

THE EFFECT OF STRUCTURED COOPERATIVE LEARNING STRATEGIES ON STUDENT ACHIEVEMENT IN SCIENCE

Introduction -My capstone project focuses on implementing structured cooperative learning. After many years of teaching science at Rancocas Valley High School, I believed I was still not conducting productive group activities that engaged all students and resulted in sustained learning and content retention. My goal in this classroom research project was to determine if maintaining structure in the groups would improve students' productivity and performance in the chemistry class. I also wanted to explore if students' attitude toward learning science was improved through this method of teaching content material.

Primary Question: What is the effect of using structured cooperative learning strategies to improve student achievement in the science classroom?

Secondary Questions:

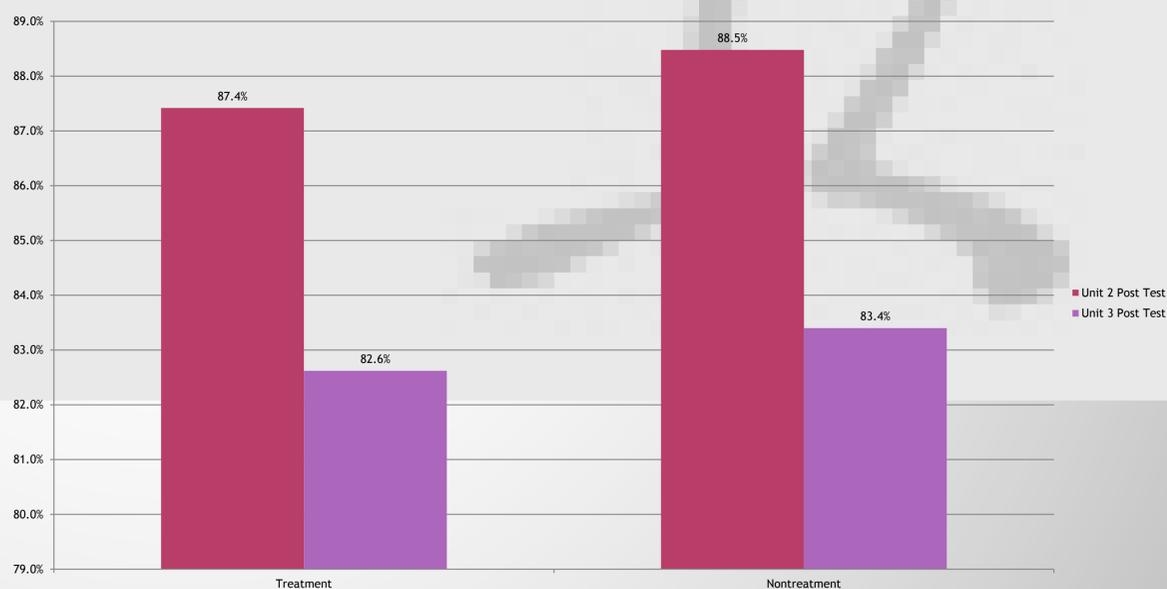
1. Is retention of course content improved by the implementation of cooperative learning groups?
2. Are students more engaged and productive when assigned specific roles within the cooperative learning group?
3. What are students attitudes about working in heterogeneous groups?
4. Does working in structured groups improve student attitudes towards learning the science content?

Treatment - The treatment group experienced structured cooperative learning in an effort to increase content mastery and retention. Various cooperative learning strategies were used to group students and to promote student engagement and productivity within the group including assigning student roles and content checks for understanding. The non-treatment group received traditional teacher led instruction. Both groups completed similar lab activities.



Image Source: <http://www.facultyfocus.com/wp-content/uploads/images/group-work150722.jpg>

Data: Test Results for Treatment Units



Data Collection Methods

Secondary Question	Data Source 1	Data Source 2	Data Source 3
1.	Pre-test and Post-test summative data	Formative assessments/Formal and Informal checks	Student surveys
2.	Teacher observations and journaling	Student surveys including self and peer evaluation forms	Student Interviews
3.	Teacher observations and journaling	Student surveys	Student Interviews
4.	Teacher observations and journaling	Student surveys	Student Interviews

Results - Although the results showed no significant difference in test scores, students were more engaged and experienced more positive interactions within their group. Attitudes towards learning science content was positive overall, and students reported a greater ability to develop and retain a deeper understanding of content material.

"I find that I actually understand the material more as I am forced to reflect more deeply upon it to explain it to someone else." - Student Quote

