Developing Preservice Teachers’ Understanding of Productive Struggle: Case of Math 2311

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Abstract: This study examined the development of preservice teachers’ (PSTs) understanding of productive struggle using video episodes which PSTs analyzed through the lens of professional teacher noticing. This qualitative study included 66 PSTs in four sections of a semester-long mathematics content course for prospective elementary and middle school teachers that focused on number systems and operations. The goal was to give PSTs opportunities to observe students struggling with the course content the PSTs were studying and to enact their specialized content knowledge and pedagogical knowledge for teaching simultaneously. Findings suggest that the PSTs develop the ability to attend to and interpret the mathematics underlying the student struggles through video analyses. They also begin to identify teaching strategies and practices that appear potentially useful for supporting productive struggle. The use of a productive struggle framework helped the PSTs develop a language for discussing productive struggle.

Hiroko is an assistant professor of mathematics at Texas State University. Her research interests include areas of teacher preparation and in-service professional development with a focus on teaching practices that support productive struggle and noticing of student thinking.

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