CHAPTER III

RESEARCH METHOD

This chapter outlines some of the procedures used in research. There are six subtopics in it. These are (1) research design, (2) research informant (3) data collection technique (4) research instrument (5) data processing procedures, (6) technique of data analysis.

A. Research Design

This research primarily uses a descriptive qualitative research approach or qualitative with a descriptive approach for details. Qualitative research is research that focuses on documents, situations, activities or relational qualities, emphasizing the overall description and mainly providing details.[64] Qualitative research focuses on developing explanations for social phenomena through descriptions of naturally occurring phenomena.[65]

Furthermore, the descriptive approach contains detailed description.[66] In other words, this method performs the overall description in the study and is conveyed in words. Descriptive research is research that aims to answer and address recent phenomena by presenting, analyzing, and interpreting data.[67] Descriptive techniques are defined as investigations that attempt to describe a phenomenon, topic, or area accurately and factually.[68] Describe descriptive research methods used to obtain information about existing situations and are widely used in educational research.[69] Furthermore, qualitative research is descriptive in nature, as data analysis and results are in the form of descriptions rather than numbers.[70]

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[64] Jack Fraenkel R and Norman E. Wallen, *How to Design and Evaluate Research in Education* (Boston: McGraw-Hill Higher Education, 2012), 426.

[65] Beverley Hancock, Elizabeth Ockleford and Kate Winridge, *An Introduction of Qualitative Research* (University of Birmingham: *The NIHR RDS EM*, 2009), 7.

[66] John W Creswell, *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (Boston, MA: Pearson, 2012), 274.

[67] Cholid Narbuko and Abu Achmadi, *Metodologi Penelitian* (Jakarta: Bumi Aksara, 1999), 44.

[68] Jack C Richards and Richard Schmidt, *Longman Dictionary of Language Teaching and Applied Linguistics* (London: Pearson Education Limited, 2002).

[69] Muhammad Ali, *Penelitian Kependidikan Prosedur & Strategi* (Bandung: Angkasa, 1985), 322.

[70] L, J, Moleong, *Metodologi Penelitian Kualitatif* (Bandung: PT Remaja Rosda Karya, 1995).

Therefore, we investigated the current status of English teachers' digital literacy proficiency using a descriptive method corresponding to the above characteristics.

There are five common features of qualitative research: First, the natural context is the direct source of data and the researcher is the main tool in qualitative research. Second, qualitative data is collected as words or images, not numbers. Third, qualitative researchers are as concerned with the process as they are with the product. Fourth, qualitative researchers tend to analyze their data inductively. And fifth, the primary concern of qualitative research is how people understand their lives.[71]

This method is used because qualitative research is expected to be a method of achieving deep understanding and comprehensive results, with an emphasis on small scale research.[72] Furthermore, there are five qualitative research objectives: First, understand the importance of research participants, the events, situations, and behaviors associated with them, and a description of their lives and experiences. Second, to understand the specific context in which participants' actions occur and the impact that context has on their behavior. Third, the identification of unexpected phenomena and effects, and the development of new rational theories. Fourth, understand the process by which events and actions occur. And fifth, the development of casual explanations. Therefore, this approach is suitable for research applications because the data in the form of teachers' perceptions of digital literacy skills packaged in questionnaire questions. In addition, the data are presented in the form of closed questionnaire responses in the form of numbers and percentages.[73]

B. Research Subject

The research subjects in this study were English teachers from Islamic high

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[71] Jack R Fraenkel, Norman E Wallen, N. E, Helen H Hyun, *How to Design and Evaluate Research in Education* (New York: *Mc Graw Hill*, 2012), 428.
[72] John W Creswell, E*ducational research: Planning, conducting, and evaluating quantitative and qualitative research* (Boston, MA: Pearson, 2012).
[73] Joseph A Maxwell*, "Designing a qualitative study," in Handbook of applied social research methods*, ed. Leonard Bickam and Debra J. Rog (New York: Sage Publication, 1998), 219.

schools (Madrasah Aliyah) from Jombang and Blitar districts. The researcher determines the sampling of subjects through different background classifications. The selected teachers are English teachers of various ages and different genders, English teachers from public and private schools, and English teachers from rural and urban areas as seen from how far the school is from the Jombang district center. These teachers were taken randomly and freely, there were no limitations and conditions for the number of teachers for each institution as representatives of each school that was sampled. From this process, there were 20 English teachers who joined this study. The English teachers were asked for answers and opinions regarding digital literacy where the data obtained from the survey results will be analyzed to determine the level of digital literacy competence of each teacher. The following is a list of personal data of English teachers who were informants in this study;

Table 3.1. List of Research Subjects

No	Level	Age	Gender	School
1	U	41	Male	MAN 1 Jombang
2	NL	49	Female	MAN 3 Jombang
3	MZI	49	Male	MAN 9 Jombang
4	K	45	Female	MAN 5 Jombang
5	MK	49	Male	MAN 2 Jombang
6	DFU	44	Female	MAN 4 Jombang
7	DA	49	Female	MAN 4 Jombang
8	HI	48	Female	MAN 1 Jombang
9	AS	42	Male	MA Al-Bairuny
10	BK	41	Female	MA Al-Bairuny
11	FI	42	Female	MAN 1 Jombang
12	RFS	27	Female	MA Darussalam Sengon
13	RS	37	Female	MA Darussalam Sengon
14	CA	42	Male	MA Al Ihsan
15	D	26	Female	MAN 3 Blitar
16	SMS	26	Female	MA Ma'arif Ponggok
17	NS	50	Female	MAN 10 Jombang
18	EM	25	Female	MAN 3Jombang
19	UH	41	Female	MMA Tambakberas
20	P	45	Male	MA Perguruan

				Muallimat Cukir

C. Data Collection Technique

The most important step in research is data collection techniques. If researchers do not understand data collection techniques, researchers will not obtain data that meets the standards. Though the main purpose of research is to collect data. In addition, there are several methods of data collection, including questionnaires, observations, and interviews. Collecting data through distributing questionnaires is the method used in this study. In this case, the distribution of questionnaires became the primary data in the study because it was the only data collection technique used. In this study, questionnaires were distributed in the form of a google form (online) to English teachers at the Islamic high school level. In its distribution, researchers through the intermediary of the English MGMP (Subject Teacher Consultation) in Jombang, distributed questionnaires to English teachers in public schools without any minimum and maximum limits for teachers who could fill out the questionnaire. Furthermore, in the distribution process, the researcher provided a research letter and also joined the MGMP group in distributing the questionnaire so that it could be properly conditioned. In other conditions, the researcher directly approached the English teacher concerned to submit a research letter along with permission to become research respondents to teachers from private schools.

D. Research Instrument

Research instrument is a type of tool used by researchers to gather or obtain data.[74] Research tools are also tools for measuring observed social and natural phenomena.[75] The main purpose of a research instrument was to gather data or information about the object that served as the study's subject. Additionally, research tools aid in the collection of better, thorough, accurate, and organized data. Then, a variety of tools are available to gather the data, including a questionnaire, interviewing guidelines, cameras, tape recorders, and field notes.

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[74] Arikuto, *Prosedur Penelitian Suatu Pendekatan Praktek* (Jakarta: PT Rineka Cipta, 2006).
[75] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (Bandung: Alfabeta, 2014), 55.

Only the questionnaire was used as an instrument in this study.

In this study, researchers used a research questionnaire with a combination of closed and open questions. This is because this type of research is descriptive qualitative research, so researchers must obtain detailed qualitative data from respondents to then be analyzed and described in full. There are 36 closed statements provided with answer choices to state the level of teacher competence in this questionnaire, 1 (very unable), 2 (unable), 3 (enough), 4 (able), and 5 (very able). Each of these closed statements has open questions, but the number is adjusted to the needs of research data. In the open-ended questions, 29 questions were made because the researcher did not provide a choice of answers, so that each teacher could answer questions with their own responses and were free to answer based on their personal abilities. A total of 65 items of statement and question were typed in English in the form of a Google form to make it easier to distribute to respondents and to be more flexible in filling out the questionnaire.

The questionnaire was developed based on the theoretical elaboration of digital literacy elements put forward by Son[76] supported by the European Commission's Digital Competency Framework for Citizens (DigComp 2.1).[77] These elements are classified into several criteria used in obtaining relevant data. The following is a questionnaire structure framework that is used as a reference and benchmarks which are explained through the 4 indicators and items identified.

Table 3.2. Structure of questionnaire based on digital literacy elements

Indicator Levels	Investigated items
Introduction and Basic Computer Operation - Basic computer mastery ability. Able to operate the basic computer properly and correctly.	- Introduction to computers / PCs - Level of ability to operate a computer
Functional Skill & The Ability to Find and Select Information - The ability to operate a computer,	- Understanding of the use of computers / PCs - Basic computer software

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[76] Son J-B and Park S-S, *Digital literacy: EAP students' awareness and use of digital technologies* (Pai Chai University: Paper presented at the Globalization and Localization in CALL (GLoCALL) Conference, 2015).

[77] Carretero Stephanie, Vuorikari Riina, and Punie Yves, *DigCom 21: The Digital Competence Framework for Citizens* (Luxembourg: Publications Office of the European Union, 2017), 14.

the ability to understand internet technology - The ability to find information on the internet	introduction level - Knowing about the internet and the latest technology
Communication, Critical Thinking & Evaluation, and Collaboration - Ability in communicating in using technology to communicate. - Using critical thinking and evaluating information from digital space - Collaboration and sharing information in digital contexts	- Digital communication - Collaborate and cooperate with other users - Share information and content in a digital context
Creation and development of Creative and Imaginative Digital Media and Security in Digital Activities - Developing digital media content. - Integrating creative and imaginative content and - Ensuring security in digital activities	- Media or content development - Creativity of digital content integration - Security of digital activity

The indicators and items investigated are formed to then be used as a framework for closed statements and open questions that must be answered by each teacher. Each indicator is not limited to a certain numbering; but is based on the needs of the analytical materials needed by the researcher, especially in determining the analysis items for each indicator. This is done to facilitate the analysis process in determining the digital literacy level of English teachers at the Islamic high school level. The following is a classification of the questionnaire framework and its numbering;

Table 3.3. Blueprint of questionnaire

No	Aspects	Indicators	No items
1	Understanding and operate basic computer or PCs and Basic knowledge of hardware	Introduction and Basic Computer Operation	1 -12
2	Understanding the software application and getting information from internet;	Understanding on Software Applications and ICT Capabilities (Functional Skill	13 - 32

	- Browsing, searching and selecting data, information and digital content - Evaluating data, information and digital content - Managing data, information and digital content	and The Ability to find and Select Information)	
3	- Developing digital content - Integrating and re-elaborating digital content - Think creatively and imaginatively in content planning, explore ideas - Interacting through digital technologies - Sharing through digital technologies - Engaging forums through digital technologies - Collaboration through digital channels - Sharing information from digital content - Managing digital identity	Communicate, collaborate, and share information and digital content with other parties (Communication, Critical Thinking & Evaluation and Collaboration)	33 - 47
4	- Creating digital-based learning media - Developing digital-based learning media - Integrating and re-elaborating digital content - Think creatively and imaginatively in content planning, explore ideas - Protecting devices - Protecting personal data and privacy - Protecting the environment - Ensure security when users explore, create, collaborate, with digital technology	Creative and imaginative creation and development of digital media and security in digital activities (Creativity and e-safety)	48 - 65

E. Data Processing Procedures

Winarno Surakhmad writes, "Data processing is a concrete attempt to make data speak." Kartini Kartono argued that:

> *Data processing means weighing, filtering, measuring, and classifying. Data weighting and filtering is the careful selection of relevant data that are precisely relevant to the problem under investigation. Orders and orders are orders, order according to the rules of time.*[78]

After the data was collected through the data collection method which was carried out using a questionnaire, the available data must be immediately processed by the researcher. The data processing procedures performed in this study are as follows:

1. Selecting Data

   Data collection activities will generate a certain amount of data which, if left unchecked, will continue to accumulate and research will find it difficult to determine the amount of data that has been collected. To obtain data appropriate to the research objective. Data selection was done during data collection. The data is selected from the results of the questionnaire related to the research focus.

2. Classifying Data

   After selecting the collected data, it is grouped according to certain categories according to the research questions on the indicators of the questionnaire with the aim of facilitating the processing of the data and their interpretation. to make a decision. Data clarification is a way of classifying data into groups that are easy to read, understand, and possibly describe all or part of a study. In this case, the data is clarified according to the research question.

3. Summarizing the Result

   Conclusion activities are performed by researchers from the beginning, making it easier for researchers to understand the data collected. These conclusions, which are preliminary responses to the research statements and questions received by the researchers based on the content of the questionnaire,

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[78] Kartini Kartono, *Psikologi Perkembangan Anak* (Bandung: CV Mandar, 1990).

are temporary and remain questionable and should be maintained throughout the study in order to maintain the level of research. Conclusions precede. At the end of the results, the background of the collected data is used and compiled after linking the theory and data collected through analysis.

4. Analyzing Data

Data analysis is the process of interpreting the data obtained, then classifying the data to make it easier to analyze the data so that the final decision can be taken to be studied. Data analysis in this study was carried out continuously during data collection until the end of the study and drawing conclusions. The technique used to analyze the data obtained from the results of the questionnaire is to look for various classifications of teacher digital literacy competencies and then describe or describe them in a narrative manner according to the respondents' answers as they are. After the necessary data is collected, the next steps are processing the data in the following way:

1. Data selection

At this stage, the data collected is selected or selected with the aim of obtaining data that is appropriate and relevant to research activities.

2. Data classification

At this stage, the data are grouped to make it easier to conclude data according to the research questions so that data research can be easily carried out.

3. Scoring

The process of determining a score on the respondent's answer is carried out by making a suitable classification and category depending on the opinion or opinion of the respondent. Scoring calculations are carried out using a Likert scale whose measurements are as follows;

a. Score 1 for an answer "very unable"

b. Score 2 for an answer "unable"

c. Score 3 for an answer "enough"

d. Score 4 for an answer "able"

e. Score 5 for an answer "very able"

4. Data tabulation

After being classified, it is then tabulated in the table so that the frequency of each answer given by the respondent can be known in this case to make reading easier. From the composition that has been arranged, the frequency and percentage then with the tabulation of the data the author analyzes and interprets it.

5. Presentation of structured data

At this stage, the results of compiling and grouping data can be classified and presented in various forms, such as tables, figures, charts or maps. Each form of data presentation is described in detail based on the required data according to the research objectives.

F. Technique of Data Analysis

The tool or instrument that collects data is called a questionnaire and contains a number of questions and statements that must be answered by the respondent. With the interview guide, the format of the questions is different, namely closed and open questions. Closed questions contain questions or statements in which alternative answers are proposed to the respondent to choose from. Whereas for open-ended questions, the questionnaire contains questions or supporting questions for closed questions which can be answered freely by respondents based on their respective perceptions and opinions.

The questionnaire here is the only technique that researchers aim to identify English teacher skills in terms of digital literacy. In this section the multiple-choice format ends with the alternative answers chosen by the teacher. The teacher only chooses the answer that best suits them. The questionnaire consists of 65 questions that must be answered honestly by the teacher. To analyze closed questionnaires, researchers used percentage analysis. Data from closed questionnaires distributed to teachers have been processed statistically through a table of relative frequency distributions which can be called a percentage table.

We call this relative frequency because the displayed frequency is not the actual frequency, while the frequency is in percentage. To get the relative frequency (percentage number). The percentage statistical model is as follows:

$$P = \frac{F}{N} \times 100\%$$

Where,

P= Percentage

F= Frequency

N= The Total Number of The Respondents

Data collection technique by questionnaire using Likert scale. Likert scale has been used to measure a person's perception, opinion, and attitude towards an object or a social phenomenon. Using the Likert scale, there are indicators to rank the instrument's items in relation to the statement or answer to the question: Poor, unable, enough, good, and expert. To fill in the closed-ended questionnaire is to put a tick mark for the answer that according to the respondent is in accordance with the characteristics of the abilities they have. To find out the score of each indicator in the questionnaire regarding the teacher's digital literacy ability level, use the guide for giving a score for each answer choice as follows;

Table 3.4. Alternative score answers

Category	Score
Poor	1
Unable	2
Enough	3
Good	4
Expert	5

In this research questionnaire, the number of respondents' answers does not start from number 0, but from number 1 to 5. The resulting index number will start from the lowest score (36) to the highest score (180) with a range of 36 with an ideal score of 148 from reduction highest and lowest scores (180 - 36 = 144). The four-box method is used to calculate the range of indexes, both those belonging to the high, medium, basic and low competency categories, so that the ideal score is 144:4=36.

The range of 148 is divided by 4 to produce a range of 36. Then the value of the percentage interval to determine the digital literacy level of the English teacher is obtained by dividing the maximum interval score in each category by the range of 36 with the highest score being 185 and multiplied by 100 to produce the required percentage interval. The following details the percentage analysis process in determining the calculation and the final percentage interval obtained for each teacher's ability category;

1. Highest score: This score is obtained by multiplying the score of the highest alternative answer (5) by the number of closed questions (36), 5x36=180.

2. Lowest score: This score is obtained by multiplying the score of the lowest alternative answer (1) by the total number of closed questions (36), 1x36=36.

3. Ideal score: This score is obtained from subtracting the highest score (180) and lowest (36), 180-36 = 144.

4. Interval score: This score is obtained from dividing the ideal score (144) by the number of competency interpretation categories as many as 4 categories, so 144:4=36.

5. Score percentage: This percentage is obtained by dividing the highest score interval by 4 categories with the highest score (180) and then multiplying by 100.

From the calculation steps above, we found intervals, score percentages, and also percentage intervals for teacher competency. The data from the calculation results can be seen in the table below;

Table 3.5. Detail of percentage analysis

Interval	% score	%interval
145-180	100%	≥81%
109-144	80%	61-80%
73-108	60%	41-60%
36-72	40%	≤40%

After obtaining the interval percentages above, the researcher presents the results of these intervals into categories of interpretation of teacher competence in digital literacy, these interpretations are presented in the following table;

Table 3.6 The level of teacher competence

Level	Interval Percentage
High	≥81%
Intermediate	61-80%
Basic	41-60%
Low	≤40%

The table above shows the specifications for the competency level categories achieved by each English teacher in digital literacy. So that it can be a reference to what extent teachers can master digital information and communication technology in its application in learning English in Islamic high schools. At each level above, it is also equipped with its own interpretation. The following below is a table which is an interpretation of each level of digital literacy that has been developed;

Table 3.7 Interpretation of Digital Literacy Levels

Level	Interpretation
High	*Technological Creativity*
	Digital literacy competency level, where English teachers have the ability to develop, modify, and create technological media or content which will be used in teaching and learning activities

Intermediate	*Technological Capability*
	Digital literacy competency level, where English teachers have the ability to use criticize, communicate, and collaborate with technological space clearly
Basic	*Technological Literacy*
	Digital literacy competency level, where English teachers know and understand the technological features or software, and learn how to use technology and internet for the right purpose, especially in terms of obtaining information digitally
Low	*Digital and Technological Awareness*
	Digital literacy competency level, where English teachers know and understand how to use digital technology in the form of operating a PC or laptop to support digital-based activities in teaching and learning activities