

Chapter 7

The Association Between Course Context and Preservice Teachers' Perceptions of SSI Instruction

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ABSTRACT

This chapter explores the association between elementary preservice teachers' (PSTs) perceptions of teaching using socioscientific issues (SSI) and the context in which the PSTs initially engaged with SSI. One course engaged with SSI while learning pedagogical strategies during an elementary science methods (decontextualized) course. The second course engaged with SSI via an environmental sciences course (contextualized). The contextualized course examined gray wolf management in Northern California as part of an ecology unit, which was followed by a series of debriefings regarding the implementation of the SSI. The findings indicate that while PSTs from both courses generally held more positive perceptions of SSI instruction after engaging with SSI, the students in the contextualized course perceived a greater ability to answer SSI-related questions and expressed more positive attitudes towards science content in the post-course data. Additionally, students in both courses perceived a greater need for teacher training on SSI implementation post-course.

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INTRODUCTION

Much of the work associated with preservice teachers (PSTs) and socioscientific issues (SSI) neglects to consider the influence of the instructional context in which SSI is introduced. While Özden (2015) has previously explored elementary PSTs' views of SSI instruction, the aim of the study presented in this chapter was to extend this research and explore how the context in which the SSI framework was introduced to elementary PSTs may influence their views. Specifically, the authors examined the association between the context in which PSTs were introduced to the SSI framework and their perceptions of the SSI framework as it relates to student engagement, teacher effectiveness with implementation, and its existence in the elementary curriculum. The study highlighted in this chapter is unique in that it considers the contextual influences of science content and methods courses on PSTs' perceptions of implementing SSI in the elementary classroom rather than the development of skills necessary to effectively engage with SSI. With these goals in mind, the following research questions guided this study:

1. To what extent, if any, were PSTs' perceptions of teaching using SSI associated with the instructional context within which they were introduced to SSI instruction?
2. How, if at all, do elementary PSTs' perceptions of SSI instruction in elementary school change after being exposed to SSI as part of their teacher preparation program?

BACKGROUND

There is a concerning reluctance in elementary science teaching to engage children in rigorous science instruction, despite existing research demonstrating young children have capabilities to actively participate in challenging science lessons (Roth, 2014). Anecdotally, it has been observed that PSTs' reluctance has resulted in the reliance of prescriptive textbook-based science instruction and a lack of our students developing their own science lessons. Novice teachers often derive instructional decisions from their experiences in teacher preparation programs (Appleton & Kindt, 1999), resulting in a call to reform science teacher preparation, specifically in teachers' abilities to deliver science instruction focused on improving scientific literacy (NRC, 2012). In responses to these reforms, a socioscientific issues (SSI) approach has been suggested as one possible improvement to science teacher preparation programs (Zeidler, Herman, & Sadler, 2019). The pedagogical power of an SSI approach to science teaching has been well documented in the extant literature (see Sadler,

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