

PREPARING INTEGRATIVE STEM EDUCATORS: IMPACTING CHILDREN AND COMMUNITIES

Havice William, Havice Pamela

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Quality education is a key to the success of children and the communities in which they live. This statement is particularly true as it relates to integrative STEM education. Integrative STEM education refers to engineering design-based learning approaches that intentionally integrate science and mathematics education with technology and engineering education (Sanders, 2010, 2012, 2013; Wells, 2010, 2013). Integrative STEM education gives shape and meaning (relevance) to our human-made world and can open doors for “all kinds of learners”.

Children need to learn early in their school experience to explore the differences in the human-made world and the natural world. This approach to education makes school subjects personally meaningful. Students thrive through enriched, action-based, problem-based and project-based learning experiences and challenges.

Educators must assist elementary teachers and administrators to explore ways to engage creative minds and ignite young ideas. We developed and provided an Integrative STEM Education Institute to meet this need. Institute participants developed knowledge and skills to create and implement integrative STEM education activities for use in their classrooms. The purpose of this presentation is to share what we learned regarding the immediate and long-term effectiveness of the Institute.

The purpose of this text was to evaluate the immediate and long-term effectiveness of the Institute. Quantitative survey data from pre-post surveys immediately revealed a statistically significant increase in self-efficacy regarding the Institute’s learning objectives. In addition, a survey was sent to alumni from the 2012–2015 Institutes.

The results from this survey revealed that a significant number of alumni felt empowered through the Institute to implement integrative STEM education in their classrooms and build sustainable integrative STEM education programs at their schools following attendance at the Institute. Integrative STEM education may be enhanced through further integration with other subjects such as language arts, social studies, art, etc. Integrative STEM education involves problem-based and project-based learning that allows learners to explore

real-world problems, simultaneously developing cross-curriculum skills while working in small, collaborative groups.

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