Chapter 27
The Digital Journey:
Integrating Technology into Teaching and Learning

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ABSTRACT

This chapter provides educators with innovative strategies to enhance learning and technology. The authors use a variety of creative approaches that integrate interdisciplinary techniques. Such examples include integrating learning theory and technology, creative problem solving through technology, using technology to enhance teaching and learning methods, visualizing information through technology (with art and design), and additional technology tools for practical application. How will technological advancement continue to transform the teaching and learning process in the digital age? As educators explore answers to this question, we consider our present students and their strengths and needs which guide teaching and learning choices in classrooms. The authors of this chapter explore how technology has facilitated greater opportunities for learners to engage in non-linear, interactive, and ubiquitous learning experiences. Strategies and tools that teachers have adapted for pedagogical practices to meet the needs of digital age learners are shared.

THE DIGITAL JOURNEY: INTEGRATING TECHNOLOGY INTO TEACHING AND LEARNING

Technology is used every day and its use has increased rapidly for people of all ages, especially for the youngest citizens. For example in America, 40% of 3-month-old infants regularly view screen media as reported by Zimmerman, Christakis and Meltzoff in 2007. The amount of time children and adolescents spend using technology has likely increased since then. Although television is the media of choice for children, youth and adults, with each new type of technological device, screen time is increased (Rideout, 2011). In a quickly changing technology landscape, educators of all

ages (infants to adults) need to better understand the impact of technology on learning outcomes and opportunities.

In recent literature, Fullan and Langworthy (2014) contended that "a radical change in the relationships between all the key players in learning: students, teachers, technologies, school cultures, curricula and assessments" has occurred. Technologies such as interactive whiteboards, tablets, and smart phones have become increasingly affordable and accessible (LeBaron & McDonough, 2009). At the same time, the present generation of students may be described as "digital natives" (Bittman, Rutherford, Brown, & Unsworth, 2011). The emergence of this new generation of learners raises questions as to how these digital natives learn and how teachers can effectively design and engage them in instruction. The authors of this chapter explore how technology has facilitated greater opportunities for learners to engage in non-linear, interactive, and ubiquitous learning experiences and examine the ways in which teachers have adapted pedagogical practices to meet the needs of digital age learners.

The goal of this chapter is for educators to have practical and meaningful examples of technology to transform theories into practice that will provide new learning opportunities in this digital age of change. For example in English Language Arts, educators share methods for teaching reading and writing and advocate students curling up in a comfortable chair with a pen, notebook, and a book. Teachers share with their students the process of putting pen to paper to capture their thoughts in writing. Teachers also discuss the joy of holding a book and flipping through the pages, as students eagerly turn to the next scene to see what happens with beloved characters. However, with recent technology, computers have replaced pen and paper and readers pick up a Kindle or iPad instead of a paper printed book or magazine. Instead of competing with new technology to capture students' attention, teachers can use it to enhance a lesson. Using media literacy to

watch a video clip of a movie based on a novel or using smart phones for students to conduct research can supplement texts. Technology also leads to creative strategies which simultaneously incorporate critical thinking, such as rewriting a scene from a novel written two hundred years ago in text message language or using a song and its accompanying video to teach poetic devices. Technology in classrooms opens up new dimensions for reading and writing strategies.

This chapter features a digital native, five digital instructors, a digital practitioner, and a digital immigrant who will guide understanding of this book's topic of learning outcomes and opportunities in the digital age. Each section begins with a narrative and leads to information and research-based practices.

In the first section of this chapter, a digital native named Harper is introduced. Through her story, educators explore the nature of digital age students and examine how the students think and learn. Next, the authors discuss the implications that these understandings bring about for today's educators and describe the forms of teacher knowledge that are needed to effectively teach digital age learners. Research on how transforming teacher knowledge of how to teach using technology and examples of teachers employing digital age instruction are also examined.

Research (LeBaron & McDonough, 2009) shows that it is not the digital tool chosen but the way it is matched to learning goals. There are so many tools. Find recommended and trusted tools by consulting with colleagues, checking institutional resources, and attending conferences to broaden community of practice. Experiment with finding a digital voice which to create social presence. Create interactive learning to focus and keep learners on track.

Discovering a digital voice both literally and philosophically, can provide the tools and teaching strategies that make learning memorable and meaningful for students. Technology enhances the curriculum of a content area class such as

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