CHAPTER III
RESEARCH METHOD

3.1 Introduction

This chapter explains the overarching methodology of this study. It deals with the explanation about research design, research site and participants, data collection methods, and data analysis procedure. It also pertains the triangulation and trustworthiness. The purpose of this study is to understand secondary English language teachers' engagement towards digital literacy practices and their perceptions of technology integration and training. The inquiry reveals detail descriptions on how the teachers define the concept of digital literacy, use digital tools for academic and non-academic purposes, and perform digital literacy practices overwhelming the process of accessing, analyzing, evaluating, creating, reflecting and acting on digital information. In addition, the teachers' digital literacy competencies are elucidated. The inquiry also uncovers the teachers' perceptions of integrating technology into English curriculum and materials and views of the ideal technology trainings. To make crystal clear understanding about the goals of this study, hereby the research questions are restated:

1. To what extent do secondary English language teachers engage with digital literacy in terms of their understanding of its concept, purposes of using digital tools, experiences in practicing digital literacy, and their digital literacy competence?

2. What are the teachers' perceptions of technology integration (into English curriculum and materials) and technology training?

Moreover, the detail description of the research questions is presented in table 3.1.

Table 3. 1 Matrix for the research questions

Research Questions (RQ)	Goals	Data Collection Methods	Data Analysis Methods
1. To what extent do secondary English language teachers	1.1 To understand the meaning of digital	Semi-structured interviews	Coding + memoing

	literacy from the teachers' views.	Field notes	
engage with digital literacy in terms of their understanding of its concept, purposes of using digital tools, experiences in practicing digital literacy, and their digital literacy competence?	1.2 To know the actual use of digital tools by the teachers.	Observations Field notes Questionnaires Artifacts	Coding + memoing Descriptive statistic Document analysis
	1.3 To reveal the teachers' experiences dealing with the practices of digital literacy	Observations Semi-structured interviews Field notes Artifacts	Coding + memoing Document analysis
	1.4 To inform the digital literacy competences of the teachers.	Self-assessment questionnaires	Descriptive statistic
2. What are the teachers' perceptions of technology integration (into English curriculum and materials) and technology training?	2.1 To recognize the teachers' opinions of integrating technology into English curriculum and materials.	Semi-structured interviews	Coding + memoing
	2.2 To understand the teachers' voices of the expected technology training	Semi-structured interviews	Coding + memoing

3.2 Qualitative Case Study

This study employed qualitative approach, specifically a case study. A number of reasons support this research to be declared as a case study. Firstly, this study tried to explore the social phenomenon of digital literacy practices done by some secondary English language teachers in their teaching practices. It is confirmed by many scholars (Creswell, 2009; Creswell & Poth, 2018; Yin, 2016) that conducting qualitative approach including case study typically aims to understand the natural setting of humans' life and how they interact or engage socially with it. Basically, qualitative

study begins with the relevant assumptions and theoretical frameworks to frame the social phenomena or problems (Creswell, 2013). Likewise, this study came up with the assumption that digital literacy is crucial for today's language teachers and the theoretical framework describing the origin, the concept, and competencies of digital literacy.

Secondly, as the name suggest, case study typically focus on identifying a specific case like a person, a community, an organization, a decision, an action, a location or an event (Creswell & Poth, 2018). In addition, the boundary of the case should be considered. Simons (2014) gave example a school as the case and then researchers may focus on the components of the school like teachers, principal or students based on selected point of view. Correspondingly, this study was conducted in prominent information-technology based vocational and senior high schools in Bandung, Indonesia in which both schools were managed by the same foundation. Meanwhile, four English language teachers where two teachers were from the vocational high school and the others were from the senior high school became the focus of the investigation. In qualitative research the selection of cases is suggested to be "no more than four cases" (Creswell, 2007, p. 76). Likewise, the researcher considered to recruit only four teachers to be the cases. Moreover, the schools are under the foundation of Indonesian information and communication technology (ICT) state-owned enterprise. Besides, both of the schools already got an "A" accreditation. Based on this fact, it is assumed that digital technology was adopted dominantly in teaching and learning practices. Thus, the English language teachers there were supposed to be quite familiar with digital literacy practices.

Thirdly, case study like other types of qualitative research design positioned researchers as the key instrument (Merriam, 2009). In this case, the researcher collected data by himself like observing the behavior of participants, interviewing participants, analyzing documents and taking notes (Creswell & Poth, 2018). Similarly, in the present study, the researcher did interviews to secondary English language teachers

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asking about their daily digital literacy practices. Online classes were also observed virtually by the researcher in order to identify how the teachers engaged with digital media and information. During the observation, the researcher took some notes to record the important things happened in the online classes. Some documents like worksheets, lesson plans, syllabus and modules were also analyzed by the researcher.

Lastly, one typical characteristic of case study is employing "multiple sources of evidence" (Yin, 2003, p. 32). Referring to the feature, this research employed multiple data collection methods including observations, interviews, field notes, questionnaires and document analysis. As the process of collecting data was still during the pandemic situation, the observations, interviews, and questionnaires were done virtually. The observations were done by joining to online classes created by teachers and identifying what happened during lessons in relation to digital literacy practices. Then, the participants (the teachers) were interviewed by phone or video call. The questionnaires were distributed online via Google Forms. Meanwhile, the process of taking field notes and analyzing documents were done as usual.

3.3 Research Site, Participants, Ethics, and Positionality

This research took place in prominent information-technology based vocational and senior high school located in Bandung City, Indonesia. In qualitative study, the selection of research site can be done purposively (Hamied, 2017). The selection is based on some relevant reasons supported the goal of the present study. Firstly, the vocational high school had three study programs focusing on digital technology namely 1) networking access telecommunication engineering, 2) computer and network engineering and 3) multimedia. Meanwhile, the senior high school provided excellent academic courses with technology integration and set goals to shape its students to be digitally literate. As focusing on the inclusion of digital technology in learning, the schools provided sufficient facilities and IT supports. Likewise, students were quite familiar with digital technology since their daily learning was closely related and equipped with technology. This also impacted to all teachers including the English

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language teachers to keep up with digital technology. Secondly, both of the schools are under the foundation of Indonesian information and communication technology (ICT) state-owned enterprise. It made the schools gained adequate IT supports, good management and educational systems and professional teachers. Thirdly, the schools already got "A" accreditation, meaning that they had good quality of education. Lastly, the schools were reachable as they were located around Bandung City.

Moving to the participants, this study involved four English language teachers (two teachers were from vocational high school and the others were from senior high school) who taught in the academic year of 2020/2021. The process of collecting data was done within 3 months from May to July 2021. During the period of time, digital literacy practices performed by the four English language teachers were explored. To address the research ethics, the researcher firstly asked permission to the headmaster and the English language teachers to conduct research there. A letter of research permission from the Faculty of Language and Literature, UPI, was also sent to the school officially. Meanwhile, informed-consent forms were distributed and then signed by each of the participant. The informed consent forms described the goal of this study, data collection methods, participants rights, and their consent to the collected data including showing pictures/videos containing their faces in the research report. However, to maintain the confidentiality, pseudonym was employed to present data from each of the participant. Moreover, in terms of positionality, the researcher did not have any power over the participants. Previously, there was no close social relationship between the researcher and the participants. Here, the researcher acted purely as a data collector while the participants became the sources of data. Likewise, the researcher was not part of the cohort of the participants.

3.4 Data Collection Methods

This study employed multiple data collection methods including virtual observations, interviews, questionnaire, field notes, and document analysis. Table 3.2

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presents the data collection matrix of this study and table 3.3 shows topics in every data collection section.

Table 3. 2 Data collection matrix

Unit of analysis	Virtual observations (45-90 minutes for each section)	Virtual interviews (30-45 minutes for each section)	Virtual questionnaires (10-15 minutes for each section)	Field notes (flexible time)	Artifacts and document analysis (flexible time)
Teacher 1	Section I – Topic 1.2 Section II – Topic 1.3	Section I – Topic 1.1 Section II – Topic 1.3 Section III – Topic 1.3 Section IV – Topic 2.1 Section V – Topic 2.2	Section I – Topic 1.2 Section II – Topic 1.4	Section I – Topic 1.1 Section II – Topic 1.2 Section III – Topic 1.3	Section I – Topic 1.2 Section II – Topic 1.3
Teacher 2					
Teacher 3					
Teacher 4					

Table 3. 3 Topics of every data collection section

Topic codes	Topics of every data collection section
1.1	Conceptualization of digital literacy by participants
1.2	Use of digital tools for academic and non-academic purposes
1.3	The participants' experiences dealing with digital literacy
1.4	Digital literacy competences of the participants
2.1	The participants perceptions of technology integration into English curriculum and materials
2.2	The participant voices of technology training for upgrading their digital skills.

3.4.1 Virtual Observation

Observation is commonly defined as the activity to see the real situation of certain objects with particular focuses. In observation, every important event that happens at

the research setting in a specific time is noted and analyzed thoroughly. Likewise, observation serves primary data source since it takes place in the natural setting of the phenomenon and allows the observer to directly interact with the phenomenon (Merriam & Tisdell, 2016). In this case, the observations were conducted virtually due to Covid-19 pandemic situation. The observations focused on digital literacy practices done by the English language teachers in their online classroom teaching practices. During the observations, some important points related to digital literacy practices like types and form of materials, use of digital materials, use of digital tools/media and managing digital information were identified. In addition, other aspects related to the teaching practices such as students' responses, students' behaviors, student-teacher interactions, and classroom management were also analyzed.

3.4.2 Virtual Interview

Interview is a common way to gather information through directly talking to the source of information. Interview can be defined as a meaningful interaction between a researcher and participants who agree to participate in research in order to achieve deep information (Hamied, 2017). Similar to the previous data collection method, the interviews were done virtually by phone call or video call in order to maintain the physical distancing. There were five interview sections for each participant where each of the section spent 30 – 45 minutes. The interviews were designed on the basis of research questions asking what types of digital tools that the English language teachers use, how they manage digital information, how they analyze and evaluate online resources. Also, the teachers' conceptualization of digital literacy, their perceptions towards technology integration and training/workshops were explored in the interviews. Semi-structured interviews were chosen to be applied in this study as this type of interview gave opportunities for the interviewers to gain deeper data by improvising conversations and to keep up with the outlined goal of the interviews (Brinkmann, 2014). Then, technically the interviews were conducted individually. It

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aimed to make participants more convenient in giving detailed information and lead conversations within the corridor of the interviews' goals (Brinkmann, 2014).

3.4.3 Questionnaire

As an alternative data collection method, questionnaire serves simple and quick way to gather information from participants. It also plays an important role to back up data gathered from other methods. Generally, questionnaire is presented in the form of documents containing set of questions which are relevant to our research questions (Gillham, 2007). In the present study, there are two questionnaire forms given to participants. The former questionnaire asked the participants' use of digital tools for academic and non-academic purposes while the latter questionnaire was a self-assessment questionnaire to describe the participants' digital literacy competences. In terms of the development of the questionnaire, the former questionnaire was developed by the researcher while the latter questionnaire was adopted from a survey questionnaire designed by (Weerakanto, 2019). Moreover, the distribution of the questionnaire was done virtually via Google Forms. Thus, the result of the questionnaire data was analyzed through descriptive statistics.

3.4.4 Field Note

When doing observations, researchers have to clearly capture important points on what was happened. They may use mechanical devices like camera, laptops, or smartphones to record data during observations. However, taking field notes is also important since "a participant observer has to rely on memory and notes to recount session" (Merriam & Tisdell, 2016, p. 149). Through field notes, researchers can write down important points/events/activities happened during the observation sessions. Field notes consist of information points including "descriptions of people, events, and conversations as well as the observer's actions, feelings, and hunches or working hypotheses" (Taylor et al., 2016, p. 79). Likewise, field notes play an important role to help researchers to remember important things that are already happened. In the present study, field notes were directed to capture relevant information about digital literacy

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practices like use of digital tools/media, online learning platforms, online resources, PPT slides, e-books, digital materials presentations, online classroom activities, and student-teacher interactions during online class observations.

3.4.5 Documents and Artifacts Analysis

Documents and artifacts also become valuable data sources in qualitative study. Unlike observations and interviews where the presence of researchers might influence data results, documents and artifacts serve natural, genuine, and actual data sources. Commonly, documents and artifacts are concrete or physically exist. However, through the development of digital technology, now it is easy to find digital documents (e.g. word, PowerPoint, excel and pdf files) and artifacts (e.g. audio, video, images, animation). Correspondingly, Merriam and Tisdell (2016, p. 162) said "data sources can exist in both a physical setting and an online setting". In the present study, various documents like worksheets, e-books, PowerPoints slides, e-modules, lesson plans and artifacts like listening audio, video presentations and images were analyzed conscientiously. The analysis related to digital literacy practices done by the English language teachers.

3.5 Data Analysis Procedures

In qualitative research, plenty of data in the form of descriptions, notes and stories should be analyzed thoroughly. The common analysis procedure of qualitative research is thematical analysis which includes three stages namely 1) data condensation, 2) data display and 3) drawing and verifying conclusions (Miles et al., 2014). Previously, Miles and Huberman (1994) used 'data reduction' to refer the first stage of qualitative data analysis. Later on, they changed it to be 'data condensation'. The new term 'data condensation' is used to avoid misconception because the term 'data reduction' implies "weakening or losing something in the process" (Miles et al., 2014, p. 9). Correspondingly, the present study followed the revised version of three stages of qualitative data analysis procedure.

Firstly, data condensation represents the process of simplifying or abstracting the raw data like field notes, interview transcripts and document analysis reports. In this stage, data were categorized and summarized into some themes. In addition, to enhance the level of data validity, memoing and coding were done as well (Miles et al., 2014). Memoing refers to the activity of writing memos or notes during the process of reading and checking data. Writing memos will link to other data and theories. Meanwhile, coding which belongs to the integral part of data condensation process refers to the activities in which data are classified in more detailed and it leads to abstraction as well as data comparison. Secondly, data display refers to the process of presenting well-organized, succinct and information-rich data. In this case, data were organized, assembled and transformed into tables, graphs or charts. Lastly, drawing and verifying conclusions represent the process of interpreting the displayed data. In this stage, the whole data were reviewed, important points of the data were marked and inferred to gain the meaning of the data points. This stage also demands the process of verification by comparing the research findings with other related studies and theories. Meanwhile, questionnaire data were analyzed using descriptive statistics which summarized features of the collected data.

3.6 Triangulation and Trustworthiness

Similar to the quantitative tradition, qualitative study also concerns with the validity of its inquiries. In qualitative study, two quality standards namely triangulation and trustworthiness have to be addressed. Triangulation refers to the employment of multiple methods and data sources within the study of the same phenomenon to gain in-depth, valid understanding (Denzin, 2015). Correspondingly, this study used more than one type of data collection methods and sources. Virtual observations, interviews, questionnaires, field notes, documents and artifacts represented the variety of data methods and sources of this study. Meanwhile, trustworthiness refers to the concept of judging qualitative study inquiries (Hatch, 2007).

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Trustworthiness provides a system to check and balance the whole body of qualitative study. It includes four elements of validity namely 1) credibility – parallels to internal validity, 2) transferability – parallels to external validity, 3) dependability – represents reliability and 4) confirmability – equals to objectivity (Hatch, 2007). Credibility refers to the demonstration of truth values or valid inquiries of the study. In the context of this study, credibility was administered by ensuring the quality of research findings through triangulation and having consultation with supervisors. Secondly, transferability applies to what extent the study can be useful for other studies with the similar contexts, research questions, situations or participants. Thus, the present study provided detailed and thick descriptions of data results. It helps other researchers to understand the points of the study easily. Next, dependability reflects on how a study can be replicated by other researchers in the similar contexts or situations. In this case, relevant theories, research procedures and data results were described clearly. Lastly, confirmability relates to the availability of other researchers to trace back and audit our study. To address this, logical flows of data analysis, inferences and interpretations were provided systematically. Likewise, connecting to other relevant studies was done to confirm the findings of the present study.