Citizen Science in a High School Science Classroom

by

Sean McAndrews

With help and support of Administration and students at Joliet High School in Joliet, MT.

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BACKGROUND

Citizen Science has become a common means of allowing nonscientists to participate in scientific research. It is being incorporated into schools at various levels world-wide

METHODOLOGY

Students completed pre-tests and surveys evaluating their knowledge and attitudes towards scientific research and citizen science.

Students participate in an online citizen science project for three weeks and journal about their experiences. Teacher also makes observations on student engagement.

Students complete a post-test, post-survey, and some students participate in exit interviews

DATA

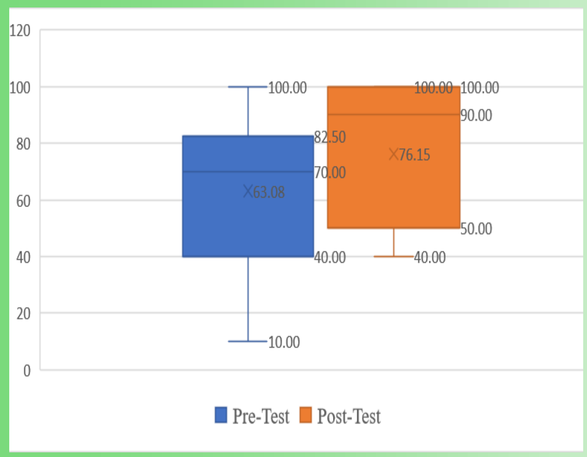


Figure 2. Distribution of scores on the pre-test and post-test, (*N*=26).

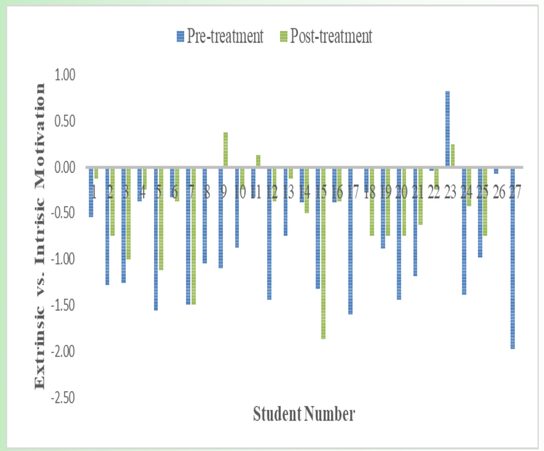


Figure 3. Average scores for portion of CLOMMS focusing on extrinsic and intrinsic motivation for learning and doing science,

DATA COLLECTION INSTRUMENTS

Data was collected via :

1.pre-and post-test

2.Pre– and Post-treatment surveys

3.Student Journals

4.Observer journal

5.Post-treatment interviews

DATA AND ALANYSIS

- Students showed a small normalized gain of 0.29 from their pre-test to their post-test
- Students increased their understand of what citizen science was and why it was important over the study.
- Many students in the treatment groups did feel like they were participating in authentic science. One student stated, “I enjoy working on citizen science projects because it makes me feel like I am contributing to science.”
- There was an 18% increase in the number of students that felt confident in their ability to explain science concepts to others.

RESEARCH QUESTIONS

Primary Question

What affect does participating in citizen science projects have on student interest and engagement in science?

Secondary Question

How will participating in this project affect students’ perceptions that they participate in authentic science at school?

Secondary Question

Will participating in citizen science projects impact student confidence in their ability to carry out scientific research?

CONCLUSIONS AND VALUE

- My study matched what previous studies have shown about the value of incorporating citizen science into schools. Students felt that they were assisting with authentic science. They also demonstrated an increased understanding of what scientific research and citizen science are.
- Many of the students in the treatment groups also made comments indicating that they enjoyed the project and found value in it.
- This is intended to be the first step in a multi-year process of incorporating more authentic, hands-on activities into my classes. My long-term goal is the development of a student-generated citizen science project with local value for my students and their community