

1116-Q5-2077 **May Chaar***, mchaar@framingham.edu. *Secondary Preservice, In-Service, and Student Teachers' Noticing of Mathematical Work and Thinking in Trigonometry.*

Recognizing and responding to students' work and thinking are central to reform-minded mathematics teaching; in particular, recent educational reforms advocate for instruction that builds on students' thinking, requiring teachers' continual assessment of students' verbal and written strategies. Despite its significance however, little is known about how secondary mathematics teachers analyze and respond to students' work and thinking. This study aimed to help explain how teachers carry out this work. In particular, it sought to explain what types of knowledge and other resources enable or inhibit teachers' in-depth analysis of students' work and thinking while more generally describing the ways in which preservice, in-service, and student teachers attend to, interpret, and respond to students' work and thinking in trigonometry. These findings serve to inform efforts to improve these skills in teacher preparation programs. This study also provides insight into secondary mathematics teachers' understandings of various concepts in trigonometry and characterizes how and to what extent teachers' previously held mathematical conceptions were challenged as they attempted to make sense of solutions. (Received September 21, 2015)