CHAPTER III

RESEARCH METHODOLOGY

This part provides a brief description about the research methodology, research design used, research procedures, applying questioning techniques in teaching reading comprehension, the population, setting and samples of research, techniques of collecting, analysis, interpreting of data, instrumentation, treatment, and hypothesis testing.

3.1. Research Design

This study was intended for testing a hypothesis about the effects of using questioning technique in teaching reading comprehension towards development of students' reading achievement. By using quasi-experimental design that provides a method of hypothesis testing (Hatch and Lazaraton, 1991). This design was used because the treatment was not random assignment of participant to groups (Creswell, 2008: 303). It means that no selection in the population, a group could be experimental or control. The researcher cannot artificially create groups for the experiment (Creswell, 2008). Since at experimental method was a method for establishing activities to sack the result, the result will be defined as something that will emphasize the existence of causal relationship between variables investigated in an issue.

Moreover, by using quasi-experimental this research involved two groups experimental and control without random sampling. This typical pre and posttest designs examined up to now involve observations or measurements taken immediately before and after treatment (Fraenkel and Wallen, 1997: 272). The effectiveness of the treatment in this design was basically determined by analyzing the pattern of test scores that results from the tests. This design also permitted significant control over threats to internal validity. (Creswell, 2008: 319). To investigate the effects of treatment, pre- posttest and treatments have been conducted. To know the students' responses towards the questioning techniques used in process of teaching and learning reading comprehension, the researcher also used questionnaires.

The research design used as in the previous mentioned was the quasi-experiment with a pre-test, treatment and post-test design, can be described at the following table:

Table 3.1 Research Design

Experimental Group	O_1 X X X O_2
Control Group	O_1 X X X O_2

E   = Experimental Group

C   = Control Group

O_1,   = Pre-test

O_2 = Post-test

X   = Treatment

<div align="right">(Adopted from Creswell, 2008)</div>

Sample	Observation Pre-test	Treatment	Observation Post-test
Experimental group (E)	1	Using questioning technique	2
Control Group (C)	1	Without using questioning technique	2

The quasi-experimental design has several characteristics as follows:

(1) It has one or two groups of subjects, experimental and control group.

(2) It is not random assignment of participants to groups

(3) It compares the two groups with respect to measurement or observation on the dependent variable.

(4) It has twice measurement, pre-test and post-test.

(5) The experimental group is manipulated with the particular treatment,(Nunan, 1992; Creswell, 2008) in this study using questioning technique, while the control group without using it.

There are two purposes of testing in this study; the pre-test is to find out the basic knowledge of the students' comprehension before having the treatment, and to diagnose the students' strengths and weaknesses in reading comprehension. The post-test is to assess how far the students have achieved the objective of the course from what is taught (Irwin, 1987: 141; Hughes, 1989: 10)

This study tried to find out the empirical evidence of whether the independent variable of using questioning technique in teaching reading comprehension affected the dependent variable of students' reading achievement. The scores data pre-test and post-test of experimental and control group were compared to find out whether there was a significant difference.   Moreover, to find out the students' responses towards the implementation of the technique the researcher used questionnaire.

3.2 Data Collection

In this research the researcher collected the data from the respondents by using some steps: first, conducting try out to subjects from the same population but not included in the research samples, the result from this process calculated and analyzed by using Anates 4.0. Besides that, the researcher also consulted his advisors before applying the instruments used.   It aimed to make sure the validity, reliability of the instruments, and to clarify the instruction used in. The research was conducted since August 26th until October 18th, 2011. The research started at August 26th, 2011 when the researcher asked for permission for conducting research from the teacher of

English and the principal of SMK Negeri I Indramayu (Appendix 16). This occasion researcher used for collecting some information relates to the research will be conducted such as about the site, populations, samples, and available resources might be used. Then prepared and consulted his advisors for advice of instruments will be used. Second, before the instruments used, the researcher took two groups out of thirty groups of students at the same site but will not be involved, for testing of reliability and validity of the test. Third, before treatments, the students were given reading pre-test. The tests were given to find out the students' score before the treatment. Fourth, upon the completion of the four meetings of treatment and finally posttest were given to both of the experimental and control group. In this research the treatment used was questioning techniques, and this technique was only given for the experimental group, while the reading text materials and questions used were modified from the students' handbook and from on line internet resources. The experimental group consisted of 32 students, 16 males and 16 females. While, the control group was also consisted of 32 students, covers 17 males and 15 females. But, because of the respondents' inconsistency, such as not joining the all research steps, two students at each group were dropped. The resources books used in this research as previously mentioned, were available in the school library in where the research was conducted.

3.2.1 The Population, Setting, and Sample of Research

The population of the research conducted was the eleventh grade or second year students of vocational school SMK Negeri I Indramayu. The size number of population was thirty classes or group students, but not all of them were considered to be the sample of the research due to limited of time and funds. This research involved only two classes from the thirty existing classes, that was Class of XI Multi Media 1 consists of 32 students as the experimental class, and Class Xl Multi Media 2 consists of 32 students for control class.

This site was chosen for some reasons; firstly, the researcher has ever conducted research on the same concerns in this school several years before, and a low students' reading achievement was secondly reason, besides this site was the nearest school from the researcher's home.

This study employed purposive sampling. It means that the sample was taken based on the certain consideration, as Fraenkel and Wallen (1997: 75) stated:

> On occasion, based on previous knowledge of a population and the specific purpose of the research, investigators used personal judgment to select a sample. Researchers assume they can use their knowledge of the population to judge whether or not a particular sample will be representative.

3.2.2 Instrumentation

There were two kinds of instruments used in this research for collecting the data: 1) instrument for scoring in the form of pre-test (Appendix 6a) and post-test items (Appendix 6b), and 2) instrument for conducting treatment which was in the

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form of lesson plans (Appendix 1) included questions list (Appendix 2) and reading materials (Appendix 3).

3.2.2.1 Instrument for Scoring

For obtaining the scoring data the researcher administered the test. He administered them twice, the pre-test and post-test. The pre-test was given at the first meeting to find out the students' reading comprehension ability before they were treated. The post-test was given at the end of the program to find out the influence of applying questioning technique in teaching reading comprehension. The test was multiple-choice questions test. It was the commonest way of assessing reading (Alderson, 2000). It was designed in such way in order to suit the students' proficiency level.

The instruments for scoring both pre, and posttest were in form of reading texts followed by 30 short-questions to achieve of standard of competency suggested curriculum. They are (1) identifying main ideas, (2) understanding the general information, (3) understanding specific information, (4) recognizing the vocabulary, and understanding of author's purpose.

The materials of the test were taken from *Effective Communication for Elementary Level* for SMK by Ernawan et al. (2010), *Modul: A New Approach to Learn English XI by Tim MGMP Bahasa Inggris* (2010) and from Microsoft Encarta Encyclopedia.

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3. 2. 2. 2 The Instrument for Treatment

The instrument for treatment consisted of lesson plan and reading materials taught in the classrooms. The lesson plan was designed by adapting from Brown's lesson plan (2001) and presented the teaching process through communicative approach. While, the reading materials were taken from the suitable resources books available in the school library such as Effective Communication for Elementary Level for SMK by Ernawan et.al (2010), Modul: A New Approach to Learn English XI by Tim MGMP Bahasa Inggris (2010), and Developing English Competencies 2 by Achmad Doddy et al. (2009) published by Pusat Perbukuan Kementerian Pendidikan Nasional Jakarta.

3.2.3 The Application of Questioning Techniques

English syllabus for SMK indicates the teaching of English should be taught integrative into four language skills namely; listening, speaking, reading and writing proportionally. But, based on the topic of this thesis 'the application of questioning techniques in teaching reading comprehension to increase students' reading achievement,' the researcher applied his research dealing with reading comprehension only. In this study the researcher intended to emphasize questioning as a technique to increase students' ability in reading comprehension. The questioning technique was given into three steps: pre-reading, whilst reading, and post reading activities.

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Based on the English syllabus for the eleventh grade students of SMKN 1 Indramayu, (Appendix 5) the standard competent was the students are able to communicate by using English at elementary level equally. The basic competency should be achieved as follows (Translated from SMKN 1 Indramayu English Syllabus 2011-2012, originally written in slightly different Indonesian wordings):

a) Understanding the daily simple conversation both in professional and private context used by non-English native speaker.
b) Taking simple notes from messages using their own education background,
c) Cutting into small pieces of jobs and their own education backgrounds.
d) Talking about jobs in the past and their planning in the future.
e) Expressing many kinds of desires.
f) Understanding the simple instructions.

The passages given to both experimental and control group were as follows:

1. Manners in the Workplace

2. Serving and Handling Guests

3. Apprenticeship

4. Gold

3.2.3.1 Instructional Activities

The subjects of the research was class XI MM1 as the experimental group, the group consisted of 32 students, 16 female and 16 male, and control group consisted of

32 students in which 17 female and 15 male students. The research activities were started August 26th, up to October 26th, 2011.

The technique for presenting those passages was questioning focused on the reading instructional objectives such as: 1) to find out the general information, 2) to find out the main idea, 3) to find out the specific information either explicitly or implicitly stated, 4) to find out the words meaning, 5) to understand the author's purposes. Questioning in advance was used in pre-reading, whilst reading and post reading activities. The technique was given only to the experimental group, while the students in the control group were not taught using the technique as in the experimental one.

3.2.4 The Treatment

This study compared the differences between the two approaches in teaching reading comprehension, the experimental group was taught using interactive communicative approach through questioning technique, while the control one was taught by the conventional grammar translation method. Using quasi-experimental design to see the effect of two different treatments given to both of them was prepared for this study.

The basic difference between the two approaches of reading comprehension in their application to the teaching-learning that in the experimental group the students were taught by   using questioning both in oral and written in all three phase of

teaching, while in control group the students were taught by using classical, traditional or grammar-translation. The procedures of teaching learning can be described as follows:

3.2.4.1 The Teaching Process and Materials of Questioning Techniques for Experimental Group

The First meeting treatment for experimental group (held at September 13, 2011)

At the first meeting, the researcher spent more time than the other ones, because the questioning technique was a new for the students of XI MM1. Therefore, the clear explanation about the technique presented was needed to manage the class effectively. The steps were as follows:

- Opening or apperception; in this step the researcher greeted and checked the students' presentation list to build a warm teacher-learners relationship, to connect and activate their prior knowledge (Nuttal, 1994). This step also can be used as a tool to help the students to prepare the communicative run well by giving them useful questions (William, 1984), and this fine job was also able to provide some worthy examples of real speech to engage the students in meaningful conversation (Nuttall, 1996)

- Introducing the questioning techniques; this step was explained in order to the students aware of many kinds and types of questions will be proposed in this

research. It was important for students to know that the questions used in this research not for testing but for helping them in understanding the content of the text presented (Nuttall, 1996).

- Justifying the use of questioning techniques; there were several views from scholars about the necessary functions of the questions; for serving three strategic: diagnostic, instructional and motivational (Donald &Eggen, 1989), for checking the students' understanding particularly by giving convergent and inferential questions (Johnson, 1997) giving impetus and opportunity to produce language comfortably without initiating language, giving the instructor immediate feedback about the learner's understanding, and providing the students opportunity to find out what they think by hearing what they say (Kinsella, 1991;Brown, 2001)

Pre-reading activities, at this step the students were introduced by displaying pictures relate to the topic to arouse their curiosity and activate their prior knowledge (Carrel, 1988: Nuttall, 1996). It is more efficient than stopping and providing explanation and detail during reading, because it prevents miss-understanding before they crop up rather than remediating afterwards (Lemov,2010). To run this activity the teacher proposed some convergent questions, as it aimed to encourage students to response and focus on central theme (Orlich, 1985). The teacher asked the students to answer some the questions orally. The samples of questions as follows:

1) Have you ever heard about etiquette?

2) What do you think of this people do?

3) Can you imagine if the world without etiquette?

Not all of the students needed to answer those above questions; hence the questioning and answering process was just used for checking their readiness of facing the real passages.

Whilst reading activities. In whilst reading activities, the teacher modeled fluent reading with rhythm, rate, intonation and expression. The teacher asked students to predict, look for general and specific information, and identify the main idea (Wallace, 1992) by using questioning techniques. The question words used: what? who?, when?, why? The passage was about "Manners at a Workplace" can be seen at the Appendix 3. The teacher proposed some questions to lead the students comprehend the passage (Appendix 2a). After the oral questions and answer, then the students were given a chance for re-read the text once or twice more. And for strengthening their comprehension they also asked find the meaning of selected following words based on the context and some tasks related to the passage presented in the Students' Worksheet (Appendix 4a) In this step they might consult their dictionary.

Post reading activities. In this activity the teacher asked the students to share their understanding. The teacher added some additional comprehension questions or

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follow-up activities. And to push the students' discussion onto broader or more analytical topic after completing a text, Lemov (2010: 294) proposes some techniques. They are summarizing and making better connection. To summarize the teacher asked students voluntarily to make summary about the passage they have read.

For making better connection beyond a text (Lemov, 2010) the teacher needed to recognize that certain types of questions were usually more rigorous and more likely to reinforce reading comprehension than others. So, here the teacher proposed the types of questions in priority order according to their relative rigor, with the more rigorous question formats, as follows:

- Text- to text, these types are preferable to text-to-world, and text-to -self because they reinforce testable ideas rather than judgment, opinion, and stories that students may not be able to access. Or across- text question

- Text-to-world, it is used to connect specific aspects of a text to specific aspects of broader world rather than allowing them to discuss any connection they see to any event in the world.

- Text-to-self, these questions are inevitable and valid, but they are also more limited in their relevance to other students and comprehension of texts. Although engaging, they can often lead classes astray (Appendix 2a)

Assessment. For assessing the students' comprehension there were some ways used by the teacher. One of them by providing activities related to both the content of the passage and its discourse structure, or organization (Grellet, 1981 in Hadley, 2001). And the second one for more effective reading instruction by finding out how well the students were reading to help them improve by giving them feedback, and measuring how much progress the student has been made (Pang, et al. 2010). (For more detailed stepping see the reading lesson plan for experimental group Appendix 1a)

The second meeting treatment for experimental group (held at September 20, 2011)

The passage about "Serving and Handling the Guests" (Appendix 3)

Pre-reading activities. After greeting and checking the students' presentation list, then the teacher gave them apperception that was connecting the concept the students had and the topic will be introduced or warming up activity. In this activity the teacher displayed pictures related to the topic through LCD projector available in the classroom, this activity aimed to activate the students' prior knowledge, as it needed by readers to activate their past knowledge and experience to predict what information was coming next in the text being read (McGinnis,1994) or operate to influence what is learning from the texts (Alexander, 1989) by proposing some

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questions (appendix 2b). In this step, as in the previous meeting the students needed to answer the teacher's questions orally.

Whilst Reading Activity. After the teacher distributed the students' worksheet (appendix 4b), the teacher asked them to focus their attention to the text will be discussed. Giving them a chance for to read by heart in limited time, and asked for some volunteer students to read aloud. In this activity the teacher might not interrupt though found students did miss-pronounce during reading process to keep the interaction between the reader and the text run well (Grabe, 1997). After three volunteers students the teacher asked them to answer some questions orally. In this step the teacher asked the students to point out their answers referred to. Then the students worked in pair and underlined the main idea of the passage by using their skimming experiences in their first language. The questions used for guiding their comprehension can be seen at the questions list appendix 2b and students' worksheet appendix 4b.

Post reading activity. For checking their comprehension, the teacher asked the students to review the exercises used in this topic and made notes needed.

Assessment. The students' activity result in doing some exercises from the post reading can be used to measure their performance.

The third meeting treatment for experimental group (held at September 27, 2011)

Pre-reading activity. For engaging the students and activate their prior knowledge the teacher displayed some pictures relate to the topic (Apprenticeship) and asked them some questions about what their thinks about pictures. The questions for these activities can be seen at appendix 2c.

Whilst reading activity. In whilst reading activities, the teacher distributed the students' worksheet, demonstrated and guided how to skim to get the gist of every paragraph by proposing some questions. The teacher asked students to predict, look for general and specific information. The text "Serving and Handling the Guests" can be seen at the Appendix 3. The teacher proposed some questions to lead the students comprehend the passage (Appendix 2c). After the oral questions and answer, then the students were given a chance for re-read the text once or twice more. And for strengthening their comprehension they also asked if they found some difficult words, by checking and clarifying the meaning of selected following words based on the context and some tasks related to the passage presented in the Students' Worksheet (Appendix 4c). In this step they might consult their dictionary.

Post reading activity. In this activity, the students asked to read the passage once or more times in a limited time and discussed the answer of the exercises for checking their understanding.

The Fourth meeting treatment for experimental group (held at October 10, 2011)

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Pre-reading activity. In this activity, the teacher proposed factual soliciting questions (Lemov, 2010) in which needs a simple straight forward answers based on obvious facts or awareness, and some divergent questions that allow the students to explore different avenues and create many different variations and alternative answers. (see Appendix 2d)

Whilst reading activity. After the students answered the questions, then the teacher distributed the students' work sheet and asked them to read the passage silently in a limited time. In this step activities also, the teacher modeled fluent reading with rhythm, rate, intonations and expression. The teacher asked students to predict, look for general and specific information, and identify the main idea (Wallace, 1992) by using questioning techniques. The teacher proposed some questions to lead the students comprehend the passage (Appendix 2d). After the oral questions and answer, then the students were given a chance for re-read the text once or twice more. And for strengthening their comprehension they also asked find the meaning of selected following words based on the context and some tasks related to the passage presented in the Students' Worksheet (Appendix 4d) In this step they might consult their dictionary.

Post reading activity. In post reading activity the students were asked to write their understanding in about 150 words about the using of gold in modern era.

3.2.4.2 The Teaching Process and Materials for Control Group

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The treatment for Control group (held at September 19, 26, October, 10 and 17, 2011)

The materials and the questions for teaching at the control group were not different from those at the experimental, except the technique in presenting them, that was the grammar-translation or traditional as their teacher usually does. The technique was not a new for the students. Therefore, the process of teaching-learning could be as natural as their everyday been taught. The steps were as follows:

Opening and Pre-reading activity.

The teacher greeted the students, checked the presentation list, and then asks the students about the reading passage after they had their worksheet (Appendix 4a) by asking them to give attention to the pictures displayed, and answering some questions for activating their prior knowledge to build meaning (Nunan, 2003), make intelligence hypothesis and draw correct inference and finally comprehend the text (Spiro, Bruce, Brewer, 1980).

Whilst-reading activity.

At this stage, the teacher wrote the key words of the topic on the board and explaining them to the students. Giving simple information about the reading topic to support the students' comprehending. For example, translate the idea of the topic by giving them the idea in their language and culture. The teacher explained the benefits of comprehending this passage, for instance they develop students' awareness of the reading process and reading strategies by asking students to think and talk about how they read in their native language. Then the students read the passage in about 20 minutes. The teacher explained

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and asked if the students found some the difficult words in the reading passage. In this case the teacher usually asked the students to give attention to the vocabulary list and grammar point for helping them in translating the reading passage.

Closing or Post-reading activity.

The teacher gave an evaluation; this contains answering the questions that related to the reading passage. If the students answer these questions correctly with a less interference by the teacher, the goals of the lesson were achieved. The teacher gave the students enough time to evaluate their understanding of the lesson.

(see the lesson plan for Control Group Appendix 1b for detail stages of teaching-learning process.

3.3 The Schedule of Treatment

The pre-test, post-test and teaching learning process was arranged in ten meetings. The time table of the treatment was shown in the following table:

Table 3. 2 The Schedule of Pre-Posttest and treatment time table

Meeting	Date	Description	Time	
			Experimental Group	Control Group
1	12/09/2011	Giving Pre-test	2 x 45 "	2 X 45"
2	13/09/2011	Manners at a workplace	2 X 45"	
3	19/09/2011	Manners at a workplace		2 X 45 "
4	20/09/2011	Serving and Handling Guests	2 X 45 "	
5	26/09/2011	Serving and Handling Guests		2 X 45 "
6	27/09/2011	Be Apprenticeship	2 X 45 "	

7	10/10/2011	Be Apprenticeship		2 x 45 "
8	11/10/2011	Gold	2 x 45"	
9	17/10/2011	Gold		2 X 45"
10	18/10/2011	Post-test	2 x 45 "	2 X 45"

3.4 Data Analysis

3. 4. 1 Technique, Instrument of Collecting Data, and Data Interpretation

In this research the researcher used some instruments to collect data. The instruments for the first research questions was the pre-test and post-test of reading test for identifying the students' reading achievement (Appendix 3). The reading test for pre and post-test had similar level of validity, reliability, discriminating power and level of difficulty. The multiple-choice questions item form was chosen for some reasons. Firstly, the scoring was easier, faster and more objective than the other form of test. Secondly, this was very efficient when number of students was large while time allocated was very short. Third, the reliability of this type was higher than the essay test (Heaton, 1995; Surapranata, 2004)

To get the data for the second research question the researcher used questionnaire (Appendix 8), to know students' responses towards the implementation of questioning techniques in teaching reading comprehension. There were many reasons to use questionnaire for collecting data and using it as a research instrument (Gray, 2004: 214) has given the following reasons: 1) There is a need to attain highly personalized data. 2) There are opportunities required for probing. 3) A good return

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rate is important. 4) Respondents are not fluent in the native language of the country, or where they have difficulties with written language.

The type of the questionnaire was Likert-Scale with five alternative options: Strongly Disagree, Disagree, Uncertain, Agree, and Strongly Agree. This scale was chosen because it was less laborious and reliability of 0.85 is often achieved (Oppenheim, 1992). There were two kinds of statements in this research instrument, positive statement in which reflect positive response towards the issue being addressed, and the negative one which negative response towards those being addressed.

3.4.2 The Technique of Analyzing Data

3.4.2.1 Score Data Analysis

The quantitative data of the research gained from pre-test and post test results. The qualitative data from questionnaires was used to measure the students' responses towards the using of questioning techniques in teaching reading comprehension to increase students' reading achievement. To compute the data gained from both of experimental and control groups, then the results compared by using match-paired t-test in order to see the difference of achievement before and after treatment. And between the experimental and control group. The statistic computation of SPSS 17 was also used by the researcher. These hypothesis testing were conducted to see whether Ho and Hi accepted or rejected.

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3.4.2.2 Hypothesis Testing

To test the alternative hypothesis (Hi) there were some assumption that was to be fulfilled. Hi accepted if:

a. Mean of post test score is higher than that of pretest score of the two groups.

b. Mean of pretest of the experimental group is not different from that of the control group.

c. Mean of posttest score of the experimental group is higher than that of the control group (Creswell, 2008).

Meanwhile, to test the null Hypothesis (Ho), it is accepted if:

a. There is no significant difference between mean of post-test score and pre-test scores either of the experimental or control group.

b. There is no significant difference between mean of pre-test score of two groups.

c. There is no significant difference between mean of post-test score of the two groups.

To meet the above assumptions, statistical analysis of t-test was applied to decide whether the mean of pre-test score was different from that of post-test score; both in group itself and between two groups with the level of significance of 0.05. The significance of the test was analyzed by using computer program of Statistical Product and Solution Services (SPSS 17) Microsoft Windows program.

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