



Context of STEM Integration in Schools: Views from In-service Science Teachers

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ABSTRACT

This study explores science teachers' views regarding Science, Technology, Engineering and Mathematics (STEM) pedagogy and its interdisciplinary nature. It also seeks to identify teachers' views on the contextual factors that facilitate and hinder such pedagogy in their schools. Qualitative methodologies were used through focus group discussions and an interview protocol. From the specific contextual issues that were highlighted in the findings, was teacher self-efficacy, pedagogical-knowledge, issues related to establishing a collaborative school culture and familiarity to STEM education among school administrators, students and parents. Findings expressed teachers' concerns of their under-preparedness to enact STEM practices and illustrated that engineering is the least mentioned discipline to be integrated with science. The study ends with recommendations that could lead to develop a professional development model to enact STEM education in schools based on valuing partnership with universities and industries as a necessary step for enacting a STEM integrated model.

Keywords: in-service teachers: interdisciplinary learning; science: STEM education

INTRODUCTION

The integration of Science, Technology, Engineering and Mathematics, known as STEM education, is a growing area in developed and developing countries (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2010). In the United States, for example, the Next Generation Science Standards [NGSS] acknowledges the importance and value of integrating the main disciplines identified in the acronym STEM and therefore engineering and technology are now integral parts of science literacy (National Research

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