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EFFECTS OF COMPUTER BASED INSTRUCTION ON STUDENTS' ATTITUDE, PERCEPTION OF CLASSROOM ENVIRONMENT AND ACHIEVEMENT IN RURAL SECONDARY SCHOOLS IN KENYA

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DECLARATION AND CERTIFICATION

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This thesis is my original work and has not been presented for Degree in any University or any other award.

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CERTIFICATION BY SUPERVISORS

The undersigned certify that they have read and hereby recommend for acceptance by Masinde Muliro University of Science and Technology a thesis entitled *Effects of Computer Based Instruction on Students', Attitude, Perception of classroom Environment and Achievement in Rural Secondary Schools in Kenya.*

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ABSTRACT

It is a government policy that all institutions of learning in Kenya embrace Information Communication and Technology (ICT) in all operations including the curriculum as the world moves towards knowledge based economy. The evidence in literature reveals positive effects of computer technology in instruction. However, such studies have concentrated in urban settings. The Effects of Computer Based Instruction (CBI) on Students' Attitude, Perception of the classroom environment and Achievement in Biology among rural secondary school learners in Kenya is largely unknown. No study known to the researcher has been done to determine the effects of CBI in Biology instruction among rural secondary school learners in Kenya. This study was designed to investigate the effects of CBI in Biology among rural secondary school learners. This involved comparison in, attitude, perception of classroom environment and achievement among rural secondary school learners exposed to the same Biology content on cell division through a CBI simulation methodology and conventional methods. A CBI module was prepared in Hyper Text Messaging Language (HTML) format utilizing multimedia tools including high resolution images, sound files and graphic illustrations. A Solomon-four quasi-experimental research design was used to investigate the effects of CBI on students' attitudes perception and achievement as dependent measures. Two control groups C_1 (N=38) that received the pre-test and C_2 (N= 35) which received conventional instruction whereas two experimental groups E_1 (N=38) that was pre-tested and E_2 (N=45) which received their instruction through the CBI mode. All groups were exposed to the same cell division content except for the instructional methods used. Four rural secondary schools were purposively selected from Bungoma and Kakamega Counties to take part in the study. A total of 156 subjects took part in this study. Balloting was used to select subjects that were randomly assigned to treatment and control groups. Questionnaires and Biology Achievement Test were used to collect information from the learners. Data analysis was done using descriptive statistics that involved the use of means and standard deviations and inferential statistics which involves t-test. All tests were conducted at $\propto = 0.05$ with the help of a computer program, the Statistical Package for Social Sciences (SPSS) version 17.5 for windows. Results of the study indicate significant differences between control groups and experimental groups on attitudes, perception of classroom environment and achievement in Biology in favour of experimental group. The study concluded that CBI improved student achievement in Biology and motivated them to overcome the notion of some concepts in Biology being difficult. Data for student attitudes toward CBI and perception of the classroom environment revealed that students enjoyed the CBI; they learned from CBI; and they wanted to use CBI more often in class. It is hoped that the findings of this study would help educational researchers, planners and secondary school teachers to successfully design and implement various classroom based innovations that would enable seamless integration of ICT in classroom instruction.

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