

Chapter 2

Social Justice Mathematics Activism to Develop Student Identity as a Global Citizen

Shande King

Trevecca Nazarene University, USA

Joanna Presley

Christian Academy of Knoxville, USA

Julie Steimer

Christian Academy of Knoxville, USA

ABSTRACT

The development of students who are global citizens has become a priority in national and international education policy today. With the rise of issues such as nationalism, xenophobia, and racism, basic human rights and democratic values of education are being challenged, and students need to understand the value in personalizing the content they are learning within their communities. Thus, a recent increase in social justice activism within school curricula pushes students to experience content material in ways that transform their identities into global citizens who contribute to the development of peaceful and inclusive communities. This chapter explores the result of students' understanding of global citizenship through mathematics learning from a collaboration of algebra educators who purposefully discussed, planned, and created social justice mathematics lessons. These interdisciplinary, inquiry-based lessons pushed students to participate as social agents and activists to fight inequities through mathematics.

INTRODUCTION

The development of students who are global citizens has become a priority in national and international education policy today. With the rise of issues such as nationalism, xenophobia, and racism (Franch, 2020), basic human rights and democratic values of education are being challenged. For students to

DOI: 10.4018/978-1-7998-9542-8.ch002

understand how to combat these issues, it is necessary to develop students who understand the necessity and the ability to create peaceful and inclusive communities. To do this, students need to understand the value in personally coming to know their community around them and experiencing a concrete example to tangibly make changes in the inequities they see in these communities (Baker & Fang, 2021). Thus, a recent increase in social justice activism (Tichnor-Wanger et al., 2016; Franch, 2020) within school curricula pushes students to experience content material in ways that transform their identities into global citizens who can and desire to contribute to the development of peaceful and inclusive communities. This study will dive deeper into the result of students' understanding of global citizenship through mathematics learning from a collaboration of algebra educators who purposefully discussed, planned, and created social justice mathematics lessons.

This study stems from the conversations and collaborations of a group of three mathematics educators, the authors, who formerly taught at the same school. The demographic of this private school primarily serves White and upper middle-class students, but as more students of various ethnic and socioeconomic backgrounds have come to this school, issues of race and identity have come to the forefront of this school. We three educators now all maintain similar teaching positions at similar institutions in various grade levels – two of which remain at this K-12 school, with one teaching in the middle school and one at the high school. The third educator (first author) now teaches at the university level in a similar environment, equally recognizing the value in teaching mathematics through a lens that empowers students to embrace their identity and use mathematics as a tool to address inequities in the society around them. The three of us as educators serve as the co-authors of this chapter, and provide similar but also unique perspectives to their teaching experiences as they have collaborated in discussion to brainstorm and lesson plan, as well as in reflection as they have completed units and lessons that require inquiry-based learning and social contexts for students to apply mathematics in a personal and engaging way that allows them to see themselves as doers of mathematics who can effect change in society around them.

Beyond the practitioner lens through which this chapter is written, we also provide unique perspectives in various but unique administrative roles, which is another main reason this group organically came together for the purposes of the research in this project. The primary author has served as a state evaluator for preservice teachers in STEM education, and currently holds a directorship of a developmental mathematics program at a university where he works with students who are teaching assistants and tutors in the math department. The other two authors, currently secondary educators, have also served at the K-12 school in administrative positions, one as an evaluator for middle grades teachers and the other as the head of the diversity committee that was recently formed at the school.

To expound on the conversations and collaborations that led to the formation of this group and thus the birth of this research project, it is important to note that we authors did not just coincidentally experience a revelation for a need to improve our pedagogy in mathematics teaching or drastically change our perspectives on mathematics application to real-world contexts. In fact, each of us as educators and lifelong learners pursued an advanced degree recently for the purposes of improving their own mathematics teaching abilities and school administrative abilities. We could each see in ourselves, as educators, the value in improvement in our teaching because of accountability through an advanced degree. Through the course of our studies, each of us began to see how mathematics can be presented as a tool to help students recognize society around them and even address inequities in their local communities around them by assisting students in developing their own identities as students who understand and can apply mathematics in their local contexts. Thus, individually we each allowed our learning in our degree programs to advance our different teaching efforts. Thus, to different extents, we each contribute

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