CHAPTER III
METHODOLOGY

This chapter presents the specific method or procedures used to identify, select, process, and data analysis. It consists of the research design, research site and participants, data collection, data collection procedures, data analysis, and hypothesis.

3.1   Research Design

An experimental design using a quantitative approach is implemented in this study in order to find out whether the use of technology-mediated corrective feedback can improve student writing accuracy in writing analytical exposition text and whether there are a significant differences in the use of different types of technology-mediated corrective feedback to improve student writing accuracy. According to Creswell (2018), experimental design manipulates one or more variables to evaluate the outcomes from the impacts of the manipulated variable by holding all the variables constant. Therefore, the reason behind the decision to use experimental design is to determine whether the treatment influences an outcome in this research.

Cook (2015) stated that all experiments, including quasi-experiments, are intended to identify whether a treatment makes a difference in a particular outcome. Since the treatment assignment of this study was not random but selected with the English teacher in the school, quasi-experiments were implemented in this study. A quasi-experimental study is conducted to examine students' writing scores from two different classroom improvements with different treatments.

The design used is a pretest-posttest control-group design. Tests of writing analytical text are used to accomplish the quantitative method. The purpose of a pretest-posttest control-group design is to compare students' performances before and after the intervention in using treatments. By utilizing the experimental and control groups, the differences in the results from both groups will be obtained more accurately in the treatment given.

The objectives of this study are to identify student writing accuracy improvement towards the use of technology-mediated corrective feedback in writing analytical exposition text, the differences between the use of Showbie and Google Docs in improving student writing accuracy, and students' perceptions. Hence, a pretest-posttest control group design will be best suited for this research. The data collected through the document analysis is expected to find the answers to whether the results of students' writing have accuracy improvements after receiving treatment. Then, the data will be collected through pretest and posttest, and the questionnaire is intended to identify students' perceptions of written corrective feedback given by the teacher.

Table 3.1

Pretest-posttest Control-group Design

Groups	Pretest	Treatment	Posttest
Experimental	T_1E	X_1	T_2E
Control	T_1C	X_2	T_2C

Where:

T_1E = pretest of students in the experimental group

T_1C = pretest of students in the control group

X_1 = treatment using Showbie for the experimental group

X_2 = treatment using Google Docs for the control group

T_2E = posttest of students in the experimental group

T_2C = posttest of students in the control group

3.2   Population and Sample

Eleventh-grade students from one of the vocational schools in Kota Bandung were the population of this study. The sample of this study was 70 students from two classes. Vocational students are chosen as participants because they have learned analytical exposition text and, at their age, they are engaged in the use of e-learning in classroom activities. In accordance with the result of a study by Joo et al. (2011), learners successfully learn through continuous interaction with the teacher in

e-learning courses. Additionally, in Kurikulum Merdeka, the use of technology should be prioritized due to the forwardness of advanced technology in many industries. Moreover, because of the accessibility in the schools and the discussion with the English teacher, the researcher could conduct this study in two classes.

Table 3.2

Population of students that will be involved in the research

Class	Students			
	Total Students	Gender		Class Speciality
		Male	Female	
Class A	35	5	30	Accounting
Class B	35	2	33	Accounting
ΣX	70			

3.3 Research Instrument

In conducting this research, the researcher obtains measures using pretest and posttest. The aims of this research focused on the use of technology-mediated corrective feedback in improving students' writing accuracy. Therefore, students writing was used as an instrument in this research.

After that, teacher corrective feedback using Showbie as a treatment was applied to students writing in experimental groups only. Meanwhile, the control group received feedback using Google Docs. After receiving feedback, the students revised their writing as a second draft to investigate whether there was an improvement in the grammar used in their writing. Then, the students will receive the treatment from the first draft to the third draft or final draft.

The researcher will collect further data regarding students' perceptions using questionnaires. This consisted of 25 questions focusing on the use of technology-mediated corrective feedback, Showbie, and Google Docs. The items in the questionnaire are developed by the researcher by referencing previous studies

such as written corrective feedback (Mertapratiwi, 2021), the use of technology-mediated corrective feedback (Sulistianingsih, 2017), and the use of Showbie (Al-Saleh, 2018).

3.4 Research Procedures

The procedure of this study took place for about two months and consisted of a survey, treatment, and questionnaire. This stage was developed by referencing the previous research that used the quasi-experimental and pretest and posttest control group design. Further visual explanations are shown in Figure 3.1 below:
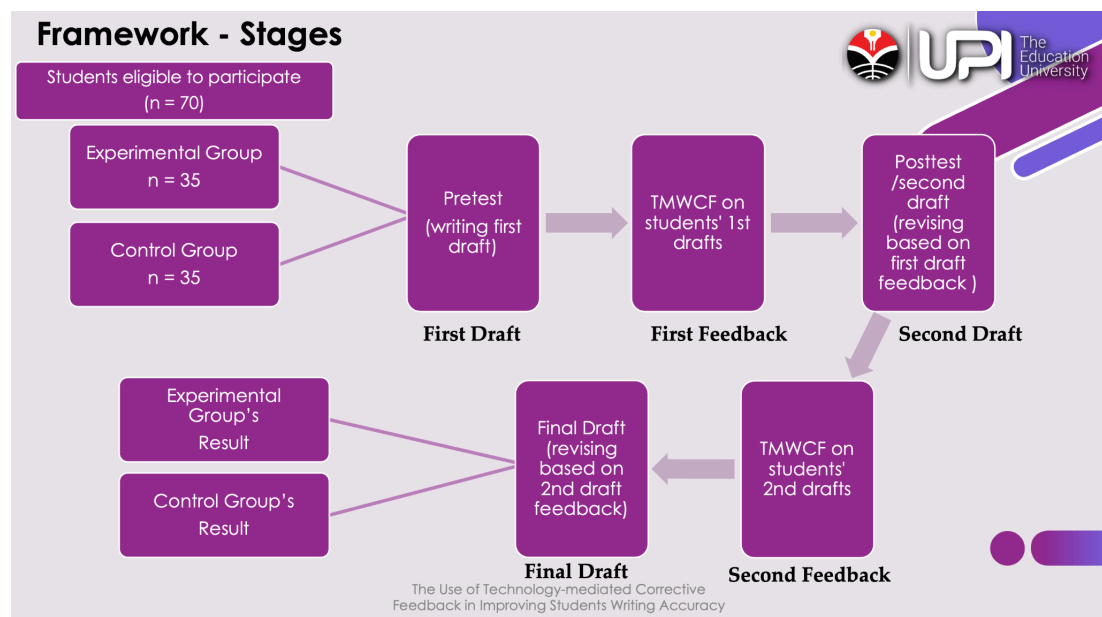

Figure 3.1 This study procedure

3.4.1 Survey

The researcher started a survey for conducting the study around February 2024 by meeting one of the students in the school to find out detailed information about the teaching and learning activities method used in the English class. The researcher then met the English teacher to discuss the study and the issues that teachers have to encounter in teaching writing for the students before conducting the study.

At the beginning of May 2024, the researcher conducted a pilot test on the eleventh-grade students who were not included in the sample population to find out the reliability and validity of the instruments before applying the pretest. First, the

researcher asked students to write an analytical exposition text. Five students were assigned to write an analytical exposition text based on the instructions from the researcher. Particular errors found in students' writing will be identified and marked. The chosen five students were asked to give the researcher feedback on how she should implement the method of providing feedback using Showbie to the students.

3.4.2 Procedure for Feedback Provision

Showbie and Google Docs were used as feedback media to provide indirect corrective feedback to the experimental group and the control group as treatments. As stated previously, indirect corrective feedback indicates the students' errors in their writing are identified without correct forms being provided. Moreover, three common grammatical errors by EFL students are the focus of this research (Bitchener et al., 2005; Ellis et al., 2008):

1. Article error   = marked with yellow highlight

2. Preposition error   = marked with blue highlight

3. Punctuation error   = marked with orange highlight

Other features used in Showbie were comment and voice note. The other feature used in Google Docs was comment without voice note since it is not available there. Those features used for providing the errors count, feedback focus, and suggestions. The difference was, when providing the suggestions, the researcher used voice note in Showbie and comment in Google Docs. It was employed because the researcher wanted to identify whether the students in the experimental group are engaged with the voice note feature.

3.4.3   Treatment

Before applying the treatment, a pretest was carried out to measure the number of errors in students writing in all focus: article, preposition, and punctuation. Furthermore, from the pretest result, students' prior knowledge in writing analytical exposition text was demonstrated and, in this stage, the researcher asked students to write analytical exposition text based on the instruction given.

The purpose of the first treatment was to identify whether the number of students' errors decreased, which means the accuracy of their writing increased. The researcher provided indirect corrective feedback through Showbie to the

experimental group and used Google Docs for the control group. Students from both the experimental and control groups were assigned to write analytical exposition text and revise their drafts, so there were three drafts during each student writing process. During the drafting process, the students will reflect on the feedback given by the researcher through Showbie and Google Docs. Treatment was applied based on the writing process approach, which involved planning, drafting, editing, and final version (Harmer, 2004).

After the treatment was given, a posttest was conducted to measure and calculate the number of particular errors that occurred in the students' writing after applying the treatment. In the posttest, both the control and experimental groups were assigned to write an analytical exposition text.

Table 3.3

Research Schedule

No	Experimental Group	Control Group
1	Writing first draft of analytical exposition text	Writing first draft of analytical exposition text
2	Writing second draft based on the feedback using Showbie	Writing second draft based on the feedback using Google Docs
3	Writing final draft based on the feedback using Showbie	Writing final draft based on the feedback using Google Docs

3.4.4 Questionnaire

The questionnaire was used to obtain further data regarding students' perspectives on the use of Showbie and Google Docs as feedback media during the writing process. There were 20 close-ended questions related to Showbie, indirect corrective feedback, and writing, followed by 4 multiple choice questions and a short essay consisting of the features in Showbie and Google Docs. Therefore, there were 25 questions in total included in the questionnaire.

Questions were categorized into several parts, such as students' perspectives toward the use of technology-mediated corrective feedback, feedback provision, grammatical errors, and the importance of writing.

Table 3.4

Questionnaire

Questions' Number	
4, 5, 6, 7, 8, 9, 11, 12, 17, 18, 19, 20, 21, 22, 23, 24, 25	Students' perspectives toward the use of Showbie/Google
3, 10, 13, 14	Students' perspectives towards feedback provision
1,2	The importance of writing
15	Students' perspectives towards the use of technology-mediated corrective feedback

3.6   Data Analysis

After obtaining the data, computation and its analysis will be conducted using IBM SPSS 29 for macOS. SPSS was used because it performs advanced statistical analysis with huge and complicated data sets. The data from pretest and posttest scores of both groups were calculated using this software.

3.6.1   Data Analysis on Students' Writing

In analyzing the pretest and posttest data, the means of scores were compared. All hypotheses were started with the alpha (α) level at 0.05. The data gained were then calculated using IBM SPSS 29 for macOS. However, before the output data were analyzed, it should fulfill the following criteria:

1. The data should have a normal distribution (Normality Distribution Test)
2. The variance of experimental and control groups must be homogeneous (Homogeneity test)

3. The participants must be different in each group (The requirement for quasi-experimental)

3.6.1.1 Normal Distribution Test

The normal distribution was calculated before the t-test to investigate whether the pretest and posttest scores of two groups were normally distributed. The statistical calculation for the normality test is used by Shapiro-Wilk, as shown below:

1. Setting the hypothesis, Ho = the scores between two groups are normally distributed.
2. Setting the level of significance (α) = 0.05
3. Analyzing the normality distribution using the Shapiro-Wilk test.
4. Comparing the scores between the test results and level of significance with those values:
   a. If Asymp.Sig $\geq$ 0.05, the null hypothesis is accepted, which means the sample for both groups is normally distributed.
   b. If Asymp.Sig < 0.05, the null hypothesis is rejected, which means the sample for both groups is not normally distributed

3.6.1.2 Homogeneity Variance

The homogeneity variance was computed to find out the variances of the groups were homogeneous or equal to be compared. The steps are:

1. Setting the hypothesis. Ho = data between two groups are homogeneous.
2. Setting the level of significance (α) = 0.05
3. Measuring the homogeneity variance using Levene's test.
4. Comparing the result of Levene's test and alpha significance level:
   a. If Asymp.Sig < 0.05, the null hypothesis is rejected, meaning the two groups are not homogeneous.
   b. If Asymp.Sig > 0.05, the null hypothesis is accepted, meaning the two groups are homogeneous or equal.

3.6.2   Data Analysis on Questionnaire

A Likert scale and short answer will be used in the questionnaire as the last step to collect data. The data collected through questionnaires were analyzed and interpreted based on the results on Google Form to see how students' perceptions toward the use of technology-mediated corrective feedback. Furthermore, the percentage number of respondents was converted taking the criterion from Burn (1994), as presented below.

Table 3.5

Percentage of respondent criterion

No	R% (Percentage of Respondent)	Criterion
1	0	None
2	1-25	Small number
3	26-49	Nearly half of
4	50	Half of
5	51-79	More than half of
6	80-99	Almost all of
7	100	All of

3.7 Hypothesis

This study consisted of two hypothesis as the two outcomes at the end of this research, they are:

Ho   : There are no significant changes for the students after the researcher administered the treatment.

Ha   : There are significant changes for the students after the researcher administered the treatment.