writer used multiple choice tests that the students confirmed their knowledge of word by selecting suitable definition and synonym.

D. Teaching Vocabulary

In teaching vocabulary, the teachers must use appropriate technique for their students. According to Nation in Haji Parhani thesis, teaching vocabulary is directly related to some other language activities. Teaching vocabulary to young learners does not just simply present some words, but it has significant influence to the four language skills.³⁰ In Bayu Dwi Jatmiko thesis, Harmer stated that many techniques can be used in teaching vocabulary. There were repetition, realia, pictures, mime actions, gesture, contrast, translation explanation, using real object and numeration.³¹

In Andi Saputra Tanjung thesis, Wallace stated that teaching vocabulary should consider these following factors:³²

³⁰Haji Parhani, *Using Slide as a Media in Teaching Vocabulary at the Fourth Grade Studentsof SDIT Al Furqon Palangka Raya*, Unpublished Thesis, Palangka Raya: State Islamic college of Palangka Raya, 2012.

³¹Bayu Dwi Jatmiko, *Using Digital Advertisement to Enrich Students' Vocabulary*, Unpublished Thesis, Semarang: IKIP PGRI Semarang, 2013, p. 3.

³²Andi Saputra Tanjung, *Reinforcing Students' Vocabulary through Scrabble Game*, Unpublished Thesis, Jakarta: Syarif Hidayatullah State Islamic University, 2011, p. 24.

1. Aims

The aim of teaching vocabulary is to make the teacher easy to formulate the materials, which will be taught to the students.

2. Quantity

The teacher has to decide the number of vocabulary items to be learned. The learners will get confuse or discouraged if they get many new words. Therefore, the teacher should select new words, which can easy to understand by the learners.

3. Need

In teaching vocabulary, the teacher has to choose the words really needed by the students in communication.

4. Frequent exposure and repetition

Frequent exposure and repetition here means that the teacher should give much practice on repetition so that the students master the target words well. They also give opportunity to the students to use words in writing or speaking.

5. Meaningful presentation

In teaching vocabulary the teacher should present target words in such a way that the meaning of the target words are perfectly clear and unambiguous.

6. Situation and presentation

The teachers tell the students that they have to use the words appropriately. The use of words depends on the situation in which they are used and depends on the person to whom they are speaking.

E. Nature of Personal Vocabulary Notes

1. Definition of Personal Vocabulary Notes

Personal vocabulary notes is one of technique used to develop students' vocabulary. In his journal, Joshua Kurzweil defined personal vocabulary notes as a way of developing students' vocabulary in a personalized way while encouraging them to become autonomous learners.³³ Teacher could make personal vocabulary notes for his/her students as an easy way to make his/her students understanding difficult and new words, form of word, meaning of word, and the students able remember that words for long time.

Based on the explanation above, the writer concluded that personal vocabulary notes helped students to make they were easy in understanding form of word and meaning of word, students could bring it everywhere, and students could learn it not only in school but also in their home.

2. The Applying of Personal Vocabulary Notes in the Classroom

According to Joshua Kurzweil, there were some applying of personal vocabulary notes in the classroom, they were:³⁴

a. Creating the need

To effectively set up personal vocabulary notes in a class, the students must first feel the need to learn vocabulary. A basic way to focus students and

³³Joshua Kurzweil, *Personal Vocabulary Notes*, TESL Journal Vol. VIII No. 6, Japan: Kansai University, 2002, p. 1.

³⁴*Ibid*, p. 2

introduce personal vocabulary notes is to give them a fluency task which will require vocabulary that they do not have. This activity needs to be adjusted to the student level. For example, for a lower level class you might just have students describe their neighborhoods or what they did over the weekend. For upper level classes you might have them explain a movie or a current event.

b. Establishing a routine

It is important to make personal vocabulary notes a habit in class which is easy and natural for students to do. In this way, students are not searching for scraps of paper to write notes but will have an organized system for recording their personal vocabulary notes.

Students are asked to use daily journal with a section for personal vocabulary notes (along with class notes, homework, etc). For example, whenever they are speaking in class the teacher ask them to keep their journals out on the desks and can easily check if they are writing personal vocabulary notes.

c. Teacher response or feedback

The most important point to keep in mind, when correcting personal vocabulary notes is to focus on what the students are trying to say. Often there is a temptation to "teach" them additional information related to the words they have written. Keep it simple. Just check that the sentences they have written are grammatically correct and naturally express the student ideas. For example a student might write the following sentence:

"I went to an alumni association last weekend."

Although it is correct teacher would have a strong suspicion that what the student wanted to say was that:

"I went to a class reunion last weekend." or "I got together with some friends from high school last weekend."

The goal is to teach students the most natural English for their particular conversational situation (for example: in class, chatting with friends). It is important in situations like the above to give students feedback on formality and register when offering the following suggestions:

"I make 800 yen an hour." And "I cut my finger."

In this way the teacher can bring in more complex aspects of knowing a word in a personal and contextualized way.

d. Follow up activities in class

Peer Teaching

One of the first activities that teachers do and one which teacher do again and again is simply having students tell each other about the new words they learned. Teachers usually put the following standard classroom questions on the board and have them talk to several different partners.

What new words did you learn?

How do you spell that?

What does that mean?

How do you pronounce that?

What part of speech is that?

In this way, the classroom questions are re-enforced and students review their own personal vocabulary notes as they teach them to others.

Peer Quizzing

Another simple activity is to have students exchange personal vocabulary notes and quiz each other. This can be done by having the tester tell them personal vocabulary notes in Japanese or by reading their example sentence and blanking out the personal vocabulary notes. For example:

"I ... with some friends from high school last weekend."

Circumlocution Lessons

Teach student the circumlocution phrases like "This is a kind of..." and have them explain their personal vocabulary notes, to each other. The students who are guessing can guess in English or in L1 in a monolingual class (*Do you mean...?*). In the latter case, have students be insistent about the guesser getting the exact word. For example, they would need to guess "outgoing" and not "friendly" (That is close, but...). This forces students to work on conveying the nuances of different words.

Peer presentations on specific topics: Later, after student have gotten used to doing personal vocabulary notes teacher can actually assign topics for them to research and present to the class or small groups.

Other Vocabulary Games/Training:

Once students have a set of words to work with they are any number of games and exercises you can do with them. To offer a couple of examples, teacher can have had students organize their words in word stress patterns. Teacher also can done speaking activities in which students must make short stories using two or more personal vocabulary notes. Another speaking activity is to have student slip a personal vocabulary notes item secretly in a conversation without the other person noticing.

3. The Advantages of Using Personal Vocabulary Notes

According to Joshua Kurzweil, there were some advantages of using personal vocabulary notes for both teacher and students:³⁵

a. Motivation:

Students are usually much more motivated to remember their personal vocabulary notes than they are a set of vocabulary items they have received from a textbook or teacher.

b. Class Atmosphere:

Personal vocabulary notes provides that safety valve which helps establish an "English only" atmosphere.

³⁵ *Ibid*, p. 5

c. Student Need:

Personal vocabulary notes address individual student needs by encouraging students to find the vocabulary they need to communicate and talk about their experiences.

d. Contextualized Vocabulary Learning:

The teacher is able to address a great deal of complexity and richness without having to invent a context as the context is already created by the student.

e. Individualized Attention:

Especially, in large multilevel classes Personal vocabulary notes provides the teacher with a time-efficient way of giving attention and feedback on language to individual students.

f. Vocabulary Awareness:

Personal vocabulary notes gives students a much deeper sense of what it is to learn vocabulary and know a word as they get contextualized feedback on words they are using.

g. Dictionary Skills:

Personal vocabulary notes provide a motivating context for teaching dictionary skills again because students are researching their own words.

h. Material for a Variety of Other Skills/Activities:

Once students have a set of personal vocabulary notes the teacher can use their vocabulary to teach many other points such as circumlocution skills, pronunciation (ex. word stress), grammars (ex. parts of speech)

i. Learner Training:

Personal vocabulary notes engages students in the cycle of noticing their own needs, researching language, trying it out, and learning from their mistakes.

4. Procedures of Using Personal Vocabulary Notes in Teaching Vocabulary

Based on Timotius, Eusabinus Bunau and Dewi Novita, there were some steps teaching vocabulary through personal vocabulary notes. They were:³⁶

a. Pre-activity

- 1) Doing apperception.
- 2) Greeting and praying.
- 3) Checking students' attendance, and readiness to study.
- 4) Conveying the learning objectives to students.
- 5) Motivating and brainstorming the material.

³⁶Timotius, *Improving Students Ability' In Vocabulary Mastery Through Personal Vocabulary Notes*, Pontianak: Tanjungpura University, 2013, p. 5.

b. Whilst activity

Exploration

- 1) Teacher provided a descriptive text to students “The Arena Sensory Overload”.
- 2) Teacher gave motivation to students in vocabulary learning that is vocabulary has an important role in master language skill.
- 3) Teacher helped students in exploring the word meaning by telling its synonym or antonym.
- 4) Teacher guided the students to classify the word form or part of speech in the descriptive text.

Elaboration

- 1) Students take-noted new vocabulary in their notebook.
- 2) Students discussed their new words from its meaning and form with their friend.
- 3) Students take note the word meaning that had been discussed.
- 4) Students did the test in the form of multiple choice and completion test items.

Confirmation

- 1) Teacher reflected the material with his students.
- 2) Teacher gave feedback concerning to the students activities in discussing its meaning and form in the classroom by giving correction to their miswriting the meaning and form.

3) Teacher gave students time to raise question.

c. Post Activity

1) Teacher concluded/summarized the material with his students.

2) Teacher gave students' homework, to take-notes the new word on their LKS book.

Meanwhile, according to Joshua kurweil, there were some procedures using personal vocabulary notes in teaching vocabulary.³⁷

a. Step 1

Give students a daily journal or (personal vocabulary notes) note paper to record vocabulary items.

b. Step 2

Tell students that the class will be “English only”.

c. Step 3

Engage students in some kind of fluency activity and encourage them to write words in L1 that they do not know how to say in English.

d. Step 4

As homework have the students look up their personal vocabulary notes and find the English translations. They then should write sentences using their personal vocabulary notes. (To make a manageable workload teacher scan ask

³⁷ Joshua Kurzweil, *Personal Vocabulary Notes*, TESL Journal Vol. VIII No. 6, Japan: Kansai University, 2002, p. 1.

students to choose just two or three personal vocabulary notes to make into sentence)

e. Step 5

The teacher collected the personal vocabulary notes, checked it, and hand it back the following class.

f. Step 6

Students keep a section in their notebook for personal vocabulary notes and do follow up activities with it such as peer teaching and review activities.

F. t-test

According to Donald Ary, t test is a statistical procedure for testing hypotheses concerning the difference between two means; also used for other purposes.³⁸

G. Experiment Study

Donal Ary defined experiment study is a scientific investigation in which the researcher manipulates one or more independent variables, controls any other relevant variables, and observes the effect of the manipulations on the dependent variable(s).³⁹ The essential requirements for experimental research were control, manipulation of the independent variable, and observation and measurement.⁴⁰

³⁸Donal Ary, *Introduction to Research in Education (Eight edition)*, United State: Wadsworth (engage learning), 2010, p. 652.

³⁹ *Ibid*, p. 265.

⁴⁰ *Ibid*, p. 267.