Preface

This casebook is a collection of 21 diverse teaching case studies framed by the field of educational technology and many of its facets. “Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” (Januszewski & Molenda, 2007). The definition of educational technology can encompass nearly an infinite number of technologies, practices, and theories. Further, the field of educational technology has evolved in the past several decades, and during this time, we have observed several new developments, including mobile learning, games and simulations for teaching and learning, online learning environments, electronic performance support systems, or blended learning environments. These new developments have shaped and changed the way in which we interact and work as students, teachers, scholars, and professionals in all educational environments and disciplines.

Have we kept up with the pace of these new innovations and problems and their presence in different contexts within our educational technology courses and programs? This casebook addresses this concern by providing educators a wide range of current and real-life topics to select from to integrate into their courses and programs. Topics such as integrating learning management systems into religious education, developing or using educational games or simulations, using mobile devices in K-12 education, developing online programs in higher education, using social media in formal education, or using electronic portfolios are presented and discussed. Educators within our field can select from this diverse body of works to supplement and enhance their courses. These teaching cases can be used in foundations of educational technology courses, instructional design courses, project management courses, and even issues and trends courses to discuss the facilitation of learning using educational technology. Each teaching case includes a rich description of an educational technology innovation or problem, the ways in which learning was facilitated, and analysis and discussion questions to expand a student’s understanding.
BOOK OBJECTIVE

The overall mission of this casebook is to provide educators in the field of educational technology an accessible, valuable, diverse, and useful text that can be seamlessly integrated into instruction and assessment in educational technology programs. The book includes 21 unique contributions from educators and professionals in the field of educational technology and outside of our field (e.g., medical education). The goals of the casebook are to 1) provide relevant and in-depth case studies that can be used for instruction and assessment in educational technology programs, and 2) represent a diverse range of topics, dilemmas and contexts within the field of educational technology to better prepare students to transition into the field and to critically think about solutions to educational technology challenges.

AUDIENCE

Educators and students within the field of educational technology are the target audience of this casebook. The challenges and best practices presented in these cases that represent a wide range of educational environments are situated within larger questions in the field of educational technology related to institutional adoption of new technologies, resistance to technology adoption, design and development processes, and teamwork and collaboration. It is our hope that educators in the field will use the teaching cases from this casebook as problem-based learning opportunities within their educational technology courses and programs that involve the analysis and discussion of educational technology-related problems. Educators can select and assign these case readings as independent assignments or groups assignments in face-to-face, blended, and online courses.

ORGANIZATION

The book contains 21 teaching cases on a wide range of educational technology contexts, including K-12 education, higher education, religious education, and healthcare education. Topics range from learning management systems to games and simulations to mobile learning environments to the use of video in the production of online courses. Each case involves an educational technology innovation or problem with a description, and several analysis and discussion questions that can be used for assignments and in-class discussions.

Chapter 1 starts us off with a discussion about the use of technology in religious educational environments with a focus on learning management systems (a.k.a. course management systems). As noted in the case, there is an increasing pressure on religious institutions to remain technologically relevant in order to reach and
teach digital natives. The case is set in a Jewish congregational religious school integrating the Moodle learning management system. The case highlights the challenges of integrating a new innovation into an existing resistant cultural system, a perfect example of Diffusions on Innovations applied to an educational problem.

Chapter 2 shifts the focus to traditional K-12 educational environments and the potential of social media tools like Facebook. The case provides an in-depth review of an attempt to successfully integrate a Facebook group in an Advanced Placement United States History course. As opposed to a teacher-led or institutional initiative, this case is about a student-led initiative and how a teacher responded to the use of Facebook in a traditional academic setting. The teacher documented an entire year’s student usage of the Facebook group for both educational and non-educational purposes. The case highlights important considerations like technology policy at the district level and school level concerns from both teachers and principals.

Chapter 3 begins to explore technology diffusion and adoption in K-12 schools and university teacher education programs on a larger-scale. A widely accepted model for preparing teachers is through partnerships between universities and K-12 schools. Sometimes these partnerships are referred to as Professional Development Schools in which pre-service teachers and in-service teachers learn alongside each other in actual teaching including technology use. This case poses a challenge to the readers in how technology can be successfully integrated into the K-12 curriculum to simultaneously meet sometimes the competing agendas of university, school, and state stakeholders. A special focus is placed on the development and implementation of technology integration plans.

Chapter 4 provides a rich account of school districts’ attempt to successfully integrate technology into schools via professional development and follow-up observation and evaluation. The case highlights the key features of effective professional development initiatives in K-12 education, taking into account the teachers as adult learners. Further, the case considers measures such as the observation of technology-enhanced teaching and evaluation of the professional development. The case describes the challenges and problems from the perspective of a teacher and a technology coordinator working within the school district.

Chapter 5 focuses on the challenges of integrating 21st century skills and technologies into teacher education courses that have traditionally focused on the industrial model of education. Rather than focusing on specific technology skills, the course described in the case focuses on developing the capacity of pre-service teachers to deploy 21st century technology in their future curricula. The authors’ course, using backwards design, structured a set of activities for pre-service teachers to engage, reflect, and share. The challenges of creating this teacher education course are highlighted and the activities are described so that others can learn from their experiences.
Chapter 6 provides a detailed account of a learning technology specialist in a community college attempting to help transition faculty members in the social sciences to teach online. The case begins with the learning technology specialist, Susan, encouraging the faculty members to create short online videos to introduce the students to their courses and create presence within those courses. As Susan is successful in this endeavor, she is then asked by the administration to give a presentation on the use of video-based technologies in online learning environments. The case ends with Susan preparing for this presentation and the range of considerations that she must take into account.

Chapter 7 focuses on an often overlooked aspect of educational technology practice—coaching. As coaching is a resource-intensive process, the thrust of the case is on the integration of an electronic coaching (dubbed e-Coaching) system in a large, high-tech company. The e-Coaching system uses non-human pedagogical characters, or avatars, as “coaches” who provide thought-provoking questions to the users. The case describes an organization’s attempt at integrating an e-Coaching system into its enterprise to coach employees, its systematic evaluation, and its associated challenges.

Chapter 8 moves us into the healthcare arena in which a practical problem is addressed with the use of systematic training using technology. The setting involves a healthcare system that has faced several problems related to patient safety due to miscommunication amongst healthcare team members. The team members include individuals from a variety of health backgrounds; including emergency medicine, surgery, nursing, and administration. Training is identified as a way to correct this problem via a needs assessment. The case describes an instructional designer’s role within the context of a complex healthcare system and the challenges with analyzing, designing, developing, implementing and evaluating a training program.

Chapter 9 involves the systematic process and challenges involved with developing an educational tool (based on hydrology) from concept to implementation. Set in the context of a National Science Foundation grant program, the case describes the experiences of a director of education’s trials and tribulations in securing the grant monies, designing a complex learning tool, and bringing together a team of scientists, developers, teachers, and students to make the vision of the successful grant proposal a reality. The case emphasizes complex design decisions, sophisticated technologies, and team dynamics that are inherent within the field.

Chapter 10 shifts us back into the healthcare domain in which medical education is fundamentally changed with the introduction of new policy. In response, a National Pediatric Nighttime Education Steering Group creates a national, peer-reviewed, Web- and case-based curriculum for nighttime learning in pediatrics. The curriculum is systematically field tested with 89 programs from across the United
States. This case describes a rich problem within the context of medical education, presents a curriculum that is developed following rigorous procedures, and offers the readers with thought-provoking questions.

Chapter 11 brings us back to the K-12 context with a focus on mobile learning. The use of wireless, mobile, portable, and handheld devices are increasing and diversifying throughout education system, especially in light of Bring Your Own Device (BYOD) policies being instituted by school districts. This case provides an account of one teacher’s attempt to learn how to successfully integrate an iPad into the classroom from another teacher that has experience in using mobile devices in the K-12 classroom. The case describes a formal classroom observation in which iPads are used in a mathematics lesson. The focus is on the pedagogical affordances of mobile devices in K-12.

Chapter 12 transports us back to the question of whether social media has a place in formal education, but this time in the context of higher education. Specifically, the use of Twitter is described in relation to two institutions of higher education. A relevant theory is presented – the Learning and Teaching as Communicative Actions (LTCA) theory – to frame the use of Twitter as an educational micro-blogging tool. Important concepts like providing timely feedback, fostering social presence, and time on task are highlighted. The case enables the reader to see the possibilities of using social media tools within their own higher education courses.

Chapter 13 engages the readers in a host of issues related to the design and development of an educational game to teach higher education students about information literacy. In the context of a grant funded program, the case delves into the workings of a team, including library content specialists, computer programmers, an undergraduate research group, and an expert on the design of educational games. The case presents several teamwork-based problems for readers to identify, analyze and discuss – all focused on the development and deployment of educational game in higher education.

Chapter 14 highlights the deployment of educational technologies in a higher education institution in a developing country. Precisely, the focus of the case is on the diffusion and adoption of a learning management system in a culture of resistance. The faculty members at the institution are reluctant to adopt the technology for many reasons. A few faculty members who have used the learning management system have since abandoned its use. This case centers on the use of the Participatory Action Research model as a tool to engage faculty in using the learning management system.

Chapter 15 describes the challenges of implementing a successful online program with limited resources in the context of a Historically Black College and University (HBCU). The case is set in a period of economic downturn in which the HBCU attempts to increase student enrollment via online education. The case offers the readers a number of issues related to the adoption of online education in higher education.
in general, including technology and management concerns, cultural concerns, and faculty perspectives and preparation. The case provides a suite of solutions that may be applicable to other institutions of higher education.

Chapter 16 describes a meaningful collaboration between a university tutoring center and a faculty member in educational technology on the development of scenario-based simulations for at-risk college students. The simulations focus on providing stories of people dealing with academic, financial, and personal issues that might relate to the at-risk college student. These simulations are used by students in a study skills course to stimulate conversations about decision-making. The case highlights the design process as being iterative and negotiated as opposed to systematic and linear design processes in traditional instructional design models. The case raises several important considerations about the design of educational innovations in general.

Chapter 17 touches on the many areas often neglected in instructional design, including communication with clients, working with a diverse group of stakeholders, and the consideration of non-instructional interventions used in human performance problems. The case centers on the use of appropriate grammar by pre-service teachers and the use of non-instructional interventions by teacher education faculty. The case provides a rich story of a group of individuals serving as instructional designers and the process they traverse to develop a holistic solution to this problem of practice.

Chapter 18 describes a case involving the use of a tool known as simSchool that focuses on providing pre-service teachers a fail-safe environment to simulate their teaching practices. Focused on the development of mathematics content knowledge and pedagogy, the case provides a rich account of a teacher education in a European university using simSchool as a virtual field experience for pre-service teachers. The tool is pilot tested with a group of educators and the many challenges of successfully integrating this type of technology are underscored.

Chapter 19 details the design, development and dissemination of an ePortfolio tool that focuses on models of self-regulated learning by a Canadian university. The ePortfolio tool, known as Electronic Portfolio that Encourages Active Reflective Learning (ePEARL), is used by elementary, secondary, and post secondary students to demonstrate learning in a variety of contexts. The case presents three vignettes that represent the interpretive lenses of a students, teachers, and administrators with respect to the ePortfolio tool. The reader is provided several important considerations ranging from buy-in from the stakeholders to technical challenges with the delivery and support of the tool.

Chapter 20 is situated in a teacher residency program aimed at producing high quality teachers for urban schools. One component of this residency program is a module focused on technology for enhancing teaching and learning. The case provides a description of this program through the lens of the educational technologist
charged with the development of the workshops for this program. This case outlines the instructional design process used to approach the development of the workshops for the technology component of the teacher residency program. The case includes several challenges with the teacher residency program ranging from the frustration of the pre-service teachers to using Google as a platform.

Chapter 21 is set in the context of the Portuguese School Libraries Network – an agency of the Ministry of Education and Science in Portugal. The Portuguese School Libraries Network developed an evaluation program known as School Libraries Evaluation Model (SLEM) and it is used widely across the school libraries of the Portugal to document how school libraries operate and contribute to effective teaching and learning. The case discusses the development of an e-learning program designed to support the stakeholders in carrying out the SLEM program.

CLOSING REMARKS

This casebook addresses the inherent complexities of the field of educational technology by providing rich descriptions, practical innovations, and real problems. Each case is set in a real-world context involving several potential stakeholders addressing challenging technologies, problems, and innovations. The cases represent several different nations, including the United States, Ghana, Canada, and Portugal. Further, the cases address diverse contexts, including government, higher education, K-12 education, and healthcare, representing the myriad ways in which educational technology is being integrated into teaching and learning in multiple disciplines. It is our hope that the meaningful analysis of these cases will lead to fruitful classroom discussions in educational technology courses and provide students with insight into the breadth of the field of educational technology. The cases are designed to support a problem-based learning approach in which students engage with real-life problems, experiences and knowledge as opposed to being passive recipients of knowledge. We hope that educators and students alike will find value in this casebook and continue to use it to expand their horizons in the field of educational technology.

Albert D. Ritzhaupt
University of Florida, USA

Swapna Kumar
University of Florida, USA

REFERENCES