

This study focuses on the expectations students and teachers have of physics practical work as carried out in Kenyan Secondary Schools. Practical work in this case entails students' individual laboratory exercises, teacher demonstrations projects, exhibitions and field trips.

The choice of the topic under study was influenced by the rising costs in building of the laboratories; new trends in science education such as process-science which depend on practical work for their implementation. There was also the need to know the state and status of physics practical work in Kenyan secondary schools and the feeling that teachers and students are often neglected in policy-making yet their voice should be heard on issues that affect them such as physics practical work.

In carrying out the study, a questionnaire based on the five point Likert scale but with spaces left for the students and teachers to give reasons for the stand they took; that is agree, disagree or being undecided was drafted and tested for refinement. The same questionnaire was used both for the students and the teachers. Their responses were coded and their means scores calculated and compared as per the pre-set hypotheses using the t-test. The reasons they gave were also compared using  $\chi^2$  technique. The outcomes of the hypotheses tested were then discussed together with the reasons given. The effect of teaching experience on the teachers' expectations was investigated using correlation (Pearson) and the method of least squares (See Chapter 3).

In this study five aspects of practical work were investigated; the role of practical work in the teaching of physics. The role of the teacher and the student in physics practical work, the content and the context of practical work in physics and the nature of assessment in physics practical work. Each aspect was discussed separately, hypotheses tested and reasons compared as per the given groups (teachers, students, F2s, F4s, boys and girls).

The findings showed no difference in expectations between trained and untrained teachers on all aspects of physics practical work. There were differences in expectations between physics teachers and student on all aspects of physics practical work except on the role of the student and the nature of assessment. No significant difference was noted between F2s and F4s except in assessment of practical work. No difference was noted in expectations between boys and girls except in the content and context of practical work in physics.

The correlation between teachers working experience (in years) and their scores on the five point Likert Scale was found to depend on their professional background. It was negative for trained teachers in all aspects of practical work and positive for the untrained teachers except in assessment. The implications of these findings to the study of physics were discussed and recommendations made to the teachers, educators, parents and policy makers among which was a call to all parties to take practical work more seriously with an eye into the future.

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