Foreword

When Sam asked me to write the foreword for his book, I was deeply honored. Sam does great work, and he and I have been interacting for years about instructional technology issues. It was an easy sell. Most important to me, however, was the fact that Sam is deeply, deeply practical. In his blogging, his books, and his work with schools, Sam has the ability to translate big ideas like *tech integration* or *student agency* into concrete, actionable ideas that educators can use tomorrow. In a time when that talent still is in short supply, that matters quite a bit because we're not there yet. Let me explain:

If we open our eyes and look around us for even a few minutes, we will find that it is incredibly difficult to overstate the scale, scope, and rapidity of change that is occurring in our world. For example,

- global corporate supply chains, offshoring, advanced and additive manufacturing, robotics, freelancing, software automation of service jobs, and other trends are forcing tens of millions of Americans to realize that their work, skills, and jobs are no longer indispensable in a technology-suffused, hyperconnected, hypercompetitive worldwide economy;

- entire industries (and sometimes governments) are disappearing as mobile computing devices and the Internet empower individuals and groups in ways previously unimaginable;

- digital, hyperlinked, multimedia texts—and accompanying e-readers, tablet computers, and smartphones—are challenging our very definitions of what constitutes a book or a newspaper (and are destroying traditional publishers' and distributors' revenue streams); and

- twelve-year-old children can now reach audiences at scales that used to be reserved for major media companies, large corporations, and governments.

Cars can drive themselves. Robots can perform surgery. Software can sometimes replace human cognition. . . . Radical transformations are everywhere we turn.

As big as the changes in our information and economic landscapes are, however, they may pale in comparison to the changes in our learning landscapes.

Students and educators now have access to all of the information in their textbooks—and an incredible wealth of primary documents—for free. They have access to multimedia, interactive texts, images, audio, video, games, and simulations that can extend or even replace what is being taught in their classrooms. They can use tools such as blogs, wikis, webcams, and social networks to learn with students and teachers in other states or countries. They can easily connect with authors, artists, business professionals, entrepreneurs, physicians, craftsmen, professors, and other experts.

Students now can actually do real-world work and use many of the same tools and resources that are used by engineers, designers, scientists, accountants, and a multitude of other professionals and artisans. They can share their knowledge, skills, and expertise with people all over the world. They can find or form communities of interest around topics for which they are passionate. They can be active (and valued) contributors to the world's information commons, both individually and collaboratively with others.

We now essentially have the ability to learn about whatever we want, from whomever we want, whenever and wherever we want. We also can contribute to this learning environment for the benefit of others. The possibilities for learning and teaching in our new information spaces are both amazing and nearly limitless.

Unfortunately, if it is difficult to overstate the disruptions that are occurring around us, it is equally difficult to understate the lack of progress that most schools have made in response to these overarching societal transformations. The reluctance of school systems to significantly alter existing pedagogical and organizational practices has long been catalogued. For instance, while students increasingly are self-directed learners and active technology users outside of school, their learning work inside of school—particularly for independent, technology-suffused, higher-level cognitive activities—has not changed much. As the Consortium for School Networking has noted, "[E]ducational mindsets and school cultures do not yet align learning to the realities of the 21st century."

This is true even in schools and districts that are giving computers to their students (so-called 1:1 environments). Although we have pockets of success here and there, for the most part, we still are implementing a 20th (and sometimes 19th) century model of education. If we look at the basic learning and teaching work that occurs in most of our classrooms, it is still primarily transmissive: Students passively receive information from the teacher or textbook (or Internet or software) and then regurgitate it back to show that they have "learned" the required low-level facts or procedures. While this may have been fine for an industrial society that needed compliant factory workers, this model of schooling is woefully

inadequate to prepare graduates for the more complex demands of a knowledge and innovation economy. Every other societal sector is finding that transformative reinvention is necessary in our current climate. Schools shouldn't expect that they somehow will be immune from these changes. And yet, if we look at what is happening in most classrooms on most days, the learning and teaching work that is occurring looks incredibly similar to that done many decades ago.

Economist David Autor at Massachusetts Institute of Technology and others have noted that the economic and employment payoffs for routine mental work are virtually nil these days. But routine mental work is exactly what most students do most of the time in their classrooms. Just as we did 125 years ago for the Industrial Revolution, it's time to reinvent school to be more relevant for the Information Revolution. If economic success increasingly means moving away from routine cognitive work, then schools need to also move in that direction. If analog, ink-on-paper information landscapes outside of school have been superseded by environments that are digital and online and hyperconnected and mobile, then information landscapes inside of school also should reflect those shifts. If our students' extracurricular learning opportunities often are richer and deeper than what they experience in their formal educational settings, it is time for us to catch up. In other words, schools' knowledge work and workforce preparation should match the needs and demands of our era. If we truly care about preparing kids for life and work success, *we need our schools to be different*.

This is where Sam's book comes in. If we're going to transition ourselves to new models of learning and teaching rather than just quit or retire and leave the problem for someone else (Don't laugh! You know you thought about it!), we need some pretty concrete help to get there. Sam's chapters are rich with specific examples of empowered students using technology and show educators how to think about and use digital tools to enhance the learning–teaching process in very intentional and purposeful ways.

It's true that technology is replacing jobs all around us. But the workers—and teachers and students—that will be absolutely irreplaceable in the decades that follow will be those that know how to use digital tools to accomplish powerful outcomes that are impossible without the technology. Sam wants you and your students to thrive in this new environment and is willing to help you get there. Happy reading!

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