

Primary Focus Question

How does phenomenon-driven inquiry effect teachers' practices?

Does the use of phenomenon-driven inquiry positively or negatively affect teacher's practices? How?

How do teachers feel about using phenomenon-driven inquiry?

Background

Maintaining student engagement and interest is one of the greatest challenges teachers face. The Next Generation Science Standards include phenomenon-driven inquiry. This model uses naturally occurring phenomena to provide an anchor and a storyline for the teachers' lesson. It is a different approach to presenting lessons and therefore it was important to find out what teachers thought of it. This action research project asked how this teaching model effected teachers as they learned the model for the first time and/or developed their practices. The project hoped to measure the impacts that using phenomenon-driven inquiry had on the teachers teaching practices and experiences. The project looked for positive and negative effects of using the phenomenon approach and hoped to understand the reasons for these effects.

Methodology

Three MSU online classes were used to collect data and observe outcomes. One course was a phenomenon use short course and the other two were sections on phenomenon from MSSE 501. Pre-surveys and post-surveys were used to answer a Likert scale series of quantitative questions. Post interviews were conducted to gather qualitative data.

Article

This action research was shared with the National Science Teachers Association in the form of a journal article. The article included a background on phenomenon-driven inquiry, a description of the teachers experience as they learned about phenomenon-driven inquiry and a model lesson using phenomenon-driven inquiry. The first submission of the article was rejected but a second draft will be re-submitted.

Data

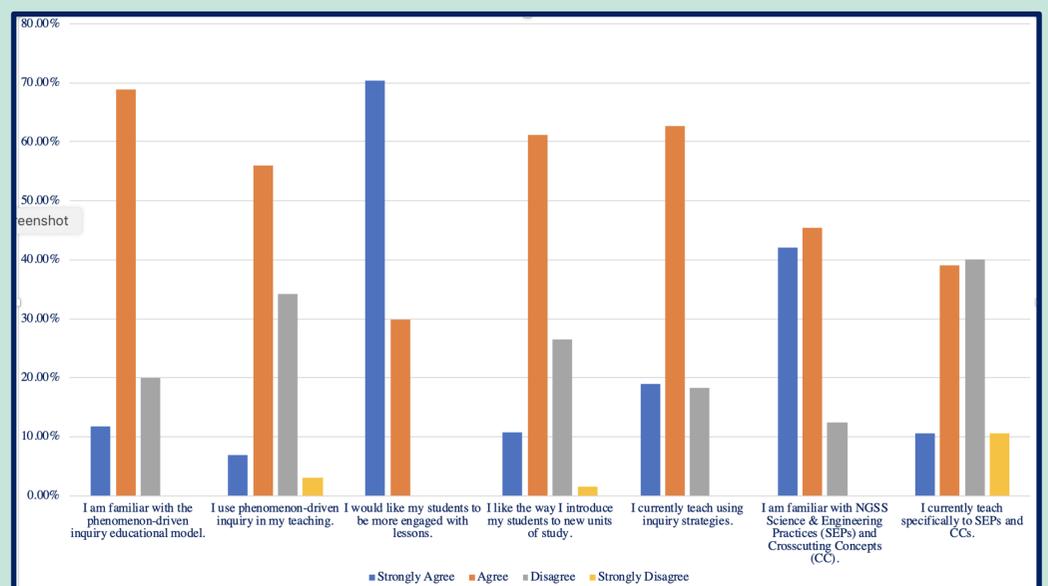


Figure 1. Phenomenon Pre-Survey Percentages

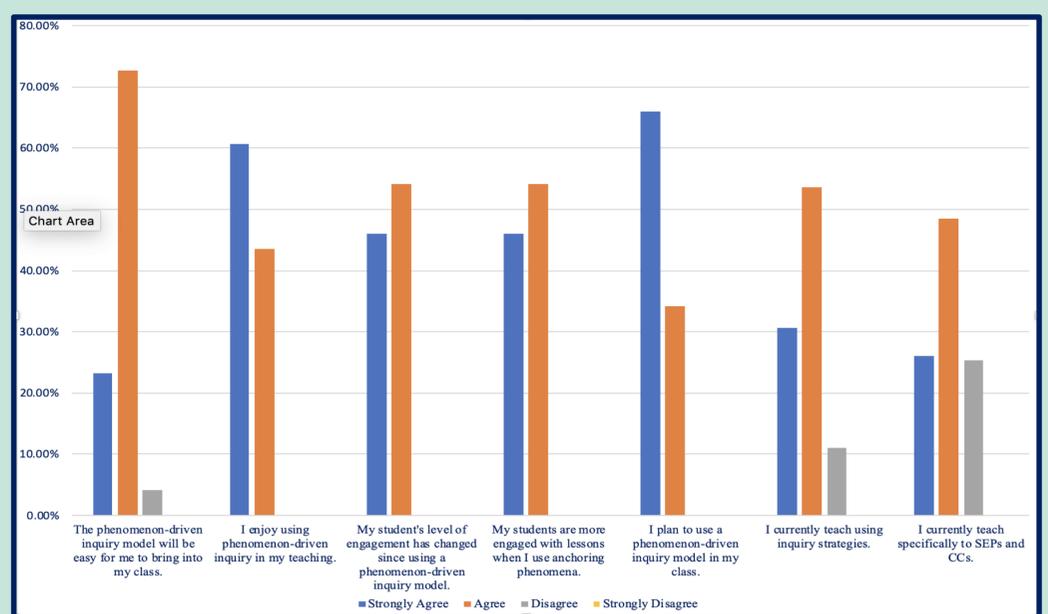


Figure 2. Phenomenon Post-Survey Percentages

Claims From Study

- Teachers learned what phenomenon-driven inquiry is, its significance and how to use it while teaching.
- The teachers were willing and eager to learn a new teaching technique. They widened their teaching lens to better serve their students.
- Teachers found phenomenon-driven inquiry to be effective and beneficial.

Future Research

- Conduct similar research using 5E's inquiry based teaching method.
- Follow the teachers' implementation of phenomenon-driven inquiry into their classrooms in a longevity study.

Teacher Quotes

- "My students are going to love this change. Right now I am starting small. I feel like the learning curve for me is steep, but worth it."
- "Effectively teaching in this manner requires lots of prep time beforehand, and I see one of the biggest hindrances to teachers using this method is having too little planning time during the school day."
- (Inquiry) "builds knowledge from experience."
- "Phenomenon-driven inquiry is great!"