

Background

Mount Vernon High School is a large, diverse school in the Virginia suburbs of Washington D.C. Our teachers are constantly trying to find ways to improve the standardized test scores and pass rates of our diverse student body. Chemistry, in particular, has a high failure rate, and many of the failing students are ones who struggled in Algebra 1 the previous year. This project focused on a group of students who earned a grade of D in Algebra 1 and were enrolled in General Chemistry classes.

Research Questions

Primary Question

- What is the impact of using a weekly math review session on reducing the failure rates of underachieving math students in chemistry?

Secondary Questions

- What effect does a weekly review session have on students' grades in chemistry?
- What effect does a weekly review session have on students' attitudes in chemistry?
- What are the challenges to the teacher(s) who has to plan and prepare materials for a weekly review session?

Sample

12 students in my chemistry classes chose to participate in this voluntary program out of 21 students who met eligibility requirements. These 12 students include 7 ESOL students. Six are Hispanic and four are black. One of the Hispanic students also has an IEP for learning disabilities.

Methods

- Students met one hour per week in dedicated study period during the school day
- Pre-instruction was given on algebra related content
- Individualized review on standards not mastered
- Practice assessments given
- Interviews and surveys conducted
- Small group setting for relationship building

Data

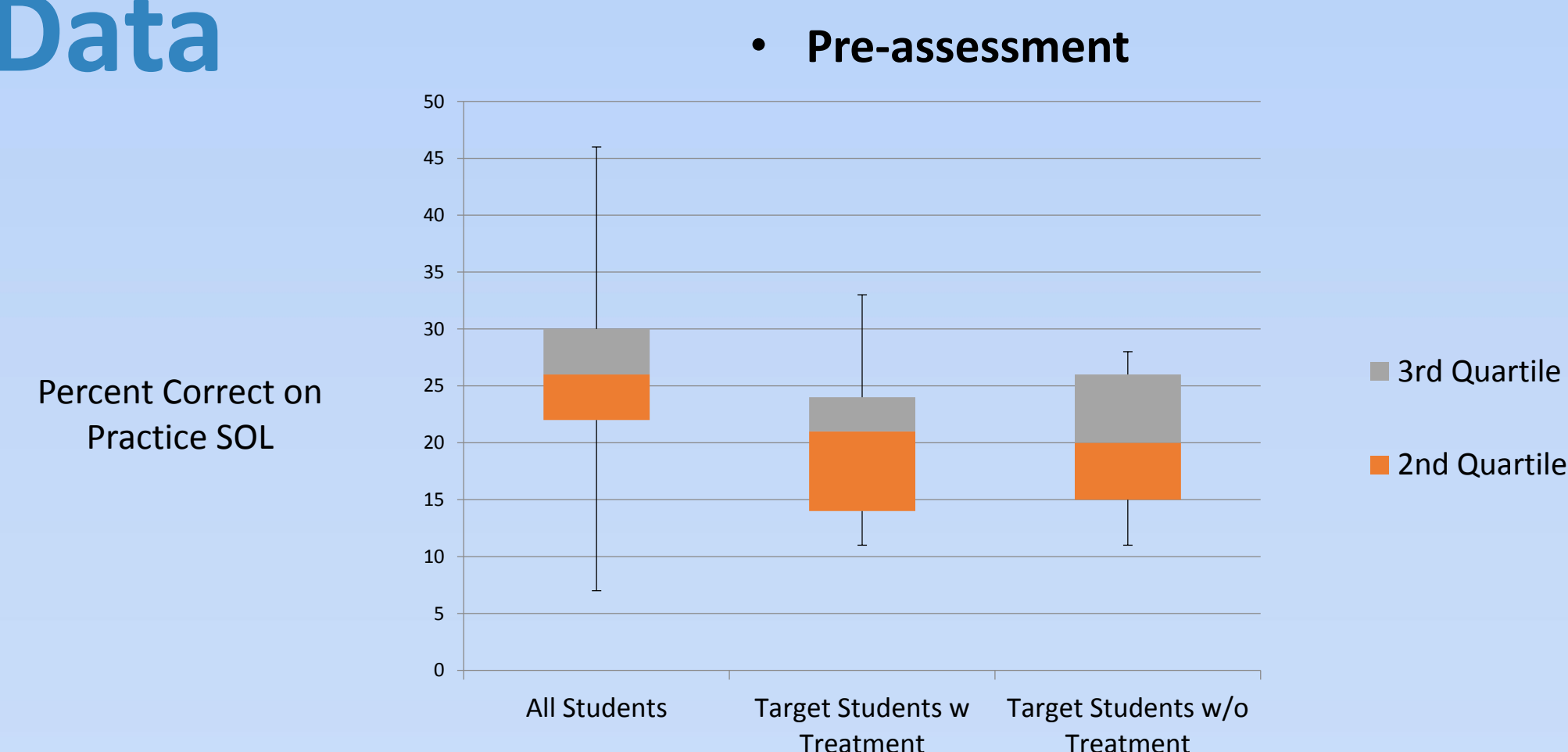


Figure 1. Box and whisker plot of student scores on SOL pre-assessment showing results for all students (N=78), for the target population with treatment (N=12), and the target population without treatment (N=9).

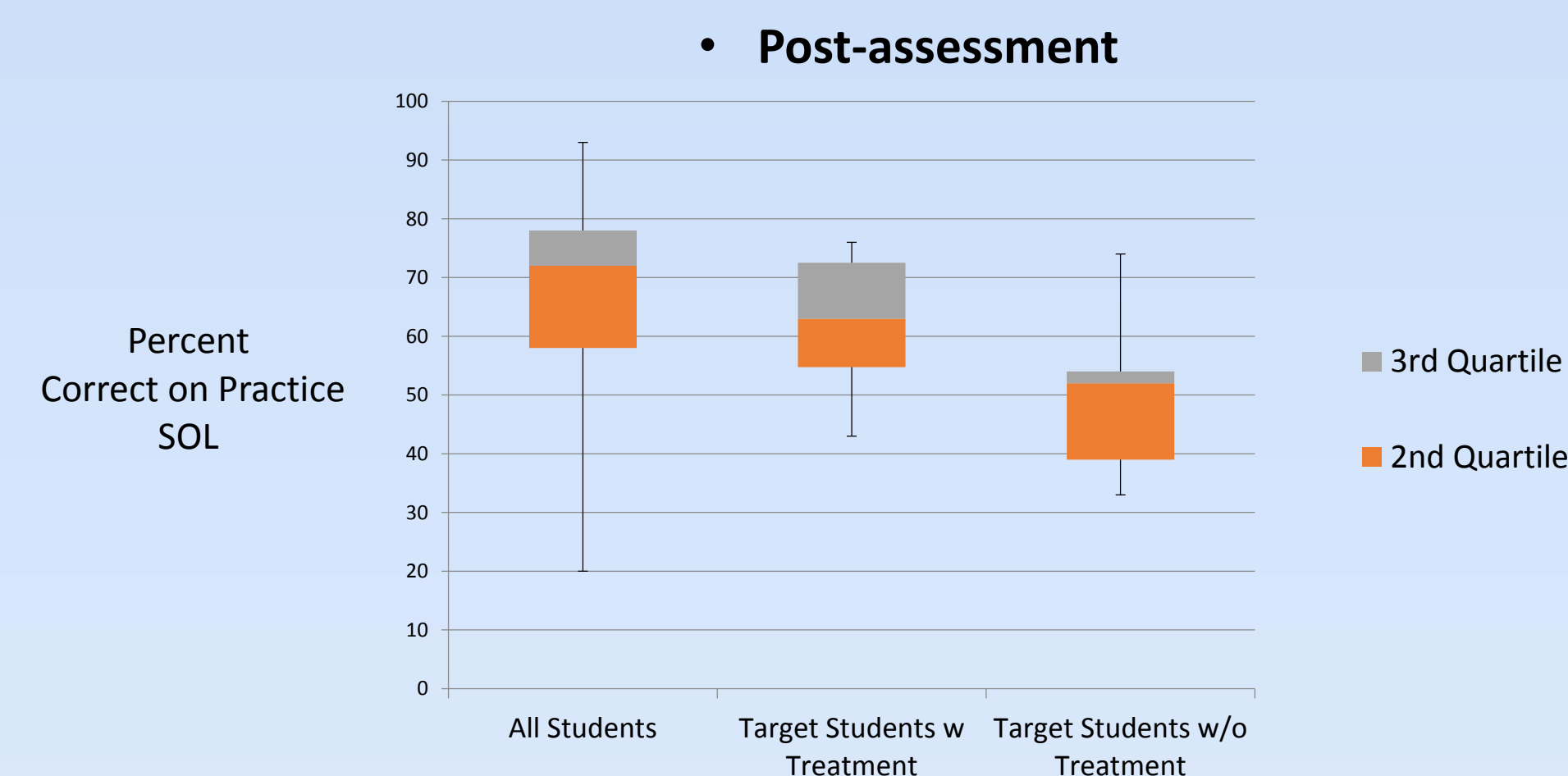


Figure 2. Box and whisker plot of student scores on SOL post-assessment showing results for all students (N=78), for the target population with treatment (N=12), and the target population without treatment (N=9).

Data Analysis

	Number of Students (N)	Mean Pre-Assessment Score (percent)	Mean Post-Assessment Score (percent)	Average Normalized Gain
All Students	78	25.5	67.7	0.577
Target Students with Treatment	12	19.8	61.8	0.528
Target Students without Treatment	9	19.8	49.1	0.372

Target students in the treatment group preformed nearly as well as all students and performed much higher than the target group without treatment

Results

The weekly review sessions provided extra time with a small group of targeted students. This led to improved student-teacher relationships, better attitudes about school, and increased achievement on assessments. The program was considered a success on all levels. It will be implemented in five more classrooms during the next school year.

Student Quote

Dear Mrs. Townley, Thank you so much for taking time out of your days to help me learn. Understand and comprehend. Because of you I passed the SOL and class, and am forever grateful. Some teachers don't put in any time for their students, you put in lots. Thank you for caring and understanding.