

# Chapter 8

## Pre-Service Teachers’ Motivation to Use Technology and the Impact of Authentic Learning Exercises

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### ABSTRACT

*In this quasi-experimental study, the authors explored the impact of authentic learning exercises on pre-service teachers’ motivational beliefs to integrate technology, as well as the ability of those beliefs to predict intentions to integrate. A questionnaire was used to assess 104 pre-service teachers’ motivational beliefs, namely intrinsic and extrinsic goal orientations, task value, self-efficacy, and control of learning in relation to technology integration. Results indicated authentic learning exercises might have enhanced motivational beliefs, particularly self-efficacy and intrinsic goal-orientation. Also, motivational beliefs predicted their intentions to integrate technology into future instruction, with task value predicting significantly. The chapter concludes with implications for practice.*

### INTRODUCTION

Using technology and integrating technology are two different things (Dockstader, 1999). In today’s society, individuals would find it hard to not *use* technology. Digitally recording favorite television shows, updating one’s status on social media, or video-calling a friend in another time zone have become common places activities. *Technology integration*, however, is about the seamless integration of technology into classroom instruction, and putting technology into the hands of the learners versus keeping it in the hands of the teacher (Cennamo, Ross, & Ertmer, 2013). At the “intersection of pedagogical knowledge and technological knowledge” (Cennamo et al., 2013, p. 2), technology integration is the consideration

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of the specific content to be taught and the most appropriate technology tools that will help reach the intended outcomes.

Despite the availability of technology afforded to schools, many teachers ineffectively integrate or do not integrate technology (Harris, Mishra, & Koehler, 2009; Vrasidas, 2015). In part, lack of integration may be due to deficiencies in professional preparation (Haydn & Barton, 2006; Lawless & Pellegrino, 2007). Most teacher education programs are not constructed to influence pre-service teachers' beliefs about technology (Chien, Chang, Yeh, & Chang, 2012; Kay, 2006). Programs might only include one designated educational technology course and other professional preparation courses may offer little to no experience with making technology integration decisions (Haydn & Barton, 2006). Consequently, unless a pre-service teacher is self-motivated to learn how to integrate technology, he or she is unlikely to do so in a future classroom (Kim & Keller, 2011; Smarkola, 2011).

Knowing professional preparation plays an important role in whether or not pre-service teachers will use technology in future classrooms (Chai, Koh, & Tsai, 2010; Haydn & Barton, 2006; Lawless & Pellegrino, 2007; Ottenbreit-Leftwich et al., 2012), there is value in uncovering pre-service teachers' existing beliefs regarding technology integration, the predictive relationship of those beliefs with technology integration, and the types of learning experiences that influence beliefs and intentions (Inan & Lowther, 2010; Kay, 2006). More specifically, understanding pre-service teachers' expectancy-value related motivational beliefs towards technology integration and their intentions to integrate could help teacher educators design better professional preparation that hones in on activities that support future technology integration.

This quasi-experimental study sought to uncover pre-service teachers' expectancy-value beliefs (specifically intrinsic goal orientation, extrinsic goal orientation, task value, control of learning and self-efficacy) towards technology integration, the impact of authentic learning exercises on those beliefs, and the predictive relationship between those beliefs and intention. The purpose of the authentic exercises was to provide pre-service teachers with the opportunity to practice making contextual technology integration decisions similar to in-service teachers. The driving idea was these types of exercises might positively influence motivational beliefs, and consequently intentions, by way of helping pre-service teachers to form an early teaching schema that includes integrating technology to enhance student learning.

## **BACKGROUND**

In this background section, the authors provide an overview of motivation as defined and assessed in this study. Next, a case for intention as an estimate of future behavior is made. Finally, how authentic learning exercises are used as an instructional strategy to influence pre-service teachers' motivational beliefs and intentions is explained. The research questions follow this discussion.

### **Motivation and Technology Integration**

Without sufficient motivation, it is unlikely pre-service teachers will put forth effort to learn and later use technology in their future classroom (Cullen, & Green, 2011; Kim & Keller, 2011; Sang, Valcke, Van Braak, Tondeur, & Zhu, 2011; Smarkola, 2011). Brophy (1999) stated, "Motivation is a theoretical concept used to explain the initiation, direction, intensity, and persistence of behavior, especially goal-directed behavior" (p. 2). The multi-dimensionality of motivation as expressed in this definition

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