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A Statistical Analysis of Activity-Based and Traditional Introductory Algebra Physics Using the Force and Motion Conceptual Evaluation[1] CECELIA TRECIA MARKES, University of Nebraska at Kearney — With a three-year FIPSE grant, it has been possible at the University of Nebraska at Kearney (UNK) to develop and implement activity- based introductory physics at the algebra level. It has generally been recognized that students enter physics classes with misconceptions about motion and force. Many of these misconceptions persist after instruction. Pretest and posttest responses on the "Force and Motion Conceptual Evaluation" (FMCE) are analyzed to determine the effectiveness of the activity- based method of instruction relative to the traditional (lecture/lab) method of instruction. Data were analyzed to determine the following: student understanding at the beginning of the course, student understanding at the end of the course, how student understanding is related to the type of class taken, student understanding based on gender and type of class. Some of the tests used are the t-test, the chi-squared test, and analysis of variance. The results of these tests will be presented, and their implications will be discussed.

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