Preface

If designed and used effectively, technology can be a powerful tool for improving upon established forms of teaching and learning in K-12 school environments. In recent years, handheld tablets, such as the iPad and Galaxy, have set off increased interest among educators, due to beliefs that these tools can enhance interactivity, collaboration, and motivation, while ultimately improving learning outcomes. However, although there has been an enormous amount of interest, research on theoretical and pedagogical practices with tablets in K-12 education is still in its infancy.

This book provides a wide range of theoretical concepts along with concrete examples about appropriate uses of tablets for K-12 educators, university professors, and school administrators, while also disseminating contemporary research findings on the effectiveness of tablets to support students’ learning processes and outcomes. This book is a synthesis of work produced by academic researchers, educational technologists, and K-12 educators.

SECTION 1: THEORETICAL AND CONCEPTUAL ORIENTATIONS

This section addresses the paucity of research about theoretical and conceptual orientations supporting teaching with handheld tablets. It is dedicated to uncovering a variety of approaches, both conceptual and theoretical, with hopes of increasing our understanding and beliefs about the promises and challenges of teaching with mobile devices. In Chapter 1, Mentor illustrates a hybrid approach to teaching with tablets, introducing the “four Cs” of context, curriculum, content, and collaboration as foundational guidance, offering insights and support when integrating educational technology into K-12 curricula. In Chapter 2, An, Alon, and Fuentes provide a framework for understanding ways in which iPads are currently being used in New Jersey public schools, with a focus on the effectiveness of three different implementation approaches: 1) “ubiquitous approach,” 2) “classroom approach,” and 3) “sign-out approach.” In Chapter 3, Fuentes, An, and Alon offer a portrait of different constructivist practices and learning environments, drawing connections between theory and methods intended to offer practicing teachers a series of theoretical considerations when planning to teach with tablets. In Chapter 4, Kum-Yeboah and Campbell address emerging trends of tablet usage in K-12 schools, the benefits of tablets, the instructional implications of tablet usage on student learning, and challenges facing teachers in regards to the use of tablets in the classroom. In Chapter 5, Fuentes, An, and Alon offer practicing educators helpful suggestions for introducing mobile devices into their classrooms and begin a dialogue about the
various practices and classroom management implications for a variety of uses of mobile devices in K-6 settings. In Chapter 6, Chandler and Beedasy call for having teachers and students focus on the world around them as they use mobile technologies. They assert that recent current events, such as Hurricane Sandy, provide new opportunities to introduce disaster preparedness and response themes as an aspect of civic education, among other subject areas.

SECTION 2: THEORETICALLY GROUNDED AND INNOVATIVE APPROACHES TO USING TABLETS

While it is important to support the use of mobile devices and handheld tablets within various theoretical and conceptual frameworks, it is equally important that these conceptual underpinnings be grounded in practical considerations of teaching and learning. The chapters in Section 2 begin this dialogue, not only about theories rooted in practice, but also about approaches that may help to move innovation forward. In Chapter 7, Nancye Black reviews the capacity of a tablet-enriched pedagogy to deepen student understanding and knowledge construction in social studies. In particular, Black illustrates how tablets can provide a dynamic platform for learning in line with the main elements of the Teaching for Understanding Framework. This versatility enlivens social studies curricula by making available to students a rich array of content to aid in internalizing core lessons and themes. In Chapter 8, Reichert and Mouza further expand on the versatility of tablets in providing mobile, individualized learning environments. By analyzing a two-year one-to-one tablet initiative at a preK-8 private school in the United States, the authors highlight the strengths and challenges associated with implementing mobile learning environments for students, teachers, and researchers alike. In Chapter 9, Alon, An, and Fuentes discuss the apps that are most appropriate in a tablet-enabled learning environment to meet the technology vision of the Common Core State Standards. The authors also share a rubric that can be used to systemize the distinctions among potential educational applications.

SECTION 3: EMPIRICAL RESEARCH STUDIES ON THE EFFECTS OF USING TABLETS IN K-12 CLASSROOMS

The aim of educational research is to develop findings that can eventually be transferred to successful pedagogical practices. Much like the policy decisions that guide the ways in which schools operate, an emphasis has been placed on the scientific pursuit of developing our understanding through empirical research. In this section, the chapters each present findings based on empirical studies that detail the impact of tablets in K-12 classrooms. In Chapter 10, Estevez-Menendez, An, and Strasser provide research findings from a study examining vocabulary knowledge acquisition and story comprehension of preschoolers when using iPads. In Chapter 11, Milman, Carlson-Bancroft, and Boogart share planning and classroom management practices of a first-year implementation of a one-to-one iPad initiative in a suburban, co-educational, independent, preK-4th grade elementary school in the United States. In Chapter 12, Meletiou-Mavrotheris and colleagues describe the content and structure of a professional development workshop and discuss its impact on teachers’ knowledge, skills, and confidence in incorporating tablet
technologies within a mathematics curriculum in Cyprus. In Chapter 13, as a way to help autistic students with speech and language impairments, Sabale examined the functional validity and instructional implications of a hybrid Applied Behavior Analysis (ABA)/Applied Verbal Behavior (AVB) intervention model that incorporated an iPad equipped with the Proloquo2Go and MyVoice apps. In Chapter 14, Bledsoe and Pilgrm describe a research study pertaining to a one-to-one middle school iPad initiative in which a CBL instructional model was adopted. In Chapter 15, Ozdemir reports on a study that examined the practices and attitudes of students and teachers when using iPads in high school mathematics classes. In Chapter 16, Carruthers, Martinovic, and Pearce present a comprehensive examination of the design of a tablet-based mathematics education environment and share their findings of the five foundational aspects of a conceptual framework for the successful implementation of technology in a K-12 environment. In Chapter 17, Hong and colleagues describe how a university reading clinic implemented iPads to assist struggling K-12 readers. The authors also offer strategies for selecting, evaluating, and incorporating iPads into literacy instruction.

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