Institute for Quality Science Teaching 2017-2018 All About You

Research and Evaluation Executive Summary

Goal

To measure change in educators' attitudes and behaviors associated with science instruction and specifically practices aligned to the Next Generation Science Standards (NGSS).

Why

Change in educators' attitudes toward science education and classroom behaviors is a goal of the Institute for Quality Science Teaching's teacher professional development programs.

What

This year-long course helps educators master unifying themes in life science and relate them to the human body through activities about cells, genetics, organ systems, health and wellness, and evolution.

Who

Twenty-one 4th through 8th-grade teachers who participated in the All About You course during the 2017-2018 academic year participated in the evaluation.

How

The survey consisted of the following sections:

- Section 1: Six questions about participants' feelings of nervousness/anxiety/confidence around teaching science[1].
- Section 2: Six questions that elicit information about participants' behaviors related to teaching science[1].
- Section 3: 21 questions that generally ask participants how often they engage in instruction aligned with NGSS specific science and engineering practices[2].
- Section 4: 11 questions that ask participants how often their students engage in NGSS-aligned science and engineering practices[2].

When

Pre-surveys were administered prior to the start of the course and the post-survey was completed after the final session.

Results

Educators reported being more likely to engage in NGSS-aligned practices at the end of the course compared to the start. Specifically, they are more likely to engage in the following areas related to NGSS-aligned instruction:

- Guiding students through empirical investigations.
- Providing students support related to critique, explanation, argumentation, modeling.
- Providing opportunities for students to access their prior knowledge and make real-world application.

However, we noticed no significant changes in teachers' attitudes and behaviors related to science instruction. The only significant behavioral change we found was related to bringing students on field trips.

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[1]Taken from The Dimensions of Attitudes of Science (van Aalderen-Smeets & van der Molen, 2013)

[2]Taken from Measuring Science Instructional Practice (Hayes et al., 2016)