

Chapter 60

Standards–Based Educational Technology Professional Development

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ABSTRACT

This study used the National Staff Development Council (NSDC) standards for staff development as a framework for measuring specific aspects of the enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS) educational technology professional development program. The Technology Integration Cycle supported the research design. The three-part cycle assumed a relationship existed between standards-based professional development, technology-rich classrooms, and students' acquisition of technology skills.

This study's research questions were designed to examine the underlying premise of standards-based, high-quality professional development. These questions sought to examine eMINTS teacher perceptions as they related to the degree in which each of the 12 NSDC standards was embedded into the eMINTS practices. To answer these questions, quantitative data were generated from an online survey.

Because of the melding of the NSDC standards and the eMINTS program, this research may provide valuable insight to stakeholders involved at all levels: adoption, design, and implementation of educational technology professional development. Further research into eMINTS' strengths (use of train-the-trainer model), as well as weaknesses (inability to customize training), could provide the organization with the information needed to strengthen the program and thus increase the number of teachers trained to integrate technology in the classroom.

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INTRODUCTION

When teachers walk down the hallways of a school, they may hear students talk about updating tweets using Twiterific, contributing to a wiki, or being splogged. At the start of the 21st century, these are common technical terms, and it would be reasonable to assume that most young people know how to use the hardware and software associated with them. However, having the ability to socialize online does not make a student technologically literate or proficient. To be considered technologically literate, students must progress beyond the trivial, and instead acquire skills that will allow them to use information in analytic, evaluative, creative, and ethical ways (Cech, 2008; Culp, Honey, & Mandinach, 2003; Manzo, 2009). It is unlikely that students will reach these and other 21st century levels of proficiency until the teachers themselves employ and model these skills. In order to improve students' technical abilities, schools must first educate the teachers through targeted, effective educational technology professional development (Garry & Graham, 2004). The challenge is that many teachers need assistance in reaching the level of technical skills Garry and Graham noted in their research. Educational technology professional development is a key component in the growth and sustainability of technology education (Culp et al.).

Teachers, who for the most part, did not grow up with digital technology, need to learn to incorporate technology into classrooms where the "chalk and talk" mode of instruction once dominated to the technology age of the Net Generation (Hasmemzadeh & Wilson, 2007), with podcasts and Web 2.0 tools. Educational technology professional development that is collaborative, ongoing, multi-faceted, and reflective is one way to develop teachers who can reach today's digital learners (Gaglioli, 2008; Ornstein, Pajak, & Ornstein, 2007; Prensky, 2005-2006; Salpeter & Bray, 2003).

This study explored the relationship between the National Staff Development Council (NSDC) standards and the educational technology professional development model known as enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS). When studying this relationship, I ascertained that the cycle of technology use in the classroom reaches far beyond the standards-based professional development sessions. I assumed relationships exist between standards-based professional development, technology-rich classrooms, and students' acquisition of specific skills. Figure 1 illustrates the cycle I proposed (Stanfill, 2010).

The Technology Integration Cycle

Through advances in the area of communication technologies such as instant messaging, blogging, and e-mail, the Earth is now considered to be a flat world, which "empower[s] people to compete, connect, and collaborate" (Hersh, 2009, p. 51) worldwide. Along with such easy access to anyone virtually anytime, a global economy has emerged. However, this new economy will require a user with an innovative and different skill set; abilities commonly referred to today as *21st-century skills* (Gura & Percy, 2005). Nonetheless, there remains "a profound gap between the knowledge and skills most students learn in school and the knowledge and skills they need in typical twenty-first century communities and workplaces" (Gura & Percy, p. 32).

Technology entrepreneur and Microsoft Corporation Chairman, Bill Gates, discussed this gap in his 2008 speech before the House of Representatives Committee on Science and Technology. Gates reported that the United States is currently not able to produce the type of skilled worker required by high-tech companies such as Microsoft, Google, Intel, and Hewlett-Packard. Gates testified that this country is at an economic crossroads, and if the United States chooses to do nothing, other

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