Investigating Prerequisite Grade Requirements in the Calculus Sequence

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The Valparaiso University Mathematics and Computer Science Department has been debating a shift from a D- to a C- in the calculus sequence prerequisite grade requirement. We first researched policies at other colleges and universities. Next, we gathered data on students' self-predicted grades by distributing pre- and post-semester surveys and measuring the accuracy of the results in comparison to the actual grade data. Using the surveys, we also associated students' expectations with their majors. In the end, we investigated whether or not prerequisite grades can predict subsequent course performance. Statistical analysis of the past four years of math student data determined that a student who received a C or lower in the prerequisite class generally would not improve in the subsequent course.

Information about the Authors:
Michelle Kleckner is a junior math and secondary education double major, and a physics and humanities double minor. This is her first time performing this type of research. As an education major, she is interested in how prerequisite grades can predict future course performance. Katie Merkling is a freshman math and secondary education double major. She has taken part in biochemical and statistical research in the past, which inspired her to continue research at the collegiate level. Lexi Paradine is a junior math and secondary education double major. Prior to this statistical research, she did research in pure mathematics alongside Dr. Lara Pudwell. As a future high school math teacher, she wished to connect her education aspiration with her mathematics knowledge.

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