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Characterizing the Pedagogical Utility of a Secondary Teacher's Understanding of Angle Measure.

This study challenges the assumption that teachers' mathematical knowledge is ready-made to inform their instructional actions. I conducted a teaching experiment to construct a model of a secondary teacher's way of understanding angle measure and examined how the teacher's understanding affords or constrains his capacity to bring this knowledge to bear in the context of teaching. The results suggest that the teacher, David, possessed two complimentary but conceptually distinct ways of understanding. David had not, however, reflected on these understandings in a way that allowed him to become consciously aware of having them. David was therefore unable to strategically employ his two ways of understanding in novel problem solving situations and was unable to leverage his understandings in the context of teaching. (Received September 12, 2014)