Preface

The Industrial Revolution of the 19th century encouraged vast migration to American cities. By the 1990s, three out of four Americans lived in an urban setting. The complexity of modern urban life has heavily impacted the public school system. These changes, coupled with technological advances, have created a unique urban environment for learning. Many writers make notes of the distinguishing features of urban schools and delineate urban schools as places that operate with large ineffective bureaucracies, have high levels of diversity, high population density, profound income disparity, and high levels of student, teacher, and administrator mobility. At the dawn of the Internet era, the priority was figuring out how to let more students and teachers access the world's information. Now the challenge is managing all that information and users' behaviors. Because these distinctively urban traits impact student learning, many researchers argue that education must address these matters.

This book contains a spectrum of case studies aimed at understanding technology integration in urban schools. Section 1 is a collection of cases based on original stories composed by current teachers on issues relevant to the students, staff, faculty, and administrators in K-12 urban school settings. Topics in these cases include: student motivation, equipment upkeep, data security, lack of technology, budget shortfalls, technology funding and fraud, and assistive technology for students with behavioral and emotional problems.

An ongoing challenge for most urban teachers is finding ways to involve students in learning activities that promote retention and engagement, what is usually described as "effective learning." This challenge has become even more pronounced as students have adapted to the essential egocentrism of the mobile communications device.

As most parents of adolescents know all too well, text messaging, video games, and mobile phones in general play an indispensable role in the lives of today's K-12 students. Tech savvy youths know what they can do with technology but may not know the proper limitations of technology. The speed of technological advances available to American youth has caught uninformed parents and teachers by surprise.

Section 1 is a collection of cases based on original stories composed by current and future teachers. Teaching requires preparation that can respond to the rigorous

demands of the contemporary classrooms. The overall aim of these case studies is to provide a series of easy to read stories about issues that are considered important in the integration of technology in urban schools. The cases discuss topics relevant to technology abuses, funding, student motivation, professional development, video game addiction, resource allocation, and cyber bullying.

Section 2 contains a number of cases written by teacher educators in relevant to K-12 urban school settings, training of preservice teachers, and professional development of inservice teachers. This section presents a collection of case studies that illustrate preparing teachers to integrate technology in urban schools from many angles.

Depending upon interest, the readers may decide to focus attention on Section 1 of the book: a section that explores issues and themes as they relate to integrating technology, from future and current teachers' perspectives. Readers who would like an insight into preparing future teachers will find Section 2 relevant.

An ongoing challenge for most urban teachers is finding ways to involve students in learning activities that promote retention and engagement, what is usually described as "active learning". The first case in Section 1, "Use of Technology to Motivate Students," describes how a middle-school teacher transformed students from being mere visitors "who only come to the classroom to chat with friends rather than learn any subject or skills," into active learners. The introduction of electronic whiteboards in the mathematics classroom increased student engagement. However, was the sudden surge in student motivation the result of the novelty effect? Would the effect soon fade and the school return to the status quo? These questions and more are addressed in this case study.

In an effort to control paper supplies and budget, the next case describes how an elementary school initiated a "No/Low Paper Policy and Equipment Upkeep." Under this policy, teachers were encouraged to use the technology available in classrooms instead of worksheets. Teachers were assigned quotas and pin numbers to discourage excessive paper usage. Despite the forward thinking attitude of the school, the campus technology specialist continues to struggle with being heard by campus and district administration on issues dealing with the purchase and upkeep of technology.

Two additional case studies address concerns over campus data security. Schools are allowed to collect public information including names, e-mail addresses, phone numbers, addresses, types of business, genders, dates of birth, behavior and assessment records, customer preference information, and other related personal information. Schools collect, store, and use the personal information of students and parents, for defined purposes. Discover how data security is being handled by reading these case studies.

"The Laptop Tracking Plan" case describes how a school was able to receive the "Technology for All" grant and issue a large number of laptop computers to students for use at home. A policy for checking out the laptops was developed that included a software utility to keep track of the amount of time students may keep the laptop, the implantation of antitheft tracking software to minimize loss, the maintenance plan of the laptops, how they were to be insured, and other information. Later, the school principal had to devise a new plan so that the laptop checkout policy would not escalate into damages and possible lawsuits.

Some data security incidents occur at the most unexpected moments and places. The case of "School Districts Stumble on Data Privacy" depicts how three school institutes are grappling with the loss of private information, each through a unique set of circumstances. Pasadena City Public Schools discovered that it had sold as surplus, several computers containing the names and Social Security numbers of employees. Stephens Public Schools learned that personal information about students at one of its middle schools was lost when a bag containing a thumb drive was stolen. Woodlands Public Schools accidentally exposed employee personal data on a public Web site for a short period of time. How should each of these institutions react?

Lately, the headlines clamor about budget cuts to public education. Reductions in school funding will only guarantee further declines in the technology applications of public education in America. In the case, "Budget Woes," a small group of technology teachers and campus IT specialists exchanged ideas about the impacts of the latest round of budget cuts to their jobs and technology on campus. Issues brought up include how schools "can do it all cheaper" if more online courses are added, how dual credits courses that count both for high school graduation requirements and college credits are becoming popular among families with reduced tuition budgets, how teachers have to wait for 6-8 years for new computers instead of 4-5, how campus Web sites are out-dated due to lack of maintenance fees, and how campus instructional technologists are increasingly spending valuable time and dwindling resources fixing obsolete computers and equipment.

Many times in the urban schools, computers and learning software are found in either short supply or simply nonexistent. The case study, "Lack of Technology in Urban Schools," compares the learning technology resources and opportunities accessible to William and Terrance, cousins who are both in the 4th grade. While William attended a school located in the middle-class suburb, Terrance attended an inner-city public school in the same metropolitan area.

The case, "Large School District Struggles to Obtain E-Rate Funds After Bid-Rigging Probe," discusses E-Rate as a funding source for school districts as well as some pitfalls associated with this federal program. The purpose of the funding is to ensure Universal Telecommunications Service is available to public schools and libraries. If approved, applicants are required to follow and maintain strict account-

ing procedures, and any red flags raised during the continual compliance assurance process can immediately stop funding until a resolution is found. The potential for a good deal of tension among education stakeholders exists when E-Rate funding is put on hold due to such audit questions. Such experiences are common as detailed in this case study.

In "Technology in the Special Education Classroom," Prairie School District believes in integrating technology into classroom learning for all students. However, for some schools, "all students," does not include the special education population. Rolando was a 7 year old autistic boy labeled with Autism and mental retardation. Read the case story, and decide if you were Rolando's teacher, would you have reacted differently?

In the case study, "Emotional and Behavioral Disorders Students Using Computer-Assisted Devices", Paul, a 12 year old 6th grader diagnosed as Bipolar, ADHD, and having difficulty controlling impulses, attended a public school and stayed in the general education classroom all day. After multiple research-based interventions had been tried over a period of weeks, Paul's teacher and the behavior specialist decided to try computer software to help him reflect on his behaviors and how his behaviors made others feel.

It is now commonplace for students to bring PDAs and smart phones into the classroom which gives them swift access to the internet. While this technology is a benefit for students conducting research for a project, it can also be detrimental for educators conducting assessments. "Pop Quiz Debacle" describes a particular quandary for educators who work with advanced placement or gifted/talented students. For students with a very high GPA and other academic performance, what distinguishes them is how perfect they are, so there's no room for any kind of error. If there's no room for error, students tend to cheat – even though these students would have done just fine on the test. They say they cheat because, "this is [our] safety net."

In recent years Facebook, MySpace, and other social-networking sites have been blamed for the suicides of teenagers in Missouri, Massachusetts, and New York. Parents complained their children were traumatized by nasty comments posted by cyberbullies on social-networking sites. Schools and districts are taking action in response. According to a *T H E Journal* survey conducted in 2009, 68 percent of respondents replied that their districts banned social networking sites for students and teachers, 19 respondents replied that they banned social networking sites only for students, and another 12 percent said there was no ban in their districts. In the case study titled "Principal's Letter to Parents: Take Kids off Social Networking," a middle school principal calls for parents to yank their children from all social-networking sites after a so-called "Naughty List" was posted on Facebook. Is his extreme measure justifiable?

The case, "Students' Reliance on the use of Technology for Classroom Assignment," describes how Ms. Turner, an eighth grade History teacher, assigns students a research paper on Cuba and communism. She asks the students to use only paper media for their research materials. Her students argue, "Why should we waste time using books to find information, when we can just look it up on the Web quickly?" Angry parents also question why the students should have to use only books for research when they have been given laptops by the school.

Cyber bullying has increased with the use of the Internet. Increasingly, youths are using their tech gadgets and social media to abuse others in romantic relationships. According to new results from the Cyberbullying Research Center, a research group dedicated to tracking bullying behaviors among online youth, about 10 percent of interviewed teens reported receiving a threatening cell phone message from their romantic partner. Abusive teens may also exert their control by preventing their partners from using technology, experts say. About 10 percent of teens interviewed said a romantic partner forbade them from using a computer or cell phone. Many students are at a disadvantage because they do not know how to identify cyber bullying, neither do they know what to do once they have identified that they or someone they know is being bullied. The case "Cyber Gangs inside the Classroom" describes how neither Jonathan's parents nor his teachers knew about the difficult situation Jonathan was experiencing with his classmates. Like so many parents and teachers, they did not have any reason to suspect that ten-year-old Jonathan was a victim of a cyber gang's activities occurring right in his own living room and inside his classroom.

In the case study titled "Technology Integration in the Home?" Mrs. Lincoln, who developed her course using a Web-based course management system named Moodle, spent time working on her Moodle pages and posting assignments. She then explained to students how the site worked. She also spent a week in the computer lab training her students to become proficient using the Moodle application. After a couple of weeks, Mrs. Lincoln noticed that a quarter of her students were not completing their Moodle-based assignments. If homework assignments that require the use of a computer are given to students, should they be penalized for what their family cannot afford?

Cell phones in the classroom have become as common as pencil and paper. Teachers are faced with the challenge of making sure that students are not using the phone during class time. One of the features that the cell phone offers is the ability to take pictures and create videos. Not only can these features contribute to cheating, but it can also be used to capture unflattering photos or live moments of teachers and students. Students can take pictures of their unsuspecting classmates in the locker rooms or restrooms, violating privacy. In an act of harassment, they can distribute pictures of classmates to others. They can promote violence by recording fights at

school. They can also use their video capability to provoke teachers and then post their video on sites such as YouTube. Teachers also try to integrate YouTube videos for teaching purposes.

"YouTube in the Classroom" tells the story that among Mrs. Grant's 22 first graders, ten are English language learners, while another two are autistic and have special needs. One of the autistic students is physically and verbally aggressive. Mrs. Grant played a video explaining the importance of classroom rules. She showed another YouTube video showing students following their classroom rules. Mrs. Grant realized that the classroom had many obstacles to overcome before becoming an emotionally and physically safe place for all the students.

A great deal goes into ensuring a smooth-running classroom when a teacher is absent. The case, "Technology and the Substitute Teacher," describes why Mrs. Truman highly recommends pre-regulated set-up and training in technology for substitute teachers.

Mrs. Long's integration of video games in the classroom is a work in progress. In "Video Games in the Classroom: A Success or Game Over," she has observed how video games are a great way to motivate and engage students. On the other hand, she has observed how video games can lead to academic and behavior concerns.

Roosevelt School District, a small urban elementary school district, is trying to find a way to purchase new digital technology for campuses. The basis of the case study titled "How Do We Close the Gap between Technology Innovation and Available Funding?" is to develop a plan for how the district can pay for new technology.

The case "Technology and Traditional Teaching" explains how despite recent online learning inroads in schools, many professional educators and administrators remain hesitant, reluctant, and even resistant to teaching with technology. The cause of resistance to technology is often misinterpreted. Teachers do not resist the technology itself. Teachers resist what the technology may represent - change, confusion, loss of control, and impersonalization. As long as these concerns remain unaddressed, technology adoption in any organization will be an uphill battle.

In "Technology Use on My Campus", Ms. Gonzalez, librarian/media specialist of an urban high school, is asked to prepare a presentation to explain the results of her study of the current status of technology use. The goal of the presentation is to inform the panel of stakeholders so they can develop a plan to further implement the use of technology as a teaching and learning tool on campus.

The author of the case "A High School Librarian's Participation in Supporting Information Literacy on Her Campus" argues that the ability to navigate the web and to use technology effectively and efficiently is no longer an option but a requirement in schools and in the workplace. Information literacy is widely accepted as embracing rapid advances in technologies and recognizing the multiple literacies required of students living and learning in this century. Information literacy has grown to

include traditional literacy, computer literacy, media literacy, and network literacy. Opportunities include the chance to transform today's library into a resource center of the future where information literacy can be easily obtained. Welcome to the world of Ms. West, a middle school teacher turned high school librarian, and see how she ponders upon her new role as being the instructor/specialist of information literacy skills on the campus, a reading advocate and provider of reading materials, as the manager of the resources both information and library resources, and lastly being a collaborator with teachers concerning information literacy issues.

The case "Social Networks: Education beyond the Classroom" describes how Mr. Taylor, a new and techno-savvy teacher, stays connected by maintaining his own social network pages. However, after seeing that other students were using his social network page as a medium for negativity, gossip, inappropriate conversations, and unsuitable remarks, he questioned its continued use as a helpful teaching tool for those utilizing it appropriately.

Distress signals seen in today's American urban schools include increasingly overloaded and underfunded schools, a growing population of indifferent students, limited access to technology, aging school facilities, and outdated books and classroom resources. Teaching requires preparation that responds to the rigorous demands of the contemporary urban classroom. Section 2 contains a collection of cases written by teacher educators in higher education institutes on issues relevant to K-12 urban school settings.

The first four cases in Section 2, written by university faculty, focus on enhancing K-12 students' learning with technology. Interestingly, the cases concerning youth cultures, collaborative tools, and gaming align closely with previous cases written by current and future K-12 teachers in Section 1, but through a difference lens.

This first case study in Section 2, "Using Online Collaborative Tools to Foster Middle School Students' Public Voices: Payoffs, Perils and Possibilities," addresses how an 8th grade U.S. history teacher in a New York urban school, using wikis and online discussion with his students, came to realize that what technology users need in order to take charge of their own online decision making is a series of trial-and-error solutions. This case describes a teacher's three-year journey beginning from his first day of teaching until he finally connected the use of technology to relevant curricular content in order to promote his students' use of online public voices for social justice.

The next case discusses how improvements and access to digital technology can provide opportunities for capturing student thinking never previously considered. The case "Digitally Capturing Student Thinking for Self-Assessment: Mathcasts as a Window on Student Thinking during Mathematical Problem Solving" discusses how mathcasts were used as a way of supporting students during their early attempts at problem solving. Mathcasts are screen captures of students' work as they write and

talk about their thinking during mathematical problem solving. The authors found screencasts to be a good technological match with mathematical problem solving that provided a more powerful opportunity for both self-assessment and teacher assessment that was not available with traditional paper and pencil reflection.

The next case provides reasons for the successful integration of technology into science classes. The case, "Educational Technology in a Novice Science Teacher's Classroom," describes how Mr. Bransford, a novice science teacher, incorporated technology into his classroom practices within his first five years of teaching. In the study, he describes the barriers he faced, his strategies to overcome those barriers, and the final outcome of his technology enriched classroom practices.

"The Case Study of Game-based Learning in a Citizenship Education K-12 Classroom: Opportunities and Challenges" focuses on technology incorporation, in particular gaming technology, into the subject area of Citizenship Education. The case study takes place within the context of a K-12 classroom and explores the processes in which a classroom teacher may have to navigate to be able to use innovative technology within their classroom. The case highlights the main issues relating to pedagogical and institutional considerations.

"Leveraging Technology to Develop Pre-Service Teachers' TPACK in Mathematics and Science Methods Courses" presents two cases that address issues related to using technology as a tool to develop pre-service teachers' Technological Pedagogical and Content Knowledge (TPACK) in mathematics and science methods courses.

In "Issues and Challenges in Preparing Teachers to Teach in the Twenty-First Century," Gibson examines the impact that immersion in technology-infused social studies pedagogy courses had on preservice teachers. The case describes the teachers' willingness to use computer and online tools as well as how they used them during their student teaching. Teacher education students enrolled in two pedagogy courses were surveyed at the beginning and end of the courses and interviewed over the duration of the courses regarding the nature and extent of their technological knowledge and skill. Following the completion of the pedagogy courses, six volunteered to have their technology use tracked during their nine-week practice teaching experience.

The case study "Web-Based Instruction: A Case Study of Preservice Elementary Teachers' Efficacy in Modeling and Reasoning with Fractions" explores the efficacy of web-based instruction on preservice elementary teachers' mathematics learning. Ten preservice elementary teachers were interviewed regarding their ability to model and reason with fractions after receiving web-based instruction on these topics in their regular mathematics method course. The interview transcripts were used to provide information about the strength and weakness of participants' conceptual and procedural understanding of fractions.

An online, statewide technology professional development project was implemented for middle school teachers in Nevada. The case study, "The Pathway to Nevada's Future: A Case of Statewide Technology Integration and Professional Development," reports the preliminary findings associated with the planning, development, and implementation of the Pathway to Nevada's Future project. Baseline data, participant characteristics, findings, and results from participation are reported.

The empirical case study discussed in "Using Technology to Support Algebra Teaching and Assessment: A Teacher Development Case Study" reports on the advancement of 8th grade Algebra I teachers' mathematical assessment practices of technology-based activities and classroom artifacts during a two-year professional development program. As a part of the professional development program, participating teachers documented their use of examining and assessing algebraic work on a handheld Computer Algebra System.

In "ABCs and PCs: Effective Professional Development in Early Childhood Education," Hansen describes how effective professional development seminars can transform teaching practices, invigorate teachers, and increase student engagement. Eighteen elementary teachers completed a yearlong, rigorous, sixty-hour workshop experience that focused on integrating technology in content area instruction. Participants integrated technology effectively, began to develop leadership skills, and experienced changes in attitude, beliefs, knowledge, and capabilities as technology influenced existing curricula.

The case described in "Designing District-Wide Technology-Rich Professional Development" focuses on the following scenario: As the technology coordinator for a school district you receive a state grant to provide technology resources and professional development for every teacher in the intermediate (Grades 5-6), middle (Grades 7-8) and high school (Grades 9-12) classrooms in your district. This case study describes the story of how one school district responded to this challenge.

The book is designed to fill the gaps left in the technology and teacher education field, as typical textbooks for technology and teacher education usually present skills to be learned such as word processing, database management, multimedia creation, and to provide the background required for insight into more advanced issues for integrating technology in education.

Based on the critical issues found in each case, discussion questions have been generated for classroom engagement. Discussion questions provided discussion starters for further investigation, debate, and discovery. For some cases, sample answers to the discussion questions are offered to encourage further development. The response to these questions is open-ended and although research appears to be moving in one direction, there does not seem to be one "right" answer. The case study approach has been effective to train students to think critically and make rea-

sonable judgments. These discussion questions make it relatively easy to facilitate investigation and class participation.

This is a text for graduate students in instructional technology or curriculum and instruction programs with a serious interest in technology. In-service and prospective teachers may also benefit from the insights and understanding that can be gained from deep thinking and discussions. This collection of case studies contains ideas that we are confident the reader will find worthy of consideration.

This book can be approached from a variety of ways, depending on the reader's interests and needs. It can be read in sequence or can simply be dipped into as needed. We the contributors hope you find it useful, stimulating and at times, a little challenging.

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