Chapter 13
Strategies for Improving and Modeling Digital Technology and Literacy Integration

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ABSTRACT
This chapter focuses on the suggestions and strategies of technology being utilized in classroom settings. An emphasis is placed on digital technology and literacy integration. The authors explore the effectiveness of digital technology and literacy integration and identify external and internal factors limiting technology integration commonly found within a typical PreK-12th grade classroom setting. In addition to the authors discussing factors that limit school’s integration, the authors provide solutions and recommendations suggesting resources throughout the chapter to improve and model digital technology and literacy integration in the classroom.

INTRODUCTION
Many teachers recognize that literacy education is crucial to student success. School education in today’s society is expected to equip students with both domain knowledge and the twenty-first century skills in order to meet the requirements of a vigorously changing society (Chan, 2010; Gut, 2011). The emergence and rapid development of digital technologies have prompted significant changes in how human beings operate, communicate, and interact with one another on a daily basis (Mishra & Koehler, 2006). This fast-paced evolution and advancement of digital technologies has permeated schools and classrooms around the United States in recent years and how children are growing up in a world that is progressively commanded by computerized environments (McKenna, Conradi, Young, & Jang, 2013). These changes have prompted educators and policymakers to re-examine teaching and learning in the

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21st Century (Collins & Halverson, 2009) as children must become proficient in accessing, analyzing, evaluating, and producing information in both digitized and non-digitized settings (McKenna et al., 2013). As a result, teachers are being pushed to better prepare students to be college and career ready with a new set of digital literacy skills, but one of the problems of technology integration in the classroom is that teachers often do not have sufficient experience in learning and integrating technology into their classrooms. Hew and Brush (2007) indicated that lack of instruction in programs to prepare and encourage teacher candidates to learn and use technology in their classrooms is an important factor that reduces technology integration skills of future teachers. The National Council for Accreditation of Teacher Education (NCATE) (2010) reported that several teaching institutions were not fully meeting their responsibility for preparing tomorrow’s teachers to use technology. In addition, only a few teacher preparation programs provided sufficient knowledge and opportunities for their candidates to learn and practice integrating technology into their teaching. Most teacher candidates have little technical and pedagogical knowledge; therefore, have little insight in how to integrate technology into their teaching (Recesso, Wiles, Venn, Campbell, & Padilla, 2002; Willis, 2007). With our increasing reliance on technology in all aspects of life, it is important for students to develop digital literacy competencies to be successful in school, productive employees, and empowered citizens in a global world (Kay, 2010, Hobbs, 2010). Teachers can help by learning how to effectively integrate technology into their practice. Several ways to enhance teaching and learning in the classroom can assist in the delivery of instructions, professional growth and/or administrative tasks, and for student learning and collaboration. Throughout this chapter we seek to provide information on the strategies and suggestions of digital technology and literacy integration in classroom settings.

TECHNOLOGY AND 21ST CENTURY EDUCATION

Today’s students are growing up in a world where technology is an inescapable key component of daily life (Ito et al., 2008; Lee & Spires, 2009). According to Newbill and Baum (2013), the way the world works is being revolutionized by technology. By today’s standards, technology envelops the future for which schools are charged with preparing their students (Ritzhaupt et al., 2012). With the advancement of technology into mainstream life, technology integration has rapidly become a driving force in education (Dougherty, 2012; Lowther, Ian, Strahl, & Ross, 2008; Project Tomorrow, 2012). Because education coexists on a socio-cultural level, there is an expectation and necessity for education to adjust to the emergent needs of the progressively digital public (Franciosi, 2012; Jenkin, 2009). Current research reported implementing computer technology at the classroom level remained top priority of educational administrators (Crook, 2012; Ian & Lowther, 2009; Kurt, 2013); meanwhile, additional research reports numerous schools are actively engaged in the integration of technology into the curriculum (Cakir, 2012; Iscioglu, 2011; Lei, 2009). Educational administrators recognize the evolution of technological integration as a logical step toward educational reform (Berrett, Murphy, & Sullivan, 2012) because students are now born into our currently and rapidly advancing digital world. Researchers have reported low levels of technology integration and irregular intervals with integration (Gumbo et al., 2012; McGarr, 2009; Pan & Franklin, 2011; Ritzhaupt et al., 2012). Researchers have advised that schools are purchasing devices and placing technology equipment in classrooms, libraries, and labs (Ian & Lowther, 2009; Iscioglu, 2011; Ritzhaupt et al., 2012); nonetheless, teachers are reporting a shortfall