

Disparities in Chemistry and Biology Achievement in Secondary Schools: Implications for Vision 2030

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Abstract

The differential representation of men and women in the scientific community has been foretold by achievement patterns evident in the elementary and secondary levels. There is a substantial body of research that documents gender differences in science and it shows that males outperform females on science achievement tests. This study focuses on achievement in chemistry and biology because they are treated as compulsory subjects in most schools and thus taken by all the registered candidates while the third science, physics, remains optional in many schools. The two sciences are also regarded as instrumental in driving Kenya's vision 2030 initiative which aims at making the country a newly industrializing middle income country providing high quality life for all its citizens. The realization of this vision calls for the harnessing of the science capacity of both men and women in the country for economic prosperity. This study adopted a descriptive survey design. This paper presents the findings of the study on disparities in achievement in chemistry and biology in Kenya with a focus in Western Province. This study was conducted in 40 secondary schools in Western Province. Out of the selected 40 schools, responses were obtained from 32 schools giving a response rate of 80%. The data collection instrument was the questionnaire. Data on achievement in chemistry and biology was obtained from the respective Heads of Departments. The study revealed that there are disparities in achievement among the different school categories and as well as gender. Boys' schools realised higher mean scores in chemistry and biology during the five years compared to girls' and co-educational schools. However, although the boys' schools maintained the lead, performance in chemistry can only be described as average for both the boys' and girls' schools. Co-educational schools underperformed. These findings indicate that such achievement is working against the realization of Vision 2030.

Key words: Achievement; Industrializing; Disparity; Quality; Capacity and Vision 2030