The Gap Project: Closing Gaps in Gateway Mathematics Courses

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Target Course: Precalculus (MATH 1101)

Intervention: Workshops to teach prerequisites topics that students may be lacking

Abstract:
The Gap Project was an experiment to determine if focused extra coaching and advising delivered at the right time to Precalculus students with gaps in their mathematical background would improve the overall pass rates across all sections. A sample of students attended workshops in August 2010, just before the Fall semester began. In selecting the sample, every effort was made to reach students with a weak grasp of prerequisites. For example, COMPASS scores were used when available, as well as a Diagnostic Test. Subsequently the students took Precalculus with a cross section of instructors. To avoid bias in data, the principal investigator and co-principal investigators did not teach any section. Students who attended any portion of the workshop, were considered treated, so as to ensure student motivation was not a lurking variable. Indeed some of the treated students who received an F grade attended a very small portion of the workshop. At the end of the semester the F/W rate in all sections of Precalculus was 31.49%. The F/W rate for students who participated in the workshop was 22.45%. A large sample significance test for population proportion was used, after confirming that the sample size met the requirements of this test. The z-score was -1.36; the p-value was 0.0869. This is significant at . Efforts to identify students lacking prerequisite knowledge revealed that nearly a third of the students enrolled in Precalculus either did not take the COMPASS placement exam or took it years ago. The next semester, a Diagnostic Test was prepared and given to students on the first day of class. An effective cut-off score was determined by correlating Diagnostic Test scores with final grades.