Impact of Mathematical Modeling on Mathematics Achievement, Attitude, and Interest of Pre-Service Teachers in Niger State, Nigeria

Authors : Mohammed Abubakar Ndanusa, A. A. Hassan, R. W. Gimba, A. M. Alfa, M. T. Abari

Abstract : This study investigated the Impact of Mathematical Modeling on Mathematics Achievement, Attitude and Interest of Pre-Service Teachers in Niger States, Nigeria. It was an attempt to ease students' difficulties in comprehending mathematics. The study used randomized pretest, posttest control group design. Two Colleges of Education were purposively selected from Niger State with a sample size of eighty-four 84 students. Three research instruments used are Mathematical Modeling Achievement Test (MMAT), Attitudes Towards Mathematical Modeling Questionnaire (ATMMQ) and Mathematical Modeling Students Interest Questionnaire (MMSIQ). Pearson Product Moment Correlation (PPMC) formula was used for MMAT and Alpha Cronbach was used for ATMMQ and MMSIQ to determine their reliability coefficient and the values the following values were obtained respectively 0.76, 0.75 and 0.73. Independent t-test statistics was used to test hypothesis One while Mann Whitney U-test was used to test hypothesis Two and Three. Findings revealed that students taught Mathematics using Mathematical Modeling performed better than their counterparts taught using lecture method. However, there was a significant difference in the attitude and interest of pre-service mathematics teachers after being exposed to mathematical modeling. The strategy, therefore, was recommended to be used by Mathematics teachers with a view to improving students' attitude and interest towards Mathematics. Also, modeling should be taught at NCE level in order to prepare pre-service teachers towards real task in the field of Mathematics.
Keywords : achievement, attitude, interest, mathematical modeling, pre-service teachers
Conference Title : ICMELS 2018 : International Conference on Mathematics Education and Learning Sciences
Conference Location : Sydney, Australia
Conference Dates : January 29-30, 2018