Public Abstract

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Title:DEVELOPMENT OF PRESERVICE ELEMENTARY TEACHERS SCIENCE SELF-EFFICACY BELIEFS AND ITS RELATION TO SCIENCE CONCEPTUAL UNDERSTANDING

Teacher beliefs that relate to teachers' motivation and performance have been an important area of concern for science education at all levels. This study focused on investigating science self-efficacy beliefs and the factors associated, and the relationship between the changes science self-efficacy beliefs and changes in physical science conceptual understanding in a specialized elementary physics content course for elementary education majors (N=51). The data were collected using science self-efficacy beliefs survey, physical science concept instrument, class observations, interviews and artifacts. The data analysis procedures included a pre-post, repeated measures multivariate analysis of variance (MANOVA) design, and grounded theory approach. Results indicated statistically significant gains in participants' science self-efficacy beliefs. Additionally, a positive moderate relationship between science conceptual understandings and personal science teaching efficacy beliefs was found. Participants' responses indicated positive shifts in their science teacher self-image and confidence to teach science in future. Findings suggest that despite of the nature of prior science experiences preservice elementary teachers previously had, an exposure to a course that integrates relevant science content along with modeled instructional strategies can positively impact science self-efficacy beliefs. These findings have important implications for preservice science teacher preparation programs.