

Title: A study of selected teacher factors related to performance in mathematics among from three students in Kirinyaga district

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Poor performance in mathematics in National Examinations remains a serious concern for mathematics teachers, curriculum developers, parents and the general public. This is in view of the importance attached to the subject. In an attempt to respond to this problem many mathematics education studies have been carried out in Kenya by scholars such as Eshiwani (1981, 1984), Riungu (1988), Kathuri (1986) and Ngecu (1985). The purpose of this study was to investigate the relationship between selected teacher factors and students' performance in Mathematics. These factors include one teacher characteristic namely teacher qualification and three classroom teacher-related behaviours namely, teaching methods, use of resources and verbal classroom interaction. The study focused on Form Three students and their mathematics teachers who were randomly selected from fifteen secondary schools in Kirinyaga district. Data were collected from Form Three mathematics teachers, observation of classroom processes and interactions, and form three students' performance in classroom - administered test. Data from the field were organized and analysed both manually and by a computer using the Statistical Package for the Social Sciences (SPSS) Programme. This gave both t-test statistics and descriptive statistics used in this study. The main findings of the study are: (1) Mathematics teachers' qualifications are similar in many ways. For example, almost all mathematics teachers are professionally trained (87 percent) and have good mathematics passes in their 'O' and 'A' levels certificates of education. The t-values indicated that eleven cases out of fifteen (73 percent) support the proposition that eachers' qualifications are positively and significantly related to students' performance in mathematics. On the basis of this evidence, the first hypothesis of this study was accepted. (2) No mathematics teacher uses a single teaching method but a number of them, Depending on the teaching method commonly used, it was found that teaching methods can be arranged in the following descending order depending on the students' mean scores: Question-Answer, Example, Lecture and Discussion. The t-values indicated that only half of the cases confirm that teaching methods are positively and significantly related to students' performance in mathematics. Hence on the basis of this evidence, it is only in some instances that the second hypothesis of this study was accepted. (3) All possible efforts should be made to make mathematics teachers understand and appreciate the role of teaching aids in the teaching-learning process. A variety of teaching aids should be developed together with users manuals and be sent to mathematics teachers in the field for their use. (4) Teachers should be sensitised during their training to the fact that their classroom behaviour and interaction with students' performance. Teachers should be free with their colleaques and students to an extent that they can mutually define and discuss specific classroom behaviours displayed. This can help in getting the right feedback and hence right suggestion for the necessary steps to be taken to achieve the desired classroom interactions. (5) There is need for primary school mathematics teachers to form a professional association. Such an association would assist them to acquire teaching resources and hold conferences. This would

enable them to learn new techniques and strategies for teaching mathematics and also problems associated with learning of mathematics. In this way they would be in a position to assist students to approach mathematics with a more positive attitude than the current fear of mathematics by students. (6) The study also recommends that a systematic scientific research on teacher factors related to students' performance in mathematics and causes of low numbers of female mathematics teachers in the field be undertaken.