Preface

The use of Information and Communication Technologies (ICT) in education has continued to grow over the past 20 years at a rapid pace. With increasing global access to broadband and mobile technologies access to online resources and connectivity is now an expectation (Allen & Seaman, 2014). In 2014 open educational resources, massive open online courses, online university program delivery, and K-12 virtual schooling are more and more understood as the norm. Thousands of educational institutions and K-12 schools deliver blended and online education (Picciano, Seaman, Shea, & Swan, 2012). In this context we see that research and dissemination of models, support for, cases of, and delivery strategies in K-12 blended and online education as critically important. The goal of this handbook of research is to contribute to those conversations and support further research and development in this area.

A key concern in K-12 education is the lack of research dissemination addressing challenges, successes, and teaching strategies. In 2009 Cavanaugh, Barbour, & Clarke identified several areas of research that were needed to support the improvement and optimization of K-12 online learning: establish best practices for online teaching strategies and how those can be incorporated into teaching practice, identify characteristics necessary for online K-12 learner success, describe learning designs using K-12 online learning communities to engage online and school based learners, and identify lower performing online learner characteristics and the support strategies for success. In 2013, the International Association for K-12 Online Learning (iNACOL) identified the development of blended and online practices supporting college and career-readiness for all students as one of three key strategic priorities (iNACOL, 2013). Similarly, Drysdale, Graham, Spring, and Halverson (2013) have stated that blended learning “needs theoretical frameworks that deal directly with blended learning and help practitioners in making decisions about how to effectively blend and how to make decisions about the blends that they choose” (p. 98).

One element of continued research in this area is the development of definitions and descriptions of what is considered online or blended K-12 education. What constitutes online learning and what that term refers to has generated much discussion in both computer and IT fields as well as in distance education. We believe that the definition presented by Means, Bakia, and Murphy (2015) describes a concise description where online learning “refers to a learner’s interaction with content and/or other people via the Internet for the purpose of learning” (2015, p.6). The learning may or may not be part of a formal course or program but as long as it makes use of the Internet to support the learning, it is considered online learning. With regards to blended learning we consider it as an innovation that is leading much of the successful implementation of ICT in education. Garrison and Vaughan’s (2008) quantitative definition of blended learning describes this as: “the organic integration of thoughtfully selected and complementary face – to – face and online approaches” (Vaugh, Cleveland-Innes, & Garrison, p. 8). They go on to indicate that their quantitative definition “distinguishes blended learning as an approach
that addresses the educational needs of the course or program through a thoughtful fusion of the best and most appropriate face-to-face and online activities” (Vaugh, Cleveland-Innes, & Garrison, p. 9). These definitions seem to us to be good starting points for the continued conversations needed in K-12 blended and online learning.

Like other chapters in this book, Chapter 1 reviews a case of pre-service teacher practice in an online teaching environment. This chapter reports “the experience of student teachers in a program called Math Coach. Math Coach offers help to junior high and high school mathematics students through just-in-time online coaching via instant messaging.” Of particular value in this case is the description of a modified online learning and teaching framework for text-based environments called the Relationship of Inquiry.

Roles change for both teachers and learning as the technology supporting online and blended learning is integrated into education structures and activities. Chapter 2 outlines a study of “challenges faced by teacher candidates placed in an online student teaching environment.” The discussion includes “recommendations for course design, faculty support, infrastructure, and future research direction.”

Chapter 3 presents a topic that is on everyone’s mind - Teacher training. Breddermann, Martínez-Cerdá, and Torrent-Sellens share their views of a comprehensive treatment of teacher training by combining a review on skills needed in a knowledge-based society in reference to actual ICT activities at school and their outcomes.

Connie Blomgren provides a detailed overview of trends and issues in Canadian K-12 classroom as blended and online learning becomes more prominent. Chapter 4 outlines the huge range of diversity inherent in the transition to online and blended learning – diversity both in the way the transformation is handled by varying jurisdictions and the geographic and demographic range across that country.

Authors Levesque and Reid remind us that, in our increasingly global society, international students will oft be a part of our online and blended learning environments. Chapter 5 outlines findings which indicate that foreign student success in Canadian distance education rests on the “connection between the local and Canadian support communities for foreign students.”

Blended and online learning provides an opportunity to improve K-12 education in a broad way. Why implement such changes without these benefits? Chapter 6 by authors O’Connor, Seery, & Canty “investigates what is it about traditional classroom practice that researchers wish to enhance, the challenges facing contemporary systems of online and blended learning, and how new ubiquitous configurations for teaching and learning have become possible.”

Rocheouste and Oliver present strategies for teachers who wish to customize learning for Australian Aboriginal students in boarding schools. In spite of challenges which they outline in Chapter 7, successful use of the Internet realized literacy gains for the students involved.

The Practical Inquiry conceptual framework for understanding blended and online learning is widely accepted in education, but applied more to higher education than K-12. Vaughan works to remedy this shortfall in his descriptions of inquired based learning in Chapter 8. This chapter provides both a description of inquiry-based learning and design strategies and examples.

Increasing student engagement is a continual quest in K-12 education. Flipped classrooms is now a well-known strategy to create greater opportunities for active learning. For Katz and Kim, the pedagogy of such environments must be clear; this is outlined in Chapter 9. Best practices for implementing flipped classrooms identify opportunities for “educators meet long-standing challenges and support teachers to meet the diverse needs of students.”

Using mobile devices in education is considered state-of-the-art technology applications. In Chapter 10, Bennett and Lin review specific web and iPad applications in reference to benefits and concerns.
Their research suggests that with appropriate steps to control learning environments using iPad, benefits regarding mobile learning with an iPad can outweigh concerns.

Chapter 11 addresses an ongoing problem in online learning – quality assurance and content. Mkrtchian, Amirov, and Belyanina outline a new required activity in online learning – content curation. These authors discuss virtual assistants; “intelligent software system designed to retrieve educational material from the knowledge base and provide them to the student in a convenient form.”

Flor and Flor provide direction for authentic assessment in online education based on a study in the Philippines in Chapter 12. These authors refer to authentic assessment as that which is appropriate to the demographics and situations of the online population. In this case and those like it, authentic assessment must “be employed to reflect real life applications and understanding of concepts based on a more constructivist perspective.”

Chapter 13 outlines the value of the TPACK (Theoretical Framework, Technology, Pedagogy and Content Knowledge) which, in the study of these authors of Grade 7 curriculum design and implementation, “provided curriculum designers with a frame that led to the successful blend of technology, pedagogy and content knowledge into two contexts.”

Our hope is that this collection of chapters provides examples of ways in which teachers, teacher educators, and administrators might go about optimizing K-12 education through blended and online learning. We look forward to continuing conversations with those in this field as this, we feel, provides some of the most important areas of educational reform and innovation meeting the needs of 21st Century learners and beyond.

Nathaniel Ostashewski
Athabasca University, Canada

Martha Cleveland-Innes
Athabasca University, Canada

Jennifer Howell
Curtin University, Australia

REFERENCES


Preface


