TEXTBOOK USE OF CHILDREN'S THINKING TO SUPPORT PROSPECTIVE ELEMENTARY TEACHERS' GEOMETRIC UNDERSTANDING

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Researchers have suggested that one way to motivate and support prospective elementary teachers' (PTs) mathematical understanding is through the use of authentic examples of children's mathematical thinking (e.g., *Circles of Caring*, Philipp, 2008). Philipp notes that some PTs may care more about children as whole beings than they care about mathematics. Therefore, integrating how the content directly relates to the teaching and learning of children can offer a way to leverage the care PTs have for children to motivate PTs to care about the mathematics.

Ball and her colleagues (2008) have identified the ability to analyze children's mathematical thinking as a valuable component of Specialized Content Knowledge (SCK), or knowledge unique to teachers of mathematics. However, Max and Amstutz (2019) found that activities related to the content domains of Geometry and Measurement & Data (Conference Board of Mathematical Sciences, 2012) provided fewer opportunities for PTs to develop their SCK.

Therefore, the goal of this study is to investigate the intersection of the Geometry and Measurement & Data content domains with examples of children's mathematical thinking in textbooks currently used in content courses for PTs. For this investigation we focused our analysis on the top three textbooks that US mathematics teacher educators recently reported using (Max & Newton, 2017): Beckmann (2018), Sowder et al. (2017), and Billstein et al. (2020). This poster will report findings and provide examples of children's thinking being utilized in the study of two-dimensional geometric concepts (e.g., shapes, polygons, angles) and measurement (e.g., length, angle size, area). Initial textbook analysis involved identifying instances relating content to the teaching and learning of children and noting the ways in which these instances were being used to support PTs' development of SCK. For example, some samples illustrated children's work in which they had applied a non-traditional method and asked PTs to analyze the validity of the child's thinking.

All three textbooks included practice exercises at the end of some sections that attached names to sample thinking, at times referencing the names as students or by grade level. However, Beckmann (2018) and Sowder et al. (2017) actively used examples of children's thinking throughout their lessons to support PTs' development of content knowledge, specifically SCK. Additional references to children were found in mentions of elementary concepts, content standards, and research conducted with children, prompting consideration of whether these types of connections to the teaching and learning of children might also serve as motivation for PTs.

Future analysis will continue to investigate the ways textbooks used in content courses for PTs reference children and their mathematical thinking as well as the potential impact of these instances on motivating PTs' development of SCK. By revealing and highlighting the integration of connections to the teaching and learning of children in content courses designed for PTs, we hope to support mathematics teacher educators in creating classroom cultures that can leverage the care PTs have for children to motivate PTs to deepen their mathematical understanding in ways that will support the learning of their future students.

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