

Chapter 9

Role of Mentorship and Reflection in Leading Learning Through Making: A Pilot Project

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ABSTRACT

There is a growing trend of learning through making in P-16 education in both formal and informal learning environments. In the informal learning environments, who provides support and mentorship for learning through making? In this chapter, the authors report on a maker mentor pilot project using a self-study methodology. This initiative was designed to develop knowledge and skills using a mentoring approach to support learning through making with pre-service and in-service teachers, and to model reflective practice. Using a reflective process, they share insights into the work of maker mentors, what worked well, as well as recommendations to enhance this mentoring initiative. They conclude with three implications for practice in support of the role of maker mentors.

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INTRODUCTION

Learning through making and in makerspaces is a growing trend in P-16 education. In educational institutions, resources are being invested to create makerspaces, which may be mobile or located in libraries or learning commons. It is one thing to create the physical environment and equip it with low-to-high technology resources to support designing and prototyping as part of learning through the making experience. It is another to have facilitators who are both confident and competent in using the technology and resources, and who can design and facilitate such a hands-on approach to learning.

Within teacher education programs, there may be limited opportunities for students and instructors to have the lived experience of learning through making. Further, if they have such an experience, are they also given the opportunity to reflect on facilitating the practice of making and exploring the integration of such learning within the curricular framework? To foster robustness of learning through making that intentionally addresses curricular outcomes, we need to create opportunities for pre-service and in-service teachers to not only experience making with various levels of technology (e.g., low-to-high tech), but also to reflect on the learning experience. For this to occur, there is a need to purposefully design mentoring experiences for individuals to facilitate not only the learning through making, but also to model and to lead such reflective practice with the makers.

The purpose of this chapter is to share reflections of a maker mentor pilot project. This initiative was designed to develop competency in using specific maker technology and kits for the purpose of designing and facilitating workshops for pre-service and in-service teachers. Our goal was twofold: developing knowledge and skills using a mentoring approach to support learning through making, and modeling reflective practice focused on learning through making. In this chapter, we will share the structure used for the learning through making initiative and the role the mentors played in designing and facilitating the making activities. Using a structured reflective process, our team comprised of two graduate students, a librarian, and a faculty member, responded to a series of guiding questions as they thought about their experience and the impact of the maker mentor initiative. Findings from this pilot project provide insights on the role of mentoring in making, the value of the maker mentoring initiative, identification of successes and challenges, and recommendations for next steps in enhancing the program, as well as expanding the nature and type of low-to-high technology components in learning through making. The chapter concludes with recommendations for practice.

LEARNING THROUGH MAKING AND IN MAKERSPACES

Learning through Making and in Makerspaces

There is growing interest in the Maker Movement in educational contexts. The Maker Movement is defined as “the growing number of people who are engaged in the creative production of artifacts in their daily lives and who find physical and digital forums to share the processes and products with others” (Halverson & Sheridan, 2014, p. 496).

Making, according to Willett (2016), is a creative process. “Learning by making allows for experimentation in ways that are difficult to teach through books, lectures, papers and quizzes” (Horvath & Cameron, 2015, p. 60). “It is implicitly creative, imaginative and process driven, allowing for differentiated problem solving that leads to more questions and deeper learning” (Lock, Santos, Hollohan, &

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