Effects of Problem Solving Case Studies on Student Understanding of Science Concepts

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Introduction

As a Biology and Chemistry teacher at Central East High School, getting students to understand the reasoning why they need to learn science can be a struggle. How can I help the students better understand science concepts with real world scenarios. Using case studies can help shine a reason as to why science is important in our every day lives to my students.

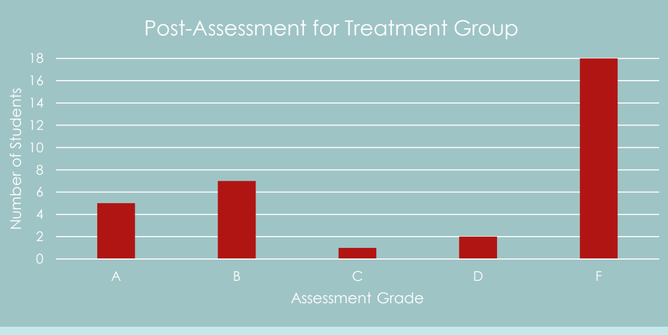
Questions

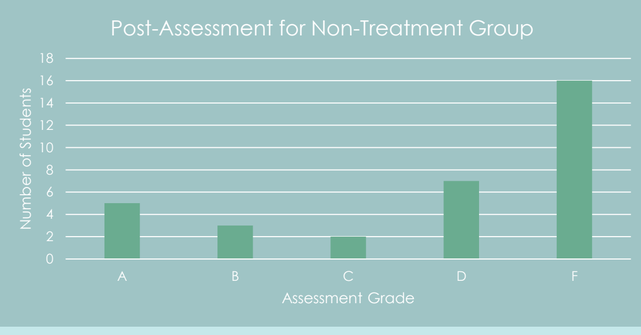
Primary Question: What are the effects of problem solving case studies on student understanding of high school science concepts?

Sub-Questions:

- What is the impact on student attitudes about science?
- How does this help students with higher level thinking?
- What is the impact of student retention?
- What is the impact on the teacher and teaching methods?

Data





Student Quotes

- "I enjoyed the case study because it allowed us to discuss a real world scenario."
- "I was confused about the case study."
- "We need to come back to school on campus because it helps us learn better."

Teacher Reflection

I wanted the case study to help students making connections and helping with understanding science concepts better. Distance learning took a toll on students and teacher at this point. Students also had difficulty with internet connections, attendance, turn in rate for assignments, lack of asynchronous learning skills.

The Pandemic Effect

During the first semester of 2020-2021, the students were all remotely distance learning, The students continued distance learning into the beginning of the second semester. This presented challenges to the students that were Zoomed out by this time.

We met as a class twice a week for 45 minutes per class. Students were expected to work asynchronously the days we did not meet.

Conclusion

Since this year was not your normal year, I still would like to include case studies in my lessons. The case studies show students how to incorporate the science learned in class to real world scenarios. But no real gains occurred for test scores. Student engagement was varied. But this was not your normal school year.