

CHAPTER 1

INTRODUCTION

This chapter contains the research background, research questions, research purposes, research significance, research scope, conceptual framework, and previous study.

A. Background

This research aims to explore how students represent understanding and questioning skills through digital mind mapping of academic texts. According to de-la-Peña and Luque-Rojas (2021) understanding academic texts is essential because they are the primary source in each subject at the higher education level. In definition, academic texts are formal written texts used in academic contexts, characterized by objective, formal, and complex features, specific purposes and audiences, and specific academic disciplines. (Salam et al., 2018). Because academic texts are primary sources, understanding them is important for supporting students' academic success.

However, in practice, many students struggle to understand academic texts due to several reasons, including limited mastery of academic vocabulary and texts' complexity (Sumedi & Putri, 2025). Eriksson (2023) found that other students' struggles to understand academic texts are panic, stress, and time-consuming tasks. Additionally, research by Anwar and Sailuddin (2022) found that additional reasons for struggling to understand academic texts include a lack of reading skills. Therefore, these difficulties can affect students' understanding of academic texts, specifically in a qualitative research textbook.

Students' questioning skills are part of critical thinking in the context of ELT, and it is consistently reported that the majority of responses and questions asked by students are still dominated by Lower-Order Thinking Skills (LOTS), particularly at the level of remembering definitions (Lutfi & Dima, 2021). Another study shows that about 61,4% of students are not active in asking questions (Ramadani et al., 2023). This phenomenon reflects the Surface Learning approach in which students focus on memorization rather than on in-depth analysis or evaluation of ideas. As a

result, class discussions tend to be less productive and fail to trigger critical thinking.

One learning strategy that can overcome the problem is mind mapping. Mind mapping is a method for organizing knowledge based on the principle of Radiant Thinking. (Buzan, 2018). Using this strategy, students can build concepts by connecting main ideas with supporting ideas. Beyond building concepts, this strategy can improve their understanding by reducing cognitive load. Using a mind mapping strategy, the learning process becomes more effective when verbal and visual representations are processed together because this process is in line with Paivio's Dual Coding Theory (Paivio, 1986).

With advances in technology, mind mapping has developed into a digital format. Digital mind mapping can help students create, edit, and save their work using digital tools (Putra et al., 2025). These digital mind maps can be saved as learning artifacts and academic documents that serve as evidence of the students' learning process. Unlike verbal responses, digital mind maps provide permanent visual records that can be analyzed to understand how students comprehend academic texts and what types of questions they ask.

In the context of qualitative research in an ELT course, specifically in English education students at UIN Sunan Gunung Djati Bandung, students were required to create digital mind maps based on a qualitative research book as an academic text by the title “Qualitative Research in Applied Linguistics: A Practical Introduction,” was edited by Juanita Heigham and Robert A. Croker they had read as a part of their assignment. This digital mind map contains concepts, relationships between ideas, and questions generated by students. As academic documents, these digital mind maps provide a source of data for exploring students' understanding and questioning abilities. By analyzing these documents, we can observe how students organize their understanding of academic texts and what types of questions they generate. In addition, based on previous explanations, digital mind maps can be used to help students better understand a concept and can support questioning skills, especially the transition from lower-level to higher-level thinking in accordance with Bloom's

Revised Taxonomy (Anderson & Krathwohl, 2001). When students visualize ideas, they ask and generate more analytical questions.

Current studies have shown the functions of digital mind mapping. First, digital mind mapping can improve reading comprehension and encourage active learning (Sagita & Sagita, 2024). Second, a study by Sari et al. (2021) explored that digital mind maps can increase students' critical thinking skills. Next, a study by Sairo et al. (2021) found that digital mind mapping can improve writing ability. However, most existing research has focused on its effectiveness in improving reading comprehension, writing skills, or critical thinking skills. Discussions on how digital mind mapping can be used as a tool to provide a deeper understanding and generate questions on academic texts, and research involving university students in qualitative research courses, are still limited.

Therefore, by analyzing the digital mind maps created by students and the questions they created, this study aims to provide insights into how digital mind mapping supports cognitive processes and learning readiness of students' understanding and questioning skills on academic texts. The results of this study are expected to contribute to a deeper understanding of the role of visual learning tools in promoting analytical and reflective thinking at the university level.

B. Research Questions

Based on the background of the study and the identified research gap, this research aims to explore digital mind maps as a tool for students' understanding and questioning skills in a qualitative research course. The following research questions have been formulated:

- a. How do students represent their understanding of the course material through digital mind mapping in the Qualitative Research Course?
- b. How do students represent their questioning skills through digital mind mapping?

C. Research Purposes

According to the research questions, this study has three main purposes

- a. To find out how students represent their understanding through digital mind mapping.
- b. To explore how students represent their questioning skills through digital mind mapping.

D. Research Significances

This study is expected to contribute both theoretically and practically to the field of language education and the qualitative research course.

a. Theoretical Significance

The researcher expects this study to contribute to digital mind mapping as a tool to support students' understanding and questioning ability in academic texts. This study supports constructivist learning theory by showing that students actively construct understanding through organizing ideas, identifying relationships, and connecting concepts using digital mind maps. In addition, this study strengthens the idea that questioning ability shows deeper understanding, as digital mind maps help students ask clearer, more relevant, and more critical questions. Overall, this study expands existing theory by connecting digital mind maps, student understanding, and questioning skills in higher education.

b. Practical Significance

For Students: This research can help students understand how digital mind mapping supports their learning process, especially in organizing complex concepts in the Qualitative Research course. The findings may also show students how visualizing ideas through digital mind maps can improve their ability to ask clearer, deeper, and more meaningful questions during discussions.

For Lecturers: The results of this research may guide lecturers in selecting and applying effective learning strategies that encourage active engagement. Digital mind mapping can be used as an instructional tool to help lecturers monitor students' comprehension, stimulate critical thinking, and create more interactive discussion sessions.

For Future Researchers: This research can serve as a reference for future research related to visual learning strategies, questioning skills, and qualitative research education. It may also open opportunities to explore digital mind mapping in different subjects, educational levels, or methodological approaches.

E. Research Scope

This study explores the use of digital mind mapping to support students' understanding and questioning skills in the Qualitative Research course. The scope of the study is limited to examining how these students represent their understanding and questioning skills through digital mind maps. The research does not compare digital mind mapping with other learning strategies or extend to different courses. Data are restricted to sixth-semester students' digital mind maps, classroom-related reflections, and their questioning performance, making the findings specific to this group and context. The scope of digital is provided in the use of Canva as a tool to create the digital mind mapping.

F. Conceptual Framework

This section discusses the essential aspects of learning in higher education, focusing on students' understanding and questioning of academic texts. It highlights the role of digital mind mapping as a cognitive and visual learning tool that helps students organize ideas, construct meaning, and generate critical questions during the learning process. By exploring how digital mind mapping supports comprehension and questioning in a qualitative research course, this study shows how students represent their understanding of academic texts.

In this study, academic texts served as primary learning input and were drawn from theoretical and methodological readings in a qualitative research course. According to Coffin et al. (2003) academic texts are texts with specific purposes, specific audiences, and a clear structure following academic conventions particular to the fields. Academic texts have their own characteristics, including concise information, formal language, and structured arguments that reflect the conventions of the discipline. (Swales, 2008). Therefore, these texts provide an

appropriate context for exploring how students understand complex ideas and generate questions during learning activities.

Moreover, digital mind mapping serves as a technology-based learning tool that helps students visually, hierarchically, and meaningfully organize information. This tool originated in traditional mind mapping. Buzan and Buzan (2006) state that mind mapping supports learning by using keywords, colors, and branching structures to represent relationships among ideas. According to Elhawwa (2022), mind mapping is a technique for using our minds to process important information that must be written in texts. Building on this concept, digital mind mapping is a way to organize ideas using digital tools instead of drawing on paper. Maningsih and Fitriani (2024) showed that digital mind maps can clearly illustrate the relationship between ideas, words, and information, which can improve students' understanding of the subjects. Additionally, digital mind mapping strategies help learners structure complex information, make their thinking processes visible, and improve accessibility (Putra et al., 2025). In this study, digital mind mapping is used to explore how students process theoretical and methodological content in qualitative research texts and how they transform information into organized conceptual structures.

Students' understanding refers to students' ability to accurately identify key concepts, classify research components, and synthesize the overall flow of qualitative research. This variable is informed by SOLO (Structure of Observed Learning Outcome), as described by Biggs and Collis (1982) which views understanding as progressing from surface-level responses to deeper relational and extended abstract understanding, and consists of five stages: pre-structural, uni-structural, multi-structural, relational, and extended abstract. In addition, Bloom's Taxonomy by Anderson and Krathwohl (2001) emphasizes understanding as involving interpreting, organizing, and summarizing information. In this study, understanding is reflected in the depth of students' cognitive processing, as shown in how they organize and connect ideas within their digital mind maps.

Additionally, students' questioning ability refers to the frequency and quality of questions generated during the digital mind mapping process. Three types of

questions can be used to examine it: questions of fact, preference, and judgment. This variable is grounded in Paul and Elder (2012) critical thinking theory, which views questioning as a core component of analytical and evaluative thinking. Questioning ability in this study indicates students' critical engagement with academic texts.

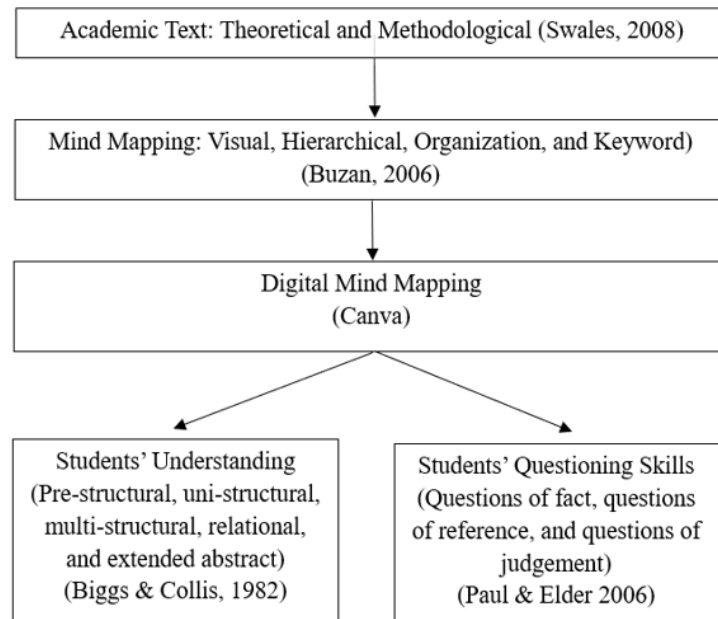


Figure 1.1 Conceptual Framework

Therefore, the relationship between concepts in this study can be formulated as follows:

This conceptual framework shows how digital mind mapping (Buzan's Radiant Thinking Theory) serves as the primary tool to support students' learning processes, using academic texts as an input. Radiant thinking explains that ideas grow outward from a core point of material, and it helps students connect the concepts easily. In this study, digital mind mapping is connected to constructivist principles because it allows students to build knowledge, make connections, and explore what they already know before entering the class. The processes are expected to support two main outcomes: conceptual understanding and questioning ability.

G. Previous Study

Previous studies refer to studies conducted by past researchers. These studies share similar objectives or topics, or offer a theoretical foundation and relevant insight for the current research. Reviewing previous studies helps enrich new studies and provide diversity in the research. Several studies related to this research are presented as follows.

A study by Sagita and Sagita (2024) titled “Enhancing English Language Learning through Digital Mind Mapping: A Comprehensive Approach for Reading Comprehension, found that digital mind mapping is an effective tool to improve students’ reading comprehension. Digital mind maps can help students break down difficult texts, identify key themes, and enhance their understanding of the relationship between ideas. This research used a qualitative method with 25 participants, employing semi-structured interviews, observations, and document analysis.

Next, the research by Sairo et al. (2021) titled “Using Digital Mind Mapping to Improve Writing Skills” involved 33 students as the subjects of the research and used a mixed-method approach. This research found that digital mind mapping is effective in improving students’ writing skills, with the average pre-test score of 24%, increasing to 90%. The increase from pre-test to post-test was supported by students’ interest in using technology in English learning. Students stated that digital mind mapping helps them organize their ideas, improve their critical thinking, and creativity.

A study by Yan and Kim (2023) explored the effectiveness of the schema strategy training using digital mind mapping on reading comprehension by using a mixed-method approach and a case study method of Chinese University students in the EFL context. It was found that schema strategy training using CMM improved participants’ meta-cognitive awareness of schema strategy use in reading, even though it might not significantly influence reading comprehension test scores in the short term. CMM visualization, schema personalization, and collaboration among students are considered factors that positively influence the

teaching of schema strategies using DMM. These three positive factors are DMM's strengths.

Next, research by Kusumadewi and Kusmaryono (2022) explored the effectiveness of using concept maps to improve students' knowledge, understanding, and creative thinking skills, which were assessed using a qualitative descriptive approach with 60 sixth-grade students. The data were collected using questionnaires, concept map assessment rubrics, and semi-structured interviews. The results of this research showed that 72,67% of students claimed that concept maps are effective in helping them understand the material, connect multiple concepts, and reduce misconceptions. Rubric assessments indicated good quality, with an average score of 78,09%. In conclusion, concept maps positively improve students' conceptual understanding and creativity

A study by Luangkrajang (2022) titled "Use of Mind-Mapping in Language Learning: A Cognitive Approach" found that mind-mapping helps improve students' collaborative skills, with 74 students (83,2%) responding, and 78 students (87,6%) responding that mind maps improve their creativity. Another response, 74 students (83,1%), agreed that a mind map is an effective tool for improving their critical thinking skills. This study used two data collection techniques: a quasi-experiment design and a questionnaire to gather students' opinions about the use of mind maps in English classes. The results of this study show that the use of mind maps in English class provides students with an opportunity to collect data, process information, build knowledge, and organize data. Another result is that mind-mapping can improve students' critical thinking, creativity, collaborative, and organizational skills.

Lastly, "Enhancing English Language Learning Through Mind Mapping: A Case Study of Students' Engagement and Effectiveness" by Anggraini et al. (2023) had a population of 30 students in an English class. This research used a qualitative case study method to identify the impact of integrating mind mapping in English language learning, focusing on students' engagement and motivation. The results of a questionnaire indicated students' positive opinions regarding the implementation of mind mapping, with 88,7% claiming digital mind mapping is useful for English

learning, summarizing lessons in 93,3%, and organizing lesson content in 92,2%. Overall, 84,3% of students reported enjoying using mind mapping in English class. In conclusion, this research showed the benefits of using mind maps in English learning, making it an engaging, effective, and student-centered activity.

Five previous studies mainly focus on the effect of students' learning outcomes and motivation in using digital mind mapping. In the context of how digital mind mapping can be used to examine students' understanding and questioning abilities, students' understanding of academic texts remains a limited area of research on this topic. Therefore, this study aims to fill the gap by exploring the use of digital mind mapping as a tool to explore students' understanding and questioning abilities in academic texts among 6th-semester students.

