

Meeting: 1003, Atlanta, Georgia, MAA CP V1, MAA Session on Research on the Teaching and Learning of Undergraduate Mathematics, I

1003-V1-1250 **Susan S. Gray** (sgray@une.edu), 11 Hills Beach Road, Biddeford, ME 04005, **Barbara J. Loud** (barbara.loud@regiscollege.edu), 235 Wellesley Street, Weston, MA 02493, and **Carole P. Sokolowski*** (carole.sokolowski@merrimack.edu), 315 Turnpike Street, North Andover, MA 01845. *Undergraduates' Uses of Variables and Success in Entry-Level Mathematics Courses.*

A robust understanding of the appropriate use of algebraic variables is considered to be important for the study of mathematics in college, but little research has been done to relate student's use of variables to their success in undergraduate mathematics courses. For this study, 215 students enrolled in basic algebra, college algebra, and calculus completed Kuchemann's (1981) algebra test on the first day of class. This test categorized students into four levels based on their use of variables. Subsequently, students' levels of variable use were compared to their final course grades across levels within each course and across the three courses. The quantitative analysis of results showed that mean course grades generally increased with level of variable use for college algebra and calculus students. The results of this study provide documentation about the hierarchy of college students' uses of variables and its relationship to their performance in mathematics courses. (Received October 04, 2004)