

## COTEACHING AS PROFESSIONAL DEVELOPMENT: A STUDY OF SECONDARY MATHEMATICS TEACHERS PARTNERING TO TRANSITION PRACTICE

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There have been many efforts to move mathematics teaching towards student-centered instruction based in problem solving and reasoning. Despite these efforts, Cohen and Mehta (2017) found that U.S. mathematics classrooms remain mostly teacher-centered and instruction remains procedural. Kennedy (2005) explains the ideals are “barely visible in the complex landscape of competing intentions and the multiple areas of concerns that are important to teachers” (p. 61). Currently the field recognizes that professional change occurs through intensive, prolonged, and focused models. One promising model is *coteaching*, where two teachers work collaboratively, which provides “immediacy of the relationship between thought and action” (Roth, 2002, p. 59) and allows for risk-taking and moving away from ‘conservative pedagogies’ (Gallo-Fox, 2010). Coteaching, without a hyphen, is defined as “a commitment to coplanning, copractice, and coreflection” (Murphy & Martin, 2015, p. 277). These three stages can provide mutual understanding and subsequent learning through zones of proximal development (ZPD). ZPD can then be used as a lens to capture professional growth where interpersonal interactions are transformed to the intrapersonal plane and integrated into each teacher’s practice. Murphy, Scantlebury, and Milne (2015) connected six elements in their ZPD framework for coteaching, which will be discussed in the findings below to address the research question: *How can secondary mathematics teachers in a coteaching partnership serve as resources for each other’s professional growth towards reform-oriented standards?*

This study analyzes a single, holistic case study (Yin, 2018) of two secondary mathematics teachers striving to accomplish progressive standards in their coteaching of four Algebra 1 sections. The design of the study emerged as part of the researcher’s teaching practice, resulting in a naturalistic inquiry of an authentic situation. Sources of data include audio recordings of researcher-participant coplanning and coreflection meetings, some of which developed into responsive interviews, coenactment of lessons, and teaching material artifacts. Qualitative thematic analysis was done in relation to the six elements of coteaching. As an example, in one of the first lessons that altered the coteacher’s typical lesson structure, she was challenged to consider how non-direct instruction opens up unpredictable situations. She states: “I just have to think these things out in my head like you know what if it's not working out the way I want it to work out? This is, this is different.” This ‘bud of development’ (Vygotsky, 1978) represents the coteacher’s hesitant but promising transition towards enacting student-centered lessons.

Through partnering with another, issues in the classroom can be explicitly recognized and alternatives can be reflected upon and enacted. Furthermore, joint reflection of enacted lessons “provides the opportunity for the deconstruction of those experiences and the reconstruction of a shared meaning in a way that transforms understandings and changes practice” (Crow & Smith, 2005, p. 491). Implicit beliefs about teaching and learning can be critically analyzed, conflicts may be resolved, and sensitivity can increase. The complex landscape of teacher beliefs, dispositions, experiences, and knowledge can be influenced through the coteaching model.

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