



## The Role of Brain-Based Learning in Training Students' Critical Thinking Skills

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### ABSTRACT

**Objective:** This research aims to determine the role of brain-based learning in training students' critical thinking skills. **Method:** The research method used is a review article from 20 main scientific articles obtained from Google Scholar, Google, and Science Direct online with the keywords brain-based learning and critical thinking skills. **Results:** The results show that brain-based learning can be applied to gain critical thinking skills in mathematics and natural science material compared to conventional learning. Brain-based learning notes how the brain processes and interprets information after processing. A learning method that aligns with how the brain functions naturally will help students become more adept at critical thinking. **Novelty:** One of the most challenging issues of the 20th century is the improvement of information technology and the environment. Building quality human resources is a strategic and critical function of high-quality education. Today's students need to learn how to think critically.

### INTRODUCTION

Educators tend to place more emphasis on content in most of the learning they do rather than sharpening students' thinking skills. Educators claim to have taught students about 'thinking skills', indirectly or implicitly, when conveying the subject's content. However, the effectiveness of teaching thinking skills in this way is doubtful because students generally do not understand the thinking skills in question (Güner & Erbay, 2021; Huang et al., 2022; Kavenuke et al., 2020; Mursid et al., 2022; Sumarni & Kadarwati, 2020). Everyone needs high-level thinking skills to face every problem well. One form of high-level thinking ability is critical thinking ability.

Critical thinking skills must be given to students to present students' thoughts and understanding of something. Critical thinking skills are among the high-level thinking skills promoted in the current era (Nabella et al., 2024). Training students' abilities in critical thinking are very much accommodated in the independent curriculum (Kusmaharti & Yustitia, 2022; Madrazo & Dio, 2020; Sarwanto et al., 2021; Thorndahl & Stentoft, 2020; Utari & Afendi, 2022). In the independent curriculum, students are trained to think for themselves about the knowledge in their immediate lives and not only refer to the context and thoughts inherited from the teacher.

Critical Thinking is one of the high-level thinking skills that students must have because, apart from the demands of the 2013 curriculum, this essential thinking skill can be used by students to solve problems in their daily lives. Therefore, Ennis (1996) states that critical Thinking is a process of determining what to do and believe. Facione (2018) further noted that one of the characteristics of a critical thinker is the skill to regulate one's knowledge. Based on this point of view, critical thinking skills are essential to learn. Critical Thinking is straightforward, namely the skill of analyzing and evaluating

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