Introduction

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Educational systems worldwide are facing enormous shifts as a result of sociocultural, political, economic, demographic, and technological changes. Emerging technologies (social media, serious games, adaptive software) and emerging practices (openness, user modeling) in particular, have been heralded as providing opportunities to transform education, learning, and teaching. Such discussions often postulate that new ideas—whether technologies or practices—will address educational problems (open textbooks may perhaps make college more affordable) or provide opportunities to rethink the ways that education is organized and enacted (for example, the collection and analysis of big data may enable designers to develop algorithms that provide early and critical feedback to at-risk students). Yet, the ways that emerging innovations and practices are used in digital learning contexts are much more complex and elusive. In this book, I amalgamate work associated with emergence in online education to conceptualize, design, critique, enhance, and better understand online education. This edited volume gathers international experiences, dispersed knowledge, and multidisciplinary perspectives for use by both members of research communities and innovative digital learning practitioners.

This introduction addresses three questions:

1. What are the scholarly contributions of the book as a whole?
2. What are the themes that unify the book and why are all the chapters that follow included in this book?
3. What is the focus of each chapter?
While each chapter in this book improves our understanding of emerging technologies and practices, the book as a whole makes three significant contributions.

First, the book provides sound scholarship. Balanced scholarship on emerging technologies and emerging practices in the context of digital education is crucial. Most often, researchers, designers, and educators present hopeful descriptions of the potential of emerging approaches to education, but ignore or resist the complex conditions under which learning occurs. In this book, contributors discuss emerging technologies and practices in digital learning, without losing sight of the fact that what designates technologies and practices as emerging is the context under which they operate. They recognize that technologies and practices shape and are shaped by sociocultural environments.

Second, the book brings together scholars and practitioners. Digital education researchers and practitioners rarely interact, rendering the sharing, dissemination, and improvement of their work a formidable task. This problem has recently been brought to the forefront because educational technology has received considerable attention from stakeholders that were not previously associated with the use of technology in education (such as investors, independent developers, and artificial intelligence labs). By way of this book, I hope to provide more opportunities for interaction between researchers, educators, designers, and developers, seasoned and newcomers alike.

Third, this book brings new voices to digital education, voices that are significant to its improvement, refinement, and understanding. This contribution is particularly significant because of the burgeoning interest that the field is experiencing. In reviewing a recently-published book on online education, Tony Bates (2014) asks, “Where are the young researchers here, and especially the researchers in open educational resources, MOOCs, social media applications in online learning, and above all researchers from the many campus-based universities now mainstreaming online learning?” This book includes several chapters from emerging leaders situated in campus-based organizations that are pushing the boundaries of digital learning. These individuals are shaping the future of digital learning and in this volume they address issues pertaining to openness, analytics, MOOCs, and social media.

Four themes unify all of the chapters in this volume. Firstly, all chapters examine concepts associated with emerging technologies or emerging practices in digital education. Whether examining the theoretical foundations of learning
(chapter 3), the messiness of learning in emerging learning contexts (chapter 2), the use of learning analytics to understand emerging learning environments (chapter 8), or individuals’ perspectives on emerging approaches to education (chapters 7, 10), these authors contribute to a greater understanding of what exactly constitutes emergence in education.

Secondly, all chapters in this book resist simplistic notions of technological determinism and show how technology’s lack of neutrality is negotiated on the ground. The contributors describe how particular features of the technology shape practice and how practice shapes the ways that technology is used (chapters 1, 2, 4, 7, 9). By resisting techno-deterministic narratives, this book aims to inform readers of the negotiated relationships between technology and practice and the complex realities that arise when theory meets practice.

Another core theme that runs throughout the book is the tension that exists between calls for efficiency vis-à-vis calls for humanized learning. On the one hand, educational institutions and stakeholders are facing increasing calls for accountability and efficiency, often resulting from the economic realities of our times. On the other, there is an increasing need to “humanize the online experience with greater compassion, empathy and open-mindedness” (Herrington, Oliver, & Reeves, 2003). The tension between these two issues is evident in the conversations surrounding digital learning and in the scholarship that is presented in this book.

Finally, all the chapters are implicitly concerned with how emerging technologies and associated phenomena reconfigure the role of learners and instructors and how learners and instructors reconfigure the roles that technologies play in digital education. While this issue is explicitly explored in chapter 5, chapters 8 and 9 investigate learners’ roles in self-directed learning environments and chapter 4 examines how emerging approaches to data collection and analysis shift instructional roles to technological artifacts?

The book is divided into two sections: foundations and applications. In the “Foundations” section, authors examine conceptual and theoretical aspects of emerging technologies and emerging practices in online education.

In chapter 1, I examine the meaning of the terms “emerging technologies” and “emerging practices” and note that these two terms are often used haphazardly without a clear understanding of what they really mean. I propose that emerging technologies and emerging practices are defined by the context in which they are situated, and suggest that they share four characteristics: not-newness, coming into being, not-yetness, and unfulfilled but promising potential. The
conceptualization of the terms proposed in chapter 1 situates the chapters that follow and establishes a common ground upon which one can examine emergence and innovation in digital education. This definition has been updated from the definition proposed in *Emerging Technologies in Distance Education* (the precursor to this book) to reflect a more refined understanding of the characteristics of emergence.

Ross and Collier (chapter 2) identify the need for evaluation of learning design and teaching practices for digital education, specifically with regard to measurement, and the challenges emerging technologies pose for postsecondary institutions. This chapter provides insights and discussion into not-yetness, the messiness of learning, and the complexity of learning design.

Anderson (chapter 3) presents the theoretical foundations of learning in emergent contexts by reviewing established and contemporary perspectives intended to answer the question of how people learn in digital contexts. The work presented in every chapter of this volume can be traced back to the theoretical foundations discussed by Anderson.

In chapter 4, Kimmons and Hall provide a set of standardized criteria for comparing technology integration models in a meaningful way. Technology integration models are frameworks used by organizations to guide thinking concerning the use of emerging technologies in education, and Kimmons and Hall provide the means for stakeholders to make informed decisions when choosing appropriate integration models to guide technology use, adoption, and integration.

Wellburn and Eib (chapter 5) investigate how emerging technologies could affect and transform the role of educators and learners, and how emerging online practices could influence the ways that education is organized. They outline how relevant online experiences can be brought into our teaching and learning practices.

In the “Applications” section, authors examine applications of emerging technologies and emerging practices in online learning, and investigate the complex social, organizational, and contextual landscape of emergence in online learning.

An emerging practice in the field is that of learning analytics, specifically the collection and analysis of data that participants leave behind in the online environments that they frequent. In chapter 6, Baker and Inventado discuss the use of data mining and learning analytics for online education and examine how educational institutions can use such emerging practices. In the interest of
provoking discussion, the authors focus on a few key examples of the potential of learning analytics, rather than exhaustively reviewing the ever-increasing literature on the topic.

In chapter 7, Whitworth and Benson illustrate how practices, as well as technologies, can be studied as “emerging.” In particular, the authors present two case studies that describe the perspectives of both educational researchers and practitioners as they adopt Moodle, an open-source learning management system. The authors found that Moodle came to be used with divergent aims, communities, and practices. The evidence presented in this chapter is a powerful demonstration of the negotiated relationship that exists between technology and practice. The authors demonstrate how technology influences digital education practice and how educational practice influences the use, implementation, and adoption of technology.

The emerging practice of using social media and open technologies for learner-learner and learner-instructor interactions is discussed in chapter 8, under the concept of Personal Learning Environments (PLEs). PLEs represent tools and processes that enable individuals to monitor and regulate their learning inputs and experiences, and have developed as a result of the growth and recognition of the importance of informal learning. Martindale and Dowdy outline the history of the PLE, identify why it is useful, provide examples of PLEs, and discuss challenges that institutions face when considering adopting PLEs in contrast to other online learning environments.

In chapter 9, Couros and Hildebrandt describe an innovative online course inspired by philosophies of the open source movement, trends in social media, and pedagogies around networked learning. This case study provides insights into the use of online networks and social media for learning, and shares lessons learned throughout the development, facilitation, and evolution of the course since its initial offering.

Moe (chapter 10) explores the emergence of the Massive Open Online Course (MOOC) movement and examines how experts perceive it and how the movement itself affects the manner in which educators and researchers practice and examine online education.

Finally, Perry and Edwards (chapter 11) argue that online communities are founded on artistic elements. They outline how to apply instructional strategies that use artistic pedagogical practices. Central to the arguments and examples presented in this chapter is the idea that emerging technologies provide opportunities for enhancing presence, interaction, and participation.
The precursor to this book *Emerging Technologies in Distance Education* was published in 2010. Numerous reasons, including evolutions in technology, pedagogical practices, and research on digital learning, necessitate the development of an update. Most significant perhaps is the fact that since 2010, there has been a growing realization that the higher education sector is in a state of transformation and as a result educational technology in general, and digital learning in particular, have been thrust to the forefront of debates on the future of education. The rise of the MOOC phenomenon has “prompted popular mass media interest at levels not seen with previous educational innovations” (Bulfin, Pangrazi, & Selwyn, 2014) and narratives of the potential impact of technology on education are pervasive. Within this environment, this book provides nuance, insights, and research to make the practice of digital education more effective and meaningful. In the furtherance of this endeavor, some chapters first published in *Emerging Technologies in Distance Education* have been reprinted here as a part of this volume. However, these chapters have been updated to reflect current realities and debates and have incorporated new research findings where necessary. The chapters that are new provide much-needed insights on topics that are at the core of higher education practice at a time when the field needs it the most. The work presented here continues the ever-expansive conversation about emerging practices and technologies for digital learning that was started in 2010 with *Emerging Technologies in Distance Education*. I would like to see these conversations extend into conferences, journal articles, blog posts, and online social networks so as to further refine the ideas presented here and make a significant contribution to enhancing research and practice and improve educational and scholarly practices. This book, offered by Athabasca University Press freely and openly to anyone interested, aims to do just that.

REFERENCES
