

CHAPTER III

RESEARCH METHOD

A. Research Design

This study employed a mixed methods approach with an exploratory sequential design, which begins with qualitative data collection and analysis, followed by the development of a quantitative instrument based on the qualitative findings (Creswell & Plano Clark, 2018).

A mixed methods approach was necessary because the three research questions in this study could not be adequately addressed by a single method alone. The first two research questions, concerning how lecturers conceptualize critical thinking and the teaching strategies they implement, required an in-depth, exploratory approach capable of capturing lecturers' reasoning, experiences, and classroom practices in their own words, something a purely quantitative approach could not provide, since no validated instrument previously existed to measure these context-specific practices. At the same time, examining the extent to which students' perceptions align with lecturers' reported practices required quantifiable, generalizable data across a larger sample, which a purely qualitative approach involving only three lecturers could not provide on its own.

Among the various mixed methods designs, an exploratory sequential design was specifically selected, rather than a convergent parallel or explanatory sequential design, because of the logical and temporal dependency between the two research

phases. A convergent design, in which qualitative and quantitative data are collected simultaneously, was not suitable because the content of the student questionnaire itself depended on first identifying, through lecturer interviews, which teaching strategies were actually being implemented in this specific research context; without this information, the questionnaire items would have relied on generic, literature-based strategies rather than practices grounded in the participants' own classrooms. An explanatory sequential design, which begins with quantitative data, was likewise unsuitable, since no validated quantitative instrument measuring students' perceptions of lecturers' critical thinking strategies existed for this specific context prior to this study. The exploratory sequential design therefore uniquely matched the structure of this study's research questions: qualitative findings from the first two research questions directly generated the variables and item content for the quantitative instrument used to further examine those same strategies from students' perspective.

This design also strengthened the validity of the quantitative phase. According to (Creswell & Plano Clark, 2018), exploratory sequential design is particularly useful when existing instruments are insufficient, as qualitative findings can help generate variables and improve the validity of quantitative tools. In this study, all questionnaire items were derived directly from the four teaching strategies and challenges identified in the interview data, rather than adapted from instruments developed in different educational or cultural contexts, ensuring that the quantitative phase remained grounded in the actual instructional practices and challenges reported by lecturers at the research site.

This study employed two types of data: qualitative and quantitative data. The qualitative data were derived from interviews with lecturers, focusing on their perspectives, teaching strategies, challenges on critical thinking development. The quantitative data were obtained from students' questionnaire responses, which reflected their perceptions of lecturers' strategies and their learning experiences related to critical thinking. The integration of these two types of data enabled the researcher to examine the consistency between lecturers' reported practices and students' perceptions.

B. Research Setting

This research was conducted at Antasari State Islamic University. The university was chosen as the research site because it acted as the primary institution responsible for equipping students with the critical thinking skills necessary for their academic and professional success. As future educators and professionals, English Education students must develop critical thinking skills to analyze, interpret, and apply knowledge effectively. Therefore, investigating the role of lecturers in developing these skills in a university setting is crucial.

This study was conducted during the second semester of the 2025/2026 academic year. The data collection process, which included semi-structured interviews and questionnaire distribution, was conducted from February to April 2026 over a period of two months. This timeframe enabled the researcher to obtain

comprehensive information regarding lecturers' roles and teaching strategies in fostering students' critical thinking skills in the English Language Education Department.

C. Participants

The participants of this study consisted of lecturers and students from the English Language Education Study Program at Antasari State Islamic University, Banjarmasin. Three lecturers were involved in the qualitative phase and were selected from a larger pool of English Language Education lecturers through purposive sampling, based on the following criteria: (1) they were actively teaching in the English Language Education Study Program during the data collection period, (2) they had experience teaching courses that required students to engage in critical thinking activities, and (3) they were willing to participate in the interview process. Rather than being determined by a fixed sample size decided in advance, the number of lecturer participants was guided by these purposive criteria together with the depth of data obtainable from each interview. Because the selected lecturers were specifically chosen for their direct experience teaching critical-thinking-oriented courses, they represented a relatively homogeneous, information-rich group, a condition under which qualitative saturation is typically reached with a small number of participants. This was reflected in the interview data itself: across all three lecturers, responses converged strongly around the same core themes, higher-order

thinking, reflective learning, group discussion, problem-based learning, open-ended questioning, and similar categories of challenges, with no participant introducing a substantially new or unique theme not echoed, at least partially, by the others. This convergence across an information-rich, purposively selected sample was taken as an indication that the data collected was sufficient to address the first two research questions in depth, rather than as evidence of saturation established through a formal, real-time saturation-monitoring procedure.

In the quantitative phase, 32 students from the 2023 cohort were selected, through purposive sampling, from a larger student population within the English Language Education Study Program. The criteria included: (1) being enrolled in the English Language Education Study Program, (2) belonging to the 2023 cohort, (3) having taken classes with the participating lecturers, and (4) being willing to participate in the study. The 2023 cohort was specifically chosen because these students had studied with the participating lecturers for several semesters and had therefore been directly exposed to the teaching strategies identified in the qualitative phase, making them well positioned to evaluate those specific practices rather than critical thinking instruction in general. A sample of 32 respondents was considered adequate for this phase because the questionnaire's function in this study was to statistically validate and describe students' perceptions of a small, well-defined set of variables, four teaching strategies and four challenges, derived directly from the qualitative findings, rather than to generalize across the entire student population.

D. Research Instrument

To collect the data, this study used two instruments: a semi-structured interview protocol and a questionnaire. The interview protocol was developed based on the research objectives and relevant literature, while the questionnaire was developed and refined based on the research objectives and the findings from the qualitative phase.

1. Semi-structured Interview Guidelines

This instrument was used to explore lecturers' understanding of critical thinking and the teaching strategies they apply in the classroom. The interview consisted of open-ended questions that allowed participants to express their views and experiences in depth. This flexible format also enabled the researcher to ask follow-up questions based on participants' responses. The interview guide was developed by the researcher based on relevant literature and research objectives.

2. Questionnaire

The questionnaire consisted of 20 Likert-scale items and one open-ended question. The Likert-scale items were designed in the form of statements, allowing respondents to indicate their level of agreement on a scale (e.g., strongly disagree to strongly agree). The items covered various teaching strategies such as discussion, problem-solving, case-based learning, and reflection. The open-ended question was

included to gather additional insights from students regarding effective teaching strategies for developing critical thinking skills.

The questionnaire items were developed through a systematic translation of the four major themes identified in the qualitative phase namely group discussion, problem-based and case-based learning, the use of open-ended questions, and reflective learning and knowledge construction, along with the four challenge themes, into measurable Likert-scale statements. For each theme, the researcher identified the core instructional behavior or condition described by the lecturers and reformulated it into a statement that students could evaluate from their own learning experience.

Mapping of Qualitative Themes, Questionnaire Items, and Research Questions

Table 3.1 Mapping of Qualitative Themes, Questionnaire Items, and Research Questions

No.	Qualitative Theme (Interview Findings)	Questionnaire Item(s)	Corresponding RQ
1	Group Discussion	Q8: Lecturers create opportunities for classroom discussion; Q10: Group discussions personally encourage critical thinking; Q16: Lecturers use group discussions in the classroom.	RQ2
2	Problem-Based and Case-Based Learning	Q3: Lecturers provide problems or case studies for class discussion; Q11: Lecturers encourage students to analyze information critically; Q14: Problem-solving activities help develop critical thinking.	RQ2

No.	Qualitative Theme (Interview Findings)	Questionnaire Item(s)	Corresponding RQ
3	Use of Open-Ended Questions	Q1: Lecturers encourage students to express opinions with logical reasons; Q5: Open-ended questions encourage deeper thinking; Q13: Lecturers permit and accept different perspectives; Q18: Lecturers pose open-ended questions allowing multiple perspectives; Q20: Lecturers encourage evaluation of ideas before drawing conclusions	RQ2
4	Reflective Learning and Knowledge Construction	Q4: Lecturers help students apply theory to real-life situations; Q7: Lecturers assign reflective and project-based tasks; Q17: Lecturers guide students to connect prior and new knowledge; Q19: Lecturer-assigned tasks support analysis and knowledge application.	RQ2
5	Lack of Confidence and Language Barriers	Q2: Students feel confident expressing opinions in discussions; Q12: Language proficiency affects expression of critical opinions.	RQ3
6	Dependence on Artificial Intelligence (AI)	Q6: AI tools sometimes reduce independent analysis.	RQ3
7	Limited Preparation Before Class	Q15: Limited preparation negatively affects critical participation.	RQ3
8	Large Class Size	Q9: Large class sizes reduce opportunities for critical discussion.	RQ3

Before being distributed to the main participants, the questionnaire was reviewed and validated by the research supervisor to ensure the relevance, clarity, and appropriateness of the items in relation to the research objectives. Following the supervisor's feedback, several revisions were made to improve the wording and content of the instrument. The questionnaire was then tested through a pilot study.

Initially, the instrument consisted of 20 items. The pilot test results indicated that several items needed further improvement in terms of wording and clarity. Therefore, additional revisions were made based on the pilot findings and supervisory feedback. After the revision process, all 20 items were retained and used in the final questionnaire administered to the main participants. The reliability of the instrument was subsequently assessed using Cronbach's Alpha coefficient to ensure the internal consistency of the instrument.

In terms of scoring, each Likert-scale item was assigned a numerical value, and the responses were analyzed using descriptive statistics such as mean, frequency, and percentage. The results were then categorized to describe the level of students' perceptions. Meanwhile, responses to the open-ended question were analyzed qualitatively by identifying common themes.

E. Technique of Data Collection

To answer the research questions, this study employed a mixed methods approach that combined qualitative and quantitative data collection techniques. Data were collected through interviews and questionnaires to provide a comprehensive understanding of lecturers' teaching strategies and how these strategies are perceived by students in developing critical thinking skills.

1. Interviews

To explore lecturers' experiences and practices in developing students' critical thinking skills, semi-structured interviews were conducted with selected English lecturers. This method allows for an in-depth exploration of their experiences, beliefs, and teaching practices. The interview questions were designed to examine how lecturers conceptualize critical thinking, the strategies they use to promote it, and the challenges they encounter in the teaching process. The interviews were recorded, transcribed, and analyzed using thematic analysis following the reflexive approach outlined by (Braun & Clarke, 2022), which involves a systematic process of generating codes, developing themes, and interpreting patterns in relation to the research questions, to identify key patterns and themes.

2. Questionnaires

To examine students' perceptions of lecturers' teaching strategies and their learning experiences related to critical thinking, a questionnaire was distributed to students in the English Education program. The questionnaire was developed based on the findings from the qualitative phase and was structured using a Likert scale. It included items related to various teaching strategies, such as open discussion, case-based learning, problem-solving activities, and critical reflection.

In addition, one open-ended question was included to allow students to express their opinions more freely regarding effective teaching strategies in

developing their critical thinking skills. The data obtained from the Likert-scale items were analyzed using descriptive statistics, including mean, frequency, and percentage, to identify patterns in students' responses. The responses from the open-ended question were analyzed qualitatively to identify common themes. The results were then compared with the qualitative findings to examine the consistency between lecturers' reported teaching strategies and students' perceptions.

F. Data Collection Procedure

Data collection was conducted in two sequential phases following the exploratory sequential mixed-methods design. In the first phase, qualitative data were collected through semi-structured interviews with lecturers to explore their teaching strategies and perspectives on the development of students' critical thinking skills. In the second phase, quantitative data were collected through questionnaires distributed to students. The questionnaire responses provided information regarding students' perceptions of lecturers' strategies in fostering critical thinking skills. The data obtained from both phases were subsequently compared and integrated to provide a comprehensive understanding of lecturers' roles and strategies in developing students' critical thinking skills.

1. Qualitative Phase

The qualitative phase was conducted first to explore lecturers' experiences and strategies in promoting critical thinking skills. Semi-structured interviews were

carried out with selected English lecturers. The interviews were recorded with the participants' consent and later transcribed for analysis. The findings from this phase were used to identify key themes related to lecturers' roles, instructional strategies, and challenges in developing students' critical thinking skills.

2. Quantitative Phase

After completing the qualitative phase, the quantitative phase was conducted. The questionnaire was then distributed to students to gather their perceptions of lecturers' strategies in fostering critical thinking skills. The collected responses were subsequently organized and prepared for analysis using descriptive statistics to identify patterns and trends in students' perceptions.

G. Data Analysis

To provide a comprehensive understanding of lecturers' roles in developing students' critical thinking skills, this study employed both qualitative and quantitative data analysis techniques (Creswell & Plano Clark, 2018). This process involved two main phases: qualitative data analysis and quantitative data analysis. The analysis was organized based on the type of data collected from interviews and questionnaires.

1. Qualitative Data Analysis

Braun and Clarke's (2006) thematic analysis approach was used to analyze the interview data. This process involved five main steps: familiarizing with the data, generating initial codes, identifying themes, reviewing and refining themes, and interpreting the findings.

- a. Familiarization with the data. The researcher read and re-listened to the interview recordings to gain an overall understanding of the data. The transcripts were reviewed several times to identify initial patterns.
- b. Initial coding. Relevant parts of the data were labeled with codes. These codes were generated based on both existing concepts and emerging ideas from the data.
- c. Identification of themes. Codes that had similarities were grouped into broader themes. These themes represented the main concepts emerging from the qualitative data.
- d. Reviewing and refining themes. The identified themes were re-examined to ensure they accurately reflected the data. Some themes were revised or combined where necessary.
- e. Interpretation of findings. The final themes were interpreted and used as the basis for developing the questionnaire in the quantitative phase. This step played a crucial role in the exploratory sequential design because it informed the development of the quantitative phase.

2. Quantitative Data Analysis

A systematic quantitative data analysis was conducted to examine patterns in the questionnaire responses (Creswell, 2012). This process involved five main steps: data cleaning and preparation, data coding and categorization, descriptive statistical analysis, analysis of open-ended responses, and interpretation and integration of results.

- a. Data cleaning and preparation. Survey data were checked to ensure completeness and accuracy before analysis. Incomplete or out-of-pattern data were filtered out before further analysis.
- b. Data coding and categorization. Answers on Likert scales or other formats were coded numerically to facilitate statistical analysis.
- c. Descriptive statistical analysis. The data were analyzed using descriptive statistics, including mean, frequency, and percentage, to describe patterns in students' responses.
- d. Analysis of open-ended responses. Responses from the open-ended question were analyzed qualitatively by identifying common themes and patterns.
- e. Interpretation and integration of results. The results from the questionnaire were compared with the qualitative findings from the interviews to examine the consistency between lecturers' reported teaching strategies and students' perceptions. This integration provided a more comprehensive understanding of the phenomenon.