

Chapter 18

The Impact of Technology on PK–12 Teacher Preparation Programs

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ABSTRACT

Technology is becoming more and more ubiquitous in our daily activities. There has been a drastic change in the technology skills that PK-20 students have acquired prior to enrolling in school. In order to be successful in the classroom, teachers need to know how to integrate technology in a way that benefits student learning and teacher effectiveness. Teacher preparation programs need to put a concentrated effort into teaching pre-service teachers the use of technology and the integration of technology into their teaching to assist in student learning. This chapter provides an overview of what the technology expectations are of pre-service teachers as they enter the profession of teaching and what pre-service teacher preparation programs are offering these candidates. The chapter concludes with recommendations and future trends with technology and its use in teacher preparation programs.

INTRODUCTION

The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative (Dewey, 1916).

John Dewey put forth that education needed to consist of respect for diversity and that there be socially engaged intelligence, meaning that we

each have values and should work collaboratively toward a common good. Since the inception of Dewey's *Democracy and Education*, schools have slowly emerged to what we have today. Sadly if we think about a schoolhouse from the 1900s very little has changed from what they look like today. A room full of desks that are positioned behind one another all are facing a main desk at the front of the classroom that is situated with a chalkboard behind it. Even with the advances of

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cooperative learning, and the access to technology such as smart boards there still seems to be minimal changes to be seen in the classroom. This is a far cry from Dewey's initial vision, where he put forth that we should work collaboratively and embrace different beliefs and values. It seems that schools seem to be lacking the ability to adapt quickly to an ever changing environment and demographic in their population. This change is key to ensuring that students have the necessary skills needed to succeed in any profession upon completion of their PK-20 education.

The move into the 21st Century has been fully embraced by some while others seem more resistant to the changes that are coming our way, particularly in the use of technology. Students entering today's classrooms, even Pre-K 3 year-olds are coming into the classroom with technology skills that may surpass tenured professors at universities. These students come with an entirely new set of skills and beliefs around technology that even their classroom teachers are not able to accommodate and assimilate. The old adage "we've always done it this way" tends to come to mind, as new strategies are continuously trying to be introduced. Since this process is so gradual it may seem that the individuals involved are resistant to change. If this is indeed true, this resistance to change does nothing to help students today in the PK-20 classroom succeed. Rather it puts them at a handicap, which in turn they have to "catch-up" once they begin their professional careers, finding the skills in other places. This is particularly true in the area of education. Not only are students having to "catch-up" but the teachers that instruct them are having to do the same thing, as they were not provided with the exposure or the skills necessary to integrate or incorporate technology in their classroom.

Breakthrough in technological advances have quickly made their way to the top of the news media, such as the Apple World Wide Developers Summit, or the Technology Summit that IBM convenes on a yearly basis. Individuals in

our society are often waiting to see what the next operating system will be, or how "smart" their new phone will become. Technology always seems to have a certain appeal, being able to have hands on, even if it occurs in a tech store it seems people are excited to try and experiment with what it can do. Students across all levels of education seem to come into the classroom with this same eagerness and curiosity to learn and try new things using technology. For example, in our education classes we use a version of Jeopardy that incorporates the SmartBoard to review for the mid-term exam. We can honestly say that these students, seniors in college, will jockey with one another to gain access to be able to interact with the board, to write on it, interact with it and be the one to "drive" the SmartBoard. While exciting it also a bit frightening at the same time, Our thoughts around this turn to "is this really the first time they've had this type of opportunity to interact with technology?" "What will they do for their students when they are in their own classroom? How will they incorporate technology if they are never shown how?"

Education tends to be one of those fields that always seem to be lagging in terms of embracing new trends, new philosophies and new teaching strategies. Rather than capturing this excitement schools and classrooms tend to ask the students to put away the very device that they find most engaging. This may be due to a multitude of reasons ranging from the organizational structure, to individuals being so used to doing what has always been done, or simply lacking the knowledge or ability to fully embrace this technology and integrate it into their classrooms. While recognizing the change is the first step, how to react and adjust would be the second step and where that catalyst must begin.

The objectives of this chapter are to: First, put forth what the current educational climate is calling for in terms of teachers being prepared with technology; second, to provide a picture of what technology integration looks like in teacher

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