Chapter 11
An Approach to Design-Based Implementation Research to Inform Development of EdSphere®: A Brief History about the Evolution of One Personalized Learning Platform

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ABSTRACT
Fulfilling the promise of educational technology as one mechanism to promote college and career readiness compels educators, researchers, and technologists to pursue innovative lines of collaborative investigations. These lines of mutual inquiry benefit from adopting and adapting principles rooted in design-based implementation research (DBIR) approaches. The purposes of this chapter are to: (a) provide the research foundation on which a personalized learning platform was developed, (b) present the evolution of EdSphere, a personalized learning platform that resulted from a deep and long-term collaboration among classroom teachers, school and district administrators, educational researchers, and technologists, and (c) describe a need for development of innovative technologies that promote college and career readiness among our earliest readers.

INTRODUCTION
Around the world, it is widely accepted that a quality education is one of the primary levers to increasing the percentage of educated citizens who may successfully participate in the workforce; with untold economic and societal benefits to countries that make investments in education (Murnane & Willett, 2011, Chapter 1; Stewart, 2012; Zhao, 2012). Rapid changes in the nature of work in the 21st Century has prompted policy-makers and educators to implement a range of initiatives

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Technology-based innovations are increasingly being promoted in federal and state reports and educational organizations (for- and not-for-profit) as key components to most, if not all, efforts to enhance student college and career readiness (Aldunate & Nussbaum, 2013; Kim, Kim, Lee, Spector, & DeMeester, 2013; U.S. Department of Education, 2010, 2013). In part, proponents of technology-based solutions, with 24-7-365 access, posit benefits such as: (a) lengthening the school day, (b) extending the school year, and (c) providing greater personalization of academic learning time (Calkins & Vogt, 2013; Childress, 2013; U.S. Department of Education, 2010, 2012, 2013; U.S. Programs, Bill and Melinda Gates Foundation, 2012).

It is however, possible that increasingly sophisticated technologies will disrupt widely accepted notions about where, when, and for how long a student learns along the path towards college and career readiness. Additionally, innovations that disrupt the status quo, with no commensurate increase in student readiness for college and career, will serve only to decrease investment, increase frustration, and ultimately abandonment of technologies. Growing pains are already being felt due to insufficient re-