

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with the research design and method including the site and participants, data collection technique, data analysis technique, and concluding remark of the chapter.

3.1. Research Method

This research is qualitative research since it concerned the understanding of human behavior and conducted in a natural setting with uncontrolled observation and attempted to interpret or make sense of phenomena (Polit and Hungler, 1999). In addition, this research was process-oriented, exploratory, expansionist and describes in detail the entire particular phenomenon occurring in such setting (Nunan, 1992; Merriam, 1988 cited in Creswell, 2009; Cohen & Manion, 1989).

In line with De Vos (2002, p. 360), this present study was therefore a qualitative-descriptive research which attempted to find out the influence of activities by using implicit multiple intelligences towards students' effective EFL learning. Besides, a qualitative research is appropriate for this present research because qualitative methodology is dialectic and interpretive as the characteristics of the research. During the interaction between the researcher and the research participants, the participants' world is discovered and interpreted by means of qualitative method.

3.2. Research Design

Research design as plans and procedures helped the researcher to obtain answer to the research questions of this current study through the determination of the detailed methods of data collection and analysis (Polit & Hungler, 1999, p.

155; Creswell, 2009, p. 1). Similar to Polit & Hungler's (1999, p. 157) explanation of descriptive strategies in research design, this research tries to adapt the descriptive strategies as the main objective to accurately portray characteristic of person, situation, or groups and the frequency with which certain phenomena occur.

Besides, the qualitative research was conducted in the exploratory approach in order to find out the understanding and information related to the theory. The data presented in descriptive way to interpret the natural phenomenon appeared during classroom activity. The description of the data presented in this study was attempted to explore and understand the meaning of individual or group interactions which the data collection relied on text and images data (Creswell, 2009, p. 141). Furthermore, this research used process-oriented method to understand, interpret, describe, and developed the theory in certain setting (Burn & Grove, 1993, p.356).

This research has multiple sources of data gained from video and direct-classroom observation and also interviews which were reviewed and organized into categories that cut across all the data sources. The data was collected in natural setting by talking directly to the people and seeing them behaved and acted within their context.

The forms of data collection, in order to answer one of the research questions in this research regarding the influence of multiple intelligences to the students' ability in learning English, the researcher decoded the classroom activities from videotapes and asked some simulations to the interviewees based on the learning materials which had been learned in the previous meeting. The interviews, however, which were based on the video transcription attempted to answer the second question of this research regards students' responses toward multiple intelligences in the classroom. This research used theoretical point of view to explore and analyze the study by making interpretation of what was seen, heard and understood. All of the characteristics above are also mentioned by

Creswell (2009, p. 141-143) and Hatch (2002, pp. 38-41, 44-48) in their explanation about the characteristics of research design to be called qualitative research.

3.3. Site and Participants of the Study

The research was conducted in one public senior high school in Cimahi. The reason of choosing the school was the accessibility of the site was easy since the teaching practicum was once conducted in the school during the previous academic year. In addition, senior high school students who mostly had experience and often returned to learn with mixed bag of assumptions about education, as well as past experiences that might be positive or negative, is an appropriate research object for this study (Herod, 2001, p. 19).

Since the research focused on the learning process using implicit Multiple Intelligences in the classroom and students' responses towards the implicit MI learning strategies, thus, one class of XI Science consisting of 38 students was chosen as the participants of this research. Eight students representing eight categories of intelligence were selected, as a result from the checklist test, to be interviewed. This sampling was done as follows:

- The researcher firstly sought the vice principle of academic affairs to identify potential participants.
- Possible participants were given a set of multiple intelligences checklist for student which was taken from Armstrong (2009).
- The researcher then put the result of the checklist into table and selected students with the highest score from each aspect of intelligence were chosen.
- Each participant who was chosen as a sample was asked to be interviewed.

3.4. Data Collection Technique

In many qualitative researches, researcher collects multiple forms of data and spends a considerable time in the natural setting gathering information. The

data for this qualitative research were collected through videotapes of classroom activity, observation (participation observation field notes), interviews (notes from formal interviews, transcripts of taped interviews) (Burn & Grove, 1993, p. 373; Hatch, 2002, p. 53; Creswell, 2009, p. 146).

For obvious reasons, the data-handling system of this research had been done carefully to prevent any missing data collected. The data, according to the data collecting methods mentioned above, were obtained from several sources, such as observation, interview, and video recording. Since it is a qualitative research, the data collection involved video recording and interviews in separated session. The recording of classroom activity helped to ensure the data obtained from observation and interviews.

3.4.1. Observation

Classroom observation was divided into two stages; they were preliminary observation and the checklist test observation. According to Creswell's (2009) theory about research step in qualitative observation, the preliminary observation stage, conducted before the researcher started the classroom video recording, was carried out to gain relevant data related to the students' learning behavior and misbehavior in the classroom.

The first thing that was observed in the preliminary observation was the total number of the students which is 38 students, like other big classes in Indonesian's public schools. Then, the researcher made students' seating floor plan to be used as a guidance to analyze the students' learning behavior and misbehavior during the learning activities in the classroom. Video recording was not used in preliminary observation.

According to Creswell (2009, p. 147), qualitative observations are when the researcher took field notes on the behavior and activities of participants at the research site. In this study, the researcher completely observed the students' major intelligence(s) identified in the classroom using the checklist test (Appendix 2) and also observed classroom activity in order to find out the implementation of

teaching strategies which involved the MI model. An observation has the following advantages for this research according to Creswell (2009, p. 146):

- Researcher has a first-hand experience with participant.
- Researcher can record information as it occurs.
- Unusual aspects can be noticed during observation.
- Useful in exploring topics that may be uncomfortable for participants to discuss.

This research followed the following steps during the observation:

- (1) Made an appointment with the vice principle of academic affairs at a time which suited him.
- (2) Explained the purpose of the research and its advantages towards participants and school development of the teaching strategy implementation.
- (3) Made an appointment with the English teacher to arrange class observations.
- (4) Joined the teacher to come to the classroom and wrote the notes about students' learning behavior.
- (5) Asked the students to have a checklist test to get some information about their major intelligence(s).

The data from preliminary observation and checklist test will be elaborated and discussed in Chapter IV in this paper.

3.4.2. Video recording

Videotapes of the classroom activities were developed to collect the data of verbal and nonverbal interaction between the teacher and the students which was in line with Creswell's (2009) and Fraenkel & Wallen's (1990) description about audio-visual materials. This method of data collection gained a comprehensive data which provide an opportunity to review and observe the classroom activities. Besides, it helped the researcher to avoid the obstacles such as losing of several behaviors that are occurring rapidly in an educational setting. In addition, this kind of recordings could assist the study to seek for validity of the data transcription.

3.4.3. Interview

After conducting the recordings, separated interview sessions were employed. The interviews are recorded and transcribed. The data collection through interview was conducted by interviewing samples that is chosen randomly according to the seven categories from the result of the checklist test. In this research, data was gathered by interviewing the samples in a quite environment, free from disturbances, and where they felt safe.

Coincide with Burns & Groove (1993, p. 285), De Vos (2002, p. 302), and Creswell (2009, p. 179) about the advantages of interviews, this method of data collection helped the researcher to facilitate co-operation and elicit more information and leading to a complete description of the phenomenon under study by the participants.

In this phenomenological research where the descriptions of participants can be explored, open unstructured interviewing is considered as a main method of this research data collection. The open unstructured interview in phenomenological studies is intended to be in-depth (Burn & Grove, 1993, p. 284). De Vos (2002, p. 302) emphasized the previous theory, which then strengthen this research assumption, that the aim of the unstructured interview is to actively enter the world of people that is grounded in behaviors, languages, definitions, attitudes and feelings. It was supported by Bryant (2013) statement that an unstructured interview is an interview without any set format but in which the interviewer, or in this case is the researcher, have some key questions formulated as listed below.

1. The application of multiple intelligences teaching strategy in the classroom.
2. The activities involving multiple intelligences in the classroom.
3. The response of students towards the activities that is includes multiple intelligences.
4. The simulation of learning material implementation in order to indicate students' understanding toward the learning materials.

In an open-unstructured interview, there are no questions deliberately formulated since the questions based on an interviewee's responses and proceeds like a friendly, non-threatening conversation (Bryant, 2013). The researcher may use reasonable guidelines to prevent the participants from feeling that they are being "cross-examined" on a topic, avoid of feeling threatening, and also the interviewer has to make the interviewees feel at ease in the interview so they are more likely to open up and say what they really mean (Burns & Grove, 1993, p. 285; Bryant, 2013). Therefore, Bryant (2013) added that the using of any kind of language in an interview is allowed and it depends on the interviewee's feeling.

3.5. Data Analysis Technique

Data analysis is a challenging and creative mechanism for reducing and organizing data to produce findings that require interpretation by the researcher from the data generated (Burns & Grove, 1993, p. 479; De Vos, 2002, p. 339). The process of data analysis involves making sense out of text and image data. It involves preparing the data for analysis, conducting different analyses, moving deeper into understanding the data, representing the data, and making an interpretation of the larger meaning of the data.

Analysis of this research goes beyond description because data is transformed and extended. The descriptive stage is an important phase in qualitative research since the researcher used reflexivity and intuiting to exclude preconceived ideas about the phenomenon under study (Burns & Grove, 1993, p. 479). The researcher identified themes and patterns from the data. Coding was also used to expand, transform, providing opportunities for more diverse analyses.

Data from checklist test and notes from video tapping analyses were also used to record insight or idea related to notes which, then, would be interpreted. Interpretation focused on the usefulness of the findings to be implemented in education field.

3.5.1 Observation

This research firstly gained data through checklist test to get information about students' intelligences. Armstrong (2009, p. 34) suggested to teachers that one good way to identify students' most highly developed intelligences is to observe how they misbehave in class. For example, the highly spatial students will be doodling and day dreaming or the strongly linguistic student will be talking out of turn. Another good observational indicator of students' proclivities is how they spend their free time in school. The following checklist test helps to organize the observations of a student's MI (Armstrong, 2009, p. 36-39). This checklist test is not a usual test since it has not been subjected to any protocols necessary to establish reliability and validity.

Table 3.1. Multiple Intelligences Checklist for Students
(Taken and adapted from Armstrong, 2009, p. 35-38)

<p>1</p> <ul style="list-style-type: none"> <input type="checkbox"/> Writes better than average for age <input type="checkbox"/> Spins tall tales or tells jokes and stories <input type="checkbox"/> Has a good memory for names, places, dates, or trivia <input type="checkbox"/> Enjoys word games <input type="checkbox"/> Enjoys reading books <input type="checkbox"/> Spells words accurately (or if preschool, does developmental spelling that is advanced for age) <input type="checkbox"/> Appreciates nonsense rhymes, puns, tongue twisters <input type="checkbox"/> Enjoys listening to the spoken word (stories, commentary on the radio, talking books) <input type="checkbox"/> Has a good vocabulary for age <input type="checkbox"/> Communicates to others in a highly verbal way <p>Total:</p>	<p>3</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reports clear visual images <input type="checkbox"/> Reads maps, charts, and diagrams more easily than text (or if preschool, enjoys looking at more than text) <input type="checkbox"/> Daydreams a lot <input type="checkbox"/> Enjoys art activities <input type="checkbox"/> Is good at drawings <input type="checkbox"/> Likes to view movies, slides, or other visual presentations <input type="checkbox"/> Enjoys doing puzzles, mazes, or similar visual activities <input type="checkbox"/> Builds interesting three-dimensional constructions (e.g., Lego buildings) <input type="checkbox"/> Gets more out of pictures than words while reading <input type="checkbox"/> Doodles on workbooks, worksheets, or other materials <p>Total:</p>
<p>2</p> <ul style="list-style-type: none"> <input type="checkbox"/> Asks a lot of questions about how things work <input type="checkbox"/> Enjoys working or playing with numbers <input type="checkbox"/> Enjoys math class (or if preschool, enjoys counting and doing other things with numbers) <input type="checkbox"/> Finds math and computer games interesting (or if no exposure to computers, 	<p>4</p> <ul style="list-style-type: none"> <input type="checkbox"/> Excels in one or more sports (or if preschool, shows physical prowess advanced for age) <input type="checkbox"/> Moves, twitches, taps, or fidgets while seated for a long time in one spot <input type="checkbox"/> Cleverly mimics other people's gestures or mannerisms

<p>enjoys other math or science games) <input type="checkbox"/> Enjoys playing chess, checkers, or other strategy games <input type="checkbox"/> Enjoys working on logic puzzles or brainteasers (or if preschool, enjoys hearing logical nonsense) <input type="checkbox"/> Enjoys putting things in categories, hierarchies, or other logical patterns <input type="checkbox"/> Likes to do experiments in science class or in free play <input type="checkbox"/> Shows interest in science-related subjects <input type="checkbox"/> Does well on Piagetian-type assessments of logical thinking</p> <p>Total:</p>	<p><input type="checkbox"/> Loves to take things apart and put them back together again <input type="checkbox"/> Puts his/her hands all over something he/she's just seen <input type="checkbox"/> Enjoys running, jumping, wrestling, or similar activities (or if older, will show these interests in a more "restrained" way—e.g., running to class, jumping over a chair) <input type="checkbox"/> Shows skill in a craft (e.g., woodworking, sewing, mechanics) or good fine-motor coordination in other ways <input type="checkbox"/> Has a dramatic way of expressing herself/himself <input type="checkbox"/> Reports different physical sensations while thinking or working <input type="checkbox"/> Enjoys working with clay or other tactile experiences (e.g., finger painting)</p> <p>Total:</p>
<p>5</p> <p><input type="checkbox"/> Tells you when music sounds off-key or disturbing in some other way <input type="checkbox"/> Remembers melodies of songs <input type="checkbox"/> Has a good singing voice <input type="checkbox"/> Plays a musical instrument or sings in a choir or other group (or if preschool, enjoys playing percussion instruments and/or singing in a group) <input type="checkbox"/> Has a rhythmic way of speaking or moving <input type="checkbox"/> Unconsciously hums to himself/herself <input type="checkbox"/> Taps rhythmically on the table or desk as he/she works <input type="checkbox"/> Is sensitive to environmental noises (e.g., rain on the roof) <input type="checkbox"/> Responds favorably when a piece of music is put on <input type="checkbox"/> Sings songs that he/she has learned outside of the classroom</p> <p>Total:</p>	<p>7</p> <p><input type="checkbox"/> Displays a sense of independence or a strong will <input type="checkbox"/> Has a realistic sense of his/her abilities and weaknesses <input type="checkbox"/> Does well when left alone to play or study <input type="checkbox"/> Marches to the beat of a different drummer in his/her style of living and learning <input type="checkbox"/> Has an interest or hobby that he/she doesn't talk much about <input type="checkbox"/> Has a good sense of self-direction <input type="checkbox"/> Prefers working alone to working with others <input type="checkbox"/> Accurately expresses how he/she is feeling <input type="checkbox"/> Is able to learn from his/her failures and successes in life <input type="checkbox"/> Has good self-esteem</p> <p>Total:</p>
<p>6</p> <p><input type="checkbox"/> Enjoys socializing with peers <input type="checkbox"/> Seems to be a natural leader <input type="checkbox"/> Gives advice to friends who have problems <input type="checkbox"/> Seems to be street-smart <input type="checkbox"/> Belongs to clubs, committees, organizations, or informal peer groups <input type="checkbox"/> Enjoys informally teaching other kids <input type="checkbox"/> Likes to play games with other kids <input type="checkbox"/> Has two or more close friends</p>	<p>8</p> <p><input type="checkbox"/> Talks a lot about favorite pets, or preferred spots in nature, during class sharing <input type="checkbox"/> Likes field trips in nature, to the zoo, or to a natural history museum <input type="checkbox"/> Shows sensitivity to natural formations (e.g., while walking outside with the class, will notice mountains, clouds; or if in an urban environment, may show this ability in sensitivity to popular</p>

<p>___ Has a good sense of empathy or concern for others</p> <p>___ Is sought out for company by others</p> <p>Total:</p>	<p>culture “formations” such as sneakers or automobile styles)</p> <p>___ Likes to water and tend to the plants in the classroom</p> <p>___ Likes to hang around the gerbil cage, the aquarium, or the terrarium in class</p> <p>___ Gets excited when studying about ecology, nature, plants, or animals</p> <p>___ Speaks out in class for the rights of animals or the preservation of planet earth</p> <p>___ Enjoys doing nature projects, such as bird watching, collecting butterflies or insects, studying trees, or raising animals</p> <p>___ Brings to school bugs, flowers, leaves, or other natural things to share with classmates or teachers</p> <p>___ Does well in topics at school that involve living systems (e.g., biological topics in science, environmental issues in social studies)</p> <p>Total:</p>
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The order of intelligence on the table above is linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist. This checklist was given without any categorization of intelligence to prevent answer bias. Student should get eight to ten maximum score to be called as highly developed intelligence in certain category.

The purpose of this inventory is to help the researcher to indicate student's most highly developed intelligence(s) from the student's chosen activities (involved what they like to do during the class, how they learn in the classroom, and what they like to do to spend their free time). The highest score in each category will be considered as the highly developed intelligence student in that category. Furthermore, student who gets the highest score in certain category will be interviewed.

The analysis of classroom observation was actually combined with the video recording since the video was used to validate past events during the observation with the notes and decoding.

To adjust to the needs of the study, the analysis of teaching instruction as shown in the sample above will be replaced by learning transition labels. Checklist of MI aspect that involved will be made in group of activities under the label of learning transition. The analysis followed by converting the data in the table into a percentage that shows the proportion of MI aspects which was involved in one session of the meeting. The data obtained from the results of the conversion then compared to the amount of learning activities contained with MI aspects, which influenced the students' ability in memorizing and understanding the material as a result of interview data conversion that will be explained in the next session.

3.5.3. Interview

The data collection through interview was conducted by interviewing samples that were chosen based on the highest score from the eight categories as the result of the checklist test in the analysis of classroom observation. The question which was used in the interview was taken from the results of the analysis of the document where the learning activities are categorized into several groups labeled as explained in the previous session. Interview conducted to the eight students who represent each category of MI to find out how far the influence of learning activities involving MI can have an impact on the students' effective learning by comparing this result with the conversion of data analysis from video transcriptions. Furthermore, the data gained from the analysis of interview transcriptions were used to interpret the students' responses towards the MI based approach to the learning activities.

3.6. Concluding Remark

This qualitative research was conducted in the exploratory approach in order to find out the understanding and information related to theory. The research firstly characterized the formulation of the research question, the objectives and the purpose of the study. Then a literature review was done to become familiar with the content of the literature. The research uses the researcher as the data

collector instrument and the sample was the participants who met the eligibility criteria. This research has multiple sources of data gained from interviews, observations, and document analyses which is reviewed and organized into categories that cut across all the data sources. Field notes were made during observation and interview. Data analysis started as soon as the first interview had been obtained.