CHAPTER 3

RESEARCH METHODOLOGY

3.1. Chapter Overview

This chapter elaborates the research design of this study. In the first part of this chapter, the research design and the rationales of choosing the design were explained. The second part of this chapter elaborates the context of the research, including the research site, the process of selecting participants, as well as the profiles of participants involved in this study. The third part of this chapter elaborates the research procedure of the study. Finally, to make sure the validity and reliability of this study, the last part of this chapter explains the instruments of data collection utilized in this study and the procedure of data analysis. In the form of a diagram, the structure of the research methodology is then explained to demonstrate how the research questions have been addressed.

3.2. Research Design

In this research, the writer used qualitative research design as the framework of the research. Then the study was investigated within a case study approach. This chapter explains how the research design fits the nature of this research.

3.2.1. Qualitative Research Framework

In this research, a qualitative research framework with descriptive research design was employed. This design was selected because this study includes data collection practices, event description and organization, tabulation, representation and description of the data collected (Knupfer & McLellan, 1996). Additionally, Crowl (1996) describes qualitative research as a methodology that can be used to address questions that can be answered better by describing orally how participants in research perceive and interpret various aspects of their

environment. This method of research gives the researcher the chance to analyze social phenomena in relation to people's everyday lives. Qualitative analysis offers insight through a method of data interpretation on what, why and how a phenomenon occurs within a society. This is in line with what was said by Denzin and Lincoln (2005) that a naturalistic, interpretive approach to the environment is often needed for qualitative research. Yin (1994) also notes that using a qualitative approach provides researchers with possibilities in a study to represent the views and perspectives of participants.

The choice of qualitative method in this research was due to several reasons. Firstly, as stated by Creswell (2003), within a qualitative study, experiences of the participants in the natural world are described in a descriptive and narrative overview. In this research, the implementation of TELL in the context of EFL classroom with minimum resources was described. Then, challenges during the implementation of TELL were also descriptively elaborated. And students' experiences in learning English using technology were also investigated.

Secondly, as stated by Archambault (2016), Creswell (2003) and Miles & Huberman (1994), the qualitative research approach gives researchers an in-depth view of the real context and offers a framework for drawing conclusions on various contextual variables influencing perceptions of how participants behave and act in an objective sense, portraying issues relating to their circumstances over a continuous period of time in a local setting. In this research, the specific context or phenomenon being examined is an EFL classroom with minimum resources in one vocational school in Bandung. Therefore, the use of a qualitative approach is considered to be valuable.

Thirdly, as stated by Hamied (2017), a qualitative study helps the researcher to recognize problems from the participants' viewpoint and to consider the significance and perceptions they provide to actions, events or objects. Through this research, the researcher investigated how technology was integrated into teaching and learning process in an EFL classroom. At the end of the research, teacher's and students' perspectives ad experiences as the participants of

this research were explored through retrospective interview and questionnaire. The interviews were then portrayed through the use of quotations in verbatim. According to Corden & Sainsbury (2006), then a verbatim quote attempts to capture the opinions and perspectives of the participants as expressed in their own terms.

Lastly, Yin (2009) states that, a qualitative research enables people or organizations to be investigated, simply by means of specific procedures, relationships, cultures or programs. This research was aimed at exploring how technology was integrated in an EFL teaching and learning process.

In summary, the researcher considers that the use of qualitative study fits to the nature of this research since the researcher was trying to analyze how an English teacher integrated technology in teaching English using the framework of SAMR and trying to identify issues related to challenges and solutions in implementing TELL in an EFL classroom with minimum resources.

3.2.2. Case Study

This present study was conducted in the form of case study approach. A case study is defined as a tool to study complex phenomena within a context (Baxter and Jack, 2008). Miles and Huberman (1994) also define a case study as a study of a phenomenon of a certain kind occurring within a bounded context. Stake (2000) and Yin (2009) also add that a case study research is based on a social construction of reality using the constructivist paradigm, which argues that the truth is subjective and depends on one's perspective. Hence, by using case study approach, this research was aimed at exploring, describing and explaining how TELL was implemented in the context of EFL classroom with minimum resources using SAMR framework.

In addition, Miles and Huberman (1994) argue that setting boundaries in a case study research is necessary in order to make the research emphasis on data collection and interpretation and to ensure that the study is within the right scope. Creswell (2003) specifies time and place as the boundaries of a case study research. Whereas Stake (2000) sets time and activity as the boundaries for a case

study research, and Miles & Huberman (1994) sets definition and context as the boundaries. In this context, the practice of technology integration conducted by an English teacher is the case. And based on the objectives of this study, the researcher has set place, activities, and time as the boundaries of this case study research. This study was conducted by implementing Technology – Enhanced Language Learning (TELL) as the activity boundary, in an EFL classroom with minimum resources as the place boundary while the study was conducted in two blocks (14 meetings) of learning process as the time boundary.

There are some advantages to the use of the case study approach in this research. Firstly, because case study research is qualitative in nature, qualitative analysis is beneficial. In addition, Johnson (1992) notes that a case study that is focused on the compilation of naturally occurring data is primarily naturalistic. In other words, in terms of actions, environment and all related aspects of the incidents examined, the case study data is highly reliable.

Secondly, a case study research is also flexible in terms of design (Yin, 1994) and in terms of the interaction of multiple factors aligned to the subject of the research (Thomas, 2003). Finally, as stated by Creswell (2003), by using a case study approach, researchers can explore the phenomenon within its context using multiple sources of information. Secondly, in terms of design (Yin, 1994) and in terms of the interaction of multiple factors associated with the topic of the study, case study analysis is also adaptable (Thomas, 2003). Finally, as described by Creswell (2003), researchers may explore the phenomenon within its context using multiple knowledge sources by using a case study approach. Therefore, to ensure that this case study research was explored using multiple sources of information, three instruments of data collections were used, they were: classroom participatory observation, retrospective interview and questionnaire. This is in line with what Baxter and Jack (2008) have said that to obtain a holistic understanding of the phenomenon being studied, the three instruments were chosen.

3.3. Research Site

This study was done in one vocational school (SMK) in Bandung, West Java, Indonesia. The school was chosen as the site for this research because the headmaster and the teacher gave positive responses when the researcher proposed to conduct the research in their school.

The vocational school (SMK) belongs to one Islamic Foundation which has several educational institutions started from kindergarten, elementary school, junior high school, senior high school and vocational school. The school opens two study programs: automotive program (car and motorcycle study programs) and software engineering program (programmer and technician study programs).

The learning program in this school is created based on national standard and industry standard. The vision and mission of the school is to prepare its graduate to be ready to work in industry. The learning process is conducted in block system and equipped with laboratory in each study program. The block system means that students learn for 2 (two) weeks in class and followed by another two-week for practicing in industry.

In the context of teaching and learning process, the school uses English textbook published by Indonesian government as the reference book. However, for additional book, the school uses Interchange book, which is published by Cambridge publisher.

The school does not have any language laboratory, so the learning process is usually conducted in the classroom. There is wifi for teachers and students, nevertheless the coverage is limited. One projector is available is each class, however the quality of each projector is various. Some still have good conditions, some are already broken. That is why the EFL classes in this school was classified into the EFL classrooms with minimum resources.

3.4. Participants

There were 1 (one) English teacher and 36 (thirty six) students of one vocational school involved in this research as the participant. The students were from grade XI, majoring in software engineering study program.

In selecting the participants of this research, the researcher used convenient sampling technique. It is a form of non-probability sampling in which subjects are chosen due to their convenience and closeness to the researcher (Crowl, 1996). The researcher had relatively easy access and proximity in conducting this research since the English teacher is highly interested in the field of using technology in English language teaching.

Even though she has only six years teaching experience in that school, however based on the interview, she had much experience related to technology integration in language teaching. First, she has possessed the certificate of Teacher Certification Program (*Pendidikan Profesi Guru*) from the Indonesian ministry of education and culture. Secondly, she works also as the vice head master of curriculum affairs, so it is relatively easy for her to manage the scheduling related to this research. Thirdly, she has joined several workshops about technology integration in English language teaching in some campuses and schools in Bandung, such as in Indonesia University of Education Yahya Christian School, Parahyangan Chatolic University, SMK Pariwisata Telkom and so on. Lastly, she has experiences of school visit programs about technology integration in English language teaching in several schools Australia and The Philippines funded by the scholarship from West Java government. The detailed profile of the teacher participants is summarized in Table 6 below.

Table 6: Profiles of Teacher Participant

N	Age	Gender	Experience	Qualification
1	37	Female	6 years	1. S1 English Education Department 2. Working as vice headmaster of curriculum affairs 3. Having *Pendidikan Profesi Guru* certification 4. Joining several workshops about technology integration in English language teaching in several campuses and schools, such as: UPI, UNPAR, Yahya, SMK Pariwisata Telkom, etc. 5. Joining school visit program about technology integration in English language teaching in Australia and The Philippines.

The other participants involved in this study were 36 (thirty six) students of software engineering study program. They were chosen since they were suggested by the English teacher to be involved in this study because they had better basic knowledge of using technology compared to other classes. This class allows the researcher to perform participant observations to gain understanding in a natural environment (Malik and Hamied, 2014).

The student participants were heterogeneous based on their genders and ages. This criterion is supported by Norum (2008) that having a natural environment and heterogeneous participants allowed the research to study things as they are without modifying the environment in which studies in their daily context are ordinary events and behaviors. Particularly, the participant students are between 15-18 years old with 28 female students and 8 male students. The profile of student participants of this study is summarized in Table 7 below.

Table 7: Profiles of Student Participant

| No	Students	Age	N	f
1	Female	16-17 years old	28	78%
2	Male	15-18 years old	8	12%
TOTAL			**36**	**100%**

3.5. Research Procedure

This research was conducted in three phases. In phases 1, the researcher contacted the headmaster as well as the English teacher to ask permission in doing the research. After getting permission, then the researcher did a preliminary observation about the research site, such as: the location, the school, the students, the textbook used as well as the school facilities. In this phase, the researcher also consulted the English teacher about the schedule for doing the classroom observation.

In phase 2, the researcher did the classroom participatory observation for about two blocks (14 meetings). Each of the observation was audio-taped and analyzed descriptively in the form of classroom observation field notes.

In phase 3, the researcher performed a retrospective interview with the English teacher to validate what was observed through observation in the classroom. In this phase, students' questionnaires were also distributed to the students to gain the information about their perceptions and experiences in technology integration in their EFL classroom. All the phases above are summarized descriptively in Figure 9 below.

Figure 9: Research Procedure
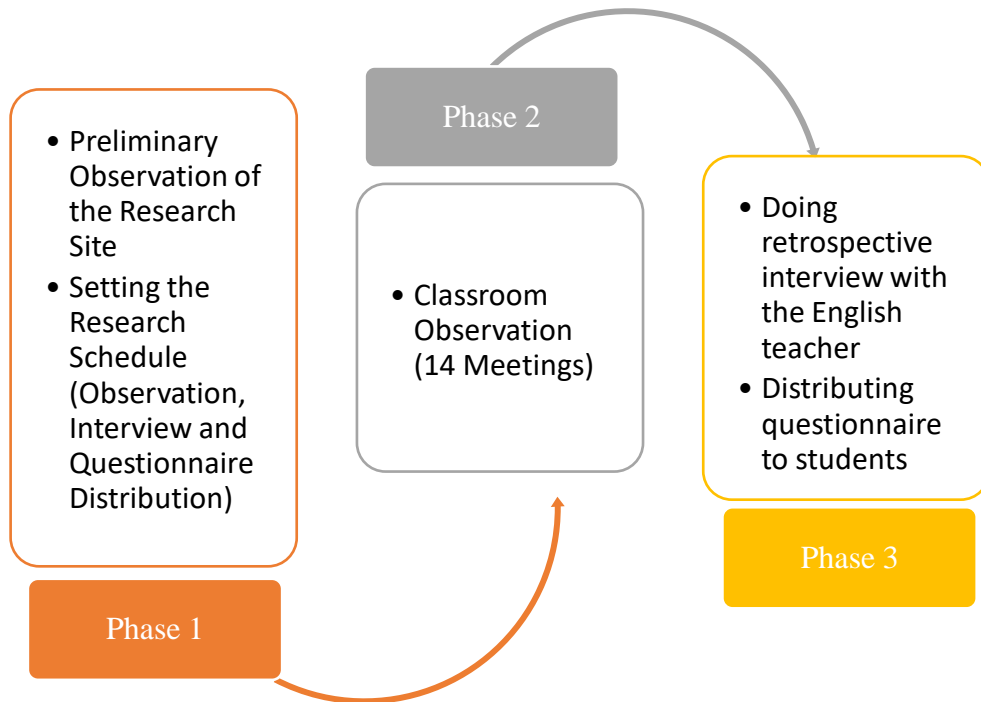
Specifically, the schedule of the research is explained in Table 8 below.

Table 8: Schedule of the Research

Block 1 (2-11 April 2019)

NO	DAYS AND DATES	ACTIVITIES	AGENTS
1	Thu, 2 April 2019 @ 08.20-09.40	Classroom Observation 1: Learning Management System (LMS) Using Google Classroom	1. English Teacher 2. Students 3. Researcher (Observer)
2	Thu, 2 April 2019 @ 11.20-12.40	Classroom Observation 2: Writing Captions using Canva Application	1. English Teacher 2. Students 3. Researcher (Observer)

3	Sat, 4 April 2019 @ 08.20-09.40	Classroom Observation 3: Learning Conditional Sentences using ELT Websites	1. English Teacher 2. Students 3. Researcher (Observer)
4	Sat, 4 April 2019 @ 11.20-12.40	Classroom Observation 4: Learning Conditional Sentences using ELT Online Games	1. English Teacher 2. Students 3. Researcher (Observer)
5	Thu, 9 April 2019 @ 08.20-09.40	Classroom Observation 5: Learning Factual Report using QR Code Application	1. English Teacher 2. Students 3. Researcher (Observer)
6	Thu, 9 April 2019 @ 11.20-12.40	Classroom Observation 6: Learning Personal Recount Text using Kinemaster & Instagram	1. English Teacher 2. Students 3. Researcher (Observer)
7	Sat, 11 April 2019 @ 08.20-09.40	Classroom Observation 7 Learning Personal Recount Text using Kinemaster & Instagram	1. English Teacher 2. Students 3. Researcher (Observer)
8	Sat, 11 April 2019 @ 11.20-12.40	Classroom Observation 8: Ice Breaking Activity using Akinator Game	1. English Teacher 2. Students 3. Researcher (Observer)

Block 2 (16-25 April 2019)

NO	DAYS AND DATES	ACTIVITIES	AGENTS
1	Thu, 16 April 2019 @ 08.20-09.40	Classroom Observation 9: Learning Suggestions and Offers using WhatsApp	1. English Teacher 2. Students 3. Researcher (Observer)
2	Thu, 16 April 2019 @ 11.20-12.40	Classroom Observation 10: Learning Pronunciation using Speechnotes	1. English Teacher 2. Students 3. Researcher (Observer)
3	Sat, 18 April 2019 @ 08.20-09.40	Classroom Observation 11: Writing Personal Letter using Padlet Application	1. English Teacher 2. Students 3. Researcher (Observer)

4	Sat, 18 April 2019 @ 11.20-12.40	Classroom Observation 12: Writing Personal Letter using Padlet Application	1. English Teacher 2. Students 3. Researcher (Observer)
5	Thu, 23 April 2019 @ 08.20-09.40	Classroom Observation 13: Listening to Song Lyrics using LyricsGaps Application	1. English Teacher 2. Students 3. Researcher (Observer)
6	Thu, 23 April 2019 @ 11.20-12.40	Classroom Observation 14: Formative Assessment using Kahoot!	1. English Teacher 2. Students 3. Researcher (Observer)
7	Sat, 25 April 2019 @ 08.20-09.40	Distributing Students' Questionnaire	1. Students 2. Researcher (Observer)
8	Sat, 25 April 2019 @ 11.20-12.40	Teacher's Retrospective Interview	1. English Teacher 2. Researcher (Observer)

3.6. Data Collection and Instrumentation

To collect the data, three instrumentations were utilized, they were: classroom participatory observation, retrospective interview and questionnaire. In a case study, these various instruments are needed (Johansson, 2003; Runeson and Host, 2009; Yin, 2013). The use of the three instruments in this research was intended to gain deeper understanding of the phenomena in this study. Creswell (2003) says that to ensure a rich understanding of the phenomenon, a variety of data sources is mostly used. The triangulation of data sources helps the researcher to collect different viewpoints, which can lead to the accuracy of research results.

Table 9 shows the framework of this research, which elaborates the relationship among the research questions, instrument of data collections and research procedure.

Table 9: Relationship among the Research Questions, Instrument of Data
Collections and Research Procedure

Research Questions	Sources of Data	Instruments of Data Collection	Research Procedure
1. Viewed from Substitution, Augmentation, Modification and Redefinition (SAMR) framework, how is the implementation of Technology-Enhanced Language Learning (TELL) in an EFL Classroom with minimum resources?	• Classroom participatory observation	• Field notes during classroom participatory observation	The researcher conducted classroom participatory observation for 2 blocks (4 weeks) as participant observer.
2. What are the challenges as well as the solutions in implementing Technology-Enhanced Language Learning (TELL) in an EFL Classroom with minimum resources?	• Teaching learning process using web-based & non web-based technology	• Retrospective interview with English teacher	The researcher interviewed the English teachers and confirmed the data from classroom observation.
1. What are students' perceptions and experiences towards the implementation of Technology-Enhanced Language Learning (TELL) in an EFL Classroom with minimum resources?	• Students' perceptions and experiences of TELL implementation in an EFL Classroom with minimum resources?	• Students' questionnaire	The researcher distributed questionnaire to 36 students

3.6.1. Classroom Participatory Observation

The first data collection instrument in this research is classroom participatory observation. The observation is intended to gain direct understanding of the data. Merriam (2009) says that the purpose of observation in a research is to obtain the first-hand representation of the data. In this observation, the researcher observed how technology was used in teaching learning process to enhance English language teaching, in the context of EFL classroom with minimum resources. The observations were recorded in the field notes. A field note is a type

of note which reports the result of documentation from classroom observation (Altheide, 1996; Creswell, 2012; Newbury, 2001; Wolfinger, 2002). The notes were written after each observational session. And then, the data which were related to the study was recorded descriptively in the notes. This is in line to what Creswell (2012) says that a field note is a description of events, people, activities and reflective personal thoughts.

The type of observation conducted in this research was participatory observation. Hamied (2017) claims that, through participatory observation the researcher can enter the participant's world and create trust between them. The researcher could also gain access to classroom interaction as a member of the community, look at certain problems that happened in the technology-integrated lesson, and see how teachers responded to the problems experienced. The researcher could obtain the real viewpoint of the participants in this way.

However Patton (2002) suggests that when explaining the result of participatory observation to outsiders, the researcher should be well aware of combining the positions in interpreting the environment as an insider. Participatory observation connects a researcher to the most basic of human experiences, discovering through immersion and participation the hows and whys of human behavior in a particular context. In this context, the researcher had fulfilled the three elements of participatory observation: 1) directly observing into the research site, 2) building rapport with the participants, and 3) spending enough time to gain the needed data. The researcher has already familiar with the research site since the researcher had given several sessions of Test of English for International Communication (TOEIC) workshops for the eleven graders before the research was conducted. Therefore, it was not difficult for the researcher to get familiarized with the principal, English teachers as well as the eleventh grade students. It was also quite easy to build rapport with the student participants since it was not the first time to meet them. Therefore, the student participants accepted the researcher, to some extent, as someone they can "be themselves" in front of. They trusted the researcher so the student participants could act much as they would if the researcher were their English teacher. Finally, the researcher had

spent enough time interacting to get the needed data. The researcher even spent more time both for building rapport and communicating for longer period of time to have a sufficient range of conversations and unstructured interviews with the students and the English teacher for the sake of data analysis.

3.6.2. Retrospective Interview

The second instrument of data collection utilized in this research was retrospective interview. The aim of the interview in this research was to gain insights from the English teacher about the challenges of using technology in teaching and learning process as well as the solutions. The data gained from the classroom observations was confirmed during the retrospective interview.

The use of interview in this research is based on several reasons. According to Best and Kahn (1998), interviews may be used to collect information about the experiences and knowledge of an individual; his or her views, opinions, and feelings; and demographic data. It means that interview is one of the suitable methods to elicit data related to perceptions, beliefs, knowledge or experiences because interviews allow researchers to explore issues as they emerge in conversation. Moreover, interview also enables participants to share their ideas in their own terms. Burns (2000) also adds that in interview, the participants can use their own words rather than using the words or language that has been set out by the research.

A semi structured interview was conducted by focusing on the challenges found during the implementation of TELL in teaching English. In doing so, the researcher prepared a set of questions which can evolve during the interview session. The questions were also followed up by some other issues during the interview (Dawson, 2009). The aim of using semi structured interview is to give more opportunities for both the researcher and the participants to do a two-way communication. The discussion between researcher and participants helps the

researcher to address a wide variety of problems as they appear in the discourse of the participants and to identify new concepts and ideas (Creswell 2009).

According to Burns (2000), a semi-structured interview allows for greater transparency and allows for more reliable answers from the participants of the research. Dornyei (2009) also notes that while there is a collection of pre-prepared guiding questions and prompts in the use of semi-structured interviews, the format is open ended and the interviewee is encouraged to discuss the issues posed in an exploratory manner. The semi-structured interview was based on a series of questions, but each interview followed up on issues as the participants posed them in order to analyze in depth their responses to the problems and solutions during the implementation of TELL.

In the interview, the researchers prepared a list of questions related to the challenges found during the implementation of technology in teaching learning process. However, the researcher still had flexibility in formulating the terminology and the order of the problems to be discussed in the semi structured interview. In this way, the researcher may flexibly ask for clarification or examine new questions in order to respond to the situation at hand, the participants' evolving worldview, and new ideas (Merriam, 2009). The interviews were recorded with a digital audio recorder and securely stored as required for future retrieval. Some selected extracts to be cited were translated into English because the interviews were performed in Bahasa Indonesia.

After conducting a semi structured interview with the English teacher, the researcher started to analyze the data. To cite the extracts, the researcher selected some sections of the teacher's discourse as providing the satisfactory answers to the questions, whereas other parts of the teacher's discourse were ignored or treated as unimportant. It was assumed that this procedure could result in a logical and coherent picture of the interview data. The process was then continued by systematically categorizing excerpts in the data in order to find themes and patterns. The coding process involved the process of reading the data, applying

codes to excerpts, grouping codes according to themes, and then making interpretations that lead to the research findings.

3.6.3. Questionnaire

The third instrument for collecting the data in this research was questionnaire. Student participants were asked to answer online questionnaire via Google Form to investigate their opinion about the implementation of TELL in their English classes. According to Brown (2001), a questionnaire is any written research tool which provides participants with a set of questions or statements to which they are to respond either by writing their responses or selecting from existing responses. The researcher considered the questionnaire as an appropriate instrument to elicit information about students' opinion about the use of technology in EFL classroom. This is because questionnaire can measure attitudinal information by asking attitudinal questions. Dornyei (2009) elaborates that attitudinal questions are used to find out what people think. This is a broad category that concern attitudes, opinions, beliefs, interests and values. This is because, by asking attitude questions, the questionnaire will calculate attitude knowledge.

The use of questionnaire as the instrument in this research has two advantages. The first issue is cost-effectiveness. Questionnaire can save researchers' time, effort and financial resources. By administering online questionnaire 36 (thirty six) students, a huge amount of information about the use of technology in their EFL classroom could be collected in a relatively short time. The second issue is versatility. According to Dornyei (2009), a questionnaire can be used successfully with a variety of people in a variety of situations targeting a variety of topics. Bryman (2008) also adds that a well-constructed questionnaire can reduce the bias of interviewer effects and thus increase the consistency and reliability of the results. Due to these merits, it is no wonder that many research projects in social sciences employ questionnaire as one of the data collection techniques. The questionnaire was divided into four parts: 1) profiles of participant, 2) students' self-rating of with technology, 3) students' attitudes of

using technology in English language learning and 4) students' experiences of using technology in their EFL classroom. All parts of the questionnaire were analyzed descriptively.

All the three instruments of data collection (classroom observation, retrospective interview and questionnaire) were crucial in order to gain deeper understanding of the practice of technology integration in EFL classroom with minimum resources, its potentials and challenges, and also students' perceptions on the learning activities. The classroom observation gave obvious pictures of technology implementation in EFL classroom, which was then confirmed by the data from retrospective interview with the teacher about what, why and how certain things were done during the learning activities. Then, the data from the classroom observation were also supported by the data from questionnaire about how students perceived the learning process with technology integration. This is in accordance to what Creswell (2003) said that to ensure a rich understanding of the phenomenon, and to achieve the accuracy of the research results, the variety of data sources had to be used.

3.7. Ethical Consideration

This study was conducted in one vocational school in Bandung. The researcher contacted the English teacher about the possibility of conducting research in her class. After the English teacher agreed, then the researcher gave a letter of permission to the headmaster. The head master then called the researcher to meet in person that he permitted the researcher to conduct research in his school. The head master, and the English teacher were informed about the specific issues related to the study, and all the activities in the research (observation and interview) were documented through photos and videos. The written information consent containing the purpose aims and timeline of the study, the information to be drawn from the teachers and students, and the means of collecting information were given to the teachers. Participants were also informed regarding the

confidentiality of the result of the study and the dissemination process of the findings (Oliver, 2010).

3.8. Data Analysis

The next process after collecting the data is to analyze it. The three data sets were analyzed qualitatively, namely: classroom participatory observation notes, teacher's retrospective interview and students' questionnaire. Burns (2000) says that the purpose of analyzing the data is to find meaning in the data and this is done by systematically arranging and presenting the information. The three data sources were analyzed using two approaches. The data from classroom observation were analyzed using the framework of Substitution, Augmentation, Modification and Redefinition (SAMR) proposed by Puentedura (2006). And then, the data gained from retrospective interview with English teachers and students' questionnaire were analyzed using thematic analysis proposed by Braun and Clark (2006). Procedure of each data analysis is described separately in the following sections.

3.8.1. Substitution, Augmentation, Modification and Redefinition (SAMR) Framework

The data from classroom observation were then elaborated descriptively and categorized into levels of students' cognitive development using SAMR framework. The framework was used to classify and evaluate teaching and learning process using technology. Romrell et al (2014) also explain that SAMR framework provides models to support educators and instructional designers in creating learning experiences using mobile devices in education. Moreover, Hamilton et al (2016) elaborates that by using SAMR framework, teachers are encouraged to move up from lower to higher levels of teaching with technology. In the first two parts of the framework (substitution & augmentation stages), technology is used as a replacement for traditional tools of learning, while in the second two parts (modification & redefinition stages), technology is used to enable learners to experience learning process which was previously impossible

without it. The SAMR framework utilized for data analysis is described in Figure 10 below.

Figure 10: SAMR Framework for Data Analysis (Romrell et al, 2014).

3.8.2. Thematic Analysis

The data from interview with teachers and students' questionnaire were analyzed using thematic analysis. Braun and Clarke (2009) define thematic analysis as a method for analyzing research data by identifying, analyzing and reporting patterns (themes) within the data. Again, Boyatzis (1998) elaborates thematic analysis as a strategy in qualitative research to analyze information in a systematic way in order to make the data understandable. It organizes and describes the data in detail according to emergent themes.

The use of thematic analysis was considered to be suitable for this study due to several considerations. First, this approach can facilitate the investigation of the data from two perspectives: firstly, inductively grounded from the data in which the theme identified were linked to the data themselves (Patton, 2002) and represented the rich description of the data set from the interviews; secondly, deductively driven from the theoretical orientation of the research questions, which tend to provide less rich data description and more detail analysis of the

data set. Second, this approach can produce an insightful analysis that answers particular research questions (Braun and Clarke, 2006) through the rigorous thematic approach. Table 10 below elaborates six phases thematic analysis.

Table 10: Phases of Thematic Analysis (Braun and Clark, 2006)

NO	PHASES	DESCRIPTION
1	Familiarizing with the data	Transcribing data, reading and re-reading the data, noting down initial ideas
2	Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3	Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4	Reviewing themes	Checking the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis
5	Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and overall story the analysis tells, generating clear definitions and names for each theme
6	Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research questions and literature, producing a scholarly report of the analysis.

The first step in the process of data analysis was organizing the data. This step involved transcribing the data gained from interview with teacher. The data then were analyzed and interpreted to identify the links within the data. After transcribing and translating the data, the next procedure was labeling the data based on the data sources. The next analytic procedure was repeatedly reading of the text of the transcription of the interview and questionnaire. The next step was coding. Creswell (2009) states that coding process is to make sense out of data, divide it into text or image segment, label the segments with codes, examine codes for overlap and redundancy and collapse these codes into broad themes. In this study, coding was intended to identify certain ideas in the data that represented the same meanings. Finally, the data were categorized into

the aspects related to potentials and challenges in the implementation of TELL in EFL classroom with minimum resources.

3.8.3. Data Analysis for Research Question 1

The first research question is aimed to describe the implementation of Technology Enhanced Language Learning (TELL) in an EFL classroom with minimum resources. To answer this research question, the research data were collected through classroom participatory observation. The data were then analyzed using substitution, augmentation, redefinition and modification (SAMR) framework. Specifically, the data from classroom observation were analyzed descriptively from the learning objectives of the lessons, original activities, SAMR activities and reflection of the SAMR activities.

3.8.4. Data Analysis for Research Question 2

The second research question is aimed to explore the challenges found as well as the solutions during the implementation of TELL in an EFL classroom with minimum resources. The data for this research question were collected through retrospective interview with the English teacher. And then the collected data were analyzed using thematic analysis proposed by Braun and Clarke (2006) and confirmed with the evidence found during the classroom observations.

3.8.5. Data Analysis for Research Question 3

The third research question is aimed at investigating students' perceptions and experiences during the implementation of TELL. The data for this research question were collected through questionnaire. Similar to research question 2 (two), the collected data were analyzed using thematic analysis proposed by Braun and Clarke (2006).

3.9. Concluding Remarks

This chapter has elaborated the methodology of this dissertation. It covers the research design and the context of the research. It also covers the site and participants of this study, the research procedure, techniques of data collection and framework of data analysis. This study was conducted in the framework of qualitative research design. A case study approach was also utilized to describe the result of this study. Data of this research were collected through classroom observation, retrospective interview with teachers and questionnaire. Finally the data of this research were analyzed using SAMR framework (Puentedura, 2006) and thematic analysis (Braun and Clarke, 2006).