

The Role of Teacher Characteristics and Practices on Upper Secondary School Students' Mathematics Self-efficacy in Nyanza Province of Kenya: A Multilevel Analysis

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Abstract

The study identified two dimensions of teacher self-efficacy and practices and five dimensions of students' mathematics self-efficacy and sought to determine the extent to which teacher characteristics and practices can enhance secondary school students' self-efficacy. Data were collected from 13,173 students in 193 teachers' classrooms from 141 schools in the 10 districts of Lake Victoria Region of Kenya. Two-level hierarchical linear model revealed that teachers' frequent use of mathematics homework, their level of interest and enjoyment of mathematics, as well as their ability and competence in teaching mathematics were found to play a key role in promoting students' mathematics self-efficacy. Teachers' ability and competence in teaching were also found to be effective in narrowing the gender gap in students' self-confidence and competence in mathematics. The study recommends that teacher training colleges emphasize such teacher practices and values in order to enhance students' mathematics self-efficacy, reduce their level of anxiety and fear of mathematics, and consequently, enhance their achievement in mathematics. Professional development opportunities should also be made available to in-service teachers to continually update their knowledge and skills and develop new strategies for teacher effectiveness.

Keywords: Teacher effectiveness, Teacher characteristics, Self-Efficacy, Mathematics achievement, Secondary school students

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