Chapter 1

The Flourishing of Adult Online Education

An Overview

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What is important is to keep learning, to enjoy challenge, and to tolerate ambiguity. In the end there are no certain answers.

—Matina Horner

The primary purpose of this handbook is to clarify the conceptual issues that underlie effective online teaching and to offer practical guidance to educators and trainers who plan to establish or teach in a virtual environment (VE). The chapters in the book are written by experts in the field who share their experiences and suggestions for working effectively in this medium. If there is one central tenet to this handbook, it is this: The adoption of the online environment as the teaching vehicle of the future in higher education and corporate training demands a reexamination of our core beliefs about pedagogy and how students learn. It challenges us to find new ways to evaluate learning and to confront the professional and ethical issues that emerge from working in this new environment. It forces us to figure out how to use rapidly changing technologies to enhance learning. Although the transfer of classroom-based learning into cyberspace at first appeared to be deceptively simple, we have discovered that doing so without an appreciation for the nuances and implications of learning online ignores not only its potential but also the inevitable realities of entering it. Before we tackle a discussion of the pedagogy itself, as well as significant changes that have emerged in recent years, we need to provide a context for this educational revolution.

A Brief History of Early Computer-Assisted and Web-Based Instruction

The history of computer-assisted instruction, which first attempted to use timesharing computers during the 1960s, is clearly described by Harasim and her colleagues (Harasim, Hiltz, Teles, & Turoff, 1995). Communication took place over dumb terminals connected to mainframe computers or dial-up telephone lines. In 1969, the U.S. government experimented with dedicated telephone lines for data exchange by constructing the ARPANET (Advanced Research Projects Agency Network) to connect researchers with remote computer centers to share resources. It was not long before these researchers wanted to exchange messages with one another about their projects. The electronic mail (e-mail) function was born and became immensely popular. Other communication networks (e.g., USENET, BITNET, CSNET) followed, still predominantly connecting researchers and scientists. Eventually, the Internet, a global network of networks, supplanted these individual efforts.

Murray Turoff is given credit for designing the first computer conferencing system in 1970 (Hiltz & Turoff, 1993). Today, of course, there are many conferencing systems available that support discussion as well as a myriad of more sophisticated features. Bulletin boards, a common space for posting messages over the computer, were developed during the late 1970s (Sterling, 1992) but did not proliferate until a decade later. Both of these functions are at the heart of the implementation of computer networks for training and education. Computer conferencing systems were applied to course activity in higher education during the 1980s and remain a prominent feature of online education today. All of these variants have found their way into higher education in the public and private sectors.

Distance Learning Terminology

One of the difficulties in obtaining a clear sense of the literature on online learning is the multiplicity of terms used to describe the phenomenon. Commonly employed terms include *distance learning, distributed learning, online learning, computer-mediated learning,* and *e-learning.*

Some educational institutions conceived their mandate as training students who are geographically dispersed from one another and from the institutions themselves. They represent what has historically been known as *distance education.* According to the U.S. Congress for Technology Assessment, distance education refers to the "linking of a teacher and students in several geographic locations via technology that allows for interaction" (Daniel & Stevens, 1998, p. 162). However, many distance

learning institutions that have come to adopt a strong online presence were functioning prior to the Internet by relying on individually directed study, mail, telephone, and/or infrequent residential sessions for contact between students and instructors.

One example is the United Kingdom's Open University, which initiated use of computer conferencing as a small adjunct to a large multimedia course (Harasim et al., 1995). Course tutors held discussion groups in closed conferences with relatively small numbers of students. Interestingly, the computer conferencing forum that was open to all students and tutors purely for socializing purposes generated the most traffic and became the most productive workspace. This unanticipated outcome, as we shall see, has had significant implications for practitioners of online education. Another example, with which we are more personally acquainted and which serves as the source of much of our experience with online teaching, is the Fielding Graduate University based in Santa Barbara, California. Fielding, as is true for a few other academic institutions such as the Union Graduate School, Empire State College, and the University Without Walls, established a distance education model many years ago to provide an educational opportunity for a group of geographically dispersed, adult, mid-career professionals who could not easily give up their family and work responsibilities to move to a campus-based institution for a lengthy period of time. Today, Fielding offers graduate degree programs in clinical psychology, human and organizational behavior, and educational leadership. Each program has its own unique blend of online and face-to-face seminars and tutorial experiences. In many cases, students take courses as asynchronous and/or synchronous online seminars. A few of the chapters in this handbook illustrate the ways in which these online programs and courses are structured and taught.

As indicated above, adherence to a distance model of training does not necessarily imply the adoption of an online teaching environment. Because the term distance education has traditionally implied delivery of instruction or course materials over a distance, educators who support a model of education that emphasizes student initiated access to learning resources have recommended the use of the term distributed learning or flexible learning rather than distance learning to refer to new forms of online learning (Carr-Chellman & Duchastel, 2000). Distance education institutions have not necessarily embraced online learning, but when they have done so, the transition to a communication-based technology has often gone more smoothly because of the overlap of values and skills required to succeed in the virtual setting. As described later in this chapter, other distance education programs have been established solely online.

Perhaps the favored term in the literature today for designating courses and programs offered over the Internet is e-learning. E-learning has been defined by the Instructional Technology Council as "the process of extending learning or delivering instructional materials to remote sites via the Internet, intranet/extranet, audio, video, satellite broadcast, interactive

TV, and CD-ROM" (Holsapple & Lee-Post, 2006, p. 2). Nonetheless, the term that most accurately describes the contemporary trend of incorporating distance technology and the Internet into the educational process is *blended learning*. Blended learning refers to an amalgamation of face-to-face learning and online learning. The other term that is frequently used in this context is *hybrid learning*, again referring to the possibility of combining face-to-face and online modalities, either within the same course or across courses or programs within the same institution.

A predictable risk in the face-to-face educational environment is a disproportionate focus and responsibility on the teacher, whereas a common risk in the online environment is lack of structure and organizational coherence because the objective is for students to become self-directed (Garrison & Vaughn, 2008). In our experience, some topics or courses are taught most efficaciously in a face-to-face format, while others are more suited to an online format. The combination of both formats within the same course or program allows for capitalizing on the advantages of each approach. Moreover, the availability of both formats allows for sensitivity to the diverse learning styles and needs of different students.

Osguthorpe and Graham (2003) have argued that the rationale for adopting a blended system is that it allows for pedagogical richness, access to knowledge, social interaction, personal agency, cost-effectiveness, and ease of revision. In a 2003 survey, 80% of undergraduate and graduate higher education institutions were found to be offering blended learning courses (Arabasz & Baker, 2003). Perhaps one reason for the burgeoning popularity of the hybrid model is that the current generation of students moves effortlessly between face-to-face and online environments; they were weaned on the Internet, and the online milieu serves as a second family (Taffel, 2000) for them. At the same, Garrison and Vaughan (2008) have pointed out that although this generation of students is very open to computer-mediated education and value social interactions and collaborative learning, they also view the instructor as a critical element of the learning experience and are apprehensive that technology will reduce communication between students and faculty. These authors believe that a "tipping point" has been reached for the dominance of blended learning in higher education and that the roots of this movement are technological, financial, and pedagogical. We concur.

Current Status of Online Learning Programs

Nearly every institution of higher learning has incorporated or intends to incorporate some aspects of online technology into its curriculum delivery system. The way in which online technology becomes operationalized, however, differs significantly among institutions. At this time, there appear

to be three major forms of computer-networked technology, or Internet-based learning, in education: 1) Web facilitated with less than 30% of the content online—this is a face-to-face course that has moved online with the help of a course management system (CMS), 2) a blended or hybrid course that uses both face-to-face and substantial online content, and 3) a fully online course with most of the content online (Allen & Seaman, 2006). Each of these options can be seen in traditional educational institutions and corporate training programs.

Some institutions were created after the advent of the Internet, and many of them were designed to offer classes, programs, and degrees exclusively online. While many of these programs have closed, others are incredibly successful in the marketplace. Smith and Mitry (2008) have been particularly vocal in terms of questioning the integrity of some selected for-profit institutions that are drawn to computer-based learning solely for cost advantages and are willing to sacrifice educational quality by, for example, hiring underqualified faculty as instructors or facilitators of their online courses. In a more general sense, it is our impression that organizations that gravitate to the online environment exclusively for financial reasons are apt to be disappointed. As Levy (2005) has put it, some proponents of online learning have focused on accessing a greater number of students rather than on serving current students in a better way.

Market Issues and Demographics

Hanna and Associates (2000) cited consumer demand as the key factor creating new forms of distance learning. The demand comes from the need for, and interest in, increased student access, lifelong learning, and professional and work-related training. Drucker (1999) highlighted the need for knowledge workers of the future to have the ability to update their skills quickly and to take responsibility for their learning. In part due to changing demographics, the globalization of the workforce, and the aging and increasing professionalization of the population, adult students are returning to school, driven by their own developmental interests and by the requirements of their employers. The pressure to respond to the desire for just-in-time learning is a powerful force for change. Some institutions are more capable of responding than others, and new approaches to learning continue to emerge.

According to the Sloane Consortium's annual surveys on the state of online learning in the United States, the enormous growth in online enrollments has begun to stabilize but will continue at a higher level than traditional classroom-based enrollments (Allen & Seaman, 2005; Allen & Seaman, 2007). The number of online students increased at an annual rate of 9.6%, whereas the classroom-based enrollments increased by only 1.5%. This difference is expected to continue. The results of the Sloane 2007 survey indicate that about 35% of higher education institutions have three quarters

of the online enrollments (Allen & Seaman, 2007). If we look at the type of institutions with the largest numbers of online students, the 2-year associate colleges have the highest level of engagement in online learning (62%). Masters or doctoral research institutions have lower rates of engagement, followed by the baccalaureate schools. The smallest private colleges and universities are the least engaged in online learning. In total, online students comprise about 20% of all students (Allen & Seaman, 2007). These figures suggest that the future bodes well for online enrollments. However, it is unlikely that many new institutions will enter the field.

Corporate universities are growing faster than higher education (Hearn, 2001; Urdan & Weggen, 2000). These "universities" focus on educating their employees to improve the quality of the globally distributed workforce and to maintain the corporate culture. Corporate training programs have used learning management systems (LMS) or more recently, content management tools and blended formats. In a 2008 survey conducted by the American Society for Training and Development's (ASTD) Learning Circuits (Learning Circuits, 2008), companies reported using e-learning for training in business skills, task specific skills, desktop applications, and regulatory and compliance issues. Reported problems with e-learning were related to cost and employee buy-in, technical competency, and time commitment. Some corporate universities have partnered with traditional universities to offer online degree opportunities to employees. For example, United Health developed United Health Learning Institute in collaboration with Renselaer Polytechnic Institute to offer degree programs to employees. As well, the U.S. military provided over 50 online degree programs to more than 30,000 service men and women through the American Public University System and the American Military University in 2008 (www.apus.edu). However, not all institutions have joined the Internet bandwagon. The Sloane Consortium (Allen & Seaman, 2007) found that smaller public colleges and universities tend not to have online learning as part of their strategic plans. Perhaps this is due to the continuing perception among their faculty that online learning is not as effective as classroom-based learning. Resistance to online teaching has been attributed to faculty lack of confidence, feelings of loss, and lack of awareness of and training in new approaches (Panitz & Panitz, 1998). Others fear for the demise of the university as we know it. Talbott (1998) cited the apprehension of faculty who are currently at the center of traditional teaching and learning models and who anticipate a loss of status and power. Noble (1999), for example, argued that higher education is being commercialized and that teaching is becoming a commodity that steals the faculty's control, knowledge, skill, and livelihood.

Fears have morphed into other issues. Students entrenched in the digital society have changing expectations about the relationship between learning and technology. Successful operation of new technology can lead

to a greater sense of knowledge and efficacy, but failure can evoke feelings of stupidity and ineptitude. There are also built-in paradoxes to the technology itself. What seems radically new and innovative one day becomes old and obsolete the next day. What appears to provide remarkable savings in efficiency and cost-effective service can inefficiently consume huge amounts of time and attention. Naïve expectations that online learning is financially rewarding have been disappointed. What is experienced as fulfilling can easily become a craving for more and better technology. The interface of technology with pedagogy gives rise to complex struggles. What has the potential for assimilating and joining people together on any number of topics and experiences can easily lead to feelings of loneliness and isolation.

University administrators attribute the growth of their online programs to student demand. Online programs increase access to education for students who are nontraditional and are unable to attend classroom-based environments. This fulfills a significant mission for many institutions. Online programs have also grown to meet the need for increased continuing and professional education, increased retention and degree completion, and accessibility for new students outside their catchment areas (Allen & Seaman, 2007). At the same time there are significant barriers to the development of online programs and courses. These are perceived by administrators to be related to (1) faculty resistance to online programs and courses, (2) increased time and effort for faculty, (3) increased needs for student focus and discipline, (4) high costs of online programs, (5) issues with retention, and (6) employers' negativity (Allen & Seaman, 2007). It is interesting to note that faculty's need to learn new technologies is not mentioned as a barrier. However, online learning is not seen as a cost savings approach to education since it requires a large investment in infrastructure and support. Rather than shifting to entirely new pedagogies applicable to fully online programs, blended programs integrate more traditional learning methods with new approaches. In a survey of chief academic officers, Allen, Seaman, and Garrett (2006) found that contrary to beliefs about the appeal of blended courses and programs, the picture is complex and difficult to research. Apparently, blended courses are not identified separately from classroom-based classes. If we look across disciplines, there are more blended programs than online programs, with the highest number of blended programs in the areas of business and information technology. Although baccalaureate programs have fewer online courses, they have many more blended courses. Doctoral and masters programs tend to have a high number of both blended and online courses. When consumers are asked about blended versus online learning, they are favorable to both, with 80% of students indicating positive interest (Allen et al., 2006). They suggest that that their findings point to high acceptance of online and blended models as compared to the traditional

classroom approach. They indicate that when students select programs, they are more interested in factors such as reputation, learning model, location, transfer policy, and price and are less concerned about whether the program is online or blended compared to classroom based. Essentially, the institution's or organization's mission strongly influences the level and structure of the commitment to online education.

The Players: Current Online Learning Environments

Online learning takes place within a variety of educational learning environments, from the traditional distance learning universities to e-learning for-profit. What follows is our categorization of the dominant players in the online teaching profession today.

Nonprofit traditional distance learning universities. Traditional distance learning schools have ventured into the online environment and brought with them the values and educational philosophies of their traditional distance environments. Some have attempted to replicate their models in other countries. The United Kingdom's Open University has entered the U.S. market with an MBA program for students without BA degrees (www.open.ac.uk). Canada's Athabasca University began as a correspondence program in 1972 and now offers several online graduate degree programs (www.athabasca.ca).

Other traditional learning distance learning institutions have expanded directly into the online market. For example, Fielding Graduate University, which began in 1974, offers masters and doctoral programs that combine face-to-face and distance modalities as well as programs that are entirely online. The university is accredited by the Western Association of Universities and Colleges, and its doctoral program in clinical psychology is the only blended program to be accredited by the Committee on Accreditation of the American Psychological Association (www.fielding.edu).

Traditional nonprofit universities. Large traditional public universities have the highest number of online degree and certificate programs as well as courses across a wide range of disciplines. There are examples of traditional universities developing entirely new entities for their online programs, such as the formation of Cardean University and Ellis College of New York Institute of Technology. Some of the elite universities, including Columbia and Northwestern, have formed for-profit businesses by partnering with online learning companies to offer online courses. Some efforts have failed, such as NYU Online and Cornell University's ECornell, which had to be reorganized. Many universities have applied corporate practices to their online efforts. One successful example is Steven's Institute of Technology's WebCampus. In the last 6 years, Stephens, with 10,000 undergraduate and graduate students, has collaborated with Beijing Institute of Technology to

offer a masters program in IT and plans to expand to other Chinese universities. This is an example of the international potential for collaboration and transfer of learning (Skaare, 2006). In an open source effort, Massachusetts Institute of Technology (MIT) offers free online courses through MIT's OpenCourseWare site and has at least a million hits per month. The courses are posted by MIT professors who offer their work to the public through the Web site.

Military online universities. The Department of Defense (DOD) has two online universities to provide continuing education and professional training as well as degree programs primarily to military personnel and DOD civilian employees. The DOD standards for online learning are maintained through SCORM (Shareable Content Reference Model), a collection of standards and specifications for Web-based e-learning to help maintain reusable learning content. SCORM defines how learning is sequenced in learning modules and is part of the Advanced Distributed Learning Initiative. The SCORM framework is being adopted by learning systems worldwide so that learning content can be easily transferred to any learning platform. Other universities, such as Park University, collaborate with the military online programs.

For-profit universities. The University of Phoenix is the largest and most financially successful for-profit university that has both campus-based and online programs. University of Phoenix Online offers BA and MA programs as well as corporate certificate programs. Jones International, founded in 1995, is an exclusively online university with students located in 57 countries. The school is accredited by the North Central Association of Colleges and Schools and offers undergraduate and graduate degrees. Other for-profit schools that offer graduate degrees online include Strayer University Online, DeVry's Keller School of Management, Capella University, Argosy University, and Walden University.

For-profit e-learning organizations. Beginning in 1998, Kaplan Learning Systems, in conjunction with the *Washington Post,* developed Kaplan University and Kaplan College Online offering degrees and certificates. It partners with the University of Alabama to provide library services and is accredited by the North Central Association of Colleges and Schools. Another large for-profit company, Sylvan Learning Systems, has consolidated some of the important players in the online market by acquiring Walden University, National Technology University, and Canter (a program for teacher's professional development). Sylvan collaborates with the University of California to facilitate their development of online programs and has a similar arrangement with the University of Liverpool to develop their online capabilities (Garrett & Verbik, 2004).

Corporate online universities. Many major corporations have developed corporate universities with online components. It is common practice

for the corporate universities to work collaboratively with for-profit learning organizations. Numerous e-learning organizations provide contracted services as consultants or providers to corporate universities. The Corporate University Xchange (www.CUX.com) provides information for corporate university organizers, including a newsletter, e-news (*Corp U Journal*), Webinars, survey research, and an annual conference. Examples of corporate universities include Motorola University, Daimler Chrysler University Online, McDonald's Hamburger University, EMC University, General Motors University, NCR University, Shell Open University, and Vanguard University. Cisco provides Cisco Networking Academies, which has served 153,000 employees worldwide (Morrison & Meister, 2001).

Online learning digital content resources and open sources. A sample of online organizations and Web sites that provide support for research, content, and collaboration for online learning indicates there is a wealth of support and rapid expansion of Web-based resources. A well-developed effort to support the online learning environment is the Sloane Foundation's Asynchronous Learning Network, which has promoted asynchronous (anytime and anywhere) learning since 1994, holds an annual conference, and has a Web site (www.aln.org) containing research and educational resources. Another nonprofit online learning venture is IMS Global Learning Consortium. Established in 1996, the membership organization publishes research and provides conferences to examine how technology can enhance Internet-supported learning with an effort to promulgate best practices and standards. Other efforts include the Online University Consortium, which publishes the results of their assessment of online universities who submit their programs for evaluation. In the corporate training arena, Corporate University Xchange partners with University of North Carolina to enhance the relationship between industry leaders in information technology and education by publishing a newsletter, research, and conferences. Online learning information resources such as ASTD's *Learning Circuits* publish e-learning news and research. Multimedia Educational Resource for Learning and Online Teaching (MERLOT) provides a Web site for peer-reviewed, online course material and discussion. Topics cover most disciplines and include tutorials, lectures, simulations, and hypertext books. Online distance and e-learning journals, many of which are peer-reviewed, provide a rich source of easily accessible research. Blogs such as *e-learningpundit,* wikis, and virtual reality sites provide a new generation of e-learning possibilities.

Along with the enormous growth and competition in online educational ventures, we have already witnessed the demise and consolidation of some online learning schools. Future developments will continue to be influenced by an institution's or organization's mission,

commitment of leadership, desire to improve access, administration and faculty beliefs that online education is equal to or better than traditional education as well as an impetus toward creativity and collaboration.

Pedagogical Implications of Online Learning

Seven years ago we began this handbook by recognizing that the techno-logical wonder of the Internet was spawning a rapid and inevitable surge in online education. We were awed by the way in which technological innovation had demolished traditional institutional boundaries to exper-tise and knowledge, citing Drucker's (1999) observation that the Internet had given everyone who seeks information access to resources once held within the ivory tower. In turn, we were curious about the pedagogical implications of online learning and acutely concerned that participants in distance education were merely trying to move the traditional classroom approach to teaching into the online environment without fully consider-ing the advantages and limitations of the medium.

Online teaching developed from advances in communication technology, not from innovative changes in pedagogy (Rudestam, 2004). This fact has had profound implications for identifying a suitable place for technology in training and education. Generally speaking, educational institutions that offer courses online have done so within the context of their dominant pedagogical principles and historical attitudes toward education. When those principles emphasize the authoritative expertise of the instructor who disseminates knowledge and information to relatively passive students using lectures supported by audiovisual aids, the virtual classroom is likely to consist of instructional materials presented to the students in the form of lecturettes, either in real time or in archived video form. Using learning management tools, measures of competence might involve responding to a set of exam questions or writing a term paper and e-mailing it to the professor. The professor evaluates the material and provides some feedback, and the student receives a grade in the course. Thus, reliance on a prevailing educational paradigm means that face-to-face instructional practices (and distance learning by correspondence) are now being replicated in a new medium. However, we maintained that this might not be the best and most effective use of the online environment.

We argued that optimal use of the electronic environment for teaching classes necessitates a shift in pedagogy and moreover, that the Internet as a medium for teaching and learning requires epistemological changes that are worthy of consideration (Rudestam & Schoenholtz-Read, 2002). This perspective to education represented our own experience at Fielding

Graduate University and was reflected in most of the chapters of the first edition of the *Handbook of Online Learning: Innovations in Higher Education and Corporate Training.*

We continue to endorse Schrage's (1990) observation that "technology is really a medium for creating productive environments" (p. 67). Thus, technologies can be effective if they are designed to empower student engagement with the learning process and collaboration. Sherry Turkle (1995), among the most visionary thinkers regarding the impact of technology on the psyche, noted that a single person working alone on the computer can work through identity issues regarding control and mastery; once the computer is used as a communication medium, the control offered by the computer can be transformed into generating collaboration and intimacy.

The Internet has exposed people to a huge variety of opinions, values, personalities, and conventions from an ever-increasing number of people from diverse backgrounds and affiliations. In cyberspace, the self is readily constructed in diverse ways, and students readily form different opinions and interpretations regarding the same reading material and commentaries. This perspective stands at odds with the traditional model of education, dubbed by Freire (1985) as the nutritionist model (and by Dabbagh, 2000, as the instructivist approach), which arranges its participants hierarchically dependent on their status as authors of knowledge. The hierarchy starts with the authority of the knowledge creators in a field (esteemed scientists and scholars who hold the truth that students need to discover and assimilate), moves to those who design curricula for students to master, and ends with teachers who dispense the goodies to hungry students who are expected to consume them. According to Gergen (1995), the nutritionist perspective does not fit well with how knowledge is actually generated. Education, he suggests, must abandon the task of discovering universal authoritative knowledge and move to giving teachers more authority about what to teach. And education must proceed within a dialogic relationship between students and teachers. As W. B. Yeats put it, "Education is not the filling of a bucket, but the lighting of a fire."

There is reason to believe that there has been a greater commitment to constructivist pedagogy within the world of online learning during the past decade. Many leaders in the field reflect this orientation. Adams and Morgan (2007) noted that the first generation of online learning was technology driven, whereas the current generation focuses on "soft skills" and pedagogy. The first-generation approach, with its emphasis on faculty being in control and students learning specific content with the aim of passing tests, lends itself to delivering expert knowledge, especially in situations where there are right and wrong answers. The second-generation approach places the learner in control of goal setting and negotiating meanings with others while participating in learning activities. It emphasizes the exploration of ideas and integrating theory with practice

and application. Alonso, Lopez, Manrique, and Viñes (2005) describe the pedagogical shift inspired by the Internet as a shift from teaching to learning, a shift which is particularly well suited to adult learning in context. They noted that one of the contributions of social constructivist theory in education is "anchored instruction"—that is, students organizing their explorations around an anchor, which might be a case study or a theme or an applied problem. Others such as Chen (2007) have described how an increasingly constructivist approach to instructional design principles over the past several years is reflected in a combination of active learners challenged by complex real-world problems using continuous assessment of progress and outcomes.

Future Issues in Online Learning: Pedagogy

Consistent with this depiction is one of John Seely Brown's (2008) predictions for the future of online learning: an increase in learning by doing and a decrease in learning about. In practical terms, this means that the focus on traditional instructional design is apt to decline and be replaced by authoring tools designed by and suited to the increasing computer sophistication of current young adults, by allowing them to locate and take advantage of their own learning resources. This distinction is reminiscent of what in networking terminology is called *pull* technology versus *push* technology. With push technology, there is often information overload because senders are responsible for sending messages; with pull technology, the recipient requests what he or she wants to receive. With a pull type of communication, it is like going from "drinking from a fire hose . . . to directing a fine water fountain stream" (Doucette, 1998, p. 26). We have seen this shift in the world of home entertainment and education with the availability of TiVo, Kindle, and other forms of on-demand audio-visual media products. Similarly, computer applications such as Moodle allow graduate education content to be highly individualized and available on request by the active learner.

Now that the pedagogy is catching up with the technology, we can anticipate another significant leap in online education, this one ushered in by Web 2.0, the more recent evolution of the Internet, and by the so-called open resources movement. As Brown and Adler (2008) have recently noted, the distinction between producers of Internet content and consumers of Internet content is gradually being eroded. A well-known example of this theme is Wikipedia, a kind of open source software that allows anyone, anywhere, to contribute to the current state of knowledge being assimilated by this highly accessible, diverse, and comprehensive online encyclopedia. The sharp demarcation between the creation of knowledge and the dissemination of knowledge (by universities) is being

eradicated so that learning is becoming truly democratized through the rapid proliferation of Web 2.0 software. This is very different from the learning management software, which has dominated online learning for the past several years. Such software has been predicated on the concept that knowledge products are something to be administered and controlled and financially supported by tuition dollars from captive students who are in residence somewhere (Nagy & Bigum, 2007). As Nagy and Bigum point out, the intellectual property issues involved in cocreated knowledge are mind-boggling. How will the intellectual contributions of future knowledge creators be protected? How will they be remunerated for their work? And most importantly, what incentives will assure the continued production of quality scholarship in a digital environment?

It is well-known that the British Open University system has been a global leader in online education. A recent interview with leaders from that organization clarifies that an initial focus on the quality of instructional materials and an attendant focus on responsive student support services were instrumental in the rapid growth of their distance education programs (Katz, 2008). The system still prospers. At this point, more than 200,000 students are being served by the Open University, facilitated by between 7000 and 8000 part-time tutors. The leaders note that technological innovations on the horizon, such as 3G technology, are making it much easier to network students across locales to engage in joint learning tasks. They also point to Second Life and other distributed virtual communities as representative of the new wave of Web 2.0 distributed learning. Second Life is a three dimensional virtual world owned and operated by its several million residents (Hargis, 2008). Second Life captures the essence of new generation experiential learning: dynamic experimentation with a variety of learning tools and educational content, simulations that allow for testing new ideas and practicing new skills, community building, and networking with a diverse set of learners. According to the Second Life Web site (www.secondlife.com), "In Second Life you can create anything you can imagine with powerful, highly flexible building tools, using geometric primitives and a simple, intuitive interface. Building is easy to learn, yet robust enough to inspire creativity."

In sum, the trajectory of distance learning environments has moved from the relatively passive to the increasingly active and interactive. Web 2.0 implies a shift from traditional software to Internet services (Bray, 2007), which supports a parallel paradigm shift from traditional learning to digitized formats of learning. The technological possibilities include the opportunity for students to design their own content as well as to rely on social software that allows for one-to-one communication (e-mail, instant messaging), one-to-many communication (Web pages, blogs), and many-to-many communication (wikis and blikis) (Kesim & Agaoglu, 2007). Where Web 1.0 had Britannica Online, Web 2.0 has Wikipedia; Web 1.0 had personal Web sites, Web 2.0 has blogging; Web 1.0 had content

management systems, Web 2.0 has Wikis, Web 1.0 had directories, Web 2.0 has tagging (Kesim & Agaoglu). Technological trends of the near future may include the following (Punnie & Cabrera, 2006, p. 23):

- more widespread broadband Internet access, including peer-to-peer file sharing and always on features;
- Web logs and blogs as information and communication sources;
- podcasting as a generator of mobile learning;
- short message services (SMS) and multimedia messaging services (MMS) as new content providers and for information sharing; and
- open source software and content in place of institutional software and content.

As Brown (Brown & Adler, 2008) saw it, the most profound contribution of the Internet is in the arena of social engagement and access to other people rather than to information—how to learn rather than what to learn. The emphasis on the social matrix of education is supported by studies such as one by Light (2001), which concluded that student success in higher education was determined more by the opportunity to participate in study groups than by the teaching style of the instructor.

Future Issues: Different Models for Different Settings

We do not want to give the impression that small-group collaboration is the only viable approach to online education. As data and experiences from online educational initiatives are collected from diverse cultures and sectors around the globe, it becomes clear that not one form of online learning fits all consumers. Martin, Massy, and Clarke (2003), for instance, have studied the *absorptive capacity* for online learning in organizations. Absorptive capacity, in this context, refers to the factors that govern how "organizations have different capacities for acquiring, assimilating, transforming, and exploiting knowledge on e-learning" (Martin et al., 2003, p. 230). Martin et al. have generated a host of propositions that promote receptivity to penetration and use of online learning based on their assessment of individual and cultural variables. Interestingly, they see more rationally based models of learning, represented by the cognitive and behavioral approaches that they view as more common in the United States, as lending themselves more easily to the adoption of online learning than the constructivist models of education more commonly found in Europe. They believe that the relative receptivity to e-learning in the United States is rooted in the short-term perspective, closely connected information infrastructure, and vertical, individualistic culture of

Northern American business. As such, they foresee that a more constructivist model of e-learning that embraces a high level of social interactivity would be more compatible with online training initiatives in many other parts of the world. Thus, one dichotomy that deserves our attention is the distinction between knowledge as a product or commodity in the marketplace versus knowledge as a social practice, heavily influenced by context and active engagement. Both types of philosophical perspectives can currently be found in online education, with turmoil at the intersection.

Another take on the influence of cultural factors in online learning can be found in a variety of studies comparing student experiences from different countries (Rutherford & Kerr, 2008). One frequently cited variable is the difference between high-context and low-context learning cultures (Morse, 2003). Cultures differ in their relationship to authority, individualism versus collectivism, masculinity versus femininity, and tolerance of uncertainty and ambiguity, among other things (Hofstede & Hofstede, 2005). High-context learning emphasizes the authority and wisdom of teachers, formality of methods, and a focus on assessments and examinations, whereas low-context learning emphasizes learning outcomes, deep learning and personal skill development, and informal teacher–student interactions. The implication is that online pedagogy may also need to be tempered to meet the expectations of diverse students in order to promote positive educational outcomes.

Future Issues: Synchronous Versus Asynchronous Approaches

The respective advantages and disadvantages of online and face-to-face learning are moderated by the form and quality of each modality. One key dimension that discriminates the current use of the online environment is the synchronous versus asynchronous nature of the course. Historically, synchronous and asynchronous e-learning models have been matched against one another. Traditional classroom teaching, of course, is real time and synchronous instructional technology probably originated with closed-circuit television on college campuses in the middle of the 20th century (Johnson, 2006). Asynchronous instruction, on the other hand, has its roots with the pioneers of distance education. Each approach has its own advantages and disadvantages. The anywhere-anytime feature of the asynchronous format allows for more flexible scheduling. According to its proponents, it also encourages more thoughtful and reflective learner participation as well as the opportunity to preserve and archive entire conversations and courses. The synchronous format offers greater spontaneity and more social interactions, but it is more likely to suffer from technology breakdowns and networking problems. Leaders within the education

community who resonate with a constructivist approach to learning have clearly favored the asynchronous model with its "richer, more inclusive types of interchange" (Dede & Kremer, 1999). Trainers in the organizational sector have also elected asynchronous approaches, ranging from PowerPoint slides to simulations with creative graphics (Welsh, Wanberg, Brown, & Simmering, 2003). Studies have also found that asynchronous discussion leads to equal or superior student satisfaction (Johnson, 2006).

Within a blended learning paradigm there is ample place for both synchronous and asynchronous learning modalities. In the recent past, chat rooms and synchronous conferencing systems were generally relegated to serve a supplemental function in online courses in the form of socializing (virtual cafes), peer support, and virtual office hours (Branon & Essex, 2001). Everything has changed, however, with the advent of social software and groupware that facilitate real-time collaboration and problem solving. Park and Bonk (2007) report the results of a small ASTD study, which found that 86% of 145 survey participants intended to incorporate synchronous technology into their future online courses. No doubt the current generation of students in higher education is not as threatened by technological bells and whistles as previous students, nor as resistant as a previous generation of educators and trainers to dive into new Internet-based accessories.

On the other hand, changes in online technology and pedagogy need to consider the opinions and sensibilities of faculty and trainers who are charged with implementing them. The DialogPLUS project, described by Davis and Fill (2007), describes a joint venture in blended learning among major universities including Pennsylvania State University, University of California at Santa Barbara, University of Leeds, and University of South Hampton. Early on, the institutions sponsoring the project agreed that the teachers needed to have ownership of the way it evolved in order to be successful. For example, relying on reusable learning objects contributed by commercial content providers, as opposed to educational content produced by faculty participating in the program, reduced local ownership and commitment. Another potential problem was restraining instructors from taking advantage of creative new learning approaches by saddling them with outmoded hardware and software. This is the flip side of previous observations that the field of online learning has been characterized by juxtaposing new technology and old pedagogy (Levy, 2005).

Future Issues: Best Practices

We have now had sufficient time to generate any number of benchmarks and best practices for online education from the perspective of students, teachers, and administrators. The authors of the chapters in

this handbook have contributed their observations and recommendations to this status report. Other available sources include benchmarks for success provided by the Institute for Higher Education Policy (2000), best practices for evaluating online faculty (Tobin, 2004), relationships between interactions and learning in online environments (Swan, 2004), success factors for online learning and institutional change (White, 2007), principles of online course design and teaching (Garrison & Vaughan, 2008), online business education practices (Grandzol & Grandzol, 2006), and regional accreditation (Loane, 2001; Swail & Kampits, 2001). Among these contributors lie the seeds for the future of online learning.

It is likely that education and training programs of the future will increasingly customize learning to take advantage of individual needs and learning styles and combine the best elements of classroom education and technology. Increasing consideration needs to be given to what method of teaching is best for what type of student for what subject matter under what circumstances. The modality depends, moreover, on the desired learning goals and outcomes. The dissemination of highly structured basic content might not require much discussion and may be suitable for a teacher-focused approach. Content that is heavily value laden may be more appropriate for peer discussion. It is up to educators to blend teaching modalities and methods in ways that match student needs and capacities to create optimal learning outcomes. The distinctions between campus-based learning and distributed learning, between classroom-based education and Internet-based education, will no doubt continue to erode.

An ongoing challenge for the future of distributed education is to meet the needs and values of individual institutions while serving the high market demand for lifelong learning worldwide. Educational institutions that are motivated to revisit their missions and integrate the appropriate technologies with their pedagogy will become more competitive in the educational marketplace. One recent survey of emerging technologies that are apt to have the greatest impact on the delivery of online education in the near future found that reusable content objects, wireless technology, and peer-to-peer collaborative tools were at the forefront (Bonk, Kim, & Zeng, 2005). Other noteworthy technologies include digital libraries, simulations and games, assistive technology, and digital portfolios.

Yet, almost all advocates of online learning agree that technology should never drive educational needs, but educational needs should determine the appropriate use of technology. The same survey cited above found that the most highly predicted pedagogical techniques for the online future in higher education were group problem solving, collaborative tasks and problem-based learning (Bonk et al., 2005). This suggests that even in a

significantly decentralized learning environment abetted by the wonders of 21st century information technology, the power of human relationships and the wisdom of the learning group can be mobilized.

Introduction to the Chapters in the Book

Part I of the revised handbook explores a wide range of issues relating to changing philosophies and theories of online learning. In "Presence in Teleland," Gary Fontaine and Grace Chun offer an update of Fontaine's chapter on the ecology of the virtual world from the perspective of the academic traveler. The authors focus on the importance of having a sense of presence in the online classroom and how that sense of presence can be fostered to generate significant learning outcomes. They build on our understanding of the phenomenology of space and help us think about ways in which to create and nurture virtual spaces to make them conducive to learning. The revised chapter offers a summary of research drawn from a community of inquiry model describing how students can create a sense of online community to enhance their learning. Throughout the chapter the authors help keep us current about both synchronous and asynchronous course ecologies.

The following revised chapter is by Jeremy J. Shapiro and Shelley K. Hughes and titled "The Challenges of Culture and Community in Online Academic Environments." The authors discuss the complex task of building and managing an online learning community given the diverse motives, styles, and preferences of the participants and the realities of computer mediated communication. They expose the technocultural paradigms and social norms that undergird the virtual community and its classrooms. The updated chapter offers forms of information literacy that make learning communities safe environments for students, faculties, and administrators in a decade challenged by the rampant use of innovations such as iPods, cellphones, Webcams, Web 2.0 social networking sites, wikis, and blogs. Shapiro and Hughes adopt a neohumanist paradigm (Hirschheim & Klein, 1989) to address these issues. The rapid speed of change in educational technologies that provide the foundation and vehicle for online learning are captured in Robin Mason and Frank Rennie's chapter on "Evolving Technologies." The Web 2.0 tools that are currently available emphasize what Mason labels as the *convergence* occurring in distributed education: the integration of synchronous and asynchronous communication and the integration of face-to-face and distance education into blended learning, all provided by the pervasiveness of the World Wide Web. After a solid foundation describing the evolutionary process, Mason and Rennie go into considerable detail in examining six popular Web 2.0 tools: blogs, wikis, podcasting, e-portfolios, social networking, and Second Life. The strengths

and limitations of each tool are addressed, followed by issues for both students and teachers pertaining to their adoption.

Pierre-Léonard Harvey has taken on the task of providing a conceptual framework for future generations of educational delivery systems in the chapter "Applying Social Systems Thinking and Community Informatics Thinking in Education: Building Efficient Online Learning Design Culture in Universities." He recognizes that technological innovation is proceeding exceeding rapidly in the online world but that epistemological and theoretical principles must also be applied to innovation in system design. This ambitious chapter explores the philosophical underpinnings of design theory and opts for a perspective that is systemic, constructivist, and transformational. His approach to an online learning community and a community supported collaborative learning community is indebted to the contributions of Bela Banathy. Harvey describes a free open source socioconstructivist virtual community of social designers (FOSSVCSD) charged with building an online learning system. As an example he describes the experience of educators at the University of Quebec in Montreal with the open source Moodle community. Harvey concludes by proposing a comprehensive research agenda for the social system design community.

Bernard Luskin and James Hirsen predict an expansive future for online education in their chapter "Media Psychology Controls the Mouse That Roars." They document the rapid growth of online learning and argue that it is being fueled by persistent market forces. Lifelong learning is in demand, the costs of campus-based education are skyrocketing, and an eager world provides a fertile ground for educational entrepreneurs and nontraditional institutions, resulting in a rapidly growing market for online education. Meanwhile, Luskin and Hirsen point out the role that the relatively new field of media psychology can play in the years ahead in contributing to an understanding of the human learning experience online at the interface between technology and psychology.

Janet Poley takes us from the local context to the global scale of e-learning in her chapter "Globalization in Online Learning." This chapter addresses global trends, challenges, and opportunities in online learning and gives us an up-to-date overview of what is taking place on the forefront of Internet-enabled learning throughout the world. Poley reminds us that the digital divide is still very real so that many people, especially in the poorer countries of Africa and Asia, have no access to quality learning resources and opportunities. She reminds us of the moral and practical challenge to bring online connectivity to all underserved regions and highlights programs and institutions that are committed to expanding connectivity to the underserved. The open source grassroots movement is a particularly swift and powerful force in this endeavor. With the global expansion of online learning comes pedagogical changes, especially in the learner-centered, collaborative, contextual direction

previously described in this section. Finally, we are reminded that care must be exercised to assure that the global community is offered content and method that are consistent with their own cultures and not dominated by Western content as in previous periods of educational colonization.

Yolanda Gayol covers an ambitiously large territory in her review of the status of research on online education. She positions her review within the context of a historical overview of the area. Gayol comes from the field of distance education, but she recognizes that one of the challenges in reviewing the research literature in this field is its fractured representation by many different communities of practice using very different terminologies. Wisely focusing on meta-analyses, Gayol decries the overrepresentation of descriptive, atheoretical research studies. She divides her review into research on learning, teaching, and outcomes. A significant trend, noted by several of our authors, is the emergence of Web 2.0, e-research, and open-systems models of learning.

The final chapter in the first section is a scholarly updating of "Uncertain Frontiers: Exploring Ethical Dimensions of Online Learning" by Dorothy Agger-Gupta. Agger-Gupta illustrates how difficult it is to discern the ethical nature of our actions in the VE. We are in relatively uncharted territory when we consider how to understand the appropriate rules and norms of behavior in the virtual world. Emerging ethical dilemmas in the 21st century include questions concerning online community, authorship and ownership of online text, identity, privacy, secrecy, power, and dominance. The author takes us on a tour of alternate perspectives on ethical beliefs and values and draws upon these perspectives to consider specific ethical dilemmas in online learning. She argues persuasively that professional ethical principles for online educators need to change and highlights the unanswered questions influencing the nature of online living and learning communities that need to be addressed in the digital era.

The second part of the book moves from theory to practice. The first section addresses the implementation of online learning in terms of programs and courses. Program implementation, be it online or bricks-and-mortar, requires a vision and a road map. In the first chapter, "Revisiting the Design and Delivery of an Interactive Online Graduate Program," revised and updated from the previous edition, Judith Stevens-Long and Charles Crowell refer to a model master's program in organizational management to describe the power of peer-to-peer, small-group, problem-based interactions in the online learning environment. The authors guide the reader through the steps to develop and manage online courses using a learner-centered pedagogy. The chapter concludes with a discussion of how the group process theory of Wilfred Bion lends itself to understanding the development and dynamics of online classes, including the meta-learning that takes place in addition to the absorption of academic content.

Barclay Hudson exemplifies the unusual creativity he brings to online teaching in an updated chapter titled "Candlepower: The Intimate Flow of Online Collaborative Learning." Hudson explains that, contrary to common belief, the online classroom can be an intensely intimate and collaborative learning environment. He argues that modern complexity theory, with its emphasis on self-organizing capacities, nonlinear systems, and nondeterministic outcomes, serves as an apt metaphor and explanatory theory for generating online collaborative critical thinking. The chapter includes many useful recommendations and exercises (i.e., candlepower) for the online facilitator to draw upon to establish an appropriate level of group trust to optimize collaborative critical thinking.

The next chapter, by Kay Wijekumar, is titled "Designing and Developing Web-Based Intelligent Tutoring Systems: A Step-by-Step Approach With Practical Applications." Intelligent tutoring systems have demonstrated significant success in improving learning outcomes by incorporating modeling, interactive practice tasks, assessment, and feedback. Wijekumar notes that the perceived complexity of intelligent learning systems has retarded their use in the online learning environment. However, recent advances such as the Web 2.0 and virtual reality environments have expanded the range of technologies available for enhancing learning. Wijekumar has developed and herein describes in great detail a four step model called 4M (multimedia, motivation, metacognition, and memory) that enables the creation and application of intelligent tutoring systems to the virtual classroom. In the example described in this chapter, the model employs expert performance, interactive activities, and feedback to increase writing skills among K through 12 students. The principles and techniques, however, are equally applicable to higher education and corporate settings and a wide variety of academic and professional skills.

The corporate learning environment has not been neglected in terms of taking advantage of technological change in online education. Bruce LaRue and Stephanie Galindo's updated chapter, "Synthesizing Higher Education and Corporate Learning Strategies," proposes that rapid technological change profoundly affects both the university and the corporation. LaRue and Galindo focus on the ongoing expansion of "knowledge work" and argue that successful adaptation to increasingly dispersed organizations necessitates a "heightened level of epistemological development." They point to the rise of flexible, networked corporations and "communities of practice" and propose a set of core competencies drawn from higher education to serve knowledge workers of the future. The 4-plex model of networked learning is a tool for corporate trainers in multinational companies that provide a practical link between the corporation and the university.

The final chapter in the programs and courses section is written by Jenny Edwards and Sue Marquis Gordon and is titled "Teaching Action Research at a Distance." The authors offer a very practical overview of how

action research, which is itself a form of applied research that serves as a powerful change agent in academic or corporate organizations, lends itself to the online environment. They begin by proposing three different models of teaching action research, differing in their (combination) levels of didactic versus experiential emphases, and go on to provide examples of each model. In concert with most authors in this volume, Edwards and Gordon opt for an approach that involves considerable small-group interaction among students and faculty. They conclude with specific recommendations for instructors who may be interested in taking on this teaching challenge.

The second section of Part II focuses on issues pertaining to faculty and students in the virtual classroom. These two chapters are written by experienced online instructors and trainers and are complementary contributions to further our understanding of faculty and student needs appropriate to succeeding in online courses. The first, by Rena M. Palloff and Keith Pratt, is an updated and revised version of "Beyond the Looking Glass: What Faculty and Students Need to Be Successful Online," which appeared in the first edition of this handbook. Palloff and Pratt make it clear that not everyone is suited for online teaching or learning. For instance, charisma and content expertise, highly valued in face-to-face teaching, may be less important than having social presence in an online environment, where a learner-focused introvert can shine. The authors use their extensive experience in training online instructors to describe what makes a good online teacher and the components that would represent an optimal faculty development program for preparing instructors for this challenge. An important element in orienting faculty is assimilating a pedagogy that emphasizes the changing nature of faculty–student relationships represented by the principles of active learning, interactivity, and collaboration.

The second chapter, "Teaching Professionals to Be Effective Online Facilitators and Instructors: Lessons From Hard-Won Experience," by Leni Wildflower, argues for creating a framework for optimal online learning by subordinating technology to educational needs. Wildflower's chapter presents a number of practical suggestions for selecting the best, as opposed to the most ornate, software, designing an online course, setting norms and boundaries for students, defining confidentiality, facilitating dialogue, providing feedback, managing conflict, sustaining motivation, and providing record-keeping and organization. Her experience in designing an online program in Evidence Based Coaching at Fielding Graduate University is used to illustrate many of these principles and techniques.

The final section of the book addresses administrative and support structures relating to the successful implementation of online courses and programs. The first chapter, by Anna DiStefano and Judy Witt, is titled "Leadership and Management of Online Learning Environments in Universities." The chapter is written from the perspective of high-level

administrators at Fielding Graduate University, a distributed academic institution employing a blended learning model of education. Educational administrators who are interested in initiating or expanding an institutional presence in online education will appreciate the guidelines described in this chapter. The authors stress the importance of aligning institutional mission, values, and organizational culture with new online proposals. It is very easy to underestimate both internal and external barriers and factors, including institutional capacity, technological capacity and support, administrative structures, academic governance, faculty roles, student engagement and orientation, educational outcomes, and marketing and recruitment. DiStefano and Witt share their experience and wisdom with regard to the factors that need to be considered to move forward in online programming. They consider both the idea of going it alone as an educational institution and the option of finding, assessing, and managing partnerships and strategic alliances. Finally, they provide the reader with alternative resources to support the development process.

As a companion piece, Ralph Wolff, President and Executive Director of the Senior College Commission of the Western Association of States and Colleges, has contributed an immensely helpful chapter on "Accrediting Online Institutions and Programs: Quality Assurance or Bureaucratic Hurdle?" Wolff offers an insider's perspective and succeeds in clarifying and humanizing what many indeed regard as a bureaucratic hurdle. He notes that all regional accreditation agencies today are receptive to accrediting online programs and then highlights "problems associated with gaining accreditation of online programs and institutions, and ways to address them." Each set of principles and best practices that is described is accompanied by one or more practice tips. He includes coverage of the following areas of concern: relationship of online program or course to the mission of the institution, links to institutional planning, curriculum development and oversight, faculty qualifications, student evaluations and outcomes, and admissions requirements.

The final chapter addresses an often overlooked implication of establishing online courses or programs: How can students and faculty have access to suitable library resources if a physical library is not readily available to them? Stefan Kramer, a research librarian with significant experience in this area, discusses this and related issues in "Virtual Libraries in Online Learning." Kramer provides a detailed, immensely practical overview of what is variously known as online, digital, or virtual libraries and reference methods. He discusses instructional services, such as Web-based instruction and synchronous and asynchronous search strategies, as well as the content of virtual libraries, including electronic journals, digitally formatted articles, e-books, digital images, and aggregator databases. The chapter also offers guidance on how to obtain access to online information as well as content that a particular library may not own. The field of library science is preparing for a future in which

the Internet is becoming the universal content delivery and access channel. Moreover, virtual libraries are also becoming repositories of fragile and difficult to access resource materials. Kramer captures the excitement of how learning resource materials can be accessed and retrieved efficiently and sensitively in an open access age of online education.

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