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Cameron Sweet* (csweet@math.wsu.edu), Department of Mathematics and Statistics, Washington State University, Pullman, WA 99164-3113. *Symbol System Flexibility and Justifications in Multiplying Polynomials*. Preliminary report.

While there is an extensive amount of research demonstrating that the ability to relate one representation of a function to another is necessary for understanding the concept of function, there are few studies on using multiple representations to help high school algebra students relate multiplication of polynomials to multiplication of integers. A representational dilemma emerges when students are taught the unfamiliar concept of multiplying polynomials using the unfamiliar symbolic representation for the distributive property. The goal of this study is to gain an understanding of whether presenting multiplication of polynomials using the same methods in which integers are multiplied may be beneficial to students' ability to make appropriate representational choices when multiplying polynomials. Student choices and accuracy will be compared to assessments in which students are instructed to solve similar problems using specific symbolic representations, namely the standard distributive property, lattice multiplication and the place value method. (Received February 28, 2017)