

Enhancing Secondary School Mathematics Retention with Blended Learning: Integrating Concepts for Improved Understanding

Authors : Felix Oromena Egara, Moeketsi Mosia

Abstract : The study aimed to evaluate the impact of blended learning on mathematics retention among secondary school students. Conducted in the Isoko North Local Government Area of Delta State, Nigeria, the research involved 1,235 senior class one (SS 1) students. Employing a non-equivalent control group pre-test-post-test quasi-experimental design, a sample of 70 students was selected from two secondary schools with ICT facilities through purposive sampling. Random allocation of students into experimental and control groups was achieved through balloting within each selected school. The investigation included three assessment points: pre-Mathematics Achievement Test (MAT), post-MAT, and post-post-MAT (retention), administered systematically by the researchers. Data collection utilized the established MAT instrument, which demonstrated a high reliability score of 0.86. Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 28, with mean and standard deviation addressing study questions and analysis of covariance scrutinizing hypotheses at a significance level of .05. Results revealed significantly greater improvements in mathematics retention scores among students exposed to blended learning compared to those instructed through conventional methods. Moreover, noticeable differences in mean retention scores were observed, with male students in the blended learning group exhibiting notably higher performance. Based on these findings, recommendations were made, advocating for mathematics educators to integrate blended learning, particularly in geometry teaching, to enhance students' retention of mathematical concepts.

Keywords : blended learning, flipped classroom model, geometry instruction, secondary school students

Conference Title : ICELS 2025 : International Conference on Education and Learning Sciences

Conference Location : San Diego, United States

Conference Dates : January 14-15, 2025