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We All Learn

I USTREAMED YOUR USTREAM: NOW THAT'S A TWITTER OF AN IDEA!

As someone who is used to giving over a hundred talks each year and whose blog is titled TravelinEdMan, my schedule in early November 2007 was part of a routine I had come to expect. First, there was a trip to Washington, D.C., to present some of the ideas for this book at the University of Maryland, followed by a presentation at a public health conference in the Walter E. Washington Convention Center a couple of hours later. I flew home the next morning only to return a few days later for a similar sequence of events; this time to keynote a disabilities-related conference, followed by a talk at Northern Virginia Community College, which my friend Nantana Wongtanasirikul had arranged.

As that session ended, a couple of monitors two feet behind me switched from my presentation slides to my Monday night Web 2.0 graduate class back at Indiana University (IU). Within seconds I could view my students back in their Indiana classroom from this classroom in northern Virginia via free Internet-based videoconferencing. They presented to me and I to them. It was the Internet2 at its finest. I could attend a conference in D.C. all day and not miss my class back at IU. In a couple of hours, I thought to myself, I would get a break.

This time I would get a day at home before traveling to the Atlanta Convention Center for a set of four talks at the Georgia Educational

Technology Conference (GAETC). Flying back from D.C. the second time, however, I realized two things: first, my personal gas tank was close to "E" for "essentially out of energy," and second, I was not yet ready for any of the talks in Atlanta. Fortunately, I had an entire day to prepare. Atlanta was a one-day affair—soar in on a nonstop flight from Indianapolis in the early morning, deliver my four talks in succession, and then fly back that night. I hoped to sleep on the plane each way.

Needless to say, GAETC was a grueling experience. By the time I got to my fourth and final talk that afternoon in Atlanta, I was pretty well spent. Worse, the conference organizers had asked me to synthesize the key points of my three earlier talks that afternoon in this final "best of" talk that would likely be my most dreadful talk of the year. I had fifteen minutes to catch my breath and refocus. When I returned, I made a mental list of the challenges I faced—a relatively small crowd, my body was dragging, I had extremely sore feet from making the mistake of wearing brand-new shoes, my vocal cords were about used up, and I was just about out of the free prizes that I could toss to the crowd to distract them.

Could it be worse? Yes. I quickly found out how bad things could get. Just as I was pondering what to do, Vicki Davis, a teacher from Westwood Schools in Camilla, Georgia, decided to plop herself down in the second row. Her selected location was right in front of where I would be presenting and just behind my suite of remaining props and prizes. I had heard about her popular blog, "The Cool Cat Teacher," but we had never met before. I thought to myself, "Oh man, now I am going to be blogged to the world by the Cool Cat Teacher. I am toast, I am really toast! I am not ready for this." Then Vicki decided to go for the jugular and said, "Do you mind if I Ustream your talk?" "Ustream?" I asked "What is that?" Vicki politely smiled and replied, "It is a way to broadcast your talk on the Internet. And it is a free service. People who cannot attend your 'best of' talk will be able to see it." I soon found out that anyone with a Webcam and an Internet connection could create a Ustream account and broadcast his or her captured events to an unlimited audience. Music, talk shows, sports, politics, meetings, speeches, and special gatherings—it is all there in Ustream.

When she finished describing it, Vicki added, "Oh, and I will Twitter it as well." Now Twitter I had heard of but had yet to see anyone actually

use it. With Twitter, friends can sign up to receive updates on activities automatically through e-mail, instant messaging, and the Twitter Web site. Social networking tools and resources like Twitter enable people to quickly connect and share information—the maximum length of posts is 140 characters—with those who have similar ideas, backgrounds, and interests. I realized that people used Twitter to let others know what they are doing or thinking at any given moment during a day. People might note that they are "off to the library," "cleaning the fish tank . . . let me know if you want to help!" or "drowning in a grant proposal." Often such short posts are made through a mobile phone. Vicki was about to let her entire Twitter subscriber network know that she would be Ustreaming my talk. When done, she was going to write a blog-post reflection about my performance that would likely be read by thousands of her blog subscribers and casual browsers. Now, here was one connected teacher!

Given all that, it took just a few seconds to say, "Sure, go for it." I now realized that having my talk on Ustream would make my audience unknowable and perhaps much larger than any audience I had had all year. Things were looking up or at least becoming much more interesting. My body quickly went from butt-dragging tired to highly inspired. I decided to muster all the remaining energy I had for this final talk and leave no regrets. Why not, I was being Ustreamed to a live audience—potentially to the entire connected world, which is over one billion humans! To up the ante even more, those who later read her Blogger post might watch the saved file in Ustream. Within mere minutes, people around the world who received Vicki's announcement on Twitter were logging in to see the show. To my amazement, my colleague, Dr. Bernie Dodge at San Diego State University, was saying hello to me and relaying questions through Vicki. Dodge, the inventor of the now famous WebQuest activity, is someone you want to have answers for. When Vicki casually let me know that Bernie was watching my talk via the Web, it was yet another layer of pressure and a simultaneous shot of adrenaline.

I soon found out that one of my IU students, Jennifer Maddrell, was also tuning in. At the time, Jennifer was working on a master's degree in our distance program in Instructional Systems Technology. She was also a cohost of the weekly Webcast show Edtechtalk, which features the latest news from the world of educational technology to improve

teaching and learning around the globe. She got wind of the Ustream event while attending a conference in New York City and sent a warm message to Vicki for me as well. After the event, Jennifer sent me an e-mail titled, "You Ustreamer!" Then she said, "I was Ustreaming from a conference in New York, when I saw a Tweet [a post to a Twitter account] from Vicki Davis in Twitter that she was Ustreaming YOU! So, at my conference we Ustreamed us watching your Ustream. Cool . . ." Yes, how cool was that? One of my students was watching me present on a topic she was interested in, but it was not during a class at IU. She was not even in the audience for my conference talk. Instead, at the exact same moment my talk was given, she was in a session at an entirely different conference in a city 850 miles away; yet she still could benefit from my presentation as it was happening.

"Ustream a Ustream," I think to myself. Wow. There must be thousands of educational uses for just this one tool. The world of education is opening up before our eyes. And it is truly open and much of it is now free! With Ustream, or some other system, we could bring education and technology leaders from around the globe together for a live event addressing serious issues such as Internet access, the digital divide, and the cost of textbooks. As Live Aid and Farm Aid concerts did in the 1980s and 1990s to help farmers keep their farms, with such resources we could gain global attention and support for education resource and technology needs in different Third World countries or regions of the world. We might name it "Live Ed" and include the best education thinkers and activists from around the planet. It is worth a thought. Okay, who will start Live Ed?

There are so many Web technologies today that, if we combined them, they could extend and amplify the learning possibilities for anyone with an Internet connection. According to Vicki Davis, "We live in a place where we may be streamed, captured, photographed, filmed, and 'snagged' at any time and at any place. It is the publication of our lives like we've never seen before and it opens up opportunities for many of us!" She goes on to tell me that many of the things I crave already exist. There is a wiki page of all educator Ustreams called EdTV. There are online conferences for those who cannot attend live ones such as the K–12 Online Conference. And, if I am still not convinced, she says there is a space on the Web for discussions of issues on K–12 education

called Classroom 2.0 Live Conversations that has some eight thousand members. For those wanting to know where technology in education makes a difference, these sites are surely inspirational. For the time being, however, the notion of someone "Ustreaming my Ustream" will remain novel enough to motivate me when speaking on an empty tank!

THE WEB OF LEARNING

Do you have a favorite place to visit for a vacation? I know of a place more than a billion earthlings have already visited and vow to come back to. Given that you selected this book, I am wagering that you already have been there and quickly became engrossed in the stunning landscapes that surrounded you. A casual tourist, perhaps? Or maybe you are an expedition leader or field guide on a return visit. No matter what your role or purpose, it is a place you want to come back to again and again for nostalgic reasons as well as for the exciting and timely new explorations that are possible.

Most readers will already recognize that what I am talking about is the "Web of Learning." It is a somewhat magical or mystical place where teaching and learning never end. Unlike traditional stand-and-deliver classes, the sun never truly sets in the world of online learning. Fortunately, the hearty explorer will find that the lights rarely flicker or fade in the Web of Learning.

Sure, you can assume the role of teacher or learner when in the Web of Learning. But you can also be a learning escort, concierge, coach, media designer, planner, or anything you really want to be to facilitate your own learning or that of others.[1] And if such responsibilities do not fit your style, there are hundreds of additional roles or avatars to select from or personally create. So why not partake in it? It is a gigantic learning party that is happening each and every day. And this is one party you do not want to miss! Most of the time, you do not even need an invitation; instead, the invitation to learn exists at a mouse click.

Once you arrive, you will discover that you are not simply using the Web of Learning; instead, like the Borg in the television show *Star Trek: The Next Generation*, you are now a part of it. Your actions—contributions, reactions, comments, and designs—have been assimilated into the corpus or being of the Web of Learning. What you do there has

a chance to influence any learner or education professional anywhere on this planet, and someday in this century, with the arrival of interplanetary coaching and mentoring, your contributions will be felt far beyond planet earth. If you post your learning activities or practice tests to the Web of Learning, learners in other geographic regions of the world can use them in preparing for their examinations or in checking their understanding on a topic.

Language and culture are, of course, valid concerns. As machine translation devices increase in accuracy and usability, though, your resources can be quickly converted for those not familiar with your particular language. In addition, they can be modified and adapted by a savvy instructor teaching learners who are younger, older, or less or more experienced than your own. Equally important, opportunities to bridge cultural differences arise when instructors share their ideas with other instructors. But is this Web of Learning spinning out of control? Some would say definitely yes. Others might further contend that Internet technologies need extensive revamping and upgrading to be ready for the proliferating uses in education that now appear on the horizon.

When I ask audiences where online learning is beneficial, a common response is "everywhere." Although one would not exactly call this an intellectually deep answer, there is some merit to it. The branches of the "Web of Learning" extend into all types of learning settings, both formal and informal. My friend Jay Cross, who coined the term e-learning, has written in depth on the informal learning avenues that are not only more available via this Web of Learning but are now required to survive.[2] Learning can be a spontaneous, on-demand decision in a community of learners who are making daily pilgrimages to the Web of Learning for casual insights. It can also be more thoughtfully and purposefully designed.

The Web of Learning impacts younger and older learners. Sometimes this happens simultaneously, as when retired workers and nursing home residents mentor primary school children, or vice versa, when well-wishing youngsters send hellos and encouragement to those in fairly lonely nursing home care. Though still controversial, there are applications of online learning that illustrate its relevance with extremely young children in preschool and primary school settings involving reading, writing, speaking, and listening skills. And in college and

university settings, there are millions of freshmen in biology and chemistry courses conducting online experiments, senior students in accounting preparing for chartered examinations with online resources, graduate students in law school debating court cases, and music majors across a range of course levels practicing their music, hearing how instruments sound as they age, and listening to historical recordings of experts. At the same time, professionals in the workplace, such as engineers, human resource personnel, accountants, and customer service representatives, are continually upgrading their skills when needs arise and when time permits. And they are choosing to do so online.

The Web of Learning is part of a personal as well as professional lifestyle. Brothers can share the results of their online learning with brothers, sisters with aunties, and moms with dads. Sure, some of it may be strange and curious facts or funny stories, but there are learning lessons in there nonetheless. Personal and professional friend networks pop up in Facebook, Bebo, MySpace, and LinkedIn, to share one's ideas, connections, and current events. What is clear is that this Web of Learning extends to all age groups, all walks of life, and learners in all corners of the world and beyond.

If the Web of Learning had existed in 1950 to enhance the learning possibilities and ultimately the competencies of just one learner on the planet, we would have still considered it transformative, albeit in an extremely small way. This one learner would likely have been paraded around as some type of learning prodigy or spectacle. He or she would have been *Time* magazine's Person of the Year.

But the Web of Learning has done much more than that. The cat is truly out of the bag. During the past decade, millions of people have taken and completed at least one online course. Millions more are enrolled and participating in an online course at this very moment. The Web of Learning has changed the learning potential of those in every country of the planet from Antarctica to Zambia. There is no denying that your own learning potential has dramatically changed with access to it. And with this sudden opening of potential come new learning accomplishments, jobs, success stories, and goals. We are witnessing a massive uncovering of human potential.

What will someone find in this Web of Learning? At first glance, there are tools for learning at deeper levels as well as skimming or

browsing possibilities. With some resource guidance and support, you will quickly come upon a sea of educational tools, resources, and objects, each vying for your attention and later use. Some pop up to smack you squarely in the face, whereas others take more subtle routes to getting your attention, but may do so repeatedly until it happens. Notices of podcasted events on nearly any topic imaginable, online conferences and virtual meetings, lifelike simulations, intriguing virtual worlds, and online games are soon found. But there is more. There is always more! There are cultural and historical databases and timelines of information related to long since departed civilizations. There are links to digital resources from online museums and libraries documenting the birth and death of such cultures. And there are portals of learning resources and centers devoted to these particular cultures and people. Further, community-developed resources—such as wikis, which any person on this planet could design or contribute to—can further support, extend, and even transform what is known about that culture. What a diverse array of resources—and each of them can be thoughtfully integrated into a particular course or across a series of them.

Given these possibilities, what is simultaneously mind-boggling and yet understandable is that many education and training professionals are stymied when entering this Web of Learning. Why the trepidation and hesitation? Well, in comparison to academic courses and other learning experiences of just a decade or two ago, when one good textbook and a supplemental reader or study guide may have sufficed, today there is an endless stream of announcements related to educational resources for one's courses and programs. These announcements typically add to the dozens of learning portals and resources already found and utilized in a course. There are a fast-growing number of discussions, collaborations, explorations, and assessment tools, as well as thousands of resources that might find their way into online course activities. Given this array of instructional possibilities, it is not surprising that many simply choose to ignore the Web of Learning altogether or incorporate it in the most minimalist fashion. This book can help the hesitant or resistant by offering a model or framework for reflecting on what is possible and organizing or compartmentalizing such activities.

Gone are the days when the lecture was the dominant mode of course delivery and deemed the essence of a successful course experience. My

own research during the past decade in postsecondary education as well as corporate training shows that online lecturing is a minor component of a total online course experience. It is true that although online formats allow and, at times, even encourage lecturing, it is just one of many instructional choices at one's fingertips, and a minor one at that. In contrast to its dominance in face-to-face settings, of which those reading this book are all too aware, lectures and direct forms of instruction might account for less than 10 or 20 percent of an online class.

The instructional approaches of choice in online environments are more collaborative, problem based, generative, exploratory, and interactive.[3] There is more emphasis on mentoring, coaching, and guiding learning than in the past. My memories from secondary or even college training would be vastly different if my learning had been one of discovery, coaching, collaborating, and being personally guided. There was, of course, some of that, but it was too intermittent to radically alter the authoritative lecturing approaches that were dominant at the time.

Clearly, there is a need for instructional approaches that are more active and engaging and in which learners have greater control over their own learning. Words such as "ownership," "control," "engagement," "relevancy," and "collaboration" are among those shaping the learning-related dialogue of the twenty-first century. And these are also the key principles or components underlying effective online instructional activities and events. Those involved in professional development or the training of adults in the workplace will readily recognize the above list of words because they are embedded in the adult learning lexicon. They almost beg the question of why anyone would want solely to rely on face-to-face instruction when working with adults.

Understanding the ramifications of the Web of Learning is still very much a work in progress. Not all technologies foster engaging and cognitively rich information processing and networking. Technology by itself will not empower learners. Innovative pedagogy is required. And the approaches will vary with the type and age of students. In postsecondary spaces, online communications and interactive tasks and events between and among students and instructors, trainers, or tutors are often referred to as the heart and soul of online learning, especially in higher education. In contrast, corporate training, until recently, has tended to rely more heavily on self-paced and preselected materials.

Primary and secondary learning often utilizes a combination of approaches, such as relying on self-paced materials and practice examinations when students are home and interactive online experiences when at school. And military training might place an emphasis on real-world embedded training, games, and simulations—the focus being on carrying out some action followed by bouts of reflections on such actions.

Because the Web of Learning contains opportunities for all such approaches, emphatic statements about which ones it is best suited to support are naive and, at times, quite silly. It is a space that is evolving. It is such a new and interesting place for learning delivery that the experience base of any one person is not enough. No one knows the entire space and all the educational possibilities and resources that reside within the Web of Learning; this would be impossible. But one can test out and gradually master strategies for harnessing its energies and resources.

In some respects, the Web of Learning is effectively a monster with thousands of heads and tentacles, each possessing its own knowledge nuggets and with a great appetite for consuming, as well as making available, more information. And though some of those tentacles might be severed, or perhaps even a few heads might be chopped off entirely, new ones sprout up in a few days or perhaps just a few seconds. This is one monster worth looking at and exploring! Certainly some of the information found inside is incorrect (witness Wikipedia vandalism and trolling) or exists only at the surface level of learning. But much of it is educationally relevant and continually evolving. There are games, 3-D worlds, online conferences and professional meetings, podcasts on nearly every education topic imaginable, world and city maps, virtual museum tours of famous exhibits, and countless visual records of human history. So many resources can be embedded in online courses and programs. Granted, such resources are not the same as physically touching or directly viewing the real object or event, but they can be useful approximations of it, functioning in the same way as a picture in a book or a drawing on a marker board.

The Web of Learning, therefore, becomes a place where learners are empowered; they are entrusted with choice in their learning paths or journeys. Perhaps above all other aspects of Web utilization, the power of choice is what sets the Web of Learning apart from other forms of learning. With opportunities to make personal decisions related to

their explorations and potential online discoveries, learners develop a sense of ownership and self-directedness or self-determination. They are finally free to learn, seek knowledge when needed, and are able to express in creative ways what they have learned, as Carl Rogers repeatedly advocated in his *Freedom to Learn* books way back in the twentieth century.[4] Of course, there are constraints related to the relevancy and accuracy of the information found online, but for a change, learners are taking control of their own learning paths.

As you explore this book, regard it as part of a personal pilgrimage into what you can do online. It is purposefully not laced with prescriptions or specific activities, though there are dozens of stories and projects outlined from which to draw your own conclusions and design your own learning ventures.[5] It is not only meant for education professionals, but also for anyone with an interest in learning, and in the learning-related technology transformations facing each of us each day. This journey into the Web of Learning should be exciting for everyone, because we are all learners. Enjoy your learning travels!

FLAT, SPIKY, AND OPEN

Thomas Friedman's *The World Is Flat: A Brief History of the Twenty-First Century* provided a very broad view of the massive social changes occurring in every sector of society since the dawn of the new millennium as a result of a variety of technological innovations.[6] Friedman insightfully noted how economic, political, and social worlds have been flattened by ten key trends or events. Leading up to a discussion of these so-called flatteners, Friedman delineates three distinct eras of globalization.

The first era of globalization began with Columbus's journeys that opened up trade between the Old and New Worlds. This era was more about the power of brawn the and muscle than brain power. Globalization 1.0 was rooted in the global expansion of countries as seen in the accords and treaties between them. Going global, therefore, was a question asked at the country or regional level, not at the organizational level. And it was unfathomable at the individual level.

The next era of globalization, Globalization 2.0, which lasted from about 1800 to 2000, entailed multinational companies finding new markets and labor in other countries and regions of the world. As

Friedman notes, at first falling transportation costs underpinned such actions, and later the falling costs of telecommunications was a key contributor. Toward the end of this era, advances in telecommunications and computing power were used to form unique collaborations between and within companies. Still, there remained barriers to seamless and ubiquitous global collaboration at the corporate level.

In the third era of globalization, however, it was not countries or corporations competing and collaborating. Instead, it was the dawn of a new age; it became possible for globalization to include the direct involvement and participation of any person on this planet. In Globalization 3.0, singular individuals from all corners of the planet were empowered to participate in the world economy in ways previously unimagined. They could now pool their knowledge, skills, and ideas to create new products, organizations, and documents that in turn could be employed by still others located anywhere in the world.

What this all meant was that by using Web tools and resources, more people could connect with other people than at any moment in history. And each day such collaborations are growing. It is in this age that millions, if not billions, of people can read, refine, and share a new idea or opinion. Such collaborations will undoubtedly result in a wave of innovations and inventions not before possible. Creativity by the masses, for the masses.

As Friedman documented, individuals in this millennium have acquired new powers and freedoms to participate socially, politically, and educationally with others around the world. Clearly, the emphasis in his book was on economic powers and the new workforce available from India, China, and former Eastern Bloc countries. Numerous stories in *The World Is Flat* describe how collaborative technologies expand the possibilities for forming new businesses and distributing valued goods and services by anyone for anyone. Friedman heralded the fact that employees and work teams can spring up from nearly anywhere on the planet and at any time they are needed. He appropriately pointed out that new management processes combined with online technologies encouraged unique forms of team collaboration and associated product development. Such coinciding events have opened up a more level economic playing field for billions of people. Friedman referred to these three parallel trends—a flattened playing field brought

about by collaborative technologies, new economic players within that playing field, and changes from vertical and hierarchical management structures to horizontal ones—as a triple convergence that was "turbo-charging" the flattening process.

Using a series of personal anecdotes, Friedman insightfully describes the convergence of various technologies—be they mobile, wireless, personal, or virtual—that buttress and nurture new forms of collaboration, globalization, and personal expression. Such technologies are central to the social and economic developments that, in his words, flatten the world. Such flattening enables companies around the globe to compete with those in more developed countries. As evident in the ten flatteners listed below, many of the societal changes Friedman outlined are more economic in nature, rather than the education- or learning-related changes discussed in this book. At the same time, there is much overlap.

1. 11/9/89: The Berlin Wall came down
2. 8/9/95: The company Netscape went public
3. Workflow software (for example, PayPal and eBay)
4. Open sourcing (self-organizing collaborative communities, such as Mosaic, Apache, Wikipedia, Linux, Mozilla-Firefox)
5. Outsourcing (such as the Y2K problem)
6. Offshoring (for example, to China, Mexico, Thailand)
7. Supply chaining (such as Wal-Mart)
8. Insourcing (UPS fixing Toshiba laptops)
9. Informing (for example, Google, Yahoo!, MSN Web Search)
10. The steroids: digital, mobile, personal, and virtual (for example, wireless, file sharing, VoIP, video camera in phone)

Friedman pointed out that the technologies of the twenty-first century allow for collaborative forms of economic growth that were not possible before. The convergence of these ten events, according to Friedman, resulted in economic flatness.

Others, such as Richard Florida, contend that the world is not flat, but instead, is rather spiky.[7] From this perspective, innovation, and thus economic development, rests in certain cities, countries, and regions of

the world more than others. Such places amass greater creative and intellectual capital as well as financial resources to support innovation centers and research parks. These creativity-rich centers and cities (such as Bangalore, Chicago, Singapore, Beijing, Dublin, Seoul, Tokyo, Taipei, London, Vancouver, San Francisco, Boston, Helsinki, Berlin, and Sydney) can attract, harness, and develop talent more effectively than others. A creative class of people moves freely among such cities. They are attracted to the opportunities found there. From Florida's viewpoint, although shifts in these economic development powerhouses can and do occur, technology has yet to equalize this development and perhaps never will.[8] Rather than equalize the peaks, hills, and valleys, he suggests that the top political challenge of the early part of this century is to lift up those in the economic valleys without "shearing off the peaks."[9]

Perhaps there is a way to understand and plan for Friedman's notion of flatness and Florida's spikiness. Education, when open to the masses, is a tool for economic flattening that, when effectively used, can greatly assist those in the valleys while still enabling those at or near economic summits to find ways to keep climbing. Today, education is opening for us in ways we've never seen before. As Richard Straub points out, we have open societies, open source systems, open standards, and open educational content.[10] As the director of development at the European Foundation for Management Development (EFMD), which links twelve thousand management professionals in over seventy countries, and the former director of Learning Solutions at IBM, Straub, if anyone, should have his finger on the pulse of this openness. As he accurately points out, management structures are opening up with values such as empowerment, tolerance, lifelong learning, participation, cooperation, and individual freedom. This is a significant departure from the traditional top-down command-and-control hierarchies that often fueled the exploitation and general distrust of the workers, bureaucratic governance, and overregulation.

Straub argues that open environments for work and learning foster the freedom, participation, creativity, and innovation that both Friedman and Florida seem to be seeking. He is not the first nor will he be the last to suggest that. Nearly two decades ago, Alvin Toffler forecasted a dramatic and democratic shift in power in business and industry, and the world in general, in which relationships between people, organizations,

and even nations would be transformed.[11] As always, Toffler was spot on. Here in the twenty-first century, managerial decision making is giving way to work teams just as swiftly as teacher lecturing in schools and universities is giving way to self-determined learning, mobile learning, and problem-based curricula. It seems everyone in business is employee-centered while everyone in schools is now learner-centered. The reins of power have indeed shifted as Toffler anticipated.

According to Toffler, during this "powershift," the focus must be on knowledge. As he contends, "[D]espite exceptions and unevenness, contradictions and confusions, we are witnessing one of the most important changes in the history of power." He further argues, "For it is now that knowledge, the source of the highest-quality power of all, is gaining importance with every fleeting nanosecond."[12] The most momentous of these powershifts, however, is not from particular people, political parties, organizations, or nations, but from shifts in relationships to the access and control of knowledge as this global society finds its way in the twenty-first century. With the creation of the Web just as Toffler's *Powershift* book was being published and the more recent emergence of what some call the Web 2.0, it seems we are now living in Toffler's future.

In the midst of this flatter yet spikier world with massive shifts in power and control, we need to reflect on the training and education of the creative class of people assuming this power. Education in the twenty-first century is mightily different from how it was in the previous one. Jay Cross argues that we live in times wherein informal learning outstrips the more formal variety.[13] In his seminal book on the topic, *Informal Learning*, Cross provides a wealth of evidence that both schools and businesses are increasingly reliant on informal learning for daily survival, especially in work-related settings. Such observations reinforce the views of Friedman, Florida, and Toffler in critical ways because they highlight the link between informal learning and innovations in business management and overall productivity. Organizational support for informal learning can result in more motivated employees who work in engaging communities of practice in this more flattened work world.

But informal learning does not just start when one enters the workplace; it is part of the experience of each person on the planet, young or old, rich or poor, male or female. A young worker spends most

of her learning hours in what would be deemed more informal situations. There are no credentials that this worker receives from going to the Web to learn what a wiki is, or to view a map of a country she intends to visit, or perhaps to buy Cross's book—yet each of these information searches entails learning. The new technologies of the Internet have propelled us into the actualization of informal learning pursuits. These same technologies have transformed learners and learning and provided more flat *and* more open management structures.

The macro-level perspectives contributed by Friedman, Florida, Straub, Toffler, and Cross give us clues that help us make sense of this ever-changing world. Technology and location both matter in this open world; location is all too often the determinant of accessibility to Web technology. Successive waves of learning tools appear every few years, if not every few months or weeks, within a highly global work-and-learn society where free and open content proliferates and access perpetually expands. Technologies such as wikis, blogs, virtual worlds, mobile devices, and electronic books make the learning revolution unmistakable and exhilarating. Such tools bring us to an age of educational and economic participation and personalization unlike no other. Education and economy go hand in hand and are equally affected. Certainly, to some degree, the barriers have come down to make it a flatter economic and social world. At the same time, it remains rather spiky. But for education, a colossal shift has commenced toward informal and nontraditional learning pursuits chosen by the learner where much of the content is free and open. There can be no doubt that the watchword of this century is openness.

Open education can help liberate people who were previously exploited by economic gamesmanship and command-and-control hierarchies. Freedom to learn will foster attitudes of freedom to work for oneself. As this happens, it will place such individuals in positions that provide a sense of personal dignity and self-worth. A proliferation of creative expression, as well as a sense of global connectedness or shared humanity, will crystallize within the valleys and peaks, enabling every new learning participant who is connected to the Internet, and thus to free and open educational resources, to experience high levels of success. This book introduces you to dozens of the revolutionary leaders creating this openness for you, as well as many of those who have already reaped

enormous benefits from open learning. It is likely that most of the people discussed in this book do not realize that they are so central to the magic that we are witnessing in learning and education today. But clearly they are. They *all* are!

THE WEB 2.0

The evolution we have all experienced during the past decade from the Web 1.0 to the Web 2.0 has made each citizen of this planet aware of the vast educational possibilities now available for all ages of learners. We see it daily in the news we encounter or the communications in which we engage. First intended as an interconnected web of knowledge and artifacts, the Web is not unlike the content storage and retrieval business plan of the ancient library at Alexandria. Today, however, the goals of the Web extend far beyond the mere digital existence and interconnection of knowledge. Donald Tapscott and Anthony Williams argue that "[t]he Internet is becoming a giant computer that everyone can program, providing a global infrastructure for creativity, participation, sharing, and self-organization."[14] As they accurately point out, we have moved from the initial stages of the Internet as a gigantic newspaper to a place where you can easily connect with the authors, editors, or readers of such articles, and contribute your perspective or resources. We have shifted from a culture that passively received content from the Web to one that actively participates in it by adding content.

Like Tapscott and Williams, Friedman alluded to an assortment of technologies—including Skype (a tool for to talking over the Internet for free using "Voice over Internet Protocol" or VoIP), Wikipedia, blogs, Web searching tools, and collaborative software—that are making an impact in educational arenas from highly developed to Third World countries. With such technologies, the world has definitely become more free, open, deep, rich, and personally empowering for those attempting to learn or relearn something. And there are countless reports of additional technologies specific to the education world.

Those in Generation X and Y who are entering colleges and universities as well as the workplace are known for being savvy about such technologies. Without a doubt, they are pushing corporations and institutions of higher learning to raise the bar of the possible to allow

employees to have a greater voice in strategic planning and students to have greater control over their own learning. Certainly, most educators and trainers today have witnessed such individuals boldly carrying their MP3 players and mobile phones, while satisfying addictions to e-mail, Web browsing, and instant messaging. We have also seen the growth of for-profit colleges and universities offering degrees and special services online. What's more, places such as Stanford University are furnishing students with their own wiki about campus life and activities as well as posting popular lectures to Apple iTunes.[15] A few miles down the road, San Jose State University has designed a virtual glimpse of campus life for potential students using Second Life. To the north, the University of California at Berkeley has decided to make its course lectures available for free in both iTunes and YouTube. And this is clearly just the start of what is to come.

Emerging educational technologies and resources are allowing for a more learner-centric focus in education where the learners are active instead of the more passive mode of instruction that has existed for centuries. During an invited presentation at MIT on December 1, 2006, John Seely Brown argued that in this new participatory educational climate, learners become engaged in a culture of building, tinkering, learning, and sharing.[16] When I talked to him during a conference at Rice University in Houston a few months later, Brown reiterated these points. The combination of free and widely distributed educational resources with tools that enable learners to add to or comment on such resources or build entirely new ones begins to redefine what learning is—it becomes production or participation, not consumption and absorption.

A week after Dr. Brown's talk at MIT, *Time* magazine published an article by Claudia Wallis and Sonja Steptoe related to bringing schools out of the twentieth century.[17] These authors argued that innovation and creativity, communication, interpretation, synthesis, collaboration, problem solving, and interdisciplinary insights are the types of skills that need to be emphasized. The ability to creatively combine, weave, and interlink knowledge is more vital than restating sets of facts, names, and dates. Among the key required skills of our time include the ability to work collaboratively with people from different countries or geographic regions. Students need greater sensitivity to different cultures and

languages, including more exposure to such languages as Mandarin Chinese, Spanish, and Korean. They need to build such skills through real-world experiences and projects. And thoughtful use of new and emerging technologies is one way for this to happen.

In their article, Wallis and Steptoe remind us of a wry joke, akin to the Plato and Aristotle scenario I detailed in the Introduction, that often circulates among educators. They note that Rip Van Winkle could suddenly find himself in the twenty-first century after sleeping for a hundred years and would be taken aback by massive changes found everywhere in society except in schools. Schools, he would quickly recognize. As Wallis and Steptoe point out: "American schools aren't exactly frozen in time, but considering the pace of change in other areas of life, our public schools tend to feel like throwbacks. Kids spend much of the day as their great-grandparents once did: sitting in rows, listening to teachers lecture, scribbling notes by hand, reading from textbooks that are out of date by the time they are printed. A yawning chasm (with an emphasis on yawning) separates the world inside the schoolhouse from the world outside."[18]

However, schools do not have uniform curricula or philosophies, and many are in the midst of transformative change, with Web 2.0 technologies being part of the reason for such changes.

Two weeks after the article by Wallis and Steptoe, *Time* magazine brilliantly followed up that article by naming "You" as the "Person of the Year."[19] It recognized the shift to an age where users generate and contribute ideas to the Web instead of simply paging through content submitted by others. The realization that users or learners were important was no longer lingo to be reiterated by the education community but was being widely accepted by society as a whole. Everyone participating in society as a digital citizen in any meaningful degree had come into contact with emerging Web 2.0 technologies that granted them a voice and a vote, and turned up the volume on their contributions.

In effect, the year 2006 signified the trend toward empowering technology users with Web 2.0 technologies that allow them to generate ideas online instead of simply reading and browsing through someone else's.[20] We now use the "read-write" Web, not just a Web from which one passively consumes or reads information. Included in the new Web were wikis, podcasts, blogs, online photo albums, and virtual worlds such

as Second Life. Web 2.0 tools and resources bring people together to share, collaborate, and interact. Web technologies can now network individuals to accomplish more than any one person could alone. With a new blog appearing every second and a world that is seemingly filled with wikis and subscription podcast shows, "we" are now the Web; each of us is the Person of the Year.

With enhanced bandwidth, reduced storage costs, increased processing speed, and the growing acceptance and expectations of rich multimedia, emerging Web 2.0 tools and resources such as YouTube, Second Life, Flickr, MySpace, Facebook, and Blogger are increasingly popular and integrated into the culture. And as such participatory technology becomes easier to use and thus more widespread, more people have found a venue in which to contribute their unique talents, with the possibility of their ideas and insights being recognized and utilized not only locally, but also publicly and internationally.

Clearly, many of the same technology trends that Friedman documented are having a significant impact on the world of learning today. Without a doubt, the increases in bandwidth, reductions in storage costs, continued enhancements in processing speed, and ubiquitous access to multimedia and hypermedia learning formats have radically transformed education and training during the past decade, and especially during the past few years. As the technologically advanced Japanese and Korean cultures demonstrate, there is now ubiquitous access to learning with personal multimedia players, mobile phones, and other such devices. Of course, as such participatory technology becomes even easier to use and increasingly accessible around the globe, education environments across sectors will continue to shift and transform. Ideas of one learner or instructor may be shared with anyone anywhere on this planet and at any time. As this occurs, educational information and resources will no longer be local but global.

In an *Educause Review* article, Bryan Alexander notes that many resist the shift to the Web 2.0 due to the lack of clear definitions, differences in determining exactly what qualifies a tool to be labeled as Web 2.0, and the seemingly temporary or fleeting nature of the field.[21] However, he further argues that we need to look beyond questions and concerns related to such labeling, especially given the many powerful implications already appearing in different educational sectors that are

directly linked to Web 2.0 technologies. Actual projects, practices, and conceptual implications trump problems in labeling.

For Alexander, initial educational uses of the Web, or the Web 1.0, were for making available pages of content for learners to browse or read. The Web 2.0 relates to microcontent or streams of revisions to a Wikipedia document or daily blog postings and hyperlinking that can be saved, shared, copied, and quoted. In our time-crunched society, it is much easier to start a wiki entry or compose a blog summary of an event, than it is to write an article or a book. And when posted, there is some immediate sense of personal empowerment or identity. Whether we will become a society of writing dabblers as a result is difficult to predict. At the same time, simple writing attempts in one's blog could expand into magazine articles, speeches, and books.

Learning technologies will continue to appear to stimulate our thinking not only about what is possible in Thomas Friedman's flatter economic world but in Richard Florida's more spiky one as well. The Web 2.0 is also in the land of open education where human beings participate in their own learning quests. These interactive technologies have brought hundreds of millions of us to the realization that we will always be learning. Soon the entire planet will recognize this need. When it does, there will be declarations that the world is now open for the education of all the citizens of this planet.

DECLARING THE WORLD OPEN FOR EDUCATION

In June 1776, Thomas Jefferson, with the help of John Adams, Benjamin Franklin, and several others, toiled on a draft of the Declaration of Independence. The writing that took place during the ensuing weeks would effectively serve as a foundation of a country for centuries to come.

Jefferson and Adams would each live five more decades and witness the results of the ideas expressed in the Declaration of Independence as a new nation and a new way of governing rose up and rapidly expanded. Both of these remarkable figures played a key role in testing out the document when serving as the second and third presidents of the United States.[22] When they both passed away a few short hours apart on July 4, 1836, some fifty years to the day since the Declaration, their ideas for a

democratic government in which people actively participated in the processes, activities, and management of it were in full view. Suffice it to say, their dreams have had a massive impact in many corners of the world.

Fast forward to September 14–15, 2007. On those two days, a meeting convened by the Open Society Institute (OSI) and the Shuttleworth Foundation in Cape Town, South Africa, resulted in a different but equally revolutionary declaration. It was an effort to help people become aware of the growing movement toward free and open educational resources, technology, and teaching practices as well as to promote their distribution and use. Like Jefferson, Adams, Franklin, and others centuries prior, the goal of this movement's leaders was to provide access to ideas and opportunities. In this case, however, the intent was for people to pursue their educational dreams and aspirations.

At the Cape Town meeting, thirty people were brought together from quite diverse perspectives, occupations, and parts of the world. Their ultimate declaration begins with this statement: "We are on the cusp of a global revolution in teaching and learning. Educators worldwide are developing a vast pool of educational resources on the Internet, open and free for all to use. These educators are creating a world where each and every person on earth can access and contribute to the sum of all human knowledge."[23] The document goes on to discuss a new age of teaching and learning, as well as advancing the culture of sharing. This culture, like that of Jefferson's political scene of the late 1700s, is a much more participatory one than what had been experienced in the past.

Numerous barriers to these dreams and visions exist, of course, including insufficient Internet access, as well as incompatibility between technologies, lack of awareness, lack of interest, and frustration.[24] Still, Internet access is not required to participate in this revolution because many open educational resources can be transferred to CD or computer hard drives. At the same time, groups such as the Internet for Everyone campaign, announced in the summer of 2008, are working to make Internet access available in every home and business in the United States. A broad coalition of companies and organizations such as eBay, Google, the Free Press, and Educause promptly signed on as well as many Internet luminaries including Larry Lessig, Yochai Benkler, and Jonathan Zittrain, all of whom are highlighted later in this book.[25]

The signers of this twenty-first-century education declaration outline three strategies to realize their vision. First, they call for educators and learners to actively participate in this movement by creating, promoting, and using open educational resources. Second, they ask for authors and publishers to release their resources openly. Third, they encourage governments, boards, and higher education administrators to make OER resource initiatives, collections, and ideas a priority. This declaration was not meant as a final document but as an evolving one. Different organizations around the world are welcome to use it as a base for their own open education declarations, contextualizing and modifying the original document for their own particular needs. Those at the Cape Town meeting focused on open educational resources (OER), such as free and open course materials, games, books, lesson plans, software, and other materials. At the same time, they realized that there are many open education initiatives that will spring up in other areas that may not be possible today or cannot be labeled at this time.

Among the American representatives at this signing event were Jimmy Wales from the Wikimedia Foundation, known for the development of Wikipedia among many other free and online wiki-related resources. Alongside Jimmy was Richard Baraniuk, professor at Rice University and founder of Connexions, a fast-growing online resource of educational content, such as courses and textbooks. Like Jefferson and prominent figures from the era of the American Revolution, both Wales and Baraniuk have been accused by many as being nothing more than idealistic dreamers. Educators, parents, scholars, and politicians have raised red flags about quality, use, assessment, and access of such OER. The irony is that these concerns are raised while their Web platforms are used by millions of learners around the world. The development, promotion, and use of their tools and this coinciding declaration are just a start to something much grander.

In an open forum article in the *San Francisco Chronicle* on January 22, 2008, Wales and Baraniuk argue that this movement can radically change the world of education.[26] They ask us to imagine worlds where the cost of textbooks and supplemental learning materials would no longer keep students out of community colleges and other institutions of higher learning but are free. They push further in suggesting that such resources might automatically adapt to different learning styles or

situations. Equally important in their push to widen access to open education, such resources could be quickly translated into the language of the user. As they note, the OER movement itself was but a dream a decade prior to this declaration. Now it is possible for anyone with access to the Internet to "author, assemble, customize and publish their own open course or textbook."[27] And emerging ways to license that content make it legal for others to use and remix it.

Wales and Baraniuk both realize that we are just at the threshold of the exciting new world of open education. For them, "Open Education promises to turn the textbook production pipeline into a vast dynamic knowledge ecosystem that is in a constant state of creation, use, reuse and improvement."[28] As this happens, learning will be more customizable and specific to the learner's true needs, not prescribed by someone foreign to that student, classroom, school system, university, or culture. They hope that with increasing access to OER, people will work together to "transform the way the world develops, disseminates and uses knowledge."[29] This is not just their hope. This is their declaration!

On January 24, 2008, just two short days after the open education declaration was made public, some 695 people had signed it. I was number 695. By July 4, 2008, another 900 names had been added. I received an e-mail that day from Elliott Masie, head of the Masie Center and an internationally recognized futurist, reminding me that "learning" is at the root of the freedoms and sense of independence that we enjoy. He goes on to say: "The ability of a society and an economy to make learning a prime and core value—from elementary school, through high school, on to college and into our work and vocational lives is essential."[30]

Masie's sentiment would likely resonate with those signing the Cape Town Open Education Declaration. Unlike the earlier American Declaration of Independence, the document they have designed is an open digital one for anyone to sign, including you; visit www.capetowndeclaration.org/. As additional people and organizations become aware of OER, unique collaborations and conversations in this area will undoubtedly ensue. Akin to the release of the Declaration of Independence, making public this open education declaration is critical in realizing those dreams. The coming decade will likely include many battles and skirmishes over this one document and the philosophy

behind it. We need the foresight and intellectual might not only to prevail in some of these clashes, but to make the world a better place for learning. Fifty years from now, this declaration could lead to a radically new world of education, where learning is freely available for every citizen on the planet.

NOW WE-ALL-LEARN

We are experiencing ten key learning technology trends across the planet that are opening access to both formal and informal education. As these trends proliferate, they nudge us into a culture where knowledge sharing is the norm. Open source software is, naturally, one of these key trends. But this is no longer exclusively a discussion about how Apache or Linux can help corporate servers run more cost effectively. Instead, the conversation has shifted toward access to free and open educational resources that can have a direct impact on learners and teachers. For instance, when colleges and universities, such as Berkeley, MIT, the India Institutes of Technology, and the Open University in the United Kingdom are sharing their course materials with the world, it is time to stand up and take notice.

Fortunately, such events are not limited to English-speaking countries; ambitious people in other places are simultaneously translating such knowledge and making it available for millions, if not billions, of potential learners in their own cultures. Learners are now collaborating with peers from around the planet, as well as being mentored by experts and practitioners from other countries or regions of the world. It is a time when learners can catch up on their studies or personal interests while sitting at a bus station, commuting in the subway, or resting outside a lecture hall on a warm, sunny day. In effect, educational resources are available faster than ever before and in larger doses. And such resources are often free to access, build upon, and share with others.

While learning is being opened up to masses of people that previously did not have access, it is also opening up in new forms to those who already did. Learners of all ages are increasingly engaged in formal as well as informal learning, which is highly mobile and often ubiquitous. In such a world, each of "you" will need to continue learning in order to stay employed. Given that every education

professional today can swiftly access these amazing learning resources and events, there are thousands, if not millions, of examples that could be provided and stories that could be told of how the world of learning has become opened up in revolutionary ways. I have selected just a few resources and people to highlight here that were involved in the creation, marketing, implementation, and evaluation of such educational technologies and resources.

The ten educational openers addressed in this book, as well as the three converging macro trends underlying them, are detailed briefly below. The first-letter acrostic or handy mnemonic for the ten openers is WE-ALL-LEARN. This memory aid can help us better understand the possibilities of the Web of Learning.

Some of the openers relate to creating or finding information and resources and making them available on the Web. Other openers concern the infrastructure for locating, selecting, and using such resources and generating ways to access them. And still other openers involve participating in and personalizing these resources. Of course, there is overlap across these openers. The framework provided here is just one attempt to categorize or make sense of the seemingly infinite resources, tools, people, and activities found online. The acronym WE-ALL-LEARN was purposefully chosen to denote my rising optimism for learning and education. During the coming decade, other more innovative frameworks and schemes will be designed and hopefully extensively used by learners, instructors, trainers, and anyone entering the Web.

I do not mean to imply that all the world's learning problems have been solved or that they are even close to some type of resolution. My primary goal in designing the WE-ALL-LEARN framework was to divide up online resources in such a way that educators, trainers, teachers, freelance lecturers, instructional designers, and others would be able to more easily and more actively employ them in their own instruction, rather than avoiding the Web at all costs.

A second and no less important goal, naturally, is to use WE-ALL-LEARN to champion a reduction of the digital divide. Many of the stories embedded in the chapters of this book provide markers that this is indeed already beginning to happen. Granted, there are billions of individuals on this planet who as yet do not have access to the Web. I do not mean to discount prevailing digital divide concerns. This is a

serious global issue, which perhaps a book such as this can help make more salient. Still, although the majority of the global population has yet to own a computer or participate in Web-based learning activities, it is likely that thousands more people obtain access each day and can, therefore, participate in the new forms of learning outlined here. Now, with WE-ALL-LEARN, we have a framework for reflecting on the learning opportunities that can be provided across educational sectors and geographic regions.

The emergence of the Web and enhancements in bandwidth offered by Internet2 capabilities is a given. In fact, all ten openers utilize Internet technologies and the associated bandwidth. The first opener, however, is perhaps the most directly linked to Web capabilities and technologies. It is, in fact, two openers—the proliferation of Web access and the availability of digital books and online documents. Even without lightning-fast access to the Web, there are enormous learning opportunities that were not possible a decade or so ago.

TEN OPENERS: (WE-ALL-LEARN)

1. **W**eb Searching in the World of e-Books
2. **E**-Learning and Blended Learning
3. **A**vailability of Open Source and Free Software
4. **L**everaged Resources and OpenCourseWare
5. **L**earning Object Repositories and Portals
6. **L**earner Participation in Open Information Communities
7. **E**lectronic Collaboration and Interaction
8. **A**lternative Reality Learning
9. **R**eal-Time Mobility and Portability
10. **N**etworks of Personalized Learning

As the WE-ALL-LEARN framework indicates, we are no longer participants in Aristotle's world where one could conceivably read from every book or document written. In the twenty-first century, no one can know all. However, we all can learn. And the vital signs of intelligence

in this century are related to access and use of knowledge when needed. Knowing where to look, how to access, and what to focus on are the powerful strategies of today.

The "WE-ALL-LEARN" metaphor is purposefully intended as a bold goal for society. It offers a temporary road map for how to enhance the educational possibilities of all learning participants on this planet. Still, there is no assumption that this is happening for most people today. Dire digital divide problems pervade every society, culture, region, and city. Still the world of education is opening. The remaining chapters of this book show how, why, where, and when this opening process is happening. They also offer clues on how this opening process can flourish in communities where it has yet to appear.

As with Friedman's flattened economic world, there are three larger trends that provide a superstructure for discussing the ten educational openers. These converging macro trends are:

I. The availability of tools and infrastructure for learning (the pipes)
II. The availability of free and open educational content and resources (the pages)
III. A movement toward a culture of open access to information, international collaboration, and global sharing (a participatory learning culture)

As indicated earlier, this triple convergence is different from the one Friedman elaborated in his book. This convergence does not focus on global economics and the new players, playing field, and processes that have emerged to flatten the world. In education around the globe, there is a different convergence related to the "pipes," or online infrastructure, the pages of online content, and a participatory learning culture brought about, at least in part, by the Web 2.0. In this convergence of education openers, many of the tools for Web-based collaboration, searching, and participation are the same as what Friedman outlines. The technologies and processes that have flattened the world economically have simultaneously opened it up educationally. The ultimate goal, of course, is expanded opportunity for learning in this more open educational world.

Competing and collaborating economically can follow or occur during such learning.

The convergence of these three macro trends has put in motion opportunities for human learning and potential never before approached in recorded history. Of course, all three components are needed. First, the pipes must be in place. These pipes—Internet access and bandwidth, preferably free and ubiquitously available for the highly mobile—provide the infrastructure for the management, supply, and distribution of free and open educational content. The first, third, seventh, and ninth openers most directly relate to such infrastructure issues.

All ten openers are clearly indicative of the second macro trend related to the proliferation of online content. For instance, much of what is later discussed in this book regarding the first opener also concerns the second converging trend related to the availability of online content such as digital books. In effect, although piping is important, online educational resources must be available, useful, and needed. Still, the second macro trend is most symbolized by the fourth and fifth openers with freely available online course contents and gigantic portals of rich educational content. With these two openers in place, each of us now has access to an endless sea of online portals that contain links to billions of pages of educational content.

The laying of the vast technological pipes with an overflowing store of educational content is only part of the story. In effect, though people can perpetually explore online content and materials to learn, a final ingredient is needed to truly open education for more democratic participation and personalization. That component has to do with culture and psychology as much as technology. Thus, the third macro trend electrifying all of humankind today is the creation of a culture that collaboratively builds, negotiates, and shares such knowledge and information: a participatory learning culture. If the resources and infrastructure are in place but the education community, as well as society as a whole, fails to maximize their power, then millions of unique learning possibilities will be lost. As we shall see, the sixth, eighth, and tenth openers highlight this trend more than the others.

Although the economic world may not be flat or level enough for everyone, the stories in this book will demonstrate that it is open for everyone, including those who do not have access to the Internet. That

news, more than anything, may shock the critics who spell out perpetual doom for those on the other side of the digital divide. I for one am not willing to accept such gloomy views. Everyone who uses Web-based collaborative tools or portals to donate or volunteer time, talent, money, or other educational resources is potentially opening up education and affecting those without Internet access. Read about the Room to Read, 1kg, and TwinBooks programs in Asia. Web-based technology is making a huge difference in the lives of those lacking Internet access and computing technology of any kind.

In the end, the people, ideas, and technologies opening up the world of education have something to say to each of us. We all learn in this wonderful Web of Learning. The following ten chapters will not only detail each of the educational openers related to the Web of Learning, but the combined stories, examples, and tools discussed within them will also show that we are entering an age where the use of WE-ALL-LEARN will help us all learn. With that in place, the closing chapter will recount the journey and offer glimpses of a few interesting trends that may still lie ahead.