

The central problem addressed in this study is that the major factors influencing students' achievement in science subjects under the newly structured 8:4:4 education system in Kenya are poorly understood. To this end, the main purpose of the study was to identify and analyze the influence factors such as classification, type and boarding status of schools, school resources, some selected student and teacher characteristics and school learning related practices have on students' achievement in science.

A purposive sampling technique was used to select 867 Forms 3 and 4 students as well as 48 Science handling these classes. The data was collected using questionnaires, interview schedules and Science Achievement Test, and analyzed by a computer utilizing both descriptive and inferential statistical techniques.

The study found that students from National and Provincial schools performed better than those from Private and District Schools. Students from Boys' School excellent in Physics and the project while those from the Girls's school excelled in Chemistry. It was found that KCPE Mathematics was a good predictor of Physics and Project performance while KCPE English was a good predictor of Chemistry performance. Boys who had a better mathematics background at primary school as measured by the quality of their KCPE Mathematics grades performed better in Physics and the Project than girls.

The study also established that it was more of the effective use made of learning resources such as textbooks, laboratory equipment and apparatus that resulted into higher achievement in science. Students who were frequently given homework and got it marked promptly, given continuous assessment tests regularly and exposed more to practicals performed better in physics and chemistry than those who were given less or none of these learning practices. Also, the students with positive attitudes towards Physics and Chemistry performed better in the subjects. Finally, the subjects, greater than those taught by non-inquiry/lecture technique.

It is apparent that students who learn Physics and Chemistry in an entirely investigative manner acquire a greater understanding of the subjects, greater than those taught by lecture method.

On the strength of the main findings and conclusions discussed a number of recommendations which have implications for policy and further research were drawn. Recommendations with policy implications included the following:

- (a) Teachers should use more inquiry/practical methods in teaching Physics and Chemistry in combination with such methods as lecture and demonstration and field trips to ensure that the pupils are introduced to all the content relevant to the syllabus while also developing other skills.
- (b) To ensure that adequate content is covered in sciences particularly in Physics and Chemistry, the Ministry of Education through the Kenya Institute of Education should either increase the teaching time or reduce the current content. This could be done by integrating some parts and /or eliminating others in the case of Physics and Chemistry.

(c) Since one of the important facilities that promote students' achievement in Physics and Chemistry is the availability and efficient use of science laboratories, schools should equip the laboratories with apparatus and other learning resources to expose students to more practical's.

(d) Science teachers should give meaningful feedback to students through homework, continuous assessment tests, supervised study time and guided group and individual practical's.

The recommendations that require further research include:

(a) An identical study to be conducted using a longitudinal study design.

(b) A study of mixed schools be conducted to determine the effect of co-educational schooling on motivation and achievement in science.

(c) A study should be conducted to establish the strategies to be adopted to popularize science and mathematics among girls and how to empower them to take up the challenge.