Implementing Protractor Placement Tasks with Prospective Teachers: Intentions and Outcomes

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Occasioning learning in mathematics courses for prospective teachers can be challenging for a variety of reasons. In this seminar, I will draw upon my experiences teaching a geometry content course for prospective middle-grades and secondary teachers. In particular, I will consider my intentions in developing and implementing a sequence of protractor placement tasks; these tasks involve images of a conventional protractor placed atop an angle model in different ways. During the seminar, folks will have a chance to explore and discuss these tasks. Using data collected from multiple assignments throughout a semester-long course, I will present preliminary findings regarding the outcomes of prospective teachers’ engagement with these tasks. These results suggest protractor placement tasks can be leveraged to occasion learning particular K–12 mathematical topics; some of these topics might be surprising since they are not typically associated with protractor usage.

Dr. Hardison received his Ph.D. in Mathematics Education from the University of Georgia and is an assistant professor in the Department of Mathematics at Texas State University. His primary research interests are investigating and engendering changes in individuals’ mathematical thinking. Much of his current research focuses on modeling students’ constructions of quantities (e.g., angularity), how these constructions change over time, and how they vary across contexts.