

Public Abstract

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Title: Examining college science teachers' belief systems about inquiry-based teaching in the context of a professional development program.

The purpose of this study was to examine how college science teachers' belief systems about inquiry-based teaching changed through their learning experience in a faculty development program (CUES). The program was designed to support college science teachers in learning about inquiry and incorporating an inquiry-based approach to teaching laboratories in their courses. Using a constructivist approach, I used a case study method for data analysis and constructed individual profiles for the five science faculty participants, then developed cross-case assertions based on the individual cases. My data sources were semi-structured interviews, field observations, artifacts, and a researcher's journal. Based on the findings, I made four cross-case assertions. First, participants developed more reform-oriented beliefs and knowledge about inquiry-based teaching and learning in which they placed more value on student-directedness and classroom inquiry. Second, participants' attitudes towards the inquiry-based format, attitudes towards implementing it, and motivations for participating in the program were the most influential components of their belief systems as they decided whether or not to incorporate the CUES approach into their future practice. Third, student responses to the participants' implementation of the CUES approach influenced their attitude towards the inquiry-based format and their plans for incorporating it into their future practice. Finally, participants gained knowledge about the inquiry-based format during the summer institute; however, implementation within their own context led to a change in their beliefs about inquiry-based teaching. The findings from this study have implications for faculty development design as well as graduate education policies for future science faculty members.