A COMPARISON OF ACHIEVEMENT IN PROBLEM-BASED, STRATEGIC AND TRADITIONAL LEARNING CLASSES IN PHYSICS

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ABSTRACT

The purpose of this study was to compare the effects of problem-based learning, strategic learning and traditional learning on pre-service teachers' physics achievement. Pretest–posttest quasi experimental research design was employed in the study. The classes were randomly assigned as control and experimental groups. Students in the first experimental group (n= 18) received problem-based physics instruction, students in the second experimental group (n= 20) received strategy-based traditional physics instruction, and students in the control group (n= 20) received only traditional physics instruction. Data were collected via the Revised Physics Achievement Test (R-PAT) and the Physics Self-Efficacy Scale (PSES). Pre-test scores of the instruments were used as covariates. Analysis of covariance (ANCOVA) showed a statistically significant difference between the experimental and control groups in the favor of experimental groups after treatment. However, no statistically significant difference between two experimental groups (problem-based versus strategy-based instruction) was found.

Key Words: Problem-based learning, strategic learning, traditional learning, physics achievement.