CHAPTER III
RESEARCH METHODOLOGY

This chapter unpacks the methods and techniques used in the present study. It covers: research design; research settings; data collecting techniques; research instruments; research procedure; data analysis techniques, expected result and timeline of the research.

3.1   Research Design

This study aims to investigate the implementation of ICT integration in an EFL classroom especially in vocational high school for agriculture including the process and challenges. To answer the research questions, a qualitative research methodology was employed. Since the main purposes of qualitative research are to emphasize more on the process of meaning-making rather than an outcome and to explore how people make meaning of their experiences (Merriam, 2009), this methodology is expected to be able to comprehensively describe the process of ICT integration in the English teaching and learning process. This is also in line with what Cresswell (2012) said about the fucntion of qualitative methodology which is to explore and understand a central phenomena i.e., integrating ICT like in this study. Moreover, other function of qualitative methods which is to understand feelings, values, and perceptions that underlie and influence behavior (Hamied, 2017) seem to be approriate with the focus of the study which is to explore teachers and students' perception.

Further, since the present research focuses on gaining an intensive and holistic description as well as in-depth analysis about ICT integration in EFL classroom from Indonesian Secondary EFL teachers, I employed a qualitative case study approach. As mentioned by Merriam (2009), a qualitative case study is approriate if the researcher needs to understand a single entity or phenomenon comprehensively since it provides an intensive and holistic product of investigation. This is also admitted by Yin (2003) that the qualitative case study is considered approriate if the focus of the study is to explain a present circumstance such as how and why a social phenomenon works. Moreover, a

qualitative case study is seen approriate to deeply explore a single or more program , event, activity.and process (Creswell, 2014).

3.2.1   Research Questions

Based on the problem identified above, this study attempts to address the following research questions.

1. How do the vocational English teachers integrate technology in the English teaching and learning process?
2. What challenges are encountered by the English teachers in the process of technology integration?
3. What are the student's perceptions on ICT integration in their learning process?

3.3   Research Sites

This study was carried out in a Vocational Hogh School for Agriculture. The selected research sites were distinguished by the geographical issue and accessibility issue. This school has integrated ICT in the learning process supported by school infrastructure that facilitates teachers in this school to utilize the technology devices in their teaching and learning process. The school also involves teachers in the use of technology by holding training to develop teacher skills in technology.

3.4   Research Participants

The participants involved in this study are two Indonesian Vocational High School English teachers and thirty three students with different achievement in English classroom. All these participants that are purposefully selected for the sake of obtaining rich information (Creswell, 2009). The criteria of selection include: (1) their experiences in teaching English with technology integration; (2) the students with low, medium and high achivement to measure the the students perceptions: (3) the school that has been integrated with technology: (4) the availability of supporting ICT-based teaching facilities, such as: projectors and active speakers in each classroom. Beside, this school

have been implementing 2013 curriculum for 5 years within which ICT integration is being more encouraged to realize.

Table 3.1.
Demography of the participants

Category	Sub-category	f
Gender	Male	1
	Female	1
Length of teaching service	Above 10 years	1
	Above 10 years	1
Length of ICT integration	Above 5 years	1
	Above 5 years	1

3.5 Data Collection Instruments

Three instruments used to gain adequate information, which address the research questions. They are observation checklists, questionnaires, and interview. Before this research is conducted, ethical permission to the principal and also to the participants for their readiness to participate in the research performed. After that, to make the participants feel comfortable and willing to engage in the process of data collection by using each instrument, the researcher re-asked for their readiness to participate. For example, in the process of taking data by using observation checklists, the participants asked for their opinion whether they are willing to be recorded in the teaching process or during the interview.

3.5.1 Classroom Observation

An observation is used to look at what is going on around the participant (Heigham & Crocker. 2009). In line with that, Ary, Jacobs, and Sorensen (2010) stated that observation is the basic method for obtaining data in qualitative research and is more than just "hanging out" (p. 431). To understand how teachers integrate the technology in real practice, the researcher observed the process of teaching and learning directly in the classroom. Here, the researcher conducted the observation by using the observation checklist. As stated by Wallace (1998), observation checklist is one of the forms in understanding the learning process (p. 146). The observation checklist contains elements

that observed towards the implementation of technology integration in the teaching and learning activities by the English teachers.

3.5.2 Questionnaire

The third instrument is questionnaire. Johnson and Christensen (2012) state that researchers use a questionnaire, so that they can obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality, and behavioral intentions of the participants (p. 162). In this research, the questionnaire aims to gather the information about the English teachers in implementing technology integration along with the process and challenges that they face in their teaching process. The questionnare also distributed to students to investigate their perceptions on the technology integration in classroom. The researcher used a mixed questionnaire. As stated by Johnson and Christensen (2012), mixed questionnaire is "a questionnaire that includes a mixture of open-ended and closed-ended items" (p. 170).

3.5.3 Interview

The researcher used the interview in order to gather data about the teachers' opinion, students' perception, belief and feeling towards the implementation of technology integration in the teaching and learning process. The researcher developed the questions based on the observation checklist and the questionnaire. The researcher used the interview to obtain information that could not be obtained through the observation and the questionnaire. Besides, through the interview, the researcher verified the answers from the observation checklist and the questionnaire. Thus, it provides a deeper information from the participants.

The interview itself is categorized into three themes. The first part questions relate to the participants' personal perception on ICT integration incorporation in EFL classroom. Meanwhile, the second part of questions refers to how they incorporate the ICT into their teaching process as well as the way the select the teaching materials which incorporate the ICT integration. The third part of the interview is about ICT evaluation, what evaluation system they use, the reasons of selecting the system and how they evaluate it. The last part of the interview relates to the problems and challenges in which

the participants might encounter in the process of using the technology, how they address to them as well as what suggestion they might propose in the future.

3.6 Data Collection Procedures

This section elaborates the procedure of collecting the three types of data. They are observation of classroom, questionnaire, and interview. Some requirements for data collection procedures have been taken to collect desired data. Before starting this research, researchers have conducted a pilot study to collect data in general by distributing questionnaires, classroom observation conducting interviews and conducting. This study was employed a qualitative study, therefore the data collection process sometimes did not fit the schedule that had been specifically determined in the process of distributing questionnaires and conducting the interview. This is because researchers must be able to adapt to school regulations, which relate to the readiness and teaching schedule of the respondent. To have a clear understanding of how data is collected, the following is a brief explanation of each data collection procedure.

3.6.1   Conducting A Pilot Study

The pilot study is described as being carried out before the real study is conducted. The pilot study in general aims to examine whether or not the research instrument is running as expected. In other words, pilot studies help researchers to verify the practice of research instruments which are used for research purposes. Doing a pilot study is believed to be an important step in conducting research. The importance of conducting pilot studies is stated clearly by Griffee (1999, p. 3) who stated that "piloting is not optional". De Vaus (1993.p.53) also strongly suggested that a pilot study cannot be disregarded in a research study. It means conducting a pilot study is highly recommended to minimize the potential threats which might occur in the process of taking the real needed data. For the purpose of this case study, the pilot study was carried out in the period 17/9/2018 to 1/10/2018. The pilot study of the three instruments of the present study was conducted on two teachers. the selection of these two teachers was based on the relevance to the targeted samples of this study. The brief description of the three instruments piloting is provided below.

3.6.1.1 The Questionnaire Pilot Study

The questionnaire pilot study was conducted by distributing the questionnaire to the participants of the pilot study. This questionnaire pilot study was intended to check the wordings of each item in the questionnaire which covered the wording appropriateness and the wording easiness to understand ny the participants. The result of this questionnaire pilot study was used to be the precious inputs for adjusting and modifying the established questionnaire.

3.6.1.2 The Interview Pilot Study

The pilot interview study was conducted by distributing questionnaires to teachers who had been determined to be participants in the pilot study. The pilot study interview was aimed at familiarizing researchers with interview procedures, for example: interview techniques, interview duration, equipment used during interviews, and also to check the reliability and validity of interview items. Berry (1999, p.4) really agreed on the action of the pilot study interview by stating it is important for researchers to familiarize themselves with questioning techniques before conducting the interview. Berry's statement (1999) clearly indicates that researchers are strongly advised to be familiar with the interview method as well as the interview procedure before conducting the real interview in the real research. Thus, researchers can minimize risks or undesirable things during the interview process.

3.6.1.3 The Observation Pilot Study

The observation pilot study was addressed to the two teachers whoo had the relevant criteria to the targeted research sample. In general, the pilot study was accomplished in two meeting for each participant of this observation pilot study by involving two observers. The involvement of these two observers was specifically to check whether the observation checklist elicited the similiar data by two different observers. Furthermore, the observation pilot study is aimed at facilitating the researcher with the observation procedure needed to be carried out in the real observation. Thus,

after the pilot study is carried out it will make it easier for researchers to make observations with better results.

3.6.2 Conducting Classroom Observation

The observation data collected by entering the classroom. This observation method is well known as a non-participant observer. The non-participant observation means that the researchers do not interact with people while they are carrying out their normal tasks such as teaching and studying (Heigham & Crocker, 2009, p.167). The data from classroom observation collected by using field notes (observation notes and observation checklist) and video camera. Field notes are the written account of what researcher hears, sees, experiences, and thinks in the course of collecting and reflecting the data. The observation checklist and notes written in the observation while the activities are running.

In conducting the observation, the video camera used to record the teaching and learning process. According to Fraenkel et al., (2012, p. 450), by using a video in the observation, the researcher will gain three benefits. First, the recorded file can be repeated many times to get good results and no missing parts. Second, the participants may listen and watch to the video recording and present the views or comments. Third, the permanent video recording can be used to compare if there are different data in conducting the observation later. Moreover, the video camera is also utilized to capture the picture of the physical environment of the classroom.

Table 3.1.
Classroom Observation Background Information

Teacher's Name	Number of Observation	Length of Observation	Date of Observation	Lesson Topic
Rudi	Observation 1	90 minutes	September 20, 2018	Asking and Giving Opinion
	Observation 2	90 minutes	September 21, 2018	Asking and Giving opinion
	Observation 3	90 minutes	September 24, 2018	Asking and Giving opinion
Nunung	Observation 1	90 minutes	September 26, 2018	Offers and Suggestions

Observation 2	90 minutes	September 27, 2018	How's Life
Observation 3	90 minutes	September 28, 2018	Shocking News

3.6.2 Conducting Interview

In this section, the interview held in the teacher's room or other convenient place, so that the teacher can think calmly and concentrate on answering the questions in the interview protocol. During the interview, all conversations recorded to get maximum results. As suggested by Yin (2014), the use of audio tapes or recorder will provide a more accurate rendition of any interview than taking notes. The protocol includes a heading, an instruction to the interviewer, the questions related to the teacher's understanding. Experiences and solutions. In this procedure, the researcher particularly use a semi-structured interview protocol because it is useful for obtaining information to test a specific hypothesis that the researcher has in mind (Fraenkel et al., 2012). The interview session held twice time for each teacher, the first season was interview and second session was some clarification from the transcribing data from the first session of interview. This interview session used interview protocol from Creswell (2012) to help the research to guide the interview session.

Table 3.2.
The Interview Track Record

Pseudonyim	Number of Interview	Date of Interview	Length of Interview
Rudi	Interview 1	29 September, 2019	47:09 minutes
	Interview 2	30 September, 2019	38:09 minutes
Nunung	Interview 1	1 October, 2019	32:07 minutes
	Interview 2	3 October.2019	25:09 minutes

3.6.3 Administering Questionnaire

The questionnaire distributed to the participants by using open-ended questions to allow the teachers and students express their opinions as many as they want. The researcher printed the questionnaire and hand it in to them. In the context of this research, there are some questions relates to the implementing of ICT integration. The questionnaire is also adapted from Ghavifekr, Zabidi, Faizal, Yao & Zhang (2014).

Table 3.3.
Schedule of Administering Questionnaire

Pseudonym	Date of Administering Questionnaire	Time of Administering Questionnaire
Rudi	September 29, 2019	13.05 PM
Nunung	September 25, 2019	10.30 AM

3.7 Research Procedure

The study conducted for about two months, before conducting the research, the researcher explained the procedure of the research and ask teachers' permission related to the classroom observation. The following table describes the procedure of the upcoming study.

Table 3.4.
Research schedule

Date	Meetings	Instruments
1st Week 17 September 2018	First Meeting Ask for ethical permission to school and the participants	Instrument Used Letter of Research
2nd Week 17-18 September 2018	Second Meeting Administering the Questionnaire	Instrument Used
3rd Week 22 - 25 September 2018	Third Meeting Classroom Observation	Instrument used Classroom Observation Checklist
4th Week 25 - 30 September 2018	Fourth Meeting Conduct the Interview	Instrument used Interview protocol
Fifth Week	Fifth Meeting	Instrument used

1 - 5 Oktober 2018	Collect the data through Interview	Interview sheets
6th Week	Sixth Meeting	
5 – 15 Oktober 2018	Transcribe the interview Recordings	
7th Week	Code the transcript	
15 – 25 Oktober 2018		
8th Week	Compare and integrate both data to formulate the display of the findings.	
25 – 30 Oktober 2018		

3.8 Data Analysis

This section elaborates the procedure in analyzing all data from document analysis, observation, interview, and questionnaire.

3.8.1 Observation Data Analysis

The researcher analyzed the observation data after all process of observation has been done by reading the checklist and notes and repeating the field observation record. Then the video recording played back to convince the correctness of the data written in the field notes. The data used to answer the research question on how the teacher implements technology integration in the teaching and learning process.

3.8.2 Interview Data Analysis

In analyzing the interview data, transcribing, categorizing (coding), and interpreting process carried out to answer all research questions (Creswell, 2012). Coding process helped the researcher make sense out of the text data and collapse it into theme. As aforementioned in section 3.4.3 about the interview, there are two kinds of interviews. So, the recorded interviews transcribed and categorized immediately after the data are collected based on each interview answer (Alwasilah, 2011). Then, categories derived from the responses compared one another to gain a similar conclusion which then be selected as the final conclusion. Meanwhile, the teacher's responses on the second stage interview used to identify the teacher's challenges in the teaching and learning process by implementing Information and communication technology (ICT) integration.

The following is the sequence of steps to be accomplished:

1. Transcribing the data from the interview recorder by writing every single detail that showed up in speech.

2. Giving code to each participant according to alphabetical order of their names.

Coding	Interpretation
PT1 and PT2	Profesional teachers as participant of the research

3. Reading again whole part of transcription and getting ready for the second session to some clarification if needed.

4. Taking a note about preliminary themes that participants talk about. In the context of this research will be focused on finding the implementing ICT integration done by the teachers.

5. Coding and categorizing the data based on potentially relevant for answering research questions.

6. Sorting the data based on need and naming them. Based on research question above, there are three categorizing data that will be found, they are the implementing of ICT integration, process of the implementation and the challenges in implementing of ICT.

3.8.3 Questionnaire Data Analysis

The questionnaire distributed at the end of the research, this questionnaire is answered by the research participants in the written form of the self-report question (Hamied, 2010). In the context of this research, there are some questions relates to the implementing of ICT integration. The questionnaire adapted from Ghavifekr, Zabidi, Faizal, Yao & Zhang (2014). After collecting the data, the researcher analyzed the results by using qualitative and quantitative data analysis.

3.9 Ethical Consideration

The researchers must consider the ethical consideration of issues to represent important ethical codes of research. Cohen et al (2000, p. 47) confirmed that research should be conducted "rigorously, scrupulously, and in ethically defensive manner. It is the principle of protecting the confidentiality of research subjects, and the integrity of

both researchers and the result of research. In the case with this study, the researcher maintained that ethical considerations through the following procedures:

a) The research participant was told that the participation was voluntary and consent of participation was given.
b) The research participation was clarified about the purpose and the broad procedures of the research.
c) The research participant was clarified how the needed data were collected.
d) All the gathered data were not publicly reported in a way that identified them.
e) The confidentiality of all the collected information and the research participant identities were always kept.

3.10 Expected Results

The expected results for this study divided into two themes: the process of ICT integration implementation and the encountered challenges in implementing the ICT integration in the classroom. In the process of implementation, the teachers mostly integrate ICT in whilst-activity when they are delivering the materials and in post-activity when they assign the students'homework. Meanwhile, when implementing the ICT, the teachers mostly encountered students' lack of engagement in using the technology in the classroom as the challenges.