

# Effects of Term Length on Academic Success in a Science Classroom



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## Background

Red Canyon high school (RCHS) is an alternative based program that follows the guidelines of the Colorado Department of Education. Average student population is between 180 and 200 students. Most students come to RCHS because of a lack of credits needed for graduation, gaps in learning, behavior or truancy issues, socio-emotional issues, or do not fit into the traditional high school model. At RCHS class size is less than 16 students. Overall, passing rate is around 50% per quarter. This study (N=60) focuses on factors that might lead to greater passing rates, such as self-efficacy, and motivation to build greater student self-confidence and classroom engagement. The main objective is understanding if a shorter grading length of four weeks (octer) leads to greater passing rates compared to a nine week grading period (quarter).

## Research Questions

Primary Question: What is the measurable impact on academic success (earning credits) through a shorter schedule at an alternative high school science classroom (Octer v Quarter)?

Sub Question One: What motivation techniques are effective within an alternative science classroom?

Sub Question Two: What information can be gained from the study on student self-efficacy to help determine self-confidence and engagement?

Sub Question three: How can the information from this study benefit me as a teacher and RCHS as a community?

## Treatment



## Results

Primary Question

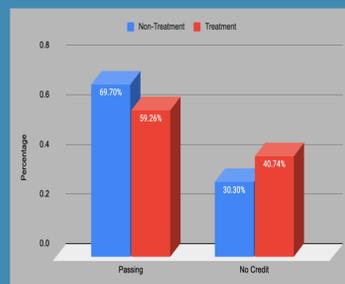


Figure 1. Non-treatment and treatment groups passing and no credit scores based on 80% academic and 20% character scores

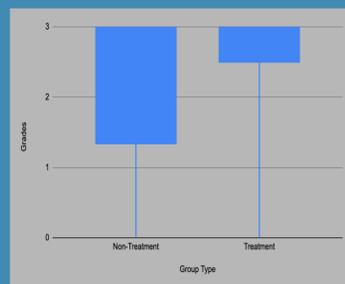


Figure 2. Academic grade. Apply scientific and engineering ideas to refine a device to maximize force on collision

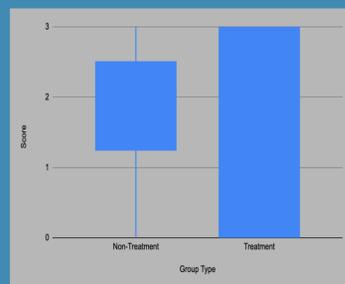


Figure 3. Academic grade. Examination of Newtons second law of motion using a mathematical relationship of net force, mass and acceleration

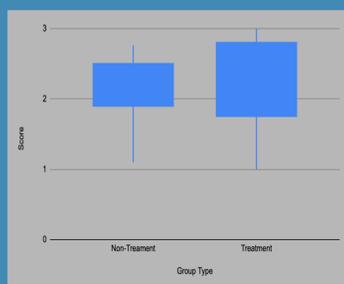


Figure 4. Character scores using RCHS norms

Sub Question One

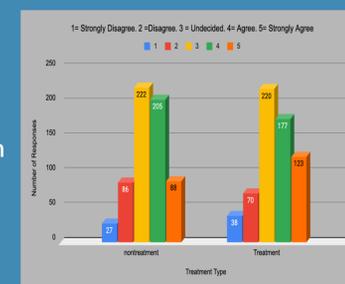


Figure 5. Science motivation questionnaire responses

Sub Question Two

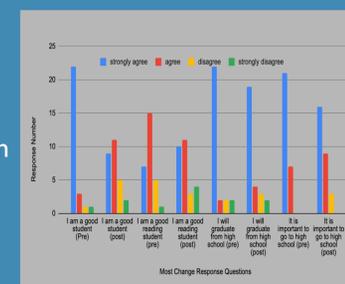


Figure 6. MJSES self efficacy questionnaire. Most changed responses from students

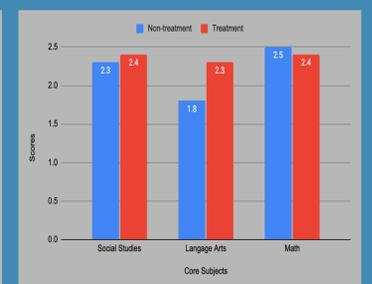


Figure 7. Average character scores from other core subject teachers

## Conclusion

Research provides information that a shorter grading terms does not increase student achievement within a science classroom. However, examination of categories that compose a students total grade show that gaps in background and content knowledge may be a result of the differences in learning target objectives. Character scores provide information that students demonstrated higher RCHS norms. The sub question provided information that octer formatting increases student motivation when looking at themed responses individually. Examination of the entire group of questions didn't support a change in student motivation. Sub question two provide no difference in student self-efficacy (two tailed t-test). Teacher perceptions and teacher character grades demonstrate that they see student growth with the octer format. Examination of individual responses from the MJSES questionnaire show that as self-efficacy decreases relationship building and tailored academic feedback techniques can provide encouragement for alternative students to change their perception of school. Information from the primary and sub questions provide the RCHS community an opportunity to understand of individual student needs and provide motivational and self-efficacy strategies to increase academic success.