CHAPTER III

METHODOLOGY

Chapter II has presented four main theoretical foundations, such as: theoretical of reading, theories of blended learning, theories of moodle, and the concept of attitude. This chapter describes methodology aspects of this study. The methodology covers research design, research site and participants, data collection procedures, and data analysis.

3.1 Research Design

This study employed a qualitative approach that is considered appropriate to "explore attitudes, behavior, and experiences" (Dawson, 2007: 15). This is a case study research design because it "investigates a contemporary phenomenon within its real-life context" (Yin, 2003: 3). Furthermore, according to Emilia (2009: 191), this study also refers to case study because "it was carried out in a small scale and a single case" and "it focused on one particular instance of educational experience or practice." The single case in this study refers to the implementation of moodle to support face-to-face classroom reading comprehension activities.

Case study research design in this study, which seeks to present a complete description of a phenomenon within its context, refers to descriptive case study. "Descriptive case study designs attempt to present a complete description of a phenomenon within its context," (Hancock & Algozzine, 2006: 33).

In other words, this study refers to descriptive case study, which seeks to describe how moodle is implemented to support face-to-face classroom reading comprehension activities where three moodle features (forum, quiz, and grade) are developed. Forum, in this study, is developed by facilitating students-students, students-teacher, and teacher-students online discussion. Next, quiz is developed by creating online self-marking multiple-choice mini tests and tests. Then, grade is developed by enabling course participants to view their reading comprehension performances by clicking grade toolbar in a course page as have been explained in chapter two and as will further be discussed in chapter four.

The processes of moodle features development are observed, analyzed, and interpreted to understand how the moodle features facilitate students-students, students-teacher, and teacher-students discussion, how moodle features shape students' learning environment, and what the strengths and weaknesses of utilizing those moodle features are to support face-to-face classroom reading comprehension activities within its context. Moreover, classroom observations, interviews, questionnaires, document analyses are administered in this study.

Classroom observations, interviews, questionnaires, and document analyses in this study are aimed to get deeper understanding of phenomenon of utilizing moodle in blended learning from participants' point of view. As McNamara (1999) states that qualitative approach is to understand participants' phenomenon from their point of views. The classroom observations, interviews, questionnaires, and document analysis are employed as multiple source of evidence to allow for in-depth study. As Emilia (2009:191) states, "case study research employed multiple sources of evidence–converging from the set of issues or multiple data collections and analytic procedures to allow for in-depth study."

3.2 Research Site and Participants

The research site of this study is a Senior High School in Pangkalpinang, Bangka Belitung Province. The school is chosen as the research site since there has been moodle infrastructure. Sugiyono (2012: 61) stated, "the population is a generalization area comprising: an object / subject that have certain qualities and characteristics that was determined by the researchers to be learned and then drawn conclusions."

From the three grades at the school, there are seven classes from the second grade. Every class contains about twenty-five student. The students are assigned into three parallel classes of science major and four parallel classes of social major at the second years academic. Then, one group from the three parallel classes of science major is assigned to be the research sample. The purposive sample is assigned to obtain the sample from the population in this case study research. "Case study research methods allow researchers to capture multiple realities in

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natural setting and its use of purposive sampling techniques," (Hancock & Algozzine, 2006: 72).

Utilizing moodle in blended learning needs computer devices to support the learning process. Based on initial information, there are 23 students from 26 (88 %) students in the class science one (IPA$_1$) having laptops. The class consists of 19 female students and 7 male students. They are familiar with computers technology for they use them to support their daily learning activities at school. The class is chosen as the sample of this study.

3.3 Data Collection Procedures

Data collections are administered simultaneously during and after data collection stage because qualitative data constantly evolves (Anderson & Arsenault, 2005: 138). The data collection procedures seek to describe how moodle features, forum, quiz, and grade, are incorporated to support face-to-face classroom learning environment for reading comprehension activities. The data collection in this study is based on main data from observations, semi-structured interviews, questionnaires, and document analyses. All the data are transcribed and categorized to find central themes. Then, the data are interpreted in a condensed body of information in accordance with research questions and lastly conclusions could be drawn.

Furthermore, the data collection procedures (observation, interview, questionnaire, and document analysis) in this study are discussed below.

3.3.1 Observation

Class observations are administered for 90 minutes twice a week for approximately two months. Information is identified in class observations to get rid of information "to shed light on possible answers to the research questions." Then, observation guide contained a list of features to be addressed during particular observation such as "time/date/location of the observation, names/positions of persons being observed, specific activities and events related to the research questions of person being observed, and initial impressions and

interpretations of the activities and events under observation" (Hancock & Algozzine, 2006: 46).

This study employs participant observer who "becomes much more involved in the lives of the people being observed," (Dawson, 2007: 33) and attempts to gain thorough description of three aspects. First, describing how modules on moodle are developed for reading comprehension activities, second, how moodle shapes students' learning environment in reading comprehension activities, and third, investigating the strengths and weaknesses of moodle in reading comprehension activities.

Avoiding bias in observation, according to Emilia (2009: 198) one teacher, Mr. Anwar (pseudonym), who works at the same school is invited to observe the class. This is aimed to check the observation administered by researcher where observation notes are written immediately after each session whiles "the memory of the observation was still fresh," as participant observer against his.

3.3.2 Interview

Interview in qualitative research seeks to describe phenomenon under studied and to portray meanings of central themes in the life world of the subjects. By having an interview, the central meaning of what the participants say can be portrayed that lead to central themes of the subjects' world lives. In other words, the main task in interviewing is to understand the meaning of what the interviewees say (Kvale, 1996; Laforest, 2009). A qualitative research interview seeks to cover both factual and meaning level as McNamara (1999) states that interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can track in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to further investigate their responses. Furthermore, collecting, analyzing, and interpreting data from interviews in this study are done constantly moving back and forth until new information does not add to their understanding of a topic in this study (Malik, 2013).

Some students, considered as key participants "whose knowledge and opinions may provide important insights regarding the research questions," (Hancock & Algozzine, 2006:39) are interviewed to gain their inner perspective on how moodle is developed, how moodle shapes students' learning environment in reading comprehension activities and to describe strengths and weaknesses of moodle in reading comprehension activities. There are ten students from the twenty-six are interviewed. As Kvale (1996: 102) states, "in current interview studies, the number of interviews tend to be 15 ± 10," by administering an interview guide or protocol since an interview is conversational that has a structure and purpose.

Every participant from those 10 key informants in this study is interviewed in certain place for approximately 15-minute every student once in two weeks while focus group discussion is administered twice during this study. The interviews are recorded by using recording interview data, audiotape, to avoid losing of valuable information and then "transcribed in order to categorize information into a coding scheme" (Hancock & Algozzine, 2006: 39-40). Moreover, doing an interview conducted by participant observer may lead to bias.

To minimize bias in verbal report, Emilia (2009: 199) states that removing possibility of verbal report to pleasant teacher as the researcher, who is also the interviewer; interviews are administered by another teacher who does not participate in teaching program. The interviews are administered in Bahasa Indonesia to allow students to express their ideas in more elaborated way two weeks after interviews in stage one by inviting a mid and a high achiever.

3.3.3 Questionnaire

Questionnaires are developed to describe students' attitude toward moodle in this study. The questionnaires portray three componential viewpoints. They are cognitive component, which refers to participants' ideas and beliefs in moodle, affective component, which refers to participants' feeling and emotions toward moodle, and behavior component, which refers to participants' action tendencies to moodle. As Allport (cited in Oskamp & Schultz, 2005: 9) sates, "an attitude is a

single entity but that it has three aspects or components: affective, behavioral, and cognitive."

The questionnaires in this study use range scale which is a 5-point for strongly agree to 1-point for strongly disagree. The definitions of each of the numeric value in the scale are reflected on the questionnaires to serve as a guide for the respondents while answering the paper.

The questionnaires are tested to students who are not the sample of this research but they are still at the same level. They are students from class science two (IPA$_2$) of the second year. Since the students have never utilized moodle to support their classroom reading comprehension activities, then, they are train how to use moodle in reading comprehension for 3 meetings. Then, the questionnaires are administered. The result from questionnaires is analyzed to check the questionnaires reliability by doing the Cronbach-alpha coefficient test, which is typically used to test reliability or consistency. It is considered that a reliability coefficient of .70 or higher is considered acceptable. Furthermore, checking for validity, the questionnaires are checked by running a Pearson-moment r correlation coefficient test. A correlation of 0.15 or higher is considered a significant indicator of test validity. As Lucas et al. (2010:15) state, "it is considered that a reliability coefficient of .70 or higher is considered "acceptable" while "a correlation of 0.15 or higher is considered a significant indicator of test validity."

The result shows that questionnaire's reliability coefficient 0.934 is considered acceptable (see appendix 1). Furthermore, checking for validity, the questionnaires were checked by running a Pearson-moment r correlation coefficient test. The result showed that the 21 questionnaires' items validity ranged from 0.459 to 0.828 is considered a significant indicator of test validity with degree of significance 5 % (see appendix 1).

Aside from running these tests, the scores are expected to be reliable and valid based on the following four conditions. They are (1) the information requested is known to the respondents since the statements are about their

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attitude toward moodle, (2) the questions are phrased clearly and unambiguously, (3) the questions refer to current attitude of these students, and (4) the questions are non-threatening, not embarrassing, and don not violate the respondents' privacy.

In addition, the map of the questionnaire items used in this study is described, as follow:

Table 1. The map of the questionnaire items

Aspects	The Questionnaire Items		
	Cognitive	Affective	Behavior
1. Learning through Moodle			
a. Moodle facilitated learning process	1	2	3
b. Moodle supported learning outside environment	4	5	6
c. Moodle was a new way in learning	7	8	9
d. Moodle supported social interaction in learning process	10	11	12
2. Technical Aspects			
e. Accessing forum	13	14	15
f. Accessing Quiz	16	17	18
g. Accessing Grade	19	20	21

Based on the structure of the questionnaire items above, the questionnaires portrayed three componential viewpoints. They were cognitive component, which referred to participants' ideas and beliefs in moodle, affective component, which referred to participants' feeling and emotions toward moodle, and behavior component, which referred to participants' action tendencies to moodle. The components of the questionnaires used in this study are in line with Allport (as cited in Oskamp & Schultz, 2005: 9) who states that "an attitude is a single entity but that it has three aspects or components: affective, behavioral, and cognitive."

In addition, based on the table above, the questionnaires used in this study portrayed two aspects, learning through moodle and technical aspects. The first aspect portrayed four sub-aspects; moodle facilitated learning process, moodle supported outside learning environment, moodle was a new way in learning, and

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moodle supported social interaction in learning process. Then, the second aspect of questionnaire in this study portrayed three sub-aspects; accessing forum, quiz, and grade. Each sub-aspect realized in to three questionnaires statements that portrayed students' attitude toward moodle for reading comprehension activities, as will further be discussed in chapter four.

3.3.4 Document Analysis

Document analysis in this study is mainly got from moodle platform where the researcher utilized the program to support classroom reading-comprehension activities. Data from document analysis are stored online and can be accessed by using internet connection and suitable web browser. Then, the data, which are considered relevant to the research questions, appeared on a screen shoot, when the data are taken as documents to support data interpretation and analysis in this study. As Hancock & Algozzine (2006: 51) state, "documents examined by a case study researcher include material extracted from the internet, private and public records, physical evidence, and instruments created by the researcher."

3.4   Data Analysis Procedures

This section focused on data analysis procedures got from observation, interview, questionnaire, and document analysis as they are discussed, as follow:

1.4.1 Analysis of observation data

Analyzing data from observation, there are three main points applied in this study, as follow:

First, observation notes that are written by co-observer, one teacher Mr. Anwar (pseudonym) who works at the same school is invited to observe the class, are classified, analyzed, and interpreted to find pattern of themes that emerged during and after the data analysis (Kvale, 1996; Hancock & Algozzine, 2006) in accordance to research questions. Moreover, Miles & Huberman (1984: 15-21) suggest that "data reduction, data display, and conclusion drawing/verification" are used in analyzing data from observation. Data reduction involves focusing, simplifying, abstracting, and transforming the raw data that appear in written-up field notes, data display is an organized assembly of information that permits

conclusion drawing and action taking in the form of narrative text, and conclusion drawing/verification involves deciding what things mean, patterns, explanations, possible configurations that conclusions appear until data collection is over.

Second, information from observation is identified to get-rid of information "to shed light on possible answers to the research questions." Then, observation sheet contained a list of features to be addressed during particular observation such as "time/date/location of the observation, names/positions of persons being observed, specific activities and events related to the research questions of person being observed, and initial impressions and interpretations of the activities and events under observation" (Hancock & Algozzine, 2006: 46).

Third, to avoid missing interpretations, data analysis from observation is done directly after the data collection. Moreover, data analysis is administered simultaneously during and after data collection stage because qualitative data constantly evolves (Anderson & Arsenault, 2005:138).

1.4.2 Analysis of interview data

Analyzing data from interview, three stages of data analysis are administered. They are transcribing, categorizing, and interpreting. According to Kvale (1996:163), "interviews are today seldom analyzed directly from tape recordings. The usual procedure for analyzing is to have the taped interviews transcribed into written texts."

Furthermore, the written texts of data from interviews are analyzed and categorized to find central meaning of what the participants' says, then, lead to central themes (Laforest, 2009) in accordance to research questions. According to Cohen et al. (2007), the content analysis of data from interview involves coding, categorizing, comparing, and concluding from the text.

In this study, written texts data from interviews are transcribed, categorized, and analyzed into themes which "long statements are compressed into briefer statements in which the main sense of what is said is rephrased in a few words," (Kvale, 1996:192). Furthermore, one category to another is compared to attain a

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related conclusion that would then be selected as the final data in form of condensed body of information.

1.4.3 Analysis of questionnaire data

Analyzing data from questionnaires which is a 5-point for strongly agree to 1-point for strongly disagree, as a part of data triangulation, is described and interpreted by using Likert Scales.

Furthermore, the questionnaires, which are portrayed the students' attitude toward moodle in terms of blended learning, are formulated into three categories (positive, uncertain, and negative) as suggested by Azwar (2012) to support data from observation and interview. The description of data analysis from questionnaires, students' attitude toward moodle per category and whole category, is described, as follow:

a. The categories of students' attitude toward moodle per aspect

Table 2. The categories of students' attitude toward moodle per aspect

Categories	Range of Scores		
Positive		>	260
Uncertain	130	-	260
Negative		<	130

b. The categories of students' attitude toward moodle the whole aspect

Table 3. The categories of students' attitude
toward moodle the whole aspect

Categories	Range of Scores		
Positive		>	1820
Uncertain	910	-	1820
Negative		<	910

The data above shows that there were two aspects: per-aspect and whole-aspect. Data questionnaires from per-aspect portrayed students' attitude toward moodle for reading comprehension activities for each sub-aspects (7 sub-aspects) separately. Then, data questionnaires from the-whole aspect described students'

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attitude toward moodle for reading comprehension activities in one unity, as will further be discussed in chapter four.

1.4.4 Analysis of documents

Documents analyses are got from moodle features (forum, quiz, and grade) as a tool for tracking students' involvement in virtual classroom discussion in a course being administered. As Cole & Foster (2008:193) sate, "you can access the grades area by clicking the Grades link in the administration block on your course page. The grade book can give your students up-to-date information about their performance in your course." Besides forum and grade, there is also data log from moodle that contains information such as; frequently students visited the existing courses, when they visit the existing courses, what they do while accessing existing course and how long they are involving in existing virtual course. In virtual learning environment, data log in moodle are used to gather data of using virtual learning environment (Mogus et al., 2012).

In other words, analyzing and interpreting documents from virtual learning environment as suggested by Cole & Foster (2008) and Mogus et al. (2012) above in this study is in line with Hancock & Algozzine (2006: 51) who state,

> A thorough researcher gathers information from as many relevant documents as possible. When planning to use documents, the researcher asks: Who has the information? What part of it is needed? Where is it? When was it prepared? How will it be collected? The results of document analyses are often summarized in narrative form or integrated into tables that illustrate trends and other significant outcomes.

In this study, data from moodle features (forum, quiz, and grade) and data log from moodle are selected, described and interpreted in narrative form or integrated into tables/figures that illustrate trends and other significant outcomes to support data finding from observation, and interviews. It is done to present complete description of utilizing moodle to support face-to-face reading comprehension activities since descriptive case study "attempts to present a complete description of a phenomenon within its context" (Hancock & Algozzine, 2006: 33).