ABSTRACT

Physics provides the conceptual and methodological foundation upon which many other scientific fields are built up on. Despite its importance, students' academic achievement in physics in Isiolo Sub County has generally been poor partly due to their low critical thinking skills. Teaching approaches have been cited as one of the factors that influence students' critical thinking skills. This study investigated effects of problem-based learning (PBL) approach on students' acquisition of critical thinking skills in physics in public co-education secondary schools in Isiolo Sub County, Kenya. The study adopted Solomon Four Quasi Experimental research design. The accessible population comprised 265 form two students. Simple random sampling techniques were used to select 4 co-educational secondary schools and a sample of 128 form two students who took part in the study. Critical Thinking Skills Physics Test (CTSPT) was used to collect data. Face and content validity of CTSTP was checked through expert judgment and its estimated reliability was 0.741. The Statistical Package for Social Science aided data analysis. Analysis of Variance (ANOVA) and t-test were used to test hypothesis at $\alpha = .05$ level. The findings indicated that the difference between critical thinking skills of students exposed to PBL and those taught using conventional methods was statistically significant, $F(3, 124) = 10.267$, $p<.05$. The paper concludes that PBL improves students' acquisition of critical thinking skills as compared to regular teaching methods. These findings may assist Physics teachers improve learners' acquisition of physics critical thinking skills and performance in the subject. The findings may also assist physics teacher trainers in strengthening PBL components in their training programmes. This may contribute to equipping teacher trainees with pedagogical skills that can nurture and develop their learners' critical thinking skills.