

THE EFFECT OF VIRTUAL LABORATORY ON STUDENT TEACHERS' ACHIEVEMENT IN INTEGRATED SCIENCE IN BAGABAGA COLLEGE OF EDUCATION, TAMALE, GHANA

Alexander Hero Yawo Asare¹, Joseph Nana Annan² & Ernest Immare Ngman-Wara³

1. Science Department, Bagabaga College of Education, Tamale, Ghana

2. Science Department, University of Education, Winneba, Ghana

3. Science Department, University of Education, Winneba, Ghana

ABSTRACT

The purpose of this study was to determine the effect of Virtual Laboratory (VL) on student teachers' achievement in Integrated Science in Bagabaga College of Education, Tamale. The study employed an action research design. The accessible population was all the level 100 student teachers of Bagabaga College of Education, Tamale. Purposive sampling technique was used to select 70 student teachers as the sample for the study. The instruments that were used to collect data were pre and post-tests. The pre-test and post-test for both the cognitive achievement test and test of practical skills were analysed statistically using paired t-test. Results from the study showed that for the cognitive achievement test, the mean score of the post-test (17.96) was significantly greater than the mean pre-test score (8.53). ($t(69) = 23.30$, $P < 0.05$), indicating that the VL had a positive effect on the cognitive achievement of student teachers before and after the implementation of the intervention. There was also a significant difference between the practical skills of student teachers before and after the intervention with ($t(69) = 11.93$, $p < 0.05$). The findings of the study strongly suggest that the sampled students' performance has improved in Integrated Science through VL. Furthermore, the VL improved student teachers' practical skills. Based on these findings, it is recommended that tutors should be encouraged through capacity building and provision of resources to integrate VL in their teaching of Integrated Science in the College of Education.

Keywords: Virtual Laboratory, Practical skills, Cognitive achievement, Student teachers, Integrated science, Information and communication technology.