Preface

Adaptation, Resistance and Access: Assessing Future Trends In Education is an attempt to capture the current trends in technology integration from Pre-K to K-12 to higher education. It is divided into five sections: Access, Enabling Students, Enabling Communities, Enabling Teachers, and Training Teachers. Each section focuses on the various constituent groups in education and the effects of educational technology on their learning and empowerment.

Section one, Access, considers various issues confronting education when historically underserved populations vary in their ability to access current and emerging technology. The effects of this lack of access and some suggestions for ameliorating these effects are discussed. Chapter One explores the gap between so-called digital natives and digital immigrants and suggests that in most educational environments, the transformation of information has not been acknowledged. The author suggests partnerships among the various educational constituencies from elementary through post-secondary as a solution. Chapter Two examines similar issues of equity and access in postsecondary institutions of learning in South Africa and focuses on technological, socio-economic and political factors. Chapter Three examines improvements in the technological infrastructure and the adoption of and resistance to the use of laptops by teachers in New Zealand, concluding that teacher professional development, a reliable infrastructure, and administrative support are keys to changing instructional practices. Chapter Four examines the perceptions of students and teachers regarding their use of an e-learning/sharing portal. This chapter provides some promising practices for technology integration and explores the effect of technology on student motivation.

Section Two, Enabling Students, focuses on specific instructional strategies that integrate technology effectively and describes some of the persistent barriers to integration. Chapter Five explores an initiative to develop student-authored textbooks using a web-based collaborative interface. The chapter provides an interesting argument for the use of so-called web 2.0 tools, like wikis, in instructional settings. Chapter Six describes an innovative instructional approach to improving the English Language Arts skills of middle school English language learners by using speech recognition software. The findings describe how the use of the software had a positive effect on pronunciation skills, fluency and text production. Chapter Seven describes engaging post-secondary students in online learning environments with an instructional approach coupling personalized learning and student engagement, which produced positive outcomes for student academic achievement. Chapter Eight’s study, conducted as part of a graduate level instructional design course, examines peer interaction and peer assistance in an online forum. The study categorizes online peer assistance and applies social network analysis to examine online interactions in academic settings with social components.
Section Three, Enabling Communities, focuses on the development of technologically mediated learning communities. Rather than focusing on teachers or students in isolation, this section describes strategies for developing communities of learning through the use of technology. Chapter Nine examines the impact of computer supported collaborative learning and offers several best practices for enhancing learners’ perceptions of support in digital environments. Chapter Ten presents a case study exploring how collaborative learning may be fostered in a virtual environment. The chapter discusses the necessary components for a successful virtual learning community. Chapter Eleven analyzes the experiences and perceptions of undergraduate students using a three dimensional virtual learning environment. The authors discuss how five forms of collaboration enhanced the learning process. Chapter Twelve identifies a new method for greater understanding of adult learners and their use of technology. The author argues that the learning context rather than the age of the learner is the important factor and that online environments should be considered as social contexts rather than solely educational technologies. Chapter Thirteen presents an original theoretical model designed to explore how adopting emerging technologies impacts values, virtuality, and veracity in learning environments.

Section Four, Enabling Teachers, focuses on promising instructional practices, supports, and training methods for educators working in technologically integrated environments. Importantly, several chapters also address internal and individual learner factors that influence the adoption of technology. Chapter Fourteen examines online social networks and advocates for their use in educational environments, recommending best practices and guidelines for implementation. Chapter Fifteen describes how educational systems have been slow to adopt new and emerging communication technologies with a specific focus on online social networking tools. Chapter Sixteen describes changes in instructor attitudes towards the integration of technology and provides insights into the transformation of educators from instructional technology resistors to instructional technology innovators. Chapter Seventeen examines the factors that contribute to faculty willingness to change and improve instruction in higher education. The author also analyzes motivating factors and their relationship to the integration of technology. Chapter Eighteen discusses the concept of technology momentum and its application to post-secondary education. A case study examines the adoption of online learning management systems.

Section Five, Training Teachers, the lengthiest section, focuses on promising practices and trends in teacher professional development in technology integration. This section encompasses many of the issues discussed in earlier sections and is optimistic about current and future developments in instructional technology use in teaching and learning. Chapter Nineteen presents a multiple case study that examines the levels of preparation of teacher candidates in using technology in their teacher education program. Resistance to the integration of ICT is discussed. Chapter Twenty examines the competence of teacher candidates in technology integration. The study examines the impact of the variation in technology programs employed by an institution on the competence of teacher candidates. Chapter Twenty-One examines a professional development technology mentoring program designed to improve student outcomes through the integration of technology into instruction. The chapter provides new insights into the potential for professional development initiatives to positively affect student academic outcomes. Chapter Twenty-Two highlights critical lessons learned concerning the development of a graduate course teaching School Library Media pre-service students how to develop learner centered, knowledge centered and assessment centered learning environments. Promising strategies are identified. Chapter Twenty-Three examines the lesson plans of first-year teachers and the relationship between higher-order thinking skills and technology-rich instruction. Findings describe the benefits of indirect instruction for promoting student discovery and higher-order thinking skills. Chapter Twenty-Four describes the effectiveness of
an electronic mentoring program for supporting pre-service educators in their transition to the classroom. Chapter Twenty-Five analyzes the use of electronic portfolios in the professional development of teachers. Using a case study-like approach, the chapter details the use of online resources and predicts the beneficial effects of online resources for future educators. The final chapter, Chapter Twenty-Six, presents a blueprint for future faculty development. The authors envision a radically changed role for educators in the future and describe the necessary components of faculty development needed to keep pace with the rapidly advancing ICT environment.

The foreword, written by Marina Leight, focuses the reader’s attention on the intended effects of educational programs: their use in developing the skills of learners that result in improvements in the human condition.

This book is intended to provide a way forward for current and future educators. It is impossible to predict what the future of ICT will be—much like it would have been impossible to predict web 2.0 and user-generated content a mere twenty-years ago—but the chapters in this book all present a mode of thinking about the interaction of technology and learning and teaching that is optimistic, empowering and equitable. It is my hope that educators will find this book a valuable resource to guide their own development as teachers and learners.