

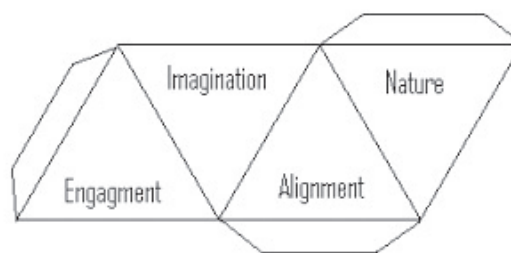
EDUCATION

Knowing the World through Mathematics: The Interconnections between Social Justice and Mathematics for Preservice Mathematics Teachers

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Recent events, such as the COVID-19 pandemic and protests in response to racialized policing practices in the United States have highlighted the need for teachers to facilitate and engage students in explorations of social justice. A case study of 11 prospective mathematics teachers (PMTs) participating in Knowing the World through Mathematics (KWM), a three-credit quantitative reasoning course centered on social justice mathematics, was conducted to determine how KWM supports PMTs' mathematics identity development. The 11 PMTs' weekly reflection prompts, course assignments, and pre- and postcourse questionnaire responses were thematically analyzed, and prominent themes were identified about their beliefs of themselves in relation to the larger mathematics community. Prominent themes included PMTs' sharing that KWM was eye-opening to both social justice issues and new uses of mathematics, their impartial perspectives of mathematics, and a renewed urgency for taking action to teach mathematics for social justice. Throughout KWM, PMTs engaged with social justice issues while utilizing mathematics as a tool or resource to uncover social injustices. Further, PMTs suggested that mathematics can be conceptualized using different methods, specifically through social justice topics, making mathematics relevant and interesting to all students. Results indicate that KWM, alongside other equity- and social justice-focused courses, will continue to be a valuable experience for PMTs to build on in their future classrooms to further expand and spread awareness to students about the powerful connection between mathematics and social justice.

Research advisor Jill Newton writes: "Gabrielle quickly established herself as a strong member of our research team through her detailed coding of evidence and openness to question our findings during weekly meetings. Gabrielle's thoughtful contributions ensured that we had alignment of ideas and themes across team members. I look forward to our continued writing partnership."



*This is an image of the framework that was used while conducting the research in KWM. The image represents the four faces of mathematics identity and was selected from R. Anderson, (2007), *Being a mathematics learner: Four faces of identity*, *Mathematics Educator*, 17(1) (2007), 7-14. <https://files.eric.ed.gov/fulltext/EJ841557.pdf>*