EFFECTS OF PHYSICAL AND VIRTUAL LABORATORIES ON THE ACHIEVEMENT OF SECONDARY SCHOOL GEOGRAPHY STUDENTS IN NORTH CENTRAL NIGERIA

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ABSTRACT

This study investigates the effects of physical and virtual laboratories on the achievement of secondary school geography students in North central Nigeria. The study adopts a quasi-experimental research design. The sample size of this research consists of 768 students from twelve secondary schools in North central states of Nigeria were used as research sample. Four schools each from the three sampled states were purposively chosen and assigned to experimental groups; I, (physical laboratory), experimental group II (Virtual Laboratory) and control group (Lecture method). One instrument used for collecting data in this study and its titled Geography Achievement Test (GAT). It is a 30 – item instrument covering topics in physical geography, a Pearson product moment correlation formula was used to determine the reliability coefficient of GAT which yielded 0.76. The data were analyzed using descriptive statistic of mean and standard deviation and inferential statistics of analysis of covariance (ANCOVA). The hypotheses were tested at 0.05 level of significance. The result of the study reveals that physical laboratory enhances secondary school students achievement in geography despite which virtual laboratory could be used to compliment physical laboratory it was therefore recommended that students and teachers should be exposed to physical laboratory environment in order to promote and encourage social interaction, active learning, learning by doing and learning by experience among other benefits

Keywords: *Achievements, geography, laboratory, physical, students, virtual*