

Fractional Reasoning: Fostering Fundamental Knowledge

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ABSTRACT

Fractional reasoning is a crucial aspect of mathematical understanding that plays a fundamental role in various mathematical concepts, real-world applications, and higher-level mathematical skills. The ability to comprehend and work with fractions is essential for students to develop a solid foundation in mathematics. However, fractional reasoning is often a challenging area for many students, requiring a deep understanding of concepts such as equivalence, ordering, operations, and connections to other mathematical domains. This study aimed to investigate to what extent primary school pupils develop fractional reasoning and the ability to solve related problems. The research involved a sample of eight primary school pupils from Perak (in Malaysia) participating in an interview. The findings revealed that the participants relied on representation methods of enactive and symbolic representations when working on fractions of an area, while they predominantly utilised symbolic representations when determining fractions for a set of objects. These results shed light on the students' fractional reasoning strategies, which are required in solving many other problems in the context of mathematical tasks. Based on the findings, it is recommended that educators employ instructional strategies such as representations that promote fractional reasoning, such as incorporating real-world contexts, to foster students' understanding and proficiency in addressing complex mathematical challenges.

Keywords: Representation, Enactive, Symbolic, Fractions, Fractional Reasoning