# ABSTRAK

**Vhasshetha Indri Prathiwi**. 2025. Analisis Miskonsepsi Peserta Didik Berdasarkan Kemampuan Numerasi Ditinjau dari Proses Berpikir Mason pada Materi Bilangan Bulat dan Upaya Mengatasinya dengan Model *Problem Based Learning*. Tesis. Program Studi Magister Pendidikan Matematika. Universitas Jambi. Pembimbing (I) Prof. Drs. Maison, M.Si., Ph.D. (II) Dr.Dra. Nizlel Huda, M.Kes

**Kata Kunci** : Miskonsepsi, Kemampuan Numerasi, Proses Berpikir Mason, Bilangan Bulat, *Problem Based Learning*

Rendahnya kemampuan numerasi peserta didik yang teridentifikasi melalui hasil Asesmen Kompetensi Minimum (AKM) mengindikasikan adanya permasalahan mendasar dalam pemahaman konsep matematika, khususnya bilangan bulat yang merupakan materi fundamental dalam pembelajaran matematika. Analisis awal mengindikasikan bahwa miskonsepsi menjadi faktor utama dalam lemahnya penguasaan konsep tersebut. Oleh karena itu, penelitian ini bertujuan mengidentifikasi jenis miskonsepsi berdasarkan kemampuan numerasi dan ditinjau dari proses berpikir Mason (*entry, attack, review*), serta mengevaluasi efektivitas model Problem-Based Learning (PBL) dalam mengatasi miskonsepsi. Penelitian ini menggunakan metode kualitatif deskriptif dengan subjek siswa kelas VIIA MTsN 8 Muaro Jambi tahun ajaran 2024/2025. Subjek penelitian dikategorikan berdasarkan tingkat kemampuan numerasi (tinggi, sedang, rendah), masing-masing diwakili oleh dua siswa yang dipilih melalui *purposive sampling*. Data dikumpulkan melalui tes diagnostik dengan metode *think aloud*, wawancara mendalam, observasi, dan dokumentasi. Hasil penelitian menunjukkan variasi jenis miskonsepsi pada setiap tingkat kemampuan. Miskonsepsi teoritis dominan pada siswa berkemampuan numerasi rendah, miskonsepsi korelasional pada siswa berkemampuan sedang, dan miskonsepsi klasifikasi pada siswa berkemampuan tinggi. Penerapan model PBL terbukti efektif mengurangi miskonsepsi melalui pembelajaran kontekstual, reflektif, dan berbasis pemecahan masalah. Selain itu, terjadi perkembangan positif pada seluruh tahapan berpikir Mason. Pembelajaran matematika berbasis PBL yang disesuaikan dengan tingkat numerasi siswa terbukti efektif memperbaiki miskonsepsi dan meningkatkan pemahaman konsep.

## ABSTRACT

Prathiwi, V. I. (2025). *Analysis of Students' Misconceptions Based on Numeracy Ability Viewed from Mason's Thinking Process on Integer Material and Efforts to Overcome Them through the Problem-Based Learning Model* (Master's thesis, Universitas Jambi).



**Keywords:** misconceptions, numeracy ability, Mason's thinking process, integers, problem-based learning



The low level of students' numeracy skills, as revealed by the Minimum Competency Assessment (AKM), indicates a fundamental issue in understanding mathematical concepts, particularly integers, which serve as foundational content in mathematics education. Initial analysis suggests that misconceptions are a primary factor contributing to students' limited conceptual mastery. This study aimed to identify the types and characteristics of students' misconceptions based on numeracy ability and analyze them through Mason's thinking process stages (entry, attack, review). It also sought to evaluate the effectiveness of the Problem-Based Learning (PBL) model in addressing these misconceptions. This descriptive qualitative study involved six seventh-grade students from class VIIA at MTsN 8 Muaro Jambi during the 2024/2025 academic year. The participants were classified into three levels of numeracy ability (high, medium, low), with two students selected for each category using purposive sampling. Data were collected through diagnostic tests using the think-aloud method, in-depth interviews, observations, and documentation. The findings revealed varying misconceptions across ability levels: theoretical misconceptions were prevalent among low numeracy students, correlational misconceptions among medium-level students, and classification misconceptions among those with high numeracy. The implementation of the PBL model was effective in reducing misconceptions by fostering contextual, reflective, and problem-solving-based learning. Furthermore, students demonstrated positive development across all phases of Mason's thinking process. PBL-based mathematics instruction tailored to students' numeracy levels proved to be effective in correcting misconceptions and enhancing conceptual understanding.