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# *Introduction*

*Education is the only business still debating the usefulness of technology. Schools remain unchanged for the most part, despite numerous reforms and increased investments in computers and networks.*

—Former U.S. Secretary of Education Rod Paige

Public education is one of the most successful institutions of the Industrial Age. We did a crackerjack job convincing students that a high school diploma was their ticket to a better-paying job, particularly following World War II. According to the National Center for Education Statistics just 95,000 students graduated from U.S. public *and* private high schools in 1900. One hundred years later, the number of public high school graduates alone was 2,809,000. A much smaller proportion of these students completed a college degree, but for much of the twentieth century, high school graduates had access to well-paid jobs in manufacturing and other industries.

Things are different today. Thanks to developments in technology, the world outside school walls has seen more change in one generation than in all previous generations put together. Outsourcing and offshoring has moved many manufacturing jobs overseas. Work is still available in the United States, but people need different kinds of skills to qualify for these jobs. For example, the U.S. Department of Labor makes forecasts about what jobs will see the greatest growth every decade. Each of the top 10 growth areas for this decade requires significant technology skills! In most cases, our schools are struggling to keep up with these changes.

Just as the one-room schoolhouse had to make way for a new model for education in industrial America, twenty-first-century educators must accept the fact that in order to prepare our students to be successful in a technology-infused global economy, we need to make some significant changes. Employers now expect that new hires will arrive with an expanded skill set that includes basic technology use. Where will these skills be learned, if we're not teaching them? Incorporating effective, regular use of technology

## 2 Critical Technology Issues for School Leaders

as a tool for teaching and learning is imperative, if we want to stay on top of the game.

*Leadership could be considered the single most important aspect of effective school reform.*

—Robert J. Marzano

There was a time when most educators assumed that if teachers had access to technology, they would naturally incorporate its use into the instructional day. We know now that some teachers will make this shift, but most don't. Why? There are a number of reasons, but beginning in the mid-1990s, one critical roadblock was identified and then substantiated in multiple studies. This research clearly shows that administrative leadership has a direct impact on all successful school reform, including the quantity and quality of technology use in schools. Two well-known studies that include this finding are the Apple Classrooms of Tomorrow report written by SRI ([www.apple.com/education/k12/leadership/acot/](http://www.apple.com/education/k12/leadership/acot/)) and a report from SouthEast Initiatives Regional Technology in Education Consortium (SEIR ♦ TEC), *Lessons Learned: Factors Influencing the Effective Use of Technology for Teaching and Learning* ([www.seirtec.org/publications/lessons.pdf](http://www.seirtec.org/publications/lessons.pdf)). Each report points out that in those instances where administrators take steps to support technology integration programs, teachers and students are far more likely to engage in regular, appropriate use of technology than in schools where administrative leadership is lacking in this area. (For a more in-depth discussion of effective change in educators' use of technology, please refer to the final section of Chapter 12.)

In order to become effective technology leaders, aspiring and practicing administrators must engage in ongoing professional development. But many administrators aren't sure where to begin. The National Educational Technology Standards for Administrators (NETS ■ A), released in 2002, offer a comprehensive framework educational leaders can use to identify courses, workshops, and materials that will meet their needs for professional development in this area. The material in this book is designed to provide administrators, and other school leaders, with up-to-date information and resources that align with NETS ■ A. More information about the standards can be found at <http://cnet.iste.org/administrators/>.

The chapters in this book originally appeared between 2002 and 2005 as articles in two professional magazines published by the Peter Li Education Group: *Today's School* and *Today's Catholic Teacher*. Reader response was consistently positive, with many requests for permission to share articles in classes and meetings. However, the audience has been limited to subscribers of these two magazines and colleagues of those readers. This publication makes the material available to a much wider audience.

The articles have been reviewed and updated. To assist readers in using the readings as working tools, additional online resources are listed

at the end of each chapter, and discussion questions have been added to encourage application of the material. Whether you're reading the book on your own, as part of a professional learning community, or as a text for a course, you will find practical information designed to increase your leadership skills.

The book is divided into four sections, each focusing on a different aspect of technology leadership. The sections are New Literacies, Engaging Teachers and Students, Providing a Reliable Infrastructure, and Legal and Social Concerns. Each chapter includes an introduction explaining why this topic is of importance to administrators, annotated lists of additional resources for further research, and discussion questions appropriate for use in personal reflection or with professional learning communities. While the chapters can be read sequentially, it's also possible to pick and choose just those that address a particular need.

Individual administrators can use these chapters for personal growth and reflection. They may also want to share chapters and resources with staff, using the discussion questions as a springboard for grade-level, departmental, or staff meeting discussions. Small groups of administrators who have formed a professional learning community can use the book in the same way. Professional development providers or course instructors may use the chapters and discussion questions as the foundation for class activities or projects.