Chapter 56
Using an Observation Cycle for Helping Teachers Integrate Technology

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ABSTRACT

The purpose of this chapter is to present a simulated case study for class discussion about supporting teachers with technology integration. The study frames the authors' definition of educational technology by focusing on research-based technology training and follow-up observation cycles for facilitating teachers' application of technology into instruction. Readers should consider the importance of utilizing professional development to support teachers via technology training geared toward integration of specific digital tools and instructional strategies. The instructional design of the study includes a focus on adult learning assumptions (Knowles et al., 1998) and elements found in the professional development literature: (a) content focus, (b) active learning, (c) coherence, (d) duration, and (e) collective participation (Desimone, 2009). Additionally, the use of observation cycles (Danielson, 2007) in this case study emphasizes collaborative planning and feedback opportunities for helping teachers integrate technology, as well as promotes further analysis of the case.

ORGANIZATION BACKGROUND

The organization discussed is a K-12 public school system. It is located in a southeastern area of the United States. The district has approximately 6,500 students and 430 teachers. Over the past four years, more than 90% of the students graduated from high school, and this year more than 95% plan to attend post-secondary educational institutions. The average amount of teaching experience among the district's educators is 14 years, and the majority of teachers have earned a graduate degree.

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The culture of the school system is one of continuous improvement. Its educators value the benefits of embracing life-long learning. The "teachers as learners for student success" mentality is evidenced through professional learning communities at each school. Additionally, the district's teachers are excited about opportunities to learn new technologies and implement the tools during instruction to help engage their students and enable learning.

The district's improvement goals include providing its students with the best modern educational resources available to facilitate learning and its teachers with cutting-edge professional development and training. The technology plan for the district outlines strategies to meet these goals. Such strategies include plans for implementing a wireless infrastructure at all schools, a procedure for accessing mobile technologies, and professional development for helping teachers effectively integrate their current and future 21st century technologies into instruction.

The district has a $50 million budget that is supported by local taxpayers, state aid, and federal aid. Further, the difficult economic times of recent years has led to the creation of austerity budgets. The district continues to try to meet its lofty goals for students, especially in the area of educational technology, while 'doing more with less.'

SETTING THE STAGE

Prior to implementation of this improvement initiative, technologies available to the teachers and students included a teacher workstation, digital projector, and computer labs available for use with students. The Instructional Technology Coordinator for the district, Cathy Onliner, focused mainly on management of and training on software tools, as innovative hardware was sparse in the district. Teachers in the case described herein received 21st-century learning technologies, which necessitated adequate professional development and support for using the technologies to benefit the students. When Cathy was assigned as coordinator for the initiatives, she reflected on how she might organize and plan a seamless implementation of the technologies in the classrooms. Her focus was to support the teachers in using the technologies to enable learning and student engagement. The challenge Cathy faced was determining a plan for ensuring quality use of the technologies in the classrooms selected for the project components.

The school district had two separate initiatives for technology integration, which were implemented with a group of six teachers in various grades and subject areas. In the first initiative, the school district purchased a Student Response System (SRS) and mobile Interactive White Board (mIWB) in response to a need for formative assessment tools to engage learners during instruction. Prior feedback from the cohort of teachers on a needs assessment survey indicated a desire for professional development appropriately designed to help teachers integrate the new 21st-century technologies. Classroom implementation of 21st-century technologies can be difficult for teachers due to the time involved in learning to integrate them appropriately for the students' benefit. Not only is it difficult to learn a new technology, but application may not occur without appropriate support (Williams & Kingham, 2003). Cathy knew that it would be important to outline a research-based professional development plan for helping the teachers.

To help accomplish the school system's technology goals, over the past seven years the school district has invested millions of dollars to provide technology hardware, software, network infrastructure, support, and training for teachers. As part of this investment, in a second initiative, the same cohort of teachers was provided a Digital Backpack containing numerous portable digital tools. A "Digital Backpack" is a rolling computer bag given to the K-12 classroom teachers that contains, among other items, two netbook computers, a document camera, a portable scanner, an LCD