

# Examination of the Efficacy of Synergistic Systems in Comparison to Traditional Math Curriculum

## Synopsis of Study Review by Brenda LeTendre, Ed.D.

**Data Provided by:** South Middle School, Joplin, MO

**Location:** South Middle School, Joplin, MO

**Date:** 1996

**Number of Participants (N)** = Spring Cohort 1 (Cont.): 68, Spring Cohort 1 (Exp.): 79, Fall Cohort 2 (Cont.): 71, Spring Cohort 2 (Exp.): 116

### Study Overview

During the spring and fall semesters of 1996, two math teachers and their students participated in a study to test the efficacy of a Synergistic Systems lab in comparison with that of a traditional math curriculum. The study examined the performance of two cohorts of students: Cohort 1 in the Spring semester of 1996 and Cohort 2 in the fall semester of 1996. In both cohorts, students were randomly assigned by the school's computer scheduling program to the two teachers' math classes. Seven classes of seventh grade math students received math instruction using an "alpha" version of a Synergistic Systems mathematics lab. The students in the experimental classes completed six out of eight of the lab's Modules. The teachers' remaining five classes continued to receive traditional math instruction and did not experience the Synergistic Systems mathematics lab. These students received primarily teacher-directed instruction in math using the Math Plus textbook from Harcourt Brace. Cohort 1 students in the experimental group also completed a five-question survey asking them to compare the Synergistic Systems lab experience with their previous traditional class instruction.

### Significant Findings

#### Test Scores

Pretest and posttest scores show that Synergistic Systems students who experienced an integrated curriculum in the Synergistic mathematics lab (experimental) performed on par with students who experienced a traditional math curriculum (control). An independent t-test analysis of the posttest scores, as well as the change scores, showed no significant differences between the performance of the experimental and control groups in both Cohorts 1 and 2.

#### Student Surveys

Students in the experimental group of Cohort 1 completed a short survey in May 1996. One hundred and fifteen students completed the survey that asked them to compare their experiences in the Synergistic Systems lab with instruction in a traditional classroom setting. Although more than 50% of the students indicated that they found the Synergistic Systems class more difficult, almost 60% preferred the Synergistic Systems class to a traditional classroom. Furthermore, just more than 75% of the students said that they found the Synergistic Systems lab offered them a more challenging math experience.

### Strengths Identified by This Study

The statistical analyses for both Cohorts 1 and 2 showed no differences in the posttest scores or change scores between the Synergistic Systems students and the traditional classroom students, thus demonstrating the two groups were comparable in mathematical knowledge and skill. When surveyed, Cohort 1 students said they preferred the Synergistic Systems class to a traditional classroom.

	Traditional	Synergistic	No preference
Which type of math class do you prefer? (113 student sample)	24.8%	59.3%	15.9%
Which type of math class was more difficult for you? (111 student sample)	38.7%	51.4%	9.9%
In which type of math class did you experience the most challenging math? (113 student sample)	15.0%	76.1%	8.8%