

**ZMATH 2016e.00140**

**Code, Warren; Merchant, Sandra; Maciejewski, Wes; Thomas, Matthew; Lo, Joseph**

**The mathematics attitudes and perceptions survey: an instrument to assess expert-like views and dispositions among undergraduate mathematics students.**

Int. J. Math. Educ. Sci. Technol. 47, No. 6, 917-937 (2016).

Summary: One goal of an undergraduate education in mathematics is to help students develop a productive disposition towards mathematics. A way of conceiving of this is as helping mathematical novices transition to more expert-like perceptions of mathematics. This conceptualization creates a need for a way to characterize students' perceptions of mathematics in authentic educational settings. This article presents a survey, the Mathematics Attitudes and Perceptions Survey (MAPS), designed to address this need. We present the development of the MAPS instrument and its validation on a large ( $N = 3411$ ) set of student data. Results from various MAPS implementations corroborate results from analogous instruments in other STEM disciplines. We present these results and highlight some in particular: MAPS scores correlate with course grades; students tend to move away from expert-like orientations over a semester or year of taking a mathematics course; and interactive-engagement type lectures have less of a negative impact, but no positive impact, on students' overall orientations than traditional lecturing. We include the MAPS instrument in this article and suggest ways in which it may deepen our understanding of undergraduate mathematics education.

*Classification:* C25

*Keywords:* undergraduate mathematics education; attitudes towards mathematics; perception of mathematics

doi:10.1080/0020739X.2015.1133854