Chapter 5

Modeling Technology Integration in Teacher Preparation Programs

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ABSTRACT

Teacher preparation programs are expected to prepare teacher candidates to integrate technology with instruction in meaningful ways to support PK-12 student learning (U.S. Department of Education, Office of Technology, 2017). Consequently, teacher candidates must experience technology in their teacher preparation coursework, including modeling by faculty, experiencing opportunities to practice integration through course assignments, and observing technology integration being implemented in K-12 classrooms. To accomplish these tasks, faculty must develop knowledge, skills, resources, and professional learning networks for themselves, including actively developing K-12 partnerships.

INTRODUCTION

In December of 2016, a group of higher education faculty from teacher preparation programs across the U.S., participated in the Advancing Educational Technology in Teacher Preparation Innovation Summit, an event sponsored by the U.S. Department of Education, Office of Educational Technology (OET) and the White House. At this meeting, an addendum (OET, 2017), to the National Education Technology Plan [NETP] (OET, 2016a) was unveiled. This addendum, Reimagining the role of technology in higher education: A supplement to the National Education Technology Plan, specifically guides teacher preparation programs to teach pre-service teachers to meaningfully use technology to support student learning. “Teachers need to leave their teacher preparation programs with a solid understanding of how to use technology to support learning” (OET, 2016, p. 32). The NETP Addendum (2017, p. 66) provides four guiding principles for the use of educational technology in teacher preparation programs:

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1. Focus on the active use of technology to enable learning and teaching through creation, production, and problem solving.
2. Build sustainable, program-wide systems of professional learning for higher education instructors to strengthen and continually refresh their capacity to use technological tools to enable transformative learning and teaching.
3. Ensure pre-service teachers’ experiences with educational technology are program-deep and program-wide rather than one-off course separate from their methods courses.
4. Align efforts with research-based standards, frameworks, and credentials recognized across the field.

An Advancing Educational Technology in Teacher Preparation Policy Brief provides additional detail (see https://tech.ed.gov/teacherprep/). This call to action is not new. In 2007, Zhao stated that faculty in teacher preparation programs must model the use of technology integrated instruction, with sound rationale and intentional strategies to integrate technology; Estes (2015) presented a similar call to action.

Webb (2011) established that school administrators expect beginning teachers to enter their first teaching position with the knowledge and skills to integrate technology as an enhancement to the K-12 instructional-learning process. Beginning teachers have also provided input. For example, in 2010, The National Center for Education Statistics reported that only 25% of teacher respondents reported that their undergraduate teacher education programs had a moderate or major impact on their ability to effectively integrate technology into instruction. In another study, Sutton (2011) surveyed teacher candidates regarding the technology training that they received in their teacher preparation program and found: 1) a disconnect between technology training and other aspects of teacher training, 2) a lack of content area training in relation to technology, and 3) inadequate attention to transfer opportunities. “Pre-service teachers need to be prepared to consider how technology can play a role in providing ongoing professional learning opportunities, engaging diverse learners, supporting student learning, and closing persistent achievement gaps” (OET, 2016b, p. 9).

Weimer (2010) reported that institutions of higher education faculty have not universally accepted and employed the practice of a learner-centered approach to teaching, nor are they integrating technology into their own teacher practices. Teacher preparation programs must begin to offer a learner-centered instructional practice of technology integration in support of preparing teacher candidates to meet the demands required of twenty-first century PK-12 teachers. One key challenge to meeting this call to action for program reform includes the shifting of faculty priorities and changing expectations of those managing teacher preparation programs.

The complexity of a K-12 educator’s role has drastically changed as a result of, and in response to, the technology revolution. Thus, teacher preparation programs have to prepare pre-service teachers for these new roles. Yet, faculty roles have also changed and faculty are called upon to do more and more. For example, in a study investigating the changing nature of faculty work and the increased expectations in response to the shifting landscape of higher education, Kinch and Sanford (2016) identified 59 separate competencies that faculty need, to be successful in their work. Hence, the role of faculty work, the expectations placed upon them, and the increasing skillsets and competencies necessary to do their work have expanded exponentially.

The traditional triad of teaching, research and service, have now expanded to include nine competency domains: teaching, research, leadership, diversity, inclusion and multiculturalism, external funding, work-life balance, internationalization, innovation, and the effective use of technology (Kinch & San-
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