

## DISTINCTIONS IN PRESERVICE TEACHERS' ASSET-BASED NOTICINGS OF MIDDLE SCHOOL STUDENTS' MATHEMATICAL STRENGTHS

### DISTINCIONES EN AVISOS BASADOS EN ACTIVOS DE PROFESORES DE PRESERVIO DE FORTALEZAS MATEMÁTICAS DE ESTUDIANTES DE ESCUELA INTERMEDIA

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Keywords: Teacher Beliefs; Teacher Education – Preservice; Equity and Diversity; Classroom Discourse.

As mathematics teacher educators (MTEs), we design methods courses to “provide candidates with tools and frameworks to support a more asset- and resource-based instructional approach focused on students’ strengths in learning” (AMTE, 2019, p. 35). Through an asset-based orientation, MTEs can foster preservice teachers (PSTs) ability to view every student as a doer of mathematics, thereby recognizing that *all* students have mathematical strengths (Bannister et al., 2018; Featherstone et al., 2011; Jilk, 2016). PSTs who develop more robust orientations about what it means to do mathematics and by whom, are more likely to question and disrupt any socially-learned deficit orientations they may have about diverse learners (see Celedón-Pattichis et al., 2018). Countering and replacing these orientations among PSTs with cultural and mathematical *asset-based orientations* will require MTEs to better understand how PSTs understand and notice mathematical strengths.

Complex Instruction (CI, Cohen & Lotan, 1997) is an asset-based pedagogical framework, grounded in the recognition that each and every student brings varied and different mathematical strengths and statuses to the classroom. The framework recognizes that during group work, peer’s assign competences to one another, impacting who contributes to the groups’ thinking and who learns mathematics. Often, the mathematical strengths of a “low-status” student may be ignored or dismissed. CI defines techniques for teachers to disrupt these socially-influenced biases. To enact these techniques, however, PSTs must believe and be able to recognize mathematical strengths in every student.

Our work seeks to answer the following research question, *What distinctions in the quality of mathematical strengths do PSTs notice during a group-worthy task?* To do so, we draw upon the research on teacher noticing aligned with Sherin’s (2001) notion of professional vision as the ability to notice and interpret significant features of classroom interactions. Four cohorts of PSTs enrolled in our different teacher preparation programs during their junior or senior methods course engaged in three key activities to learn to consider students’ mathematical strengths: (1) read and respond to a CI paper; (2) name strengths in peers after completing a group-worthy task together; and (3) implement the same task with a group of 4–6 middle school students to identify mathematical strengths for every student. Data from PSTs’ class artifacts, group recordings, reflection papers across the two sites were analyzed using both holistic and descriptive coding (Saldaña, 2016).

Results indicated that PSTs welcomed the invitation to learn about students’ mathematical strengths and were able to identify them in most middle schoolers. Yet, PSTs’ noticed qualitatively different types of mathematical and behavioral strengths. In this poster, we present the distinct types of strength-noticing patterns among the PSTs, and their movement towards asset-orientations. Results will be useful for MTEs and further analyses of PSTs’ dispositions.

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