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*Building a Foundation for Algebra: How Fluency with Rational Numbers and Proportionality is Key to Achievement.*

This study demonstrates not only the importance of rational number and proportionality skills to the learning of algebra, but also how a review of such skills for post-secondary students can result in a significant increase in algebraic performance, regardless of the students' mathematical background. The combined participants (n=175), who on average had not taken a mathematics course for 1.5 years, demonstrated a significant increase in achievement with a medium-to-large effect size ( $p < .001$ ,  $d = .61$ ). Further, students' performance improved in each topic area of algebra (linear equations, linear systems, domain/range, right triangles, exponential expressions and equations, and quadratic equations) despite the fact that none of these topics were covered in the review. This research has implications for high schools' college-bound curricula, which in most states requires four years of English, but only two to three years of mathematics. As a result, many students satisfy their math requirements for high school graduation early (especially some who take algebra in middle school and have excellent potential in mathematics) and are not exposed to mathematics for an extended period of time prior to college, thereby losing their facility with the subject. (Received September 18, 2007)