INFLUENCE OF CO-EDUCATIONAL SECONDARY SCHOOL GENDER STREAMED CLASSES ON MATHEMATICS TEACHERS ATTITUDES, PERCEPTIONS AND CLASSROOM PRACTICES IN FOUR COUNTIES OF KENYA

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A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Award of the Degree of Doctor of Philosophy in Curriculum and Instruction of Egerton University

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DECLARATION AND RECOMMENDATION

Declaration

This is my original work and has not been presented for conferment of a degree, award of diploma or any other award in this or any other university.

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DEDICATION

This work is dedicated to my parents Mr and Mrs Hosea Barmao Chemweno, husband Dave K. Bowen and children Harry Kiprotich, Stacy Jebet and Mark Kigen
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ABSTRACT

The major goal of most developing countries including Kenya is to achieve high levels of technological advancement. In order to achieve this goal, the citizens of these countries should among other skills be competent in mathematics. This is because the skills acquired in the subject provide the country with a human resource that is highly educated and able to tackle most of the country’s problems. Hence, it is imperative that students excel in the subject especially in secondary school, since a good grade in the subject at this level is a criterion for enrolment in advanced science, mathematics, and technology courses in colleges and universities. However, the performance of students at the Kenya Certificate Secondary Education (KCSE) mathematics examinations in Kenya has been dismal since 1989. Further statistics indicate that girls perform poorly compared to their male counterparts. Studies conducted in Kenya to establish the cause of this have concluded that teachers in mixed sex classroom learning environments foster unequal treatment of male and female students. As a possible remedy to this, single sex classes within co-educational secondary schools were created. There is, however, limited research that has been carried out to establish the impact of perceptions and classroom practices. Therefore, this study sought to determine the influences of the intervention within public co-educational secondary schools. Since it was not possible to manipulate the independent variable, the study adopted an ex post facto causal comparative research design. A sample of 203 mathematics teachers and 516 form four students drawn from co-educational secondary schools (those with mixed sex classes and single sex classes) in Nakuru, Kericho, Baringo, and Uasin Gishu counties of Kenya participated in the study. Data were obtained using self-report questionnaires for mathematics teachers and a student’s questionnaire for the purposes of triangulation. The instruments were validated and pilot tested to improve them before actual data collection. Cronbach alpha reliability coefficient of 0.87 for Mathematics Teacher Questionnaire and 0.82 for Mathematics Student Questionnaire were obtained. These were considered appropriate as they were within the accepted threshold of 0.70 and above in social science research. The collected data were then analyzed using descriptive statistics which included means, standard deviation and percentages and inferential statistics which were t-tests and ANOVA at a statistical significance of alpha equal to 0.05. The findings indicate that mathematics teachers’ favourable perceptions irrespective of the class gender composition. The statistical tests of significance show that there were no statistically significant differences in their perceptions and classroom practices in both the sub-county and county schools. However, the mathematics teachers’ attitudes towards girls lower than towards boys. These only differences in and attitudes mixed were also statistically significant at coefficient alpha (α) equal to 0.05. The results from the study have yielded valuable information that may inform the intervention in Kenya’s secondary schools and advice policy makers, teachers, and administrators of the schools on appropriate measures to undertake to enhance its effectiveness in the teaching and learning of mathematics.
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