

## **RELATIONSHIP BETWEEN SECONDARY SCHOOL BOYS' AND GIRLS' CHEMISTRY SELF- CONCEPT AND THEIR SCIENTIFIC CREATIVITY IN SELECTED COUNTIES IN KENYA**

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### **ABSTRACT**

Education is the most critical ingredient in a country's development process in the social, economic and political realms. Kenya in its vision 2030 hopes to be transformed into a newly industrialised, middle-income country providing a high quality of life to all its citizens in a clean and secure environment by the year 2030. To realise this vision, the country needs to develop through its education system, manpower that is trained to think creatively. The role of Chemistry in the development of the scientific base of a country cannot be over emphasized. Kenya's secondary school chemistry, Physics and biology syllabi recommend the acquisition of creative skills by students. However, few studies have been carried out in Kenya with regard to scientific creativity in secondary schools. Studies in Physics and Biology have shown that the level of scientific creativity is low and is influenced by such factors as gender and knowledge. If these creativity skills in science education amongst secondary school students remain low, it will be difficult for Kenya to become industrialised by the year 2030. The purpose of this study was to examine the relationship between learners self-concept by gender and scientific creativity in chemistry education in Kenya. The study involved ex post facto research with causal-comparative and correlational designs. The population of the study was all Form Three students in National Secondary Schools in Nairobi and Kiambu Counties and all Form Three students in District Secondary Schools in Muranga and Kajiado Counties in Kenya. A sample of 16 schools (4 Boy's and 4 Girl's National schools and 4 Boy's and 4 Girl's District schools) were involved in this study. National schools were selected through random sampling, while the county schools selection were through purposive random sampling. Participating Form Three stream (class) in the schools were selected through stratified random sampling. A total of 640 students, (320 boys and 320 girls) were involved in the study. Data were collected using four instruments; the Chemistry Achievement Test (CAT), the Chemistry Scientific Creativity Test (CSCT), Chemistry Self-Concept Questionnaire (CSCQ) and Students Culture Evaluation Questionnaire (SCEQ). The test items were piloted in two schools; a National and a County school in Nakuru County. Data were analysed using Pearson Product Moment correlation Coefficient and t-test. Tests of significance were done at 0.05 alpha level. The findings of this study showed that scientific creativity is positively related to learners' chemistry self-concept. The findings further indicated that the level of scientific creativity in chemistry was not gender dependent. The results of the study are likely to be helpful to secondary school chemistry teachers as they seek to enhance creativity in students. In addition, the results may be useful to chemistry curriculum developers in Kenya as they seek to enhance scientific creativity in chemistry education in secondary schools.