

Intervention Grid for University of Chicago School Mathematics Project

Katie Kerian and Morgan Eihusen

University of Kansas

SPED 843: Advanced Methods & Assessment: Strategies for Students with Significant Behavior,

Social & Emotional Need

Dr. Brasseur-Hock

February 27, 2023

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The University of Chicago School Mathematics Project is a Tier 3 intervention found on the What Works Clearinghouse (WWC) website. The program is a core mathematics program for grades 7-12 that uses a student-centered approach. Lessons in this intervention focus on skills in problem-solving, real-world applications, active learning that incorporates reading (Institute). The intervention is implemented using flexible lesson organization in topics such as algebra, geometry, advanced algebra, functions, statistics, trigonometry precalculus, and discrete mathematics. According to the WWC intervention report, the repetition and review are used sparingly in this intervention.

In total, WWC identified 12 studies that were considered for review. What Works Clearinghouse identified three studies that met WWC standards. Two of the studies were of the UCSMP Algebra program, and the third was of the cumulative effect of multiple courses. While three of the studies met WWC standards, none of the 12 studies identified met the standards without reservations. According to table 1 in the clearinghouse report, the intervention showed “potentially positive effects” in the areas of general mathematics achievement and algebra. The first study that met WWC standards was a longitudinal study reported on by Daniel B. Hirschhorn of Illinois State University. This study was a four year quasi-experimental evaluation of the first edition of UCSMO (Institute). According to Hirschhorn, a total of 141 students participated in this study. Fifty-eight of the participants were male while eighty-three were female. Two of the three schools selected for this study were in an affluent suburban area, while the third was a college preparatory magnet school in a large urban district. The school population at the urban site had approximately one third minority students (Hirschhorn).

Students were selected using their results on achievement tests. Every student in the intervention group participated in all four years of the program beginning with the *Transition*

Mathematics and ending with Advance Algebra (Institute). Students receiving the intervention were matched with a student in the comparison group based on their 6th grade pretest scores. Posttests, in the form of achievement tests and “Application Tests”, were administered in April and May of 1990.

The next article reviewed was from the University of Nebraska. Kevin Peters conducted a study that inspected the usefulness of two different algebra programs, Saxon and NCTM. The population of students who were identified to receive the intervention was the talented eighth-grade mathematical students. This included 19 students in the Saxon study and 17 students in the NCTM study. The study measured the relationship between three independent variables: Learner satisfaction, math aptitude, and group placement on the dependent variable, the student’s final achievement level (Peters 1992). One instructor was chosen to lead both groups. This study's duration started in August and went on until the end of the school year. The outcomes monitored related to the finding of this study showed that learner satisfaction had the strongest correlation with the student’s final level of achievement. The criterion scored average and appeared to score higher on 7 out of the 12 components.

Student engagement is often a challenge when working with students with Emotional and Behavioral Disorders. The University of Chicago School Mathematics Project supports student engagement by bringing real-world skills into the classroom. The student lessons focus on reading, problem-solving, everyday applications, and the use of technology. Additionally, students are encouraged to monitor their understanding. The program uses a flexible lesson organization format. Using a program with lesson flexibility could be beneficial when working with students with EBD as their educational placement could change during or between school years.

References

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Appendix
UCSMP Support Grid

Support	Description	Schoolwide Data: Entry Criteria	Data to Monitor Progress	Exit Criteria
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University of Chicago School Mathematics Project (UCSMP)	This one-year course is one that works to increase students' skills in algebra. It focuses on real world applications, statistics, geometry, probability, and graphing. The program delays manipulation with rational algebraic expressions until later in the course. The curriculum uses the University of Chicago Mathematics Project textbook.	As a Tier 3 support, students must meet one of the following criteria: Enrolled in grades 7-10 The level they start this course at depends on the students' incoming knowledge.	Academic Measures: Standardized tests for pre and post-test. AND Four study-generated criterion unit tests. AND Weekly progress monitoring. Treatment Integrity: Direct implementation, and whole class observation	Students exit the intervention after completing the 9-month class and post-test have been completed.
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