

THE EFFECTS OF FREQUENT QUIZZES ON STUDENT ACHIEVEMENT IN A CHEMISTRY CLASS

Background

I conducted my capstone at Essex High School in Essex, Vermont. I chose my topic after observing students struggle on tests, even though completing all of their homework assignments. Clearly, there was a disconnect between the test scores and homework scores. Providing students with frequent low-stake quizzes would give students another opportunity to determine their confidence level prior to test taking.

Primary Research Question

Will daily formative assessments (quizzes) positively impact student learning in a chemistry classroom?

Sub Questions

1. What is the impact of increased quizzing and credit recovery on student achievement?
2. How do students perceive the value of increased quizzing and credit recovery?
3. What is the impact of increased quizzing on the curriculum pacing?
4. What types of post quiz enrichment activities can be used to help struggling students?

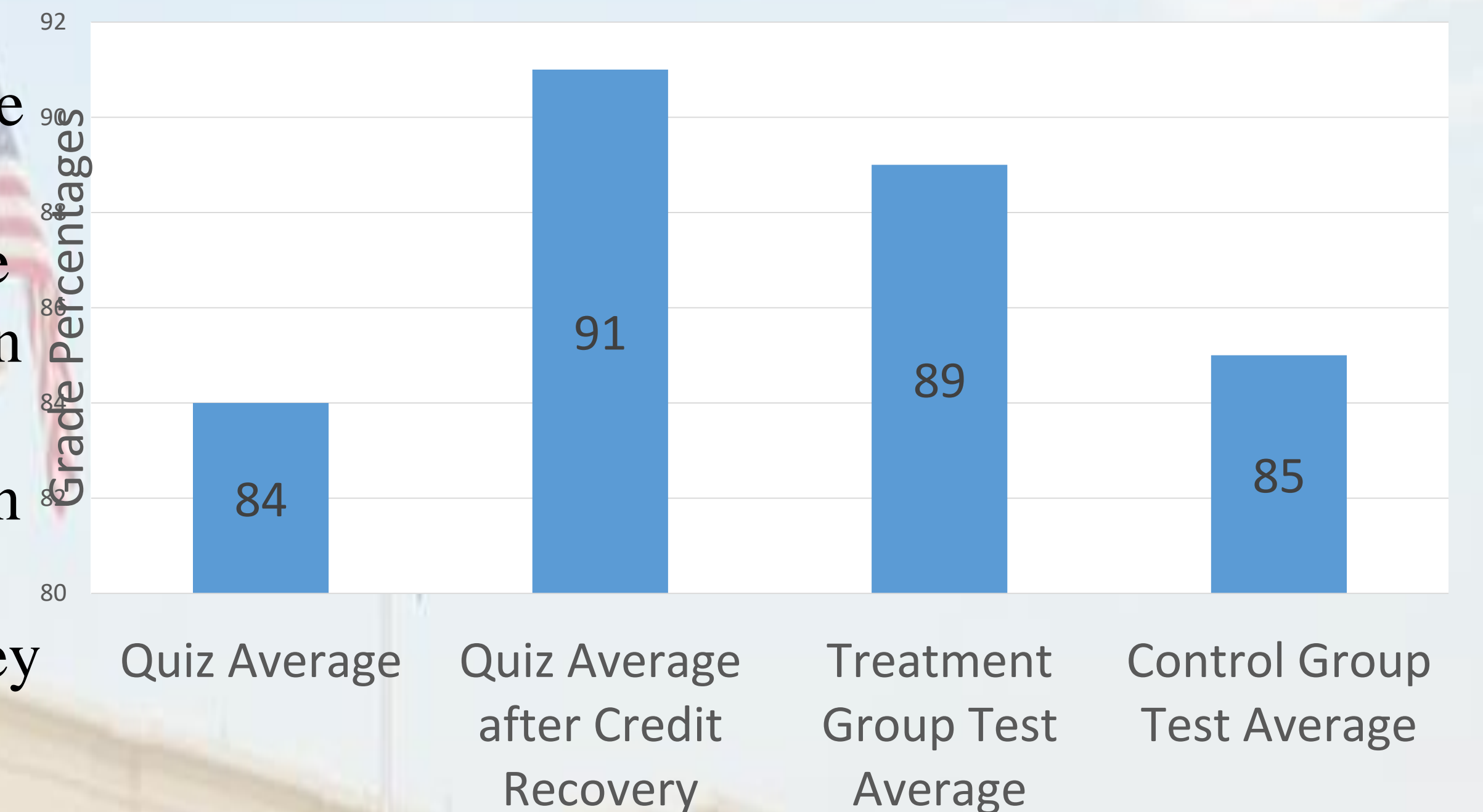
Treatment

The study compared two groups during a unit on the Gas Laws. The treatment period started with a teacher led discussion about the use and importance of formative assessments as a tool for self-reflection and success. Every other day during the unit, the students took a short quiz about topics that had been covered prior. The students received immediate feedback from the computer generated quizzes. They also had the ability to raise their scores on their quizzes by demonstrating mastery on the unit test and completing a credit recovery paper.

Data Collection and Analysis

Research Questions	Data Source		
Subquestion 1	Quiz Scores	Unit Test	Teachers Gradebook and Journal
Subquestion 2	Interviews	Student Surveys	NA
Subquestion 3	Previous Teacher Calendars	Teacher Observations	NA
Subquestion 4	Interviews	Class Discussion	Student Surveys

Average Student Test Scores



Results

More numerous quizzes and credit recovery increased student achievement as measured by the unit test. Students achieved higher scores in the treatment group. Students in the treatment group averaged 89% on the unit test, while the control group averaged 85% with a standard deviation of 7.28 and 7.90 respectively. In an unpaired T test, the P value was found to be .0156 showing a statistically significant difference in the test scores. In addition, students, responded favorably to the frequent quizzes and the ability to recover scores on their quizzes.