Chapter 22
Defining Professional Development for Technology

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ABSTRACT

Professional development for technology implementation is a critical component of achieving successful learning outcomes in educational settings. The use of technology in all teaching disciplines and administration requires the systematic training of every individual within the organization. Technology tools often provide the catalyst for skill development and attainment of expertise to ensure organizational successes. Through proven and research-based training opportunities, administrators and instructors can receive and ultimately share quality learning experiences that guarantee optimal learning achievement for school districts and specific instructional programs as technology is integrated into curricula. Planning professional development that creates seamless technology assimilation at all levels of use helps to guarantee that instructional design parallels desired learning outcomes.

INTRODUCTION

The tremendous surge in technology in the past decade requires a retrospective, as well as a future analysis of professional development regarding administrative, faculty, and staff readiness for integrating the many facets of technology into the curriculum at the K-12 educational level. According to the National Staff Development Council (2011), the term professional development means "a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement" (p. 1). Mizell (2008) claims that collective responsibility for student achievement will result in increased performance levels for both educators and students. Professional development involves not only training in the various components of technology, but also to successfully incorporate this knowledge into the classroom for optimum student achievement.

DOI: 10.4018/978-1-4666-5780-9.ch022

The concept of professional development can be simply defined as teacher or staff training, but a more detailed definition would include the various elements that prove professional development has been successful. In the most basic way, professional development is providing administrators, faculty, and staff with the knowledge needed for understanding and utilizing existing or new information, acquiring the skills or knowledge provided, and sharing this newly acquired expertise with the students. Specifically related to technology, professional development entails the process of learning new information or being retrained in emerging instructional software and hardware components, practicing the new knowledge to develop expertise, and then sharing and transferring that information or knowledge into classroom instruction that directly relates to student achievement. The transfer of knowledge from faculty to students to increase student learning proficiency is a worthy goal of professional development, as well as improving research capabilities for faculty in general.

Little research exists that indicates a relationship between professional development in technology-related areas and the impact of training on student achievement. In fact, research in educational technology in general is lacking. The reality still exists however, that technology, if appropriately used, has the ability to augment student achievement by relating the curricula to real-world scenarios, providing tools to enrich learning, allowing feedback, revision, and reflective opportunities, building a community of learners, and expanding learning opportunities for teachers and students (PT3, 2002). While professional development must be addressed at all educational (and training) levels, this chapter primarily focuses on the K-12 setting. Many of the suggestions offered can be utilized at the postsecondary level as well.

The No Child Left Behind (NCLB) Act of 2001 sought to improve teacher qualifications and student achievement, but standardized testing is the current method of assessing NCLB success. Today's learning environment is becoming more constructivist-oriented with a student-centered approach to learning rather than teacher-centered top-down models. Standardized testing that is fact-based therefore, may not provide the means to measure 21st Century skills or to assess higher order thinking and reflective answers to problems. Professional development success in educational settings ultimately hinges on measureable student achievement.

Lawless and Pellegrino (2007) suggest that professional development is critical in order that teachers learn new technologies for teaching and learning, and then adapt their teaching methods to changing learning environments and increasing student diversity; furthermore, they believe that professional development is inadequate for the most part. Because of the increase in emerging technology, current professional development methods are not the same as their previous counterparts. To be effective, there must be an understanding on the part of administrators and faculty about what is needed in today's professional development programs to address technology and its integration into instruction and how to assess whether the programs are successful based on student achievement.

Until the correlation between professional development programs and student achievement is actually observed, gauging whether professional development has been successful is tenuous at best. The underlying purpose of most professional development in instructional environments is student achievement. In this chapter, we will address past and future professional development models, which ones have the potential for use in today's educational settings, the effectiveness of professional development, and how student outcomes based on professional development can be assessed.