

# Inquiry-Based Teaching of Fractions Among Primary Mathematics School Teachers

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## ABSTRACT

Fraction is a fundamental concept and has become one of the basic foundations of more complex mathematical concepts such as algebra, ratio, and trigonometry. The importance of fractions in our daily life has also become the reason why it is a focus in the mathematics curriculum of primary schools. However, the topic of fractions is challenging for primary school students because of their complexity and abstractness. Teaching fractions using an inquiry-based approach is found to increase the students' understanding and achievements on this topic. Nonetheless, the result from previous studies showed that teachers have a lack of knowledge on inquiry-based teaching making it hard to be implemented in classrooms. Numerous studies have been made regarding inquiry-based teaching on mathematics but the focus is not on inquiry-based teaching of fractions. Hence, this study is conducted to explore the inquiry-based teaching of fractions among mathematics teachers specifically in primary schools. In conducting this research, three research questions have been made to achieve the purpose of this study. The research questions are; (a) how do primary schools' mathematics teachers implement inquiry-based teaching of fractions in the classroom? (b) what are the roles of mathematics teachers in implementing the inquiry-based teaching of fractions?, and (c) what are the challenges in implementing the inquiry-based teaching of fractions in the classroom? This study is based on the social constructivism theory and uses a case study as the research design. The participants in this study are chosen using the purposive sampling method. They are primary school teachers who have a minimum of five (5) years of experience in teaching mathematics and have attended the inquiry-based mathematics education professional development course on inquiry-based mathematics teaching organized by the Ministry of Education Malaysia. The participants selected will be from several states in the country. Based on earlier questioning by the researcher, only those who are practising inquiry-based teaching in their mathematics classroom will be selected. The number of participants finally selected will depend on the data obtained until saturation point is reached. The data will be collected using observations, semi-structured interviews, and document analysis. The data will be analysed using the qualitative content analysis method. It is hoped that the findings of this study can provide in-depth information on inquiry-based teaching of fractions and can benefit various stakeholders in the field of mathematics education such as primary school mathematics teachers, textbook writers, lecturers in the various teaching training institutions, and school curriculum developers in particular.

**Keywords:** inquiry-based teaching, fractions, social constructivism