

Chapter 4

Preparing Preservice Teachers to Become Self-Reflective of Their Technology Integration Practices

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ABSTRACT

The purpose of this chapter is to further understand how preservice teachers critically think about technology and their competence in technology integration. A mixed methods research design was employed to gather survey and performance task reflection data from preservice teachers. Data were analyzed using a categorization process based on preservice teachers' conceptualizations of technology as replacement, amplification, and transformation. Results revealed a significant overall effect of the selection of performance task upon whether it was applied in a transformative manner, but that no such overall effect existed for amplification and replacement. Descriptive analyses indicate preservice teachers were self-reflective about the extent to which technology influences students' learning. Conclusions indicate that teacher education programs should consider how they support preservice teachers to become self-reflective consumers of technology.

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INTRODUCTION

In an era with new technologies and increasing technology integration in educational contexts, a similar growth in frameworks and models for explaining and using new technologies has transpired. Templates and models for technology integration in classrooms have been created, which have often replaced prior classroom procedures with technology rich methods. At times, the introduction of technologies in classrooms serves as a replacement for previous methods. At other times, these new methods serve to improve efficiencies or empower students in learning experiences that may otherwise not have occurred. While educational establishments serving students in kindergarten through grade twelve have steadily worked to increase technology accessibility and use in classrooms, demand to support teachers in how to implement these technologies has similarly increased. Likewise, this demand for increased knowledge and understanding of technology integration has also infiltrated teacher education programs.

As technologies advance and teacher education programs consider the structure through which they work to increase preservice teachers' pedagogical skills related to the use of technology, expectations exist that novice teachers enter the profession with a given understanding about technology that will prove beneficial when teaching and reflecting on the experience. However, many of these expectations center on preservice teachers' abilities to use technology to engage students, as opposed to encouraging preservice teachers to consider how they can positively impact students' learning experiences through the incorporation of multiple technologies. At the same time, less emphasis has been placed on preservice teachers' reflections on technology integration and how this relates to technology use during instruction and as well as learning outcomes for students. Preparing preservice teachers to be reflective about technology integration practices is essential for successful classroom implementation in later years. As a result, this chapter begins with an overview of technology integration in the K-12 context, discusses technology integration in teacher education programs, and advances the importance of critical reflective thinking as related to technology integration.

BACKGROUND

The influx of technology in the educational system has brought about changes in instructional methods as technology is integrated across content areas and grade levels. Technology integration is described as a sustainable change in the social structure of the K-12 educational system resulting from the adoption of technology as a means to assist students with constructing knowledge (Belland, 2009). Proponents of technology integration argue that a defining characteristic is a student-centered classroom where students operate and manipulate technology (Hammonds, Matherson, Wilson, & Wright, 2013; Lowther, Inan, Strahl, & Ross, 2008).

Lowther et al. (2008) studied the use of computers to increase learning and impact student achievement as well as teachers' abilities and perceptions toward technology integration. Findings indicated that students in classrooms where teachers had received professional development on technology integration were more engaged in student-centered activities and independent inquiry and used technology as a meaningful learning tool. Likewise, teachers participating in the professional development experience reported increased positive attitudes toward technology integration and were more confident in incorporating computer tasks in their teaching. Additionally, teachers improved their skills with technology and were better equipped to integrate technology to help students learn standards, thus supporting the

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