In conducting research on distance education, I was able to find tremendous resources in particular fields of study. My primary area of study—composition—had thorough documentation of the development of technology in the field by scholars such as Cynthia Selfe, Gail Hawisher, and Hugh Burns, among many, many others. Nursing and theology were other fields with hundreds and thousands of scholarly articles and publications chronicling the unique history of incorporating distance education into their fields of study. These publications started with seemingly simplistic developments such as bringing a television into the face-to-face classroom to enhance the educational experience with technology. Eventually, these texts critically examined learning management systems, institutional development, faculty support, and many more facets of distance education.

The perspectives of these texts developed from examining a technological tool to modifying one's pedagogy to utilize technology effectively. While these texts were invaluable examinations of the development of distance education across these particular disciplines, there did not seem to be any research regarding distance education across higher education, regardless of discipline. In addition, the presentation of research was not evenly distributed across disciplines. As previously stated, some areas of study had tremendous research into this area, and some were relatively quiet on the matter.

Regardless of discipline, distance education is the new wave of the educational present and future. The statistics regarding distance education continue to increase year to year, and students, faculty, staff, and administrators are likewise increasingly expected to have experience in this capacity. Understanding the past of one's discipline, and one's area of research (such as higher education) is necessary for continuing to shape a successful future in education. The goal of this text is to represent varied perspectives on the history of distance education, and significant issues revolving around distance education in order to better understand and assess the current state of higher education and the goals of the future.

The audience for this text includes all educators and administrators that are currently engaged with, or interested in, implementing distance education courses for their students. Specifically, this text critically examines the processes associated with distance education within higher education. While some of the information may be applicable for K-12 education, the likely readers of this text will be those affiliated with higher education. As will be explained later in this Preface, some of the chapters of this collection examine distance education from a unique disciplinary perspective; others discuss this educational shift generally in terms of higher education. While this text is not a comprehensive overview of distance education in all disciplines, readers may find that the experiences and developments in one discipline may shed light upon challenges in another discipline.

Below is a breakdown of the content area to be discussed in each chapter of this collection. The first area of the text focuses on Humanities-area discipline-specific examinations. These chapters provide
specific discussions of the development of distance education within Humanities disciplines, both providing historical overviews and paving the way for current and future discussions in these areas. The authors of the second area of the collection discuss science disciplines. Similar in organization to the first section of the text, the authors in this second area strive to provide the unique perspectives of educators and administrators examining distance education from the point of view of their disciplinary developments. And the third area is a more interdisciplinary area of review wherein several important matters to higher education will be discussed and evaluated. These areas present timely analyses of distance education including the developments of community colleges, social and pedagogical implications of distance education, and discussions of students’ voices and experiences with distance learning.

The following paragraphs highlight specific information about each chapter to be found in this text.

Chapter 1 discusses the opportunities that distance education has provided to the field of creative writing. The field of creative writing studies includes commonly regarded forms of distance education such as online courses, but there is an impressive diversity regarding the opportunities available to creative writers. To illustrate this, the chapter discusses the two tracks available to writers. The first features the university environment, where students enroll in undergraduate and graduate creative writing degree programs. These programs could be full-residency, low-residency, or online. However, not all writers are able or willing to enroll in such programs. For these writers, there are non-academic options that are driven not by colleges and universities but by the publishing community. Non-degree writers might enroll in online workshops or communities. Finally, non-degree seeking writers might work independently through MOOCs, extension classes, iTunesU courses, and how-to texts. This chapter discusses the history of distance education as it is evolving and the potentially overwhelming number of options available to aspiring writers.

Chapter 2 details the history of The New School. In 1998, the AT&T Foundation awarded a grant to the Teacher Education Graduate Program at The New School, a university in New York City, to implement an Advanced Professional Certificate (APC) in Teaching and Learning with Technology (TELT). The grant was given to train public secondary classroom teachers in urban schools how to integrate technology into their classes. Using a cognitive science and constructivist-based theoretical framework, a twelve-credit, four-course curriculum to earn the APC was developed. The intention was to offer it in a blended format in Fall 2000 through Distance Instruction for Adult Learners (DIAL), the New School’s innovative online learning program. Because this was occurring during the early days of computer use in the classroom, many faculty and students had no prior experience in teaching and learning with technology, much less with teaching and learning over the Internet. Web-based learning was in its infancy. DIAL was one of the first online learning programs in the United States to offer degrees, certificates, and courses in the liberal arts through a computer-mediated environment. The Advanced Placement Certificate in Teaching and Learning with Technology was the first of its kind to offer a theoretically based course curriculum in a blended learning format to urban educators. The historically significant outcomes were as follows: creating a method for teaching instructors how to teach technology online, learning how to integrate technology in the classroom, learning how to teach as well as participate in an online environment, using the DIAL interface which was an early platform built, in part, on a customized Linux platform. The pilot TELT program used both formative and summative assessments for learning outcomes and efficacy. The results were positive and a model for teacher education with technology was created. Nothing of this kind existed previously. The model was for continuing the New School graduate certificate program in the next stage.
Chapter 3 will illustrate the current state of challenging conversations within composition studies as a kaleidoscope of positions in which instructors using online education must conscientiously and deliberately position themselves. Although computer technology and composition courses have gone hand-in-hand for decades, the history of online education within composition studies has yet to be determined, much less written. This chapter aims to identify the shape that history will take as it unfolds in the upcoming years. The relationship between composition courses and online education is complicated, and attempting to summarize that relationship in a blanket statement may be feeble or futile. As a field, composition faces the challenge of identifying best practices in online education at the same time as it struggles to identify standardized content for its courses. The Council of Writing Program Administrators, a national organization for those who oversee composition education, recently published an outcomes statement that defines expectations for composing in electronic environments but stops short of identifying guidelines for online education. Recent attempts at composition MOOCs from three major universities illustrate the effects of this challenge: the curriculum and approaches differ greatly across composition courses, as do the degrees of their implementation of innovative online learning techniques. Assessment challenges also plague online composition courses. While other fields might assess student work with standardized methods or computerized scoring, the work of composition requires tedious and labor-intensive assessment methods difficult to delegate to software. Even the storage of student work becomes contentious, with concerns over corporate LMS ownership of student writing, highlighting the intricate role of originality in the field.

Chapter 4 discusses the Standards for Mathematical Practice and describes varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The Common Core State Standards in Mathematics provide ample opportunities for teachers to use multiple available ICTs to support mathematics teaching and learning. From the grade level content standards to the Standards for Mathematical Practice, there is a need to provide examples about effective ways that technology can be integrated into mathematics classrooms. Actually, mathematical methods and techniques, such as ordinary and partial differential equations, stochastic processes, calculus of variations, and nonlinear analysis, are typically used in engineering and industrial fields; in particular, aerospace engineering, bioengineering, chemical engineering, computer engineering, electrical engineering, industrial engineering and manufacturing systems, and mechanical engineering are of interest. Along with fields like engineering physics and engineering geology, it can also become an interdisciplinary subject motivated by the engineers’ needs for practical and theoretical considerations with their specialization while dealing with constraints, in order to be effective in their work. Mathematical problems in engineering result in rigorous engineering application carried out using mathematical tools. Contributions containing formulations or results related to applications have become very common. Therefore, the solid understanding and command of mathematical knowledge is very necessary. This chapter will present the introduction of currently available ICTs. They can be applied to evaluate and improve the performance of the e-learning environment. The theoretical knowledge itself is also an important part of mathematical learning, which prepares for the students’ future engineering education.

Chapter 5 provides a critical examination of the evolution of distance education in tertiary aviation programs. By reviewing the literature and studies associated with Professional Pilot training, the chapter explores the issues affecting the delivery of distance education in university Professional Pilot programs, including the global shortage of Professional Pilots, the nature of work as a Professional Pilot, the importance of simulation, and the integration of assessment. In an effort to address some of
the challenges, this chapter also offers recommendations and solutions. The authors contend that tertiary aviation distance education programs need to be adjusted to consider the needs of the student and industry by: (1) implementing action-based learning, (2) considering pedagogy before technology, (3) encouraging interaction and collaboration, and (4) embedding formative assessment. The chapter aims to contribute to the body of literature aimed at enhancing the effective delivery of distance learning in aviation tertiary education.

Chapter 6 examines the role of the Instructional Designer. The Instructional Design field has been significantly impacted by the distance education phenomena. With the strengthening of the distance education presence, more focus has been framed around concerns related to interactive activities that built upon the importance of communications and building relationships between the course information, the learners, the instructional facilitator, and the larger community wherein the information may be more fully framed. The vast and ever-expanding distance education phenomena is moving beyond the traditional “comfort zone” of procedural Instructional Design expectations, towards a more holistic and innovative thoughtful multimedia-supported design and development process wherein the Instructional Designers must be able to engage more fully in the socio-engagement of the learner within a multimedia-supported global community of learners.

Chapter 7 discusses the development of online learning in the discipline of economics. Introductory economics courses for undergraduates have increasingly been delivered online. This chapter documents not only the number of economics courses taught online and the types of institutions where they are offered, but it also highlights how the online environment changes how students learn and faculty members teach. As for how students perform in an online classroom and whether learning online is superior or inferior to learning face-to-face, the evidence is mixed. The overall finding with regard to student learning, however, is that there is no statistically significant difference in student learning in either the face-to-face or online environment. Finally, certain kinds of technology can enhance student learning in an online environment such as video lectures, blogs, and frequent homework assignments that guide students. This chapter concludes with a discussion of instructional design and how to make informed technology and assessment choices in the economics classroom that enhance student learning.

Chapter 8 outlines the history and development of an international distance learning relationship, which was established between an Australian and Japanese university. In 2002, the University of Sydney, Australia and Gifu University in Japan established a lecture exchange program whereby live lectures would be transmitted through Web-based video conferencing. Further development of the relationship resulted in an additional three-year program whereby an entire course, consisting of weekly live lectures transmitted from Australia, was offered not only to local university students but citizens of Gifu city. An empirical account outlines the origin and purpose of this course, analyzes its success, discusses pedagogical and cultural issues and challenges that arose, and makes recommendations for further development. The final section of the chapter suggests possible future directions, including a theoretical model for worldwide international distance education.

Chapter 9 examines blended learning. Blended learning is proliferating rapidly in higher education across the United States. However, this learning environment may pose new challenges to learners at moderately selective colleges who are normally found to be low in autonomy. A quasi-experimental study was conducted to examine the learning achievement and course satisfaction of this group of learners in two sections of a course, with one being blended and the other a face-to-face. The results, shown in this chapter, reveal that instructional mode does not have a significant effect on learning achievement and course satisfaction; however, a further examination into the course structure, dialogue, and learner
autonomy suggests that low structure and high dialogue can help reduce transactional distance and a synchronous format for the online component in a blended course is highly recommended. In addition, coaching and scaffolding learner autonomy is indispensible for learners at moderately selective colleges and should be considered in the design and implementation of online learning.

Chapter 10 examines a particular Learning Management System (LMS), Blackboard, and its implications. In the 1980s, during the emergence of the online software called Blackboard, the academic target audience was filled with field independent learners. With the growing success of Blackboard, the availability of the new software broadened and eventually claimed the status as the number one choice of software for online education. With the acceptance of online education as an effective tool for learning, the online classroom demographics began to shift with a growing representation of field-dependent minority students. This shift in demographics also meant a shift in learning styles. This chapter highlights elements regarding the development of Blackboard and the design shift within Blackboard. It also provides practical suggestions that can be incorporated into an online instructor’s pedagogy so that the 21st century online class will be more attentive to the needs of the minority, field-dependent students.

Chapter 11 examines student satisfaction with distance education. In recent years, many individuals started pursuing higher education to increase their marketability. The growth in the online market was significant and due to full-time workers, the fastest growing segment of the student population. In addition, online education became an essential element of higher education and continues to grow with a potential to facilitate learning. Evidence indicates that many students become frustrated after their initial online experience and fail to pursue additional online courses. Little is known about the reasons why this phenomenon exists. The purpose of this quantitative study was to examine students’ satisfaction with online learning environments for online students attending an online BA program guided by the Social Cognitive Theory (SCT) conceptual framework to determine students’ perceptions of social presence in the online environment. The sample population was selected from an online university that offers both traditional and online programs. This population was enrolled in an online bachelor’s program. The selection of the student population from this program was due to the need to improve on the U-rate. The U-rate is the unsatisfactory rate of a course due to few factors. Such factors were low Course Level Assessment (CLA), course difficulty, content presented in the course was not clear, or students struggling with course outcomes. In addition, the sample population has taken at least one online course to ensure their familiarity with online courses and the learning environment.

Chapter 12 critically discusses the development of distance education within community colleges. When a college’s faculty, staff, or students perceive distance learning negatively, the implementation of distance learning can be adversely affected. This chapter addresses the perceptions of community college educators regarding the increased frequency of distance learning at their institution. It explores the current literature on distance education. Key components such as instructor skepticism, ethics, faculty development, and evaluation methods are the crux of the information. Research has been conducted in many different areas and about many different perceptions and points which are examined.

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