

1125-O1-2657      **Mihhail Berezovski\*** (mihhail.berezovski@gmail.com), 600 S. Clyde Morris Boulevard,  
Daytona Beach, FL 32114. *Implementation and evaluation of active learning elements and  
innovative strategies for learning and teaching in Calculus classes.*

High-enrollment courses with a high percentage of withdrawals sometimes referred to as “gateway” courses because they are also required as pre-requisites to degree program courses. Failure to pass these “gateway” courses disrupts the natural progression of a degree program and often leads to high attrition rates. The focus of this research is to incorporate and enhance proven teaching practices in a course and assess their efficacy for improving learning and pass rates. This research reports on an innovative combined approach to teaching Calculus I and II. The designed method combine improved traditional practices with elements of innovative methods of modern education. The conceptual and practical forms of education provided through the strictly planned assignments and activities, such as polling open ended questions, bi-weekly two day workshops, provoking conceptual tests, hands-on homework projects, elements of flipped classroom and online assignments. The results of each activity and overall approach compared with traditional lecturing sections of the course. The analysis of the results of pre- test and post-tests are compared and presented. The general recommendation is formulated. The analysis of student’s self-evaluation is performed. (Received September 20, 2016)