

CHAPTER 1

INTRODUCTION

The background, research questions, goals, significance, scope, conceptual framework, and prior research are all included in this chapter. This chapter provides an extensive theoretical framework for the investigation and examines the foundation, investigative questions, and investigative aims. It provides a conceptual framework and emphasizes the importance of consideration. An overview of previous reflections concludes the chapter.

A. Research Background

This research intends to apply the brain-based learning approach to improve students' reading comprehension. Reading comprehension is one of the four language skills that is most important because it allows pupils to efficiently access, comprehend, and use information. Indonesia was ranked 62nd out of 111 nations in the EF English Proficiency Index (2023), suggesting that Indonesian students still need to work on their English language proficiency, especially in reading comprehension. According to the Indonesian Ministry of Education (2025), 75% of Indonesian 15-year-olds can read, but they don't comprehend what they are reading. Their abilities tend to fall below Level 2 of the PISA standard, which means difficulty grasping the main ideas of longer texts.

Achieving reading success hinges on the capacity to understand texts, especially those concerning advancements in science and technology, which are prevalent in print and digital formats, like books, newspapers, and articles. To grasp these texts, students require particular techniques to recognize key information while disregarding less significant details. These abilities are not inherently developed but must be cultivated through organized learning programs in educational settings (Baroody & Diamond, 2012; Sole & Edmondson, 2002).

Beginning at the elementary level, students encounter textbooks filled with substantial information, frequently presented as lengthy and intricate expository texts. The intention behind reading these materials is to facilitate

learning, which is a core objective of education. Consequently, students must employ efficient strategies to understand various kinds of texts to thrive academically (Baroody & Diamond, 2012; Sole & Edmondson, 2002).

These conditions highlight the importance of improving reading instruction. The learning process involves several components, including teachers and students, learning materials, facilities, and instructional procedures such as teaching strategies and methods (Fauzi & Respati, 2021; Sari & Surip, 2020). Furthermore, reading comprehension is considered one of the most crucial aspects of learning in schools (Sole & Edmondson, 2002).

In various classroom situations, students continue to encounter significant challenges in reading comprehension. These challenges are often attributed to a restricted vocabulary, ineffective reading strategies, lack of motivation, and passive learning behaviors, all of which impede students' ability to identify key ideas and grasp detailed information in texts (Grabe, 2009). Additionally, traditional teaching approaches tend to focus on the teacher, offering few chances for students to actively engage with reading material. Consequently, students often struggle with processing and interpreting texts effectively (Sole & Edmondson, 2002).

These issues are supported by earlier research findings that show students' reading comprehension abilities were still at a low level prior to the introduction of Brain-Based Learning. According to the pre-test results, pupils' average score was only 34%, highlighting their struggles with understanding texts effectively, including both explicit and implicit comprehension as well as critical thinking. Students had difficulty processing information and found it challenging to answer questions related to the texts. This situation indicates that students had not been adequately trained to employ effective reading strategies and that traditional teaching methods were inadequate for enhancing their reading comprehension abilities (Thabthimthong & Suplertpreedakorn, 2025).

The Brain-Based Learning (BBL) approach is one useful method for enhancing reading comprehension. Brain-Based Learning incorporates emotional, social, cognitive, physical, and reflective components into

classroom learning, based on how the brain naturally processes information. According to Kohar (2017), the Brain-Based Learning model significantly improved students' reading comprehension achievement, particularly in inferential understanding. According to the study, learning activities that are in line with brain processes can improve comprehension abilities because students' post-test scores were higher than their pre-test scores.

Furthermore, Brain-Based Learning emphasizes structured stages such as pre-exposure, preparation, elaboration, and reflection, which support deeper understanding and long-term memory retention (Kohar, 2017). By engaging students actively and creating meaningful learning experiences, this approach helps students process reading texts more effectively. Therefore, implementing Brain-Based Learning is expected to foster a more engaging and effective reading environment for eighth-grade students at SMPN 34 Bandung.

The majority of previous studies on Brain-Based Learning (BBL) have been conducted at the senior high school or higher education levels, even though many findings indicate that this approach effectively enhances students' reading comprehension. Research by Agus Nur et al. (2020) demonstrated that the application of Brain-Based Learning significantly improved students' reading comprehension achievement, particularly in identifying main ideas and supporting details. According to the study, when BBL was implemented, pupils' post-test results revealed a good classification.

In a similar vein, El Sakka (2023) highlighted that Brain-Based Learning fosters meaningful learning by emotionally, cognitively, and socially engaging pupils, establishing a calm but concentrated learning environment that encourages deeper text comprehension and long-term memory retention.

However, most of these studies focused on general classroom implementation without specifically addressing junior high school contexts. Furthermore, limited research has explored the implementation of Brain-Based Learning in strengthening literacy practices at the lower secondary level, particularly in schools such as SMPN 34 Bandung, where reading motivation and comprehension skills still need improvement. This gap emphasizes how crucial it is to look into how Brain-Based Learning can be used to increase

junior high school students' reading comprehension by creating a more stimulating, encouraging, and brain-compatible learning environment. Therefore, the purpose of this study is to investigate how Brain-Based Learning is applied and how well it improves students' reading comprehension at SMPN 34 Bandung.

B. Research Questions

It is evident from the previous discussion that Brain-Based Learning can enhance students' reading comprehension through the creation of a supportive learning environment, the activation of prior knowledge, and the emotional and cognitive engagement of students during the learning process. It is anticipated that this method will help eighth-grade students at SMPN 34 Bandung become more proficient readers. As a result, the investigator develops the following research inquiries:

1. What are the students' reading comprehension ability using the Brain-Based Learning?
2. What are the students' reading comprehension ability using the conventional method?
3. Is there a notable difference in reading comprehension among students between the class utilizing the Brain-Based Learning and those taught using the conventional method?

C. Research Purposes

This study aims to assess how well Brain-Based Learning enhances students' reading comprehension by contrasting it with conventional teaching methods. Specifically, the objectives of this study are:

1. To outline the reading comprehension abilities of students in the class that utilized Brain-Based Learning.
2. To outline the reading comprehension abilities of students in the class that was taught through conventional instruction without the Brain-Based Learning
3. To investigate if there is a notable difference in reading comprehension between students instructed with the Brain-Based Learning and those

receiving conventional teaching methods.

D. Research Significances

This research is expected to make a substantial theoretical and practical contribution to English language instruction. The results of this study should theoretically contribute to the conversation on Brain-Based Learning theory in relation to reading comprehension. This study advances our knowledge of how brain-compatible concepts—such as emotional engagement, activation of prior knowledge, meaningful learning, and a supportive learning environment—can affect students' comprehension outcomes by investigating how Brain-Based Learning affects students' reading comprehension. Additionally, future researchers who are interested in investigating brain-based educational approaches, especially at the junior high school level, may find this work useful as a theoretical reference.

Practically, it is anticipated that this study will offer instructors, students, and educational institutions useful information. For teachers, the findings may give an alternative educational style that can produce a more engaged, dynamic, and supportive classroom ambiance compared to typical teaching methods. For students, the implementation of Brain-Based Learning may help them become more motivated, focused, and confident in comprehending reading texts. For schools, especially SMPN 34 Bandung, this research may serve as a consideration in strengthening literacy practices and improving students' reading comprehension through more brain-compatible teaching approaches suited to 21st-century learning demands.

E. Research Scope

During the second semester of the 2026-2027 school year, eighth-grade students from SMP Negeri 34 Bandung will participate in this study. 64 students will be chosen as the study's sample from the 349 total pupils. This study aims to investigate how students' reading comprehension abilities are affected by brain-based learning. The data will be gathered and analyzed using a quantitative approach. By contrasting an experimental class taught utilizing brain-based learning with a control class taught using traditional teaching techniques, this study will use a quasi-experimental approach. Reading

comprehension assessments will be used as a pre-test and post-test to gauge students' success. Students' reading comprehension is the dependent variable in this study, and brain-based learning is the independent variable.

The application of Brain-Based Learning concepts in reading comprehension instruction is the particular emphasis of this study. Activating prior knowledge, fostering a safe and encouraging learning environment, promoting collaborative learning, and emotionally and cognitively involving kids in reading activities are all key components of the program. Eighth-grade students at SMPN 34 Bandung will participate in the study, which will concentrate on their capacity to recognize key concepts, comprehend supporting facts, and draw conclusions from English readings. It is anticipated that the results would give a clear picture of how much junior high school students' reading comprehension is improved by Brain-Based Learning.

F. Conceptual Framework

The conceptual framework of this study is based on three major theories: the Brain-Based Learning approach, methods for teaching reading comprehension, and EFL reading comprehension.

Reading comprehension in EFL is considered an active engagement in creating meaning from texts by combining previous knowledge with cognitive strategies. Walter Kintsch (1988), in his Construction-Integration (CI) Model, describes that understanding requires the construction and integration of meaning to establish a coherent comprehension. This procedure includes identifying key concepts, providing evidence, forming conclusions, and drawing inferences. As such, reading comprehension is crucial for students' academic achievement (Sole & Edmondson, 2002).

Effective instruction in reading comprehension necessitates clear and systematic teaching. Pearson & Gallagher (1983) introduce the Gradual Release of Responsibility model, which includes teacher demonstration, guided practice, and independent learning. Students can become engaged readers and improve their comprehension skills by using strategies including summarizing, predicting, asking questions, and explaining. Therefore, suitable teaching approaches significantly contribute to the improvement of reading

comprehension (Fauzi & Respati, 2021; Sari & Surip, 2020).

The hypothesis put forth by Caine and Caine (1991) serves as the foundation for the Brain-Based Learning method, which underscores that learning is shaped by the brain's natural information processing mechanisms, including the effects of emotions, significance, and a nurturing environment. This concept is further reinforced by Jensen (2008), highlights the importance of active participation, meaningful learning experiences, and social interactions in enhancing students' comprehension and retention.

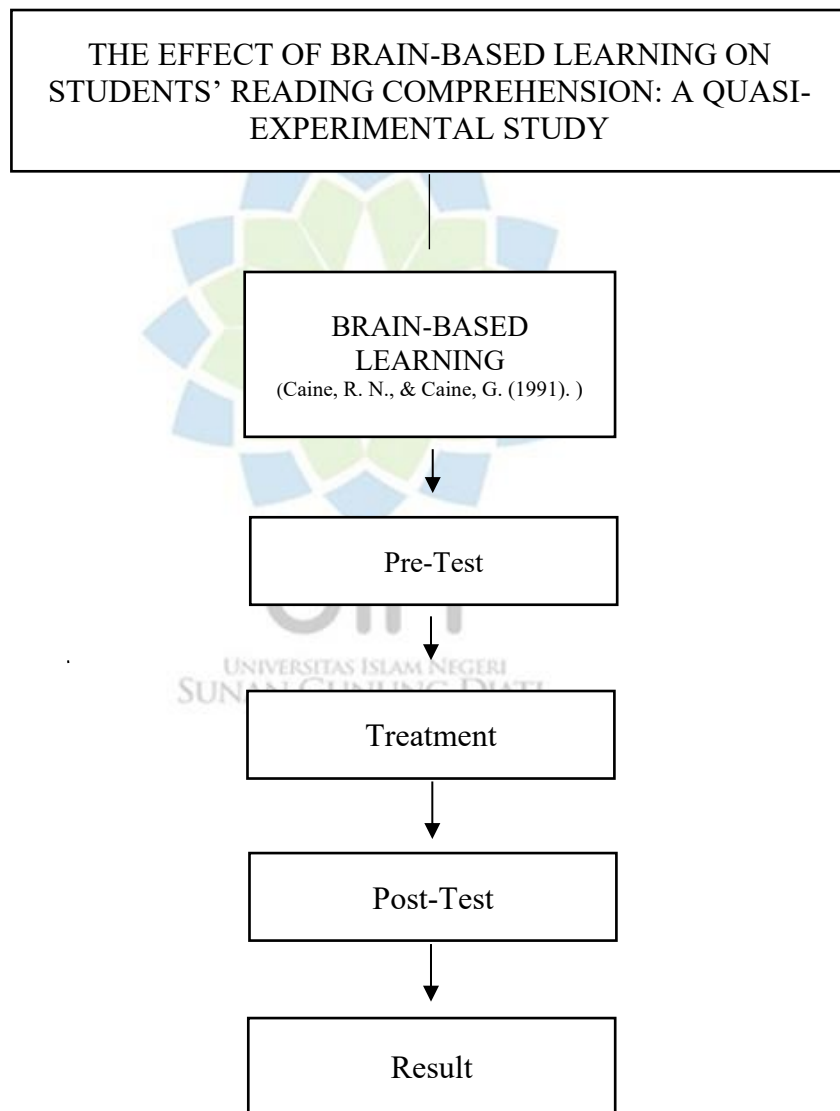


Figure 1.1 Conceptual Framework

An instructional strategy known as "Brain-Based Learning" synchronizes teaching methods with the way the brain naturally learns. According to Jensen

(2008), Brain-Based Learning emphasizes meaningful learning experiences, active engagement, and emotional involvement to improve students' understanding and retention of information. Students can become more motivated and engaged in the learning process, especially when it comes to reading comprehension exercises, by using tactics that activate the brain's natural learning processes. Students can become more motivated and engaged in the learning process, especially when it comes to reading comprehension exercises, by using tactics that activate the brain's natural learning processes.

Before pupils read the material, the first stage, Readiness/Relaxed Alertness, seeks to establish a low-threat, safe, and inspiring learning environment. At this stage, teachers activate students' prior knowledge and build curiosity about the topic.

The second stage, Coherent Construction / Orchestrated Immersion, focuses on students' active engagement with the reading text. Caine and Caine (1991) describe orchestrated immersion as providing meaningful and multisensory learning experiences that encourage students to build understanding actively. During this stage, students read the text, identify important information, discuss ideas, and answer comprehension questions.

The final stage, Consolidation / Active Processing, emphasizes reflection, consolidation, and reinforcement of learning. Students now go over and arrange the knowledge they have gained from the text. According to El Sakka et al. (2023), activities such as summarizing, mind mapping, quizzes, and self-reflection help students strengthen memory retention and confirm their understanding.

Students' reading comprehension is the dependent variable in this paradigm, and brain-based learning is the independent variable. The way these variables interact shows how using Brain-Based Learning techniques can boost students' cognitive engagement and enhance their comprehension of texts. The study intends to investigate whether Brain-Based Learning may considerably improve the reading comprehension of eighth-grade students at SMPN 34 Bandung by implementing these steps in reading instruction.

G. Hypotheses

The following hypotheses are established for the study based on the research objectives and the quasi-experimental design that contrasts the experimental and control groups:

1. Null Hypothesis (H_0)

Students who are taught using Brain-Based Learning and those who receive traditional instruction do not significantly differ in their reading comprehension scores.

2. Alternative Hypothesis (H_1)

Students who are taught with Brain-Based Learning and those who receive traditional education have significantly different reading comprehension scores.

H. Previous Studies

Numerous studies have looked into how Brain-Based Learning (BBL) can improve students' reading comprehension in a variety of educational contexts. The findings from these studies typically emphasize that BBL fosters significant learning by synchronizing teaching methods with the brain's innate information processing mechanisms.

Kohar (2022) investigated the implementation of Brain-Based Learning in teaching reading comprehension among secondary school students. The study focused on how learning activities designed according to the brain's natural learning processes could improve students' engagement and understanding of reading texts. The findings showed that Brain-Based Learning helped students better interpret information and significantly improved their reading comprehension performance.

In a similar vein, Nur, Hasyim, and Khalikin (2020) investigated how well Brain-Based Learning worked for teaching reading. Their study emphasized that learning activities that stimulate students' emotions, prior knowledge, and collaborative interaction can enhance students' comprehension skills. According to the findings, students who used brain-based learning showed improved reading comprehension and increased motivation to learn.

In line with these findings, El-Sakka (2023) explored the role of Brain-

Based Learning principles in language learning environments. The study highlighted that instructional practices aligned with how the brain processes information—such as meaningful learning experiences, active participation, and reflection—can improve students' cognitive engagement and support deeper comprehension of texts.

Khanthap and Bhiasiri (2012) carried out a study on the application of Brain-Based Learning in teaching English reading. 75% of participants achieved good scores after the intervention, demonstrating a significant improvement in kids' reading proficiency. This research indicates that Brain-Based Learning can successfully improve students' reading comprehension results.

Chukaeo et al. (2017) examined the impact of Brain-Based Learning on the reading skills of students. The findings demonstrated a notable enhancement in students' reading performance, with an average score of 84.3%, surpassing the anticipated benchmarks. This implies that pupils' reading comprehension and overall academic achievement benefit from brain-based learning.

Based on previous literature, Brain-Based Learning has been shown to support students' reading comprehension by designing educational settings that complement the way the brain learns naturally, encouraging active participation, emotional engagement, and meaningful processing of information. However, most previous studies focused on general language learning or were conducted in different educational contexts. Thus, the purpose of this study is to examine how Brain-Based Learning affects eighth-grade students at SMPN 34 Bandung's reading comprehension of narrative texts using a quasi-experimental method, addressing the need for more research on Brain-Based Learning implementation in junior high school reading instruction.