

Factors Influencing Girl's Performance in Physics in National Schools in Kiambu and Nairobi Counties of Kenya

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Abstract

This study was designed to investigate factors that influence girls' enrolment and performance in physics in five(28%) traditional national schools in Kenya. Meaningful learning of physics is the hallmark of a technologically competent workforce in science, technology and engineering. However, there is a lower performance index and enrolment of girls opting to study physics at Kenya Certificate of Secondary Education (KCSE). Specifically, the factors of attitudes of students, learners' ability and teacher characteristics were found to affect enrolment and performance of girls in physics. Three theories that influence the understanding of the issues in this study include Bloom's Theory of Affect, Bruner's Theory of Constructivism and Kneller's Progressive Theory. Despite intervention measures by the Ministry of Education to alleviate girls' polarization in enrolment and performance in physics, the Ministry of Education Science and Technology (MOEST), 2006 module report upholds that there are negative influences in the teaching and learning of science. A wide range of literature review on girls' enrolment and performance in physics nationally and in sub county schools showed low enrolment and poor performance at KCSE. However, no research was evident on factors that influence girls' performance in physics in Kenya national schools. The study used a survey design among five national schools in Nairobi and Kiambu counties; form two class was chosen as the target population as well as teachers of science and mathematics in the five schools. Purposive and simple random sampling was used in the study. A random sample of two hundred and twenty eight form two students was selected from the five schools. From each school a sample of forty five students was selected using a simple random sampling method. Questionnaires were used to collect data for both teacher and student factors. In addition, an Achievement Test was used to isolate areas of misconceptions that account for poor performance of girls compared to boys. The data was analysed using both descriptive and inferential statistics. Statistical Package for Social Sciences (SPSS) was used in data analysis. Means, frequency distributions and percentages, histograms, and pie charts were determined. Likert Scale was used to measure attitudes affecting performance of physics among all the targeted girls' schools and the teachers. The study showed students' attitude, learner's ability and teacher characteristics, affected girls' enrolment and performance in physics in national schools. The girls had better positive attitudes and performance in learner abilities in physics than the boys. The results also showed that teachers of physics in girls' national schools are effective and efficient in instructional designs. The findings of this study may be used to foster positive attitudes towards physics. The methods of physics instruction among girls may also be impacted by constructivism approaches as the results show strong preference to physics practical work.

Keywords: Secondary education, Girl child performance, Physics, Science education

Full text: <http://article.sciencepublishinggroup.com/html/10.11648.j.ijstedu.20150304.11.html>