Oral Defense Announcement
University of Missouri – St. Louis Graduate School

An oral examination in defense of the dissertation for the degree
Doctor of Philosophy in Education with an emphasis in Teaching and Learning Processes

Jill Ann Klahn Smith

M.A. in Math for the Middle Grades, July, 2011, University of Northern Iowa
B.A. in Elementary Education, December 1993, University of Northern Iowa

Academic and Demographic Patterns of Students Placed in Early Algebra I Acceleration

Date: July 14, 2021
Time: 11:00 a.m. to 1:00 p.m.
Place: Remote

Abstract
In the United States, there had been a push for Algebra for All in the early 1990’s in an effort to increase performance on international assessments and provide equity for low-income students and students of color. As the number of students in eighth grade Algebra I increased, a small number of students enrolled in seventh grade Algebra I also increased. The purpose of this quantitative study is to identify and evaluate demographic and academic patterns of students placed in this early acceleration at the middle school level looking at the continuation of acceleration, higher achievement, and an increase in the number of students successfully completing calculus by their senior year within a suburban Midwest public school district.

Approximately 4712 students were included in the study. There were 237 students who were enrolled in seventh grade Algebra I, 1634 enrolled in eighth grade Algebra I, and 2841 enrolled in ninth grade Algebra I. During this time the enrollment in seventh grade Algebra I went from 4 students to 123 students. The expected course pathway completion, ACT mathematics score, and EOC levels were examined over a six-year period. Patterns in demographics such as gender, racial groups, socio-economic groups, along with programs and services such as special education and gifted programs were identified and reported. It was found that minority and low socio-economic groups were underreported in the accelerated Algebra I courses, however were able to show higher than average performance, and lower than average expected course pathway completion. Additionally, as the enrollment increased in the seventh grade Algebra I, performance decreased in all groups.

Defense of Dissertation Committee
Natalie Bolton, Ph.D., Chairperson
Amber Candela, Ph.D.
Steve Moehrle, Ph.D.
Edward Rathmell, Ph.D.