

CHAPTER III

RESEARCH METHOD

Chapter III consist of research design, setting,subject and object research, respondents, data sources, data collection techniques, and data analysis techniques.

3.1 Research Design

This study used mixed method research methods, Creswell (2017) defines mixed approaches as mixing or integrating qualitative and quantitative research and data in a project.the purpose of this study was to determine the effectiveness of sing Communicative Language Teaching (CLT) with multimedia to improve student's fluency in speaking at SMK Teuku Umar Semarang. In this case, the independent variable (X) will be taught with the Communicative Language Teaching (CLT) approach, and the dependent variable (Y) is students' fluency in speaking.

Pre-experimental research was the research design employed in this investigation. The simplest design type is pre-experimental as, according to Sugiyono (2019: 74), external factors continue to influence the development of the dependent variable. This occurs as a result of the sample not being chosen at random and the lack of control factors. The method used was chosen because it is a type of quasi-experimental assessment that provides for a straight forward evaluation of an intervention administered to a research group.

Pre-experimental design came in a variety of ways, including intact-group comparison, one-shot case studies, and one-group pretest-posttest designs (Sugiyono, 2019: 74). The pretest-posttest design used in this study is a one group pretest post-test which involves measuring or observing one group both before and after being given treatment using a pretest.

The test illustration control group pretest posttest can be seen in this table.

Table 3.1 The Illustration of Research Design

Pretest	Independent	Posttest
Y1	X	Y2

X : Communicative Language Teaching approach.

Y1 : Student's Speaking fluency before taught Communicative Language Teaching approach.

Y2 : Student's Speaking fluency after taught by using Communicative Language Teaching approach.

The following is a description of the pre-experimental research methods used in this study that employ a one group pretest-posttest design:

1. Before to the treatment, the researcher arranged for the tenth grade students at SMK Teuku Umar Semarang to take a pretest (Y1) on speaking fluency.
2. Students in the tenth grade at SMK Teuku Umar Semarang participated in the Communicative Language Teaching (CLT) teaching experiment (X).
3. Following the implementation of the treatment, the researcher measured the speaking fluency of the tenth grade students at SMK Teuku Umar Semarang in order to give the posttest (Y2).

3.2 Setting of the Research

An environment, location, or space that a researcher wishes to use as a research topic is known as a research setting. In order to gather the data and information required for this study's research goals, the research setting is also necessary.

3.2.1 Time of the Research

This research was conducted in February – April 2024.

3.2.2 Location of the Research

This research was conducted at SMK Teuku Umar Semarang, which located on Jl. Karangrejo Tengah, Gajahmungkur sub-district, Semarang City, Central Java, 50231.

3.3 Subject and Object of the Research

The researcher provides an explanation of the topic and purpose of the study in this chapter. the unit to be examined, the location where the variable is attached, and the study topic itself as a source that can give researchers data information. However, the research problem or variable Y, the research issue itself, the location of the unit of analysis, the variable, or the focus of a study, constitute the research object.

3.3.1 Subject of the Research

The focus of this study is tenth grade students of SMK Teuku Umar Semarang in the 2024/2025 academic year. The researcher chose this school as a research site because it is in a strategic location close to the researcher's home, allowing for easier access and lower transportation costs, and because the research topic is directly related to problems or issues in the school environment.

3.3.2 *Object of the Research*

The object of this research was the student's speaking fluency in English.

3.4 Population and Sample of the Research

3.4.1 Population of the Research

A population in quantitative research is a generalization domain made up of objects and participants with specific attributes chosen by researchers for analysis before conclusions are made (Sugiyono, 2019). All of the people, things, or occasions that are the primary focus of a study are referred to as the population (Susanto et al., 2024). The population of this study was the tenth grade of SMK Teuku Umar Semarang. The total population was 66 students, the distribution of the population as below :

Table 3.4.1 Population of the Research

No	Class	Number of Students
1.	10 MP 1	33
2.	10 MP 2	33
Total		66

3.4.2 Sample of the Research

The researcher randomly selected one class to examine because of the comparatively big population. To choose samples at random, the researcher employed the cluster random sampling technique. Since the tenth grade MP 1 class was prepared to begin learning English, the researcher used them as a sample in this instance.

Sugiyono (2019 : 83) said “If the object to be investigated or the data source is very vast, cluster random sampling is used to choose the sample. This method is based on randomly selected population areas”.

Table 3.4.2 sample of the Research

No	Class	Total
1.	10 MP 1	33
Total		33

3.5 Respondents

The study included 66 students from two classes of the same major, all of whom were tenth grade MP 1 students at SMK Teuku Umar Semarang. Cluster sampling was used in this investigation. Cluster sampling is a sampling method in which the population and sample size are extremely large. Sugiyono (2017) defines cluster sampling as a sample strategy used when the item to be examined or the data source is very vast. Researchers utilize this technique to investigate what happens when CLT is applied to speaking learning using multimedia as a learning medium.

3.6 Data Sources

Data sources are the basis for generating insights that are useful for providing information and answers to researchers. In this case the information needed by researchers is obtained from two sources, namely Primary data sources and secondary data sources.

3.6.1 Primary Data Sources

Primary data is data gathered directly by researchers for the first time, specifically to answer the study problem under consideration. Alternatively, for the first time, precisely This data is real-time and represents current conditions. Primary data collecting entails additional processes such as interviews, questionnaires, observations, or a mix of the three. Primary data is a data source that directly offers information to data collectors (Sugiyono 2019). The key data sources for this research were English teachers, students, and learning methods taught in the tenth grade at SMK Teuku Umar Semarang.

2.6.1.1 Score Pretest PostTest

Pre-test and post-test scores are two sorts of scores used in educational or training assessments. The goal of pre-test scores is to determine the student's initial level of understanding of the content being studied. Following therapy, post-test scores are collected to assess the achievement of the ultimate results. This is done to provide an overview of the effectiveness of learning or training by comparing pre-test and post-test scores.

2.2.1.1 Responses of Interview

Interview responses are the feedback offered by respondents after conducting interviews. In this study, interview responses from respondents were employed as a data gathering method. These responses take the form of verbal answers given directly to respondents. Respondents' replies add context to numerical data or other information gathered throughout the investigation.

3.6.2 Secondary Data Sources

Pre-existing data that has been previously gathered is referred to as secondary data. In order to support the research process, the writers of this study gathered prior data from official books, governments publications, websites, papers, and journals pertaining to the topic of the study.

3.7 Data Collection Techniques

The appropriate data gathering technique will assure the validity and reliability of the research findings. According to Sugiyono (2019), this approach is the most strategic phase; without understanding the data gathering technique, the researcher will not receive data that fulfills the stated requirements. This study collects data using four

techniques: pretest, treatment, posttest, and interview. The following is a full explanation.

3.7.1 *Pre-Test*

A pretest is an evaluation tool used in research studies that is administered to participants prior to their receiving any kind of therapy. According to Ratnawulan & Rusdiana (2014: 47) pre-test activities are routinely carried out by teachers at the beginning of each new presentation. The goal is to identify the level of student knowledge regarding the material to be presented. While the post-test is the opposite of the pre-test, namely an evaluation activity carried out by teachers at the end of each presentation of the material.

3.7.2 *Treatment*

Treatment is classified as approaches, models, methods, techniques, media, and strategies both learning media and strategies were mostly used by students in teaching the subject.

➤ Listen

The researcher informs the students about the fundamental dialog that they will read, which can be a brief discussion regarding the selected reading material. Here, the teacher attempts to activate the students' past knowledge. This process takes approximately 10-15 minutes.

➤ Read

The students then read a selected paragraph describing the dialog. This explanation is compared to the information provided by the researcher. The excerpt from the textbook should have the same information as in the last activity. Reading assignments that include additional topics are not appropriate.

This activity attempts to improve students' fluency in speaking English using themes chosen by the researcher.

➤ Discuss

The researcher will lead a class discussion on the material that has been read and encourage students to reflect on the differences between their reading and the material that has been determined by the researcher. In this step, the researcher creates groups. Each group will consist of 10-15 students.

Researchers in this study generated a list of learning activities that occurred during the study. In addition, researchers described the numerous actions carried out during the study. While this study used audio-video material, short dialog texts, and group discussions as the primary means of implementing learning approaches, researchers used a theme in this study. The researchers used the following learning activities and media during the activities.

Table 3.7.2
Learning Activity

Date	Learning Activity	Media	Note
2025 - 05 – 15	<ul style="list-style-type: none"> in the first teaching, the researcher gave a pre-test to the students by giving a dialog text and the students practiced it. 	Audio – Video, Text Dialog Conversation, Role – Play activity	Has a limited vocabulary to speak, speaking with many pauses, speaking with several incorrect pronunciations.

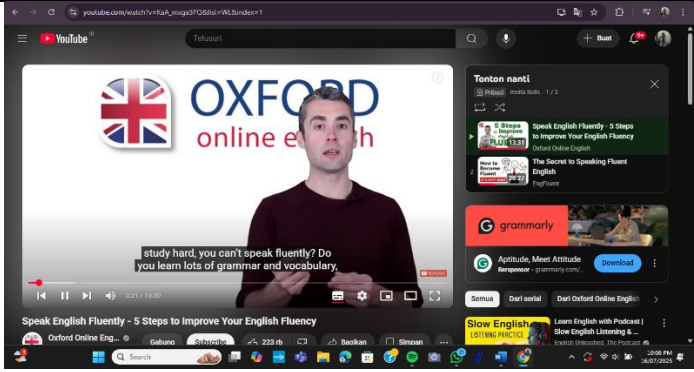
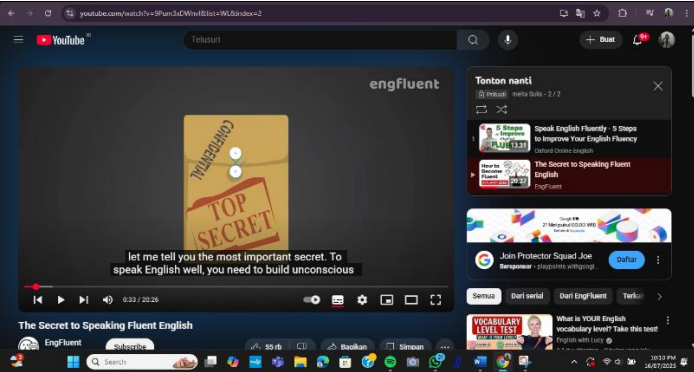
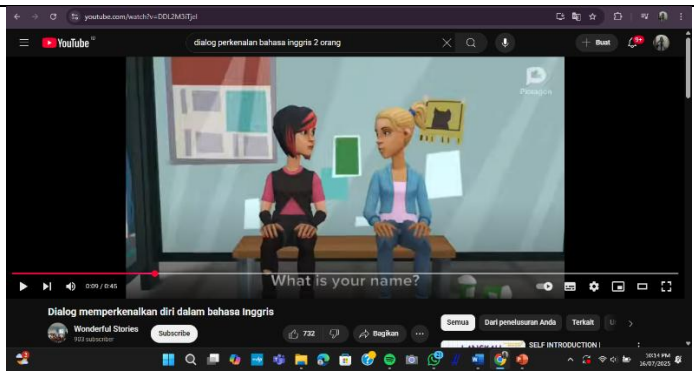
	<p>after that the researcher explained about the learning method that would be used to the students.</p> <ul style="list-style-type: none"> • Furthermore, the researcher provides the first treatment to students using Audio - video media and students are required to understand the contents of the video discussion followed by making a summary and explaining it. 		
2025 – 05 – 20	<ul style="list-style-type: none"> • the second meeting, the 	Text Dialog Conversation,	Understand to slowly, and

	<p>researcher gave the students an assignment to create a daily dialogue and practice it by creating a discussion group.</p> <ul style="list-style-type: none"> • Next, the researcher gave a short video on how to speak English easily and fluently, the researcher explained the contents of the video to the students. 	<p>video materials from YouTube, Practice activity</p>	<p>frequently causes bewilderment, the choice of the words that could almost be understood</p>
<p>2025 – 05 – 21</p>	<ul style="list-style-type: none"> • In the third treatment, the researcher provides teaching material 	<p>Materials from Power Point, Audio – Video, create study groups</p>	<p>Good discussion and cooperation, the choice of the words that could almost be understood, speaking at</p>

	<p>using power point media, the researcher makes a discussion group of students to be given an assignment by making a short narrative and practicing it.</p>		<p>generally at normal speed, speaking with several incorrect pronunciations, interacted well with peers during the Role – Play.</p>
2025 – 05 - 25	<p>at the next meeting the researcher provides teaching through YouTube videos and students are directed to reread the dialog in the video.</p>	<p>Materials from Video YouTube, Pronunciation practice</p>	<p>Still hesitant to speak, but vocabulary knowledge increased, speaking generally at normal speed.</p>
2025 – 05 – 28	<ul style="list-style-type: none"> at the last meeting the researcher gave a post 	<p>Pronunciation practice, discussion groups, questions</p>	<p>Actively participated and used new vocabulary</p>

	<p>test with the same material as the pre test, namely dialog conversation and practicing it with the group.</p> <ul style="list-style-type: none"> • After being given a post test, the researcher gave several interview questions to students as a measuring tool for how far students mastered speaking skills in English through the learning media that the researcher described. 	<p>interview from researcher</p>	<p>confidently, demonstrated strong understanding and excellent use of multimedia, speaking fluently, has a little bit of grammatical errors.</p>
--	--	----------------------------------	---

Table 3.7.2
Learning Media

 <p>https://youtu.be/KaA_mxga3PQ?si=jMZlveKi5ny2hCMX</p>
 <p>https://youtu.be/9Pum3xDWnvl?si=yDR74A_zx9Tn88dC</p>
 <p>https://youtu.be/DDL2M3iTjel?si=0o4wQbvyn8aryugC</p>

3.7.3 Post – Test

A posttest is an evaluation tool used in research studies that is administered to participants following therapy. According to Nur Aisyah Sirgar et al. (2023), the goal of the post-test is to measure the level of student achievement following treatment. If

the post-test findings are compared to the pre-test results, they both serve to assess the effectiveness of the instructional program's implementation.

3.7.4 Interview

An interview in a research method is a data collection approach that involves direct interaction between the researcher and the respondent to get information about the issue to be examined. According to Sugiyono (2019 : 214), interviews are used as a data collection strategy to identify the problems that need to be investigated. Interviews can be structured or unstructured, performed face to face or over the phone. In this study, researchers performed unstructured interviews by not following interview procedures that were systematically and properly organized for data collection. Researchers made this interview to students by dividing into 2 groups and each of the groups had two representatives.

Some of the students' answers to the interview questions are explained through the script :

Table 3.7.4
Interview script

No.	Question interview	Answer
1.	Which topic do you prefer when learning to speak English?	<ul style="list-style-type: none"> • I think emmm.... About food and drink and family life too • Then Emmm..... daily conversation and sports? I just like when we discuss together miss • I was like daily routines and travelling miss • Mmmmm..... what is that, wait..... greetings and introduction and group discussion
2.	What learning activities did you enjoy the most?	<ul style="list-style-type: none"> • Video on youtube miss, I think is not boring in class • I like all the activities miss..... • Just in a group discussion and pair discussion miss • Emmm..... I like all the activities but I enjoy the most activities is in

		role – play and multimedia speaking tasks
3.	Which learning media did you find most interesting?	<ul style="list-style-type: none"> • Ofcourse video and audio cartoon miss • Wait miss, I just thinking the answer..... role – play recording and interactive quizzes • Just on video dialogues miss, is not boring to me • Story telling video and podcast – style audio
4.	What improvement do you expect for this learning activities?	<ul style="list-style-type: none"> • Emmmm..... I think the vocabulary is more support • With this media I’m better in pronunciation guidance • But me I like all the improvement after the given short but meaningful learning • Me? Emmm Time for reflection after activities, and better on vocabulary

3.8 Validity and Reliability of the Test

3.8.1 Validity of Test

Validity and reliability are two key ideas in research that concern the quality of measuring equipment. Validity refers to the measuring instrument's precision, or how well it measures what it is designed to measure. In contrast, reliability refers to the measuring instrument's consistency, or how consistently it produces the same results when used repeatedly under the same conditions.

According to Sugiyono (2019: 192), employing valid and reliable data collection devices is intended to ensure that the research outcomes are valid and reliable. In this study, the authors employed content validity to determine whether the tests administered correlated with the domain. The test is given based on the material that students have learned. The test materials are based on textbooks and sources utilized by 10th grade students at SMK Teuku Umar Semarang.

If the same test is administered to the same student or group of students in two distinct locations, the results will be identical. In this study, the author employed the raters agreement type to measure the test's reliability, which is related to inter-rater reliability, because the author assessed students' speaking skills using two raters. The author calculated the correlation between the first and second rater ratings using SPSS version 23.0. The writer used the categories of reliability that can be seen in the following table by Cohen, Manion, & Morrison (2007, p. 506)

Table 3.8.1
Category of Reliability

No	Reliability	Category
1.	>0.90	Very high reliable
2.	0.80 – 0.90	Highly reliable
3.	0.70 – 0.79	Reliable
4.	0.60 – 0.69	Minimally reliable
5.	<0.60	Unacceptably low reliable

The table below displays the results of reliability calculations:

Table 3.8.1
The Results of Reliability

Reliability statistics	
Cronbach's Alpha	N of items
.876	2

The test had a reliability of 0.876, indicating it is highly reliable. This indicates high instrumental accuracy, making it suitable for research purposes.

3.9 Research instruments

The instrument in this study was a *Pretest Posttest*. a *Pretest Posttest* is a research instrument used to collect data by giving a number of written questions to respondents to fill in. According to Arifin & Maharani (2021) The questionnaire is a data collection technique that is carried out by giving a set of questions or written statements to respondents to answer them in other words, the questionnaire is an efficient data collection mechanism if the researcher wants to know exactly what is needed and how to measure the research variables. Thus, respondents can only answer the questions by checking the column column that is already available. This questionnaire is used by researchers as a tool to answer the problem formulation in this study.

3.9.1 Pre Test Post-Test Questions

Pre-test and post-test questions In this study, the researchers supplied students with samples of basic dialogs as the initial material. The researchers then conveyed the content about dialogs to students and gave them examples of how to pronounce each sentence in the dialog in the hopes that they would grasp it. The following are examples of dialogs used by researchers to teach fluency.

Sabrina :” keisha,what do you think of our English teacher, Mr.Warno?”

Keisha :” I think our English teacher is very handsome, tall and smart”.

Sabrina :” that’s phsycally speaking, what do you think of his personality?”

Keisha :” in my opinion, he is kind, friendly, responsible and generous. What about your opinion?, what do you think of his?”

Sabrina :” I think he is perfect teacher.”

Keisha :” yeah, you’re right!”

3.10 Interview Questions

In this study, some interview questions were utilized solely as a framework to assess students' comprehension of English language when developing speaking skills through multimedia. At this point, the researcher divided the tenth grade MP1 class into two groups, with each group represented by two students who would be interviewed about the learning process that the researcher outlined.

Table 3.10
Question interview

No.	Question interview
5.	Which topic do you prefer when learning to speak English?
6.	What learning activities did you enjoy the most?
7.	Which learning media did you find most interesting?
8.	What improvement do you expect for this learning activities?

3.11 Data Analysis Techniques

To determine whether there is a significant difference, researchers utilized a statistical method, namely the paired samples t-test formula in the SPSS version 23.0 program. The paired sample t-test is used to calculate the average value of students' speaking ability when taught using the CLT approach versus when taught without it. The eta squared formula was used to calculate the level of influence that the CLT technique had on students' speaking skills at SMK Teuku Umar Semarang.

$$\text{Eta Squared} = \frac{t^2}{t^2 + (N^1 - 1)}$$

0-0.1 = small effect

0.1-0.3 = modest effect

0.3-0.5 = moderate effect

>0.5 = strong effect

3.11.1 Eta Squared Test

According to Cohen's (1988) guidelines for interpreting effect size values (Cohen, 1988):

Small effect: $\eta^2 \approx 0.01$

Medium effect: $\eta^2 \approx 0.06$

Large effect: $\eta^2 \geq 0.14$

Given that $\eta^2 = 0.216$ in this study, the result falls within the category of a large effect size. This means that the implementation of CLT integrated with multimedia had a robust and meaningful impact on students' speaking fluency. The 21.6% variance explained is considered substantial in educational research, where multiple variables typically influence learning outcomes. The implication of a large effect is that the intervention's benefits are not limited to minor gains or limited subgroups; rather, the overall student population experienced tangible improvements. This supports the scalability of the approach across similar educational settings.

A large effect also suggests that teachers can expect consistent gains when applying similar methods. It reflects not only the method's success in boosting fluency but also its potential in enhancing learner confidence, engagement, and vocabulary application which key components of communicative competence. Moreover, a large η^2 is significant when dealing with language skills such as speaking, which often show slower and less measurable progress. Therefore, achieving this level of effect suggests that multimedia-enhanced CLT is an especially effective intervention.

In practice, this means curriculum designers and policy-makers can confidently integrate multimedia and CLT into language instruction, knowing it yields substantial improvements. The interpretation of η^2 provides both justification and encouragement for expanding such initiatives in broader curricular context.

3.11.2 Thematic Analysis

In this study, thematic analysis refers to the process of identifying, analyzing, and reporting data patterns (themes). It is a versatile and frequently utilized method for comprehending a wide range of events across several fields. To gain significant insights, researchers look for repeating themes in data, such as interview transcripts or documents.

According to Hariyanto (2019), thematic analysis is an alternative for qualitative researchers who aim to uncover patterns, or patterns, in the target of their research. Researchers might employ a methodical approach to unearth hidden stories from occurrences that capture their attention.

Thematic analysis is a data analysis technique commonly used by qualitative researchers. This applies to library and information science researchers as well. The flexibility and interpretive style inherent in this Thematic feature allow researchers to delve deeply and constantly into what truly happened in an event or event analysis, while also demonstrating the relevance of data analysis results to issue formulation in each study.