

## **Exploring Mathematical Values Through Mathematics Teachers' Beliefs and Instructional Practices**

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### **ABSTRACT**

Mathematical values are deep affective qualities which education aims to foster through mathematics subjects in schools and are crucial components of the classroom affective environment. Mathematical values comprise teachers' beliefs, attitudes, and their instructional practices in mathematics classrooms. This study investigated Malaysian mathematics secondary school teachers' beliefs and their instructional practices based on four schools of philosophy of mathematics which are logicism, formalism, intuitionism and kuhnism. A quantitative research method with a survey design was used for assessment during this study. An instrument to measure the two constructs was developed based on the four mathematical philosophies mentioned earlier. The findings indicated that majority of mathematics teachers' beliefs were inclined towards kuhnism whilst their instructional practices were inclined towards formalism. These findings imply that in practice majority of mathematics teachers in secondary school emphasized on symbols and formulas in their teaching. However, it can also be concluded that the mathematics teachers' instructional beliefs were closely affiliated with their social norms and culture. Thus, these findings suggested that mathematics teachers' beliefs were not congruent with their practices. Although the teachers' beliefs were towards kuhnism, they did not portray these in their teachings, which seemed to emphasize on formalism.

**Keywords: Mathematical values, mathematics teaching, mathematics education**