

ICT-based Methodologies and Students' Academic Performance and Retention in Physics: A Case with Newton Laws of Motion

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Abstract : The study was carried out to appraise the impact of ICT-based teaching methodologies (video-taped instructions and Power Point presentations) on academic performance and retention of secondary school students in Physics, with particular interest in Newton Laws of Motion. The study was conducted in Cross River State, Nigeria, with a quasi-experimental research design using non-randomised pre-test and post-test control group. The sample for the study consisted of 176 SS2 students drawn from four intact classes of four secondary schools within the study area. Physics Achievement Test (PAT), with a reliability coefficient of 0.85, was used for data collection. Mean and Analysis of Covariance (ANCOVA) was used in the treatment of the obtained data. The results of the study showed that there was a significant difference in the academic performance and retention of students taught using video-taped instructions and those taught using power point presentations. Findings of the study showed that students taught using video-taped instructions had a higher academic performance and retention than those taught using power point presentations. The study concludes that the use of blended ICT-based teaching methods can improve learner's academic performance and retention.

Keywords : video taped instruction (VTI), power point presentation (PPT), academic performance, retention, physics

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