

Washington State University

College of Education

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Will defend the dissertation

Date: June 25, 2020

Time: 11:00 A.M.

Location: Zoom by request

Faculty, students and the general public are encouraged to attend

MATHEMATICAL SELF-EFFICACY IN HIGH SCHOOL TRACKED CLASSROOMS

Chair: Amy Roth McDuffie

Within the context of a 4-year high school mathematics tracking system, this study explored mathematical self-efficacy (MSE), or a person's belief in one's mathematical capabilities. The aim was to understand students' perceptions of (a) their MSE, (b) the effects of tracking on their MSE, and (c) changes in their MSE over time. Tracking is a form of ability grouping used to sort students based on perceived academic ability or other characteristics. I applied a qualitative instrumental case study methodology with a multistage purposeful sampling procedure to select participants. I selected Grassy High School (GHS) as the setting because it provided access to 12th-graders from dominant and non-dominant populations and their tracked classroom learning environments. In addition, I had collected MSE data at GHS as part of an exploratory study in 2017 that allowed for comparing students' MSE at two points in time. Using surveys and interviews, I sought to understand the relationships among student demographic characteristics, characteristics of the students' tracked mathematics courses, and students' MSE. The survey included Likert-scale items focused on characteristics of MSE and classroom learning environments. Analysis of survey data consisted of comparing descriptive statistics from the exploratory study and this study to understand how different classroom learning environment characteristics affect students' MSE. I collected 169 surveys and determined that 107 respondents met the inclusion criteria. I then selected 16 for one-on-one, semi-structured interviews which focused on students' perceptions of their MSE and their classroom learning environment characteristics. I analyzed the interview data using a coding protocol, thematic analysis, and a cross-thematic matrix. I discuss three primary conclusions: (a) students entered classrooms with pre-established views of their MSE, (b) students' classroom learning environments played a role in their MSE development, and (c) students' MSEs played a role in other aspects of their mathematical dispositions. I provide educator and researcher recommendations to improve MSE development in the high school classroom and to guide future research in the field of tracking. The findings of this study highlight the importance of rich and challenging learning environments for all learners to eliminate unjust systems, such as tracking.