CHAPTER III

RESEARCH METHOD

This chapter presents the research methodology which covers the research design, subject of the research, data collection, procedure, and data analysis.

3.1 Research Design

Research design is a key to solving problems. This is supported by (Asenahabi & Nambiro, 2020), that a plan must be created by the researcher before data collection to accomplish the study objectives. The purpose of this study is to determine students' perceptions of the usefulness of artificial intelligence as a learning media to improve the ability to find ideas in the learning process.

This study's research design falls under the category of mixed-method research. To fully comprehend a study topic, researchers are increasingly using mixed methodologies research, which combines quantitative and qualitative research procedures by leveraging their complementing qualities and distinctions (Clark, 2017).In a single study, the concurrent use of quantitative and qualitative approaches mutually encourages one another, resulting in a more comprehensive investigation and an enhanced analysis of the research topic.

3.2 Subject of the Research

The subjects in this study were students of English Language Education (ELED), Universitas Muhammadiyah Malang who have used or currently use Artificial Intelligence, especially ChatGPT. In this study, individuals were chosen through non-probability sampling. A sampling method known as a non-probability sampling methodology does not provide each component or population member an equal chance to be chosen as a sample (Sugiyono, 2012). Purposive sampling is the kind of non-probability sampling that is utilized. When selecting samples or conducting sampling for particular goals, researchers may employ a technique called "purposeful sampling." Purposive sampling is a method used by researchers to choose volunteers who best fit the criteria needed to carry out their research. Researchers will take 30 students to be given questionnaires and interviews to collect data and to support the achievement of this research.

3.3 Data Collection

The researcher collected data through survey research using questionnaires and interviews if further data is required. Closed questionnaires and unstructured interviews were the data collecting methods employed in mixed-method research. To accomplish the goals of the research, two instruments will be used for data collection: an unstructured interview and a closed-ended questionnaire. The process for gathering data consists of the following phases.

The first step is to disseminate the questionnaire on February 25, 2024, using a Google form. Every class group was sent the identical link to the questionnaire. Participants in this research project can respond using the options provided by the closed-ended questionnaire. Following the identification of the intended participants, a questionnaire analysis was performed to identify the six students who were granted permission to take part in the interview.

Second, each of the six respondents was permitted to take part in the interviews that were performed on various parts of each other. The interview took place in 2024 between March 1 and March 5.

3.3.1 Techniques

According to the mixed method research approach, the researcher employs two distinct types of information collection procedures: quantitative methods (questionnaires) and qualitative techniques (interviews).

3.3.2 Instrument

a. Questionnaire

There is a lot of research and also future research that is needed for the questionnaire (Krosnick, 2017). To gather data or views for research purposes, multiple questions are put in a questionnaire and distributed to respondents. One of the instruments frequently employed in quantitative research methodologies is the questionnaire. In this study, a Google Form was used to disseminate the questionnaire.

Participants will get questionnaires with simple-to-understand questions. Participants may participate willingly. However, the researcher protected their privacy throughout the study. The researcher triangulated the results using the closed-ended questionnaire. The closed-ended questionnaire is a collection of questions that respondents can freely and succinctly respond to. The questions will be asked about the

strengths and weaknesses of using artificial intelligence (ChatGPT) as the learning media to improve EFL reading comprehension.

The number of questionnaires to be given by the author is 15. The researcher guarantees that the identity and data provided by respondents will be kept confidential. There are also questionnaire statements, in which students are given a statement to read carefully and will give their judgment by choosing one of the following options:

1: Strongly Disagree [*Sangat Tidak Setuju*]

2: Disagree [*Tidak Setuju*]

3: Agree [*Setuju*]

4: Strongly Agree [*Sangat Setuju*]

The following are 3 examples of questions that will be given by the researcher:

1. ChatGPT helps me understand the material provided.
2. I use ChatGPT to help me improve my writing skills.
3. I am interested in using ChatGPT to learn writing in English because it has many features.

b. Interview

The second instrument used was the interview. This interview was conducted to find out more and ask in depth about the information in the questionnaire. This interview was conducted by asking further about the respondents' responses to the previous questionnaire. Beck & Perry (2008) define interview structure as a function of how much the interviewer oversees, guides, and molds the dialogue between the two main characters. This entails setting boundaries and providing guidance through the interviewer's questions and interventions, as well as controlling the interviewee's discourse's duration, focus, and depth.

The researcher conducted direct interviews through the Zoom application. Interviewees will be selected based on the data and results in the questionnaire. The purpose of this interview is to find out in depth data from the questionnaire. Participants in an interview are free to express their opinions openly. The interviewee usually provides examples to back up their assertions, such as by sharing personal tales. The

more participants in an interview, the richer the data will be, and the more data that may be collected as a result. The researcher will invite a few students to an interview on campus for research reasons. Each interview will last around 10 minutes to foster a relaxed discourse.

Subjects will be called for the interview process if further data is needed, for example, 5 students will be called. Calling the subject for the interview process is of course agreed by the researcher and also the subject without any coercion. The interview process can be carried out anywhere according to the subject's convenience, and can also be online through the Zoom application. Here are 3 examples of questions that the researcher will ask the subjects if further data is needed:

1. Would you kindly tell me about your ChatGPT English learning experience?
2. Do you enjoy using ChatGPT to learn English? If so, what would you say? If not, what would you say?
3. What are the elements that help and hinder learning English using ChatGPT? Why? Provide an example

3.4 Procedure

In this study, a mixed sequential method strategy is used to incorporate data from many methodologies. (McKim, 2017) applied this method in two steps: first, they applied quantitative data analysis. To address the issue formulation, quantitative data is gathered and analyzed in the first step. This involved determining the strengths and weaknesses of artificial intelligence (ChatGPT) as the learning media to improve EFL writing comprehension at the University of Muhammadiyah Malang. The questionnaires were given to research participants to acquire quantitative data.

The researcher also looked at the qualitative information gathered to consider participant interviews. Participants were carefully selected, and questions on the benefits and drawbacks of utilizing podcasts to improve speaking abilities were posed to them. Students will be asked to participate in interviews; those who are will be contacted. Furthermore, the information from the questionnaire will be gathered from the interview data.

3.5 Data Analysis

Research studies using mixed methods combine various characteristics of qualitative and quantitative research, such as distinct viewpoints, goals, research questions, and data sources, synergistically (Clark, 2017). Concurrent triangulation research involves the almost simultaneous collection, independent analysis, and interpretation of quantitative and qualitative data before the final result is drawn. Data visualization, interpretation, and dialogue are integrated. Furthermore, (McKim, 2016) states that the topic of whether mixed methods research is seen to be more valuable than simply quantitative or purely qualitative studies is warranted given the rise in mixed methods research. Knowing the perceived benefits of merging two different approaches is crucial, especially in light of the additional time, money, and skill needed to carry out a mixed methods study. Moreover, various techniques and two distinct types of data must be gathered and analyzed, research takes additional time.

Considering the following research topics from the first chapter: a.) What are the strengths of Artificial Intelligence (ChatGPT) as the learning media for writing comprehension, b.) What are the weaknesses of Artificial Intelligence (ChatGPT) as the learning media for writing comprehension, to address the study questions, the researcher has gathered information using interviews and questionnaires. There were 30 students for respondents and 4 students for an interview. The questionnaire, which has 15 and 5 interview items, was given to students in the English Language Education Department (ELED) at the University of Muhammadiyah Malang from February 25 to February 28, 2024, for the 2020–2022 academic year. SPSS 25 was utilized in this study's analysis of the quantitative data. Whereas "Agree" and "Strongly Agree" merged to produce a single positive response, "Strongly disagree" and "Disagree" joined to create a single negative response. In addition, a descriptive analysis was done on the interview.

The following procedures were taken in the analysis of the interview's data:

1) To ensure that the response was pertinent to the question, the researcher carefully studied the verbatim transcription.
2) The data that weren't relevant to the research issue were minimized and analyzed by the researcher.
3) The participant's explanation yielded the same classification for the researcher.

The following processes are used to examine the questionnaire's data:

1) The questionnaire responses were fully read by the researcher, who then recorded them verbatim.
2) The researcher eliminated extraneous data.
3) The participant's explanation yielded the same classification for the researcher.
4) Results from questionnaires and interviews were compared by the researcher.
5) Based on the complete findings of the surveys and interviews, the researcher concludes.