

CHAPTER III

RESEARCH METHOD

A. Research Design

This study employed a Classroom Action Research (CAR) design. According to Burns (2005), action research is a reflective and systematic inquiry conducted by teachers or researchers to improve classroom practices by identifying problems, implementing appropriate actions, observing the outcomes, and reflecting on the effectiveness of the intervention. Classroom Action Research is particularly suitable for English language teaching because it enables teachers to respond directly to learners' needs while continuously improving the quality of instruction.

This study adopted the Kemmis and McTaggart (2014) action research model, which involved four key phases: planning, acting, observing, and reflecting. This cyclical model enabled continuous improvement, where each cycle informed the next. The relevance of this model for speaking instruction was supported by recent studies. Tihal (2025) successfully applied the Kemmis and McTaggart model to enhance EFL listening and speaking skills through storytelling. Similarly, (Agustini et al., 2025) used a two-cycle collaborative CAR design to improve vocabulary learning through speaking activities, demonstrating that this model remained highly effective for contemporary EFL classrooms.

This research was planned to be conducted in two cycles, with each cycle consisting of three meetings, following the standard CAR procedure where the second cycle served as a refinement of the first cycle based on reflection results. This study employed a mixed methods

approach by combining qualitative and quantitative data to obtain a comprehensive understanding of the implementation of the Mind Mapping technique. According to (Rogers & Révész, 2020), integrating qualitative and quantitative evidence enables researchers to obtain richer interpretations of educational phenomena and strengthens the validity of research findings. In this study, qualitative data were obtained through interviews and classroom observations, while quantitative data were collected through speaking.

test scores.. Furthermore, this study adopted a collaborative CAR model in which the researcher worked together with the English teacher as a collaborator during the planning, observation, and reflection stages. Moreover, this study adopted a collaborated CAR model, where the researcher collaborated with the English teacher of SMA Negeri 6 Kota Bengkulu as an observer and collaborator, providing feedback and assisting in the reflection process (Burns, 2010).

B. Setting and Subjects of the Study

This research was conducted at SMA Negeri 6 Kota Bengkulu, located in Bengkulu City. This school was selected based on preliminary observations which indicated that eleventh-grade students experienced significant difficulties in speaking English, particularly in organizing their thoughts coherently, maintaining fluency, and expressing ideas confidently.

The subjects of this study were students in class XI F, selected based on preliminary observation indicating low speaking proficiency and typical speaking problems. The class consisted of 36 students (13 male and 23 female).

Tabel 3.1 Setting and Subject of the Study

Class	Male	Female	Number
XI F	13	23	36

C. Procedure of the Study

This study followed the action research model developed by Kemmis and McTaggart (2014) , which consisted of four phases in each cycle: planning, acting, observing, and reflecting. The research was conducted in two cycles, with each cycle comprising three meetings. Prior to the first cycle, a preliminary study was carried out to identify the specific speaking problems faced by students in class XI F. Prior to the first cycle, a preliminary study was carried out to identify the specific speaking problems faced by students in class XI F.

1. Preliminary Study

The preliminary study aimed to gather initial data regarding students' speaking abilities and the challenges they encountered. This stage included:

- a. **Analysis of Students' Daily Speaking Scores:** The researcher collaborated with the English teacher to analyze students' daily speaking scores from regular classroom assessments. The daily scores indicated that the majority of students had low speaking proficiency, with most students scoring below the school's Minimum Mastery Criterion (KKM = 70). The scores showed that many students still had difficulties in fluency, accuracy, pronunciation, and comprehensibility.
- b. **Pre-interview:** An unstructured interview was conducted with the English teacher to understand the general classroom conditions, students' typical speaking difficulties, and the techniques previously used in speaking instruction. An unstructured pre-interview was conducted with the English

teacher of class XI F at SMA Negeri 6 Kota Bengkulu before the implementation of the action research. The interview aimed to understand the general classroom conditions, students' typical speaking difficulties, and the techniques previously used in speaking instruction. The following are the results of the interview.

Based an interview with some teachers related to general conditions of students' speakin ability, it found some problems. They said that "Most students in class XI F have very low speaking ability. When I ask them to speak English, they are usually silent. Only three or four students are brave enough to speak, but even they make many mistakes. The rest of the students prefer to keep quiet. They can write English quite well, but when it comes to speaking, they seem to freeze. I think the main problem is that they are not used to speaking English. They only practice writing and reading in class, not speaking."

After that regarding the difficulties student usually face when speaking they said that "There are many difficulties. First, they lack vocabulary. They know basic words, but when they want to express more complex ideas, they cannot find the right words. Second, they have poor pronunciation. They pronounce English words like Indonesian words. For example, they say 'breakfast' as 'brekfas' without the 't' sound. Third, they are very afraid of making mistakes. They think that if they make a mistake, their friends will laugh at them. Fourth, they cannot organize their ideas. When I give them a topic, they do not know what to say first. They just stand there and say nothing. They have ideas in their minds, but they cannot arrange them in a logical order."

Regarding the teaching techniques that have been used, they said that “the teacher admitted to usually using the lecture method and question-and-answer technique. The teacher explains the material, gives examples, and then asks students to practice in pairs or in front of the class. Occasionally, the teacher uses role play, but not often because it takes a lot of time. The teacher also asks students to memorize dialogues and practice them with their partners. However, these techniques are considered less effective because students still feel afraid. They can memorize the dialogues, but when they have to speak spontaneously, they are unable to do so because they are too dependent on the script”.

Concerning the use of visual techniques such as Mind Mapping, “the teacher admitted that it has never been used in the classroom. Although the teacher has heard about the technique, it has never been specifically applied. So far, the teacher only asks students to make an outline or write down key points before speaking, but without providing specific instruction on how to create a mind map. The teacher thinks that Mind Mapping might be interesting to try because students like pictures and colors, so this technique has the potential to help students organize their ideas better”.

According to the teacher, “the main cause of students' speaking problems is a lack of practice. Students rarely speak English outside the classroom. They only learn English at school, and even then, the focus is more on grammar and reading. Speaking is considered difficult and scary, so students avoid it. Students also lack preparation before speaking. When asked to speak, they are not ready and do not have a clear structure in their

minds. This is what causes them to become confused and silent. The teacher believes that if students had a way to organize their ideas first, they would probably feel more confident”.

Finally, the teacher expressed hopes for this research. “The teacher hopes that this research can help students become more confident in speaking English. The teacher also hopes that the Mind Mapping technique can become an alternative strategy that can be used in future classes. If this technique proves to be successful, the teacher will continue to use it even after the research ends. The teacher also hopes that students will realize that speaking English is not as scary as they think; they just need the right strategy to prepare themselves”.

2. Cycle One

1) Planning

The planning phase began with a collaborative discussion between the researcher and the English teacher to design appropriate interventions for the speaking problems identified in the preliminary study. Together, they developed three key components:

- a. A lesson plan that systematically integrated the Mind Mapping technique into speaking instruction across three meetings
- b. Teaching materials such as topic cards related to healthy lifestyle, mind map examples, and blank paper for students to create their own mind maps
- c. Assessment instruments, including observation sheets and an analytical speaking rubric adapted from Heaton (1988).

The success criterion of this research was that at least 70% of students achieved a minimum speaking score of 70 by the end of the research.

2) Acting

The action was implemented in three meetings. In Meeting 1, the researcher introduced the Mind Mapping technique and demonstrated how to create a mind map. Students practiced in groups. In Meeting 2, the researcher reviewed the previous material and asked students to create individual mind maps based on the given topic. In Meeting 3, students individually created mind maps and delivered short presentations.

2.1 Meeting 1, May 11 2026 :

- a) The researcher introduced the concept of Mind Mapping, explaining that it helped organize thoughts visually before speaking.
- b) The researcher demonstrated how to create a mind mapping using a simple topic (e.g., " The Importance of Eating Breakfast") on the whiteboard, showing the central image, main branches, keywords, and colors.
- c) Students were divided into small groups. Each group received a topic and was asked to create a mind mapping collaboratively.
- d) Using their mind maps as a guide, each student practiced speaking in front of their group for about 2 minutes.

2.2 Meeting 2, May 12 2026:

- a) The researcher reviewed the previous lesson and provided feedback on the mind maps students had created.

- b) Students individually created a mind mapping based on the given topic and practiced explaining their ideas with their partners before presenting them in front of the class on a new topic (e.g., "Avoiding junk food").

2.3 Meeting 3, May 18 2026:

- a) The researcher provided individual practice time for students to prepare their speaking using their mind maps.
- b) Each student delivered a short monologue (1-2 minutes) using their mind mapping as a visual guide.
- c) The researcher and observer assessed the performance using the speaking rubric.
- d) A post-test was administered at the end of Meeting 3.

3) Observing

During the acting phase, the English teacher (collaborator) observed the teaching-learning process using field notes (Miles et al., 2020). The observation focused on:

- a) Student engagement and participation during mind mapping creation.
- b) Students' ability to use mind maps as speaking guides.
- c) Classroom atmosphere (e.g., whether students appeared more confident or still anxious).
- d) The researcher's performance in delivering the material and managing the class.
- e) The post-test scores from Cycle One were also collected and analyzed.

4) Reflecting

At the conclusion of Cycle 1, the researcher and the English teacher collaboratively evaluated the implementation process and its outcomes. The reflection session focused on four

main areas:

- a) Identifying the strengths and weaknesses of the Mind Mapping intervention as observed during classroom activities;
- b) Analyzing the Cycle 1 post-test scores to determine the mean score and the percentage of students who met the Minimum Mastery Criterion (KKM =70)
- c) Discussing the persistent challenges faced by students, particularly their limited vocabulary mastery, which caused frequent pauses during speaking; and
- d) Formulating a revised action plan for Cycle 2 that specifically addressed these weaknesses. Based on this reflective evaluation, both the researcher and the teacher agreed to proceed to Cycle 2 with targeted improvements.

3. Cycle Two

1) Planning

Based on the reflection from Cycle One, the researcher and teacher collaboratively redesigned the action plan for Cycle 2 with four strategic improvements:

- a) To address students' vocabulary limitations, the researcher permitted students to use dictionaries (both printed and digital) during the mind mapping process
- b) To increase student engagement and motivation, a wider variety of topics related to 'Healthy Life' were selected, such as 'The Benefits of Sleeping 7-8 Hours at Night' and 'The Importance of Maintaining a Balanced Diet.
- c) To prevent students from writing complete sentences instead of keywords, a more structured mind mapping

guidance sheet was developed, including explicit prompts for each component of the analytical exposition text (thesis, arguments, and reiteration)

- d) Additional time was allocated for individual practice before the final presentation.
- e) Additional individual practice time was allocated before the final assessment to build students' confidence and reduce speaking anxiety. The success criterion remained consistent: 70% of students achieving a minimum score of 70.

2) Acting

Cycle Two was implemented in three meetings with the following activities:

- a) Meeting 1, May 19 2026: The researcher reviewed the previous cycle's results and introduced a new topic. Students created more detailed mind maps individually, using dictionaries to enrich their vocabulary. The researcher provided more intensive guidance by walking around the class and offering individual support.
- b) Meeting 2, June 02 2026: Meeting 2 focused on strengthening students' speaking performance through guided practice. The researcher began the lesson by reviewing the previous material and discussing vocabulary related to healthy lifestyle topics. The researcher also demonstrated how keywords in a mind map could be developed into complete spoken sentences. After the explanation, students individually created mind maps based on the topic "Maintaining a Balanced Diet." During this activity, the researcher guided students in selecting appropriate

keywords and organizing their ideas logically. After completing their mind maps, students worked in pairs to practice speaking. Each student used the mind map as a guide while delivering a short monologue. Their partners provided simple feedback regarding fluency, vocabulary use, and pronunciation. Several students were then invited to present their ideas in front of the class. The researcher provided corrective feedback and encouraged students to reduce their dependence on written notes and rely more on keywords in their mind maps. This activity prepared students for the speaking assessment conducted in Meeting 3.

- c) Meeting 3, June 03 2026: Students presented their speeches individually using their mind maps. Each presentation was audio-recorded. At the end of the meeting, the post-test for Cycle Two was administered.

3) Observing

The observer again recorded classroom activities using field notes. Compared to Cycle One, students demonstrated greater enthusiasm, better vocabulary use, and more fluent delivery. The class atmosphere was more positive, and students appeared less anxious when speaking.

4) Reflecting

The researcher and teacher evaluated the results of Cycle Two. The post-test scores showed significant improvement, and the success criterion (70% of students scoring ≥ 70) was achieved. Therefore, the researcher and teacher decided to stop the action research after Cycle Two.

D. Techniques of Data Collection

Data were collected using qualitative and quantitative techniques to provide comprehensive evidence regarding the implementation of the Mind Mapping technique. According to Taherdoost (2021), selecting appropriate data collection methods is essential because they determine the quality, accuracy, and credibility of research findings. Therefore, this study employed interviews, field notes, and speaking tests to obtain both descriptive and numerical data.

1. Qualitative Data Collection

Interview: According to Creswell (2012), interviews allowed researchers to explore participants' experiences and perspectives in depth. An unstructured pre-interview was conducted with the English teacher before the action to identify problems in speaking instruction. A post-interview was conducted after Cycle Two to gather the teacher's responses regarding the effectiveness of the Mind Mapping technique.

Field Notes: Defined as detailed written accounts of classroom events and observations, were used to document classroom activities and participants' responses throughout the research process (Phillippi & Lauderdale, 2018). The observer used field notes to record all events during the teaching-learning process, including classroom atmosphere, student behavior, student-teacher interactions, and any unexpected incidents. Field notes were completed after each meeting.

2. Quantitative Data Collection (Speaking Test)

According to Brown (2004), speaking tests were performance-based assessments that measured learners' oral production abilities. Speaking tests were administered at the end of

Cycle One and Cycle Two. The test format was consistent across all administrations:

- a. Task type: Individual monologue (short speech).
- b. Preparation time: 1 minute.
- c. Speaking duration: 1-2 minutes.
- d. Topics: Parallel topics of similar difficulty (e.g., "The Importance of Eating Breakfast" for post-test cycle 1, "The Importance of Washing Hands Before Eating" for post-test cycle 2).

Procedure:

Students received a topic card and were given 1 minute to prepare their speech using the Mind Mapping technique. They were instructed to create a mind mapping on blank paper, which they could refer to while speaking. Each student then delivered a 1-2 minute monologue using their mind mapping as a visual guide. All performances were audio-recorded for later scoring.

Scoring rubric: The researcher used an analytical rubric adapted from Heaton (1988, p. 100), assessing four components: fluency, accuracy, pronunciation, and comprehensibility. Each component was scored on a scale of 1 to 5 (1 = very poor, 5 = excellent). The maximum total score was 20, which was then converted to a percentage.

E. Research Instruments

Research instruments are systematic tools designed to collect accurate and relevant data for answering research questions. According to Taherdoost (2021), selecting appropriate research instruments is fundamental to obtaining reliable and valid research findings. In this study, the instruments consisted of speaking tests, interview guidelines, and field notes.

Speaking Test: An analytical scoring rubric adapted from Heaton (1988) was used to assess students' speaking performance across four indicators: fluency, accuracy, pronunciation, and comprehensibility. According to Weigle (2002), analytical rubrics provided more reliable and diagnostic assessment because they evaluated each component separately. The rubric provided clear descriptors for each score level (1-5).

Table 3.2 Scoring Rubric

Indicator	5 – Excellent	4 – Good	3 – Fair	2 – Poor	1 – Very Poor
Fluency	Very fluent, natural flow.	Mostly fluent, minor pauses.	Some pauses and repetitions.	Frequent pauses, hard to follow.	Not fluent, constant breakdowns.
Accuracy	Highly accurate, varied vocabulary.	Minor errors, meaning clear.	Frequent errors but meaning intact.	Many errors affecting meaning.	Not understandable.
Pronunciation	Clear, natural pronunciation.	Mostly clear, minor issues.	Understandable but influenced by L1.	Often unclear, affects understanding.	Not understandable.
Comprehensibility	Listeners can easily understand the entire message without any effort.	Listeners understand the message with minimal effort.	Listeners understand most messages with moderate effort.	Listeners understand only a small part of the message with great effort.	Listeners hardly understand the message at all.

Source: Adapted from Heaton (1988, p. 100)

Interview Guidelines: Unstructured interview guidelines were prepared to encourage participants to express their opinions freely and provide detailed information regarding the implementation of the Mind Mapping technique. The use of interview guidelines helps researchers obtain rich and in-depth information while allowing flexibility to explore issues that emerge during the interview process (Kallio et al., 2016).. The questions focused on classroom conditions, students' difficulties, the teacher's perceptions of the Mind Mapping technique, and suggestions for improvement.

Field Notes: An unstructured observation sheet was used by the collaborator to record qualitative data during each meeting, including classroom events, student engagement, and teacher performance. As stated by Burns (2010), field notes were essential for capturing contextual details that could not be obtained through tests alone.

F. Technique of Data Analysis

Data analysis was conducted in two parallel tracks: qualitative analysis for interview, field notes, and quantitative analysis for speaking test scores.

1. Qualitative Data Analysis

Qualitative data from teacher interviews, field notes

- a. Interview data were transcribed, coded, and categorized into themes (e.g., "students' difficulties," "teacher's perceptions," "benefits of mind mapping").
- b. Field notes were reviewed after each meeting to identify patterns in student behavior and classroom dynamics.

2. Quantitative Data Analysis

Quantitative data from the speaking tests (post-test 1, post-test 2) were analyzed using descriptive statistics.

a. Scoring and Conversion

Each student's speaking performance was scored using the analytical rubric (maximum score = 20). The raw score was converted to a percentage using the formula:

$$\text{"Percentage Score"} = \text{"Student's Raw Score"} / 20 \times 100$$

b. Mean Score Calculation

The mean score for each test (post-test 1, post-test 2) was calculated using the formula:

$$M = (\sum x) / n \text{ Where:}$$

M = mean score

$\sum x$ = sum of all student scores n = number of students

c. Percentage of Students Achieving the KKM

The Minimum Mastery Criterion (KKM) for English at SMA Negeri 6 Kota Bengkulu was 70. The percentage of students who achieved this score was calculated using the formula:

$$P = F / N \times 100\%$$

Where:

P = percentage of students achieving the KKM

F = number of students who scored ≥ 70

N = total number of students Improvement Percentage

The improvement of students' speaking skills was identified from the increase in students' mean scores and the percentage of students who achieved the Minimum Mastery Criterion (KKM) in each cycle. The researcher compared the results of the speaking test in Cycle I, and speaking test in Cycle 2 to see the progress of students' speaking performance after the implementation of the Mind Mapping technique.

3. Criteria of Success

According to Burns (2010), action research must establish clear criteria to determine whether the action had been successful. This study was considered successful if the following criteria were met: The research was considered successful if students showed better participation during the learning process and at least 70% of students achieved the KKM score. If these criteria were not met after Cycle One, the researcher and teacher would proceed to Cycle Two with necessary revisions. If the criteria were met after Cycle Two, the action research would be considered successful and terminated.

G. Validity and Trustworthiness of Data

To ensure trustworthiness, this study employed strategies from Lincoln and Guba and Cypress, 2017, qualitative research must establish trustworthiness to ensure the credibility of findings. In this study, the following strategies were employed to enhance the validity and trustworthiness of the data:

1. Triangulation

As stated by Denzin (1978, as cited in Burns, 2010) , triangulation involved using multiple data sources to cross-validate findings. This study employed data triangulation by collecting data from speaking test scores, field notes, and interviews. Berta and Mulat (2024) and Agustini et al. (2025) both used triangulation to validate their findings on mind mapping effectiveness.

2. Member Checking

Birt et al. (2016) explain that member checking is a validation strategy in which participants review and confirm the researcher's interpretations to ensure that the findings accurately

represent their experiences. This process improves the credibility and trustworthiness of qualitative research.

3. Prolonged Engagement

As noted by Lincoln and Guba (1985, as cited in Creswell, 2012), prolonged engagement referred to spending sufficient time in the research setting to build trust and gain a comprehensive understanding. Smith and Tinto (2024) argue that engagement is a fundamentally relational concept that evolves over time through sustained interaction. In the context of qualitative research, prolonged engagement allows researchers to build trust with participants and gain richer, more authentic insights into classroom. The researcher conducted the study over multiple meetings (two cycles, each consisting of three meetings), allowing for sustained interaction with students and the teacher.

4. Inter-rater Reliability

To maintain the consistency of the speaking assessment, the researcher collaborated with the English teacher in scoring students' speaking performances. Both the researcher and collaborator used the same analytical speaking rubric adapted from Heaton (1988). After scoring, the researcher and collaborator discussed the results to ensure that the scores were appropriate and consistent.