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Case Studies From Cyprus

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Distance Learning is for leaders, practitioners, and decision makers in the fields of distance learning, e-learning, telecommunications, and related areas. It is a professional journal with applicable information for those involved in providing instruction of all kinds to learners of all ages using telecommunications technologies. Articles are written by practitioners for practitioners with the intent of providing usable information and ideas. Articles are accepted from authors with interesting and important information about the effective practice of distance teaching and learning. No page costs are charged authors, nor are stipends paid. Two copies of the issue with the author's article will be provided. Reprints will also be available.

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IN UPCOMING ISSUES

Perspectives on E-learning
Case Studies From Cyprus

Charalambos Vrasidas, Lucy Avraamidou, and Symeon Retalis

INTRODUCTION

During the past decade there has been tremendous progress in the advancement of educational technology, making innovative learning solutions such as e-learning and online education increasingly more feasible in many educational settings. In several countries, the use of e-learning has now begun to noticeably contribute to economic growth. In Cyprus, an island in the Mediterranean Sea located at the crossroads of Europe, Asia, and Africa, many large-scale e-learning initiatives are currently being undertaken by both public and private organizations, establishing the country as a center for education in the region.

Between the 1960s and 1990s, educational technology efforts in Cyprus schools were limited to the use of traditional audiovisual equipment and a few educational radio and television programs produced by the government. In recent years, however, considerable efforts have been devoted to promoting lifelong learning and integrating information and commu-

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nication technologies (ICTs) in all levels of education. These efforts have been supported in large part by significant investments in the island's telecommunications infrastructure, which is one of the most developed in the region.

THE CYPRUS EDUCATION SYSTEM

Cyprus has a centralized educational administration system, with the Council of Ministers as the highest authority for educational policy, and the Ministry of Education and Culture (MOEC) responsible for delivery of education in Cyprus. Specifically, the MOEC is entrusted with the administration of education, the enforcement of education laws and, in cooperation with the Office of the Attorney General, the preparation of education bills. Education is compulsory up to the age of 15 and elementary and secondary education is free. The education system in Cyprus consists of the following levels:

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- *Preprimary Education.* One-year preprimary education that has recently become compulsory for children over the age of 3.
- *Primary Education.* Primary education is compulsory and has duration of 6 years.
- *Secondary Education.* Secondary education consists of two 3-year cycles of education—Gymnasio (lower secondary education) and Lyceum or Secondary Technical and Vocational Education (upper secondary education).
- *Higher Education.* There are currently three public universities (Cyprus University of Technology, Open University of Cyprus, University of Cyprus) and three private universities (University of Nicosia, Frederick University, European University Cyprus).

After several private higher education colleges had been operating on the island for decades, Cyprus established the first public university, the University of Cyprus, in 1992. With the additional expansion of operations by the renowned Cyprus Institute of Neurology and Genetics, government spending on research and development increased substantially and efforts began to promote Cyprus as a center for services, business, and education in the region. These efforts also included a plan to improve higher education provided by both public and private institutions and a recent law now allows the establishment and operation of private universities in Cyprus. The positions that are allocated to Cypriot high school graduates for studies in higher education institutions are distributed among the candidates based on the results of the competitive entrance examinations that are held every year by the Department of Higher and Tertiary Education.

Cyprus' accession to the European Union (EU) on May 1, 2004 also had a strong impact on the country's education, economy, and culture. Cyprus had been a

member of the Council of Europe since 1960 and followed policies similar to those of the EU member-states in the field of education. With accession to the EU, Cyprus has been more actively participating in EU-funded projects in the areas of education, e-learning, and vocational education.

E-LEARNING IN CYPRUS

All European nations have established policies for using e-learning and incorporating ICT in education. Their objectives have focused on the categories of equipment, the acquisition and development of software, the skills of teachers, the skills of students, and the use of the Internet. After the special evaluation report of the Cyprus education system, conducted in 1997 by the International Institute for Education Planning (1997), a number of reforms were implemented on the island in an effort to raise the quality of education, such as the integration of computers and Internet connectivity into all levels of classroom teaching.

In a recent study (Empirica, 2006) about the use of computers and the Internet in schools in Europe, it was found that almost all schools in Cyprus now use computers for teaching and have Internet access, with the highest percentage being achieved in primary schools (95%). Only 31% use the Internet via a broadband connection, ranking Cyprus 25th among the 27 countries participating in the survey. However, the survey did not make clear how many computers are used per class, and the study was based on limited observations.

While schools in Cyprus appear to be well-equipped with technology and an ICT in education plan exists for formal education, what has generally been lacking is a holistic e-learning strategy encompassing education, business, and industry. To that end, the recent International Council for Educational Media 2007 conference, hosted in Cyprus by CARDET (Centre for

the Advancement of Research and Development in Educational Technology), invited key national experts in the area of e-learning to present their views and engage in a public dialogue on e-learning. Participants included representatives from the MOEC, the Pedagogical Institute, the University of Cyprus, the Open University of Cyprus, the European University Cyprus, and the University of Nicosia. The findings of the symposium revealed that several initiatives are currently under way which use a wide variety of technologies to offer education opportunities to learners of all ages. Some of these projects are presented and discussed in the following section.

E-LEARNING CASE STUDIES

Cyprus and the European Union have signed several protocols on financial and technical cooperation providing substantial financial aid to the island. In addition, Cypriot public and private organizations are increasingly participating in various EU-funded educational initiatives. Recently, the European Commission integrated its various educational and training initiatives under a single umbrella, the Lifelong Learning Program. With a significant budget of nearly 7 billion euro for 2007 to 2013, the new program replaces the existing education, vocational training, and e-learning programs, which ended in 2006. The new Lifelong Learning Program consists of several subprograms, including Comenius (for schools), Erasmus (for higher education), Leonardo da Vinci (for vocational education and training), and Grundtvig (for adult education).

Among the critical factors impacting the development and implementation of e-learning initiatives, are the skills and competencies of online tutors. One recent example of an e-learning project, funded under the Leonardo da Vinci subprogram, is *METER* (Monitoring, Evaluating and improving e-trainers competences in a life-

long learning environment). The project lead partner is the Institute for Adult and Vocational Education, under the Greek Ministry of Education. CARDET is the partner organization from Cyprus focusing on needs analysis, curriculum development, and quality assurance. The aim of the project is twofold: (1) to provide the means for training organizations to monitor, evaluate, and improve the competences of trainers regarding skills required for efficient and effective use of ICT, and (2) to develop training curricula for e-trainers of vocational education organizations to be offered throughout Europe. The projects aims to build the competencies of individuals and organizations involved in e-learning in Europe and at the same time raises the quality of education and training offered across sectors with the use of online technologies.

Another EU-funded project in which Cyprus participates is called *Multiple Intelligences Instructional Design Framework for Virtual Classes*. The program is in collaboration with the Waterford Institute of Technology and five other EU partners. This project uses the theory of multiple intelligences as a conceptual tool for the design of e-learning programs, and has developed and validated an instructional design framework for virtual classes. Pilot courses are being developed in the area of construction safety, and will be offered and evaluated in the participant countries.

One of the key challenges of European collaborations has to do with the multicultural nature of the organizations participating in the projects across borders. A project funded by the European Commission and which focuses on cultural diversity is called ADAPT (Adapting e-learning to Small Medium Enterprises Cultural Diversity). The project leader is Henley College of Management in the United Kingdom, with partners from Cyprus, Italy, Sweden, and Lithuania. This project aims to analyze and compare the findings from five previous EU-supported projects and to consult with national and regional businesses, trainers, and e-learning developers to explore how e-learning needs can be adapted for different cultures and regions. The project will produce and disseminate an expert report to wider education and training communities in each country, which will inform future e-learning training providers about the specific e-learning needs of various sectors.

In addition to the e-learning offerings by the recently established Open University of Cyprus, there are several e-learning initiatives being implemented by both private and public organizations. Research centers, universities, and colleges have established agreements and collaborations with institutions from abroad. For example, the University of Nicosia has signed agreements with several EU- and U.S.-based universities to offer joint degrees using distance learning technologies. Also, the Mediterranean Virtual University allows students from leading universities in the Mediterranean region and Europe to enroll in various online courses developed and offered by the 11 partner universities. Since September 2006, 40 online courses in computer science and engineering and four courses in development studies have been offered (http://ls-ewdssps.ces.strath.ac.uk/MVU/).

A further EU-supported e-learning initiative is UNITE (Unified eLearning Environment for the School). This is an Information Society Technologies project under Framework Program 6 of the European Commission, and the local partner in this project is the University of Cyprus. The UNITE consortium has developed and established a technical platform enhanced with pedagogical guidance for the creation of high-quality e-learning content for secondary school. UNITE's technology has the flexibility to adapt to the learner's cultural environment and to his or her personal learning style. The UNITE portal-like platform supports the reuse of content material, the exchange of best practices,

and the improvement of pedagogic models (http://www.unite-ist.org). Based on a socioconstructivist approach, UNITE developed a "best-practice" pedagogical framework that harnesses the potential of mobile technologies to foster enquiry/discovery learning and autonomous learning.

A large-scale open and distance learning initiative is the *Virtual University of the Small States of the Commonwealth* (VUSSC) launched in 2001 by the Commonwealth of Learning. The VUSSC is a consortium of institutions from small states of the Commonwealth (populations < 4 million), enabled by appropriate ICT applications, collaborating in practical ways to plan programs, develop the required content and ensure the delivery of those programs and support services to learners. Through the VUSSC, learners from island nations in the Caribbean, Pacific, Mediterranean (including Cyprus), Indian Ocean, as well as small countries in Africa, can gain online access to open educational resources designed to meet the development needs of participating countries. These non-proprietary course materials are integrated into accredited programs at postsecondary institutions in the participating countries, strengthening their educational capacity and outreach (http://www.wikieducator.org/VUSSC).

Finally, recent developments in mobile learning technologies have allowed the implementation of projects that use mobile devices and handheld computers in educational settings. Two ongoing research projects integrating mobile learning are *Handlearn* and *Technoskepsi* (http://mlearn.cardet.org), both supported by the Cyprus Research Promotion Foundation. These projects investigate the use of handheld technologies within nonformal science learning settings as a means to support scientific inquiry and reasoning at the elementary school. Specifically, these two projects aim to: develop and implement curriculum material informed by perspectives on the nature of science issues, and the use of mobile technologies to support learning; investigate the role of handhelds in outdoors science investigations, and; produce material for both teacher education and teacher professional development. The learning context of the two projects combine formal (i.e., classroom), nonformal (i.e., Web-based), and informal (e.g., park) learning environments and engage students in data collection and analysis of authentic data regarding local environmental problems. Furthermore, the two projects try to address current gaps in the literature of mobile learning by exemplifying the theoretical aspects and the characteristics of design frameworks associated with mobile learning, demonstrating rich and complex pedagogical practices that use mobile devices and, characterizing the processes by which students come to understand science through the use of mobile wireless devices.

Successful e-learning initiatives often rely on solid partnerships among organizations that bring together a set of complimentary knowledge and expertise. An example of a partnership among information technology companies, e-content developers, academic institutions, and research centers, is a recent project that is being developed for the Cyprus Ministry of Education and Culture. The project goal is to prepare learning objects for 13 subjects of upper secondary schools and technical education including mathematics, physics, carpentry, English language, and culinary arts. The partnership is led by HS DATA and SIVECO, with supporting partners the University of Nicosia and CARDET. This project is cofunded by the European Social Fund and the Cyprus government, and it builds on a project that has been running for a year now, which is also led by HS DATA and SIVECO and which aims to establish a pilot implementation of an e-learning solution (Learning Management System—LMS) at seven schools in the public education system.

The two projects are related in the sense that all learning objects and e-content that will be developed, will be disseminated and made available to schools through the LMS. It is in the immediate plans of the MOEC to have the whole public education system connected with the LMS solution, which consists of a set of services that are designed to support the education process within a lifelong learning environment. This system is designed to support teachers in their everyday activities, the students in accessing educational content, and the parents in monitoring school activities.

CHALLENGES AND POSSIBILITIES

There are several challenges faced by organizations trying to promote e-learning initiatives in Cyprus and the European Union. Most notably, these include the lack of solid strategic plans and the issue of accreditation of online programs. The projects discussed earlier are a small sample of the types of e-learning initiatives currently under way in Cyprus in collaboration with EU countries and the eastern Mediterranean region. Although individual organizations engage in the development of e-learning programs, there is no comprehensive strategic plan that coordinates these initiatives and provides ways to leverage the rich expertise being developed in both public and private organizations on a broader scale. Such coordination is essential and can help establish Cyprus as a truly competitive regional knowledge center.

As in many other countries, e-learning degrees offered at a distance in Cyprus are not always held in the same regard as face-to-face degrees. However, technology is blurring the boundaries between traditional face-to-face and distance education, and educators should revisit their fundamental assumptions about teaching and learning (Vrasidas & Glass, 2002). Educational institutions need to be flexible and open to adjustments brought by technological developments and changes in social needs and the education environment. This is particularly urgent, since higher education institutions are increasingly being criticized for not being able to accommodate the increasing number of students seeking education, and for using ineffective teaching methods such as lectures to large numbers of students (Daniel, 1996; Vrasidas, 2002). Commercial developers and providers of educational content are also rapidly emerging in Cyprus to capitalize on these issues. Private companies that offer training and diplomas in both face-to-face and online are flourishing. A similar trend is evident in higher education.

To bring about the necessary changes and encourage the increased adoption and acceptance of online education, all education stakeholders in Cyprus need to emphasize both the content and process required to develop successful e-learning strategies. All parties impacted by these strategies need to have an input. Personnel from private and public higher education institutions including faculty, heads of departments, technology coordinators, business and industry representatives, as well as government officials and K-12 educators, should participate in the planning, implementation, and evaluation stages of e-learning initiatives.

In developing e-learning strategies, one should begin with the skills and resources that are already available. In higher education institutions and at the MOEC there are often faculty and staff involved in research and development, yet their efforts are not widely known by most of their colleagues. There is a need to establish better communication channels for developers, organizations, faculty, and scholars to share ideas and collaborate on projects. Sharing one's work and discussing projects can help build the collegiality needed to bring faculty and officials together in planning the strategies.

Also, investments are an important component for the success of e-learning and the general expertise needed to develop and offer distance learning courses. If Cyprus wants to engage in serious research and development to improve education and the quality of life of its people, all stakeholders have to take research more seriously and put in place the mechanisms for providing the necessary funds, in particular for e-learning initiatives. For e-learning to grow and to continue to offer Cyprus a competitive advantage, the government needs to establish policies and procedures that will facilitate the growth and accreditation of e-learning courses, certificates, and degree programs. Higher education institutions should collaborate more closely with all other levels of educational organizations and pursue research grants from corporations and the European Union. It is only through close partnerships that a clear vision for a better education will be realized.

Accreditation is often associated with quality assurance. Without well-defined quality management of online programs, it is difficult to build a good reputation. A quality assurance system should consist of the policies, attitudes, actions, and procedures necessary to ensure that quality is being maintained and enhanced (Kefalas, Retalis, Stamatis, & Kargidis, 2003). Unfortunately, there haven't been any commonly accepted approaches. Therefore, many obstacles to implement and achieve quality can be found in practice. However, the new quality standard ISO/IEC 19796-1 was developed to overcome problems of choosing and implementing the appropriate quality assurance system. Yet, ensuring quality in an educational organization is a complex task requiring competencies, commitment, and resources (Pawlowski, 2007). Content providers and institutions in Cyprus need to have a well-defined quality assurance policy based on clearly articulated frameworks and methods for review. Institutional review addresses the ultimate responsibility for the management of quality and standards that rests with the institution as a whole. Moreover, the missing quality assurance management for online learning is one of the reasons why the Cyprus government is reluctant to take appropriate legislative action for online learning.

CONCLUSION

With the help of e-learning, Cyprus has already made great strides toward becoming a regional center for education and creating an open, wall-less, and paperless educational environment that serves the needs of more citizens, especially the ones traditionally disadvantaged. The government needs to increase its support to both public and private organizations and stimulate the necessary competition among education providers. Governmental support is also necessary to achieve the main objective set by the European Council held in Lisbon in 2000. The European Council decided that by 2010 the EU should "become the most competitive and dynamic knowledge-based economy in the world." Reaching this goal implies a challenging program for modernization of the education and training systems, both in Cyprus and elsewhere in Europe.

Establishing a clear e-learning strategy is not an easy task, particularly when one deals with technologies that change so rapidly. The most critical challenge facing education systems is how to develop the capacity for change and remove the barriers built into their cultures which prevent change. In addition to increased funding, what will facilitate the development of advanced e-learning is the establishment of clear policies and support mechanisms in order to remove the barriers placed on attempts for change, innovation, and technology adoption. Therefore, framing a comprehensive e-learning strategy within which quality education and training will be offered is just one of the many ways in

which Cyprus will be established as a regional center of excellence in education.

References

Daniel, J. S. (1996). *Mega universities and knowledge media: Technology strategies for higher education*. London: Kogan Page.

Empirica (2006). *Use of computers and the Internet in schools in Europe 2006. Country brief: Cyprus*. Retrieved November 16, 2007, from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm

European Commission. (2007). *Life long learning programme.* Retrieved December 3, 2007, from http://ec.europa.eu/education/programmes/llp/index_en.html

International Institute for Educational Planning. (1997). *Appraisal study of the Cyprus education system*. Paris: UNESCO.

Kefalas, P., Retalis, S., Stamatis, D., & Kargidis, T. (2003, May). Quality assurance procedures and e-ODL. *Proceedings of the International Conference on Network Universities and E-Learning*, Valencia, Spain. Retrieved from http://www.city.academic.gr/special/research /xcityng/papers/Kef-Ret-Sta-Kar-03.pdf.

Pawlowski, J. M. (2007). The quality adaptation model: Adaptation and adoption of the quality standard ISO/IEC 19796-1 for learning, education, and training. *Educational Technology & Society, 10*(2), 3-16.

Vrasidas, C. (2002). Educational technology in Cyprus and strategies for higher education. *Educational Media International, 39*(2), 123-132.

Vrasidas, C., & Glass, G. V. (Eds.) (2002). *Distance education and distributed learning.* Greenwich, CT: Information Age.

What Every Distance Educator Should Be Alerted to About PQDT (Digital Dissertations?)

Scott L. Howell

I know what you are thinking after reading the title: can reading dissertations really be a credible best practice and a great professional development opportunity for a busy distance educator? (PQDT comes later.) Should I read on? The last thing I want to do is read about reading dissertations.

Just give me a chance to explain. Remember, I'm a busy distance education

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administrator like you and not a professor serving on six or seven dissertation committees. Like you, I never have enough time for my own professional development, and, even if I did, reading dissertations is probably not my idea of "fun" professional development. Besides, aren't dissertations "to be written but not read"?

While it is true that doctoral dissertations and master's theses are not at the top on our reading lists, I hope you would agree that at least some of them merit a quick perusal—especially those most relevant to your work as a distance educator. Since you likely prepared your own thesis/dissertation back who knows when—it is one of those memories you are still trying to repress, right?—you know for yourself that it represented a significant effort by not only you but also your faculty committee. Nothing else you have ever done has probably been subjected to more scrutiny, been of higher quality, and taken more effort than that dissertation/thesis. For this reason alone, shouldn't somebody at least take a quick look at it?

Have you any idea how many dissertations/theses are written and archived each year with the keyword descriptor "distance education"? Take a guess. My own search revealed that for the past few years, the average number of dissertations having something to do with "distance educa-

Figure 1.   A copy of the e-mail alert announcing two new dissertations related to distance education.*

tion" is approximately 200 each year; the total number of dissertations in the database at this writing is 1,744 (the oldest is from 1956—it is also the only one dated before 1980; there are 80 from 1980 to 1990; 631 from 1990 to 2000; and 1,032 from 2000 to 2008). Do these numbers surprise you? They do me. Our field is coming of age and beginning to burgeon as a discipline with more dissertations on the topic in the past eight years than in all previous years combined.

Are you partially convinced that there might be something to this idea of quickly perusing at least titles of dissertations/theses, and maybe even a few of the more interesting abstracts, especially if there are only 200 of them each year (about four a week)? However, are you thinking now that it is still too much hassle each week to

look for those two or three or four new dissertations/theses on distance education? What if I told you that by signing up for a weekly (or monthly) e-mail alert or RSS (Really Simple Syndication) feed, you never have to go looking (pull technology) for these new dissertations/theses again. Instead, they will come looking for you (push technology). This is exactly what happens, if you want it to.

Since I signed up for the free weekly alert, I receive an e-mail every Monday around 5:35 a.m. (MST) that notifies me of new dissertations/theses on distance education. In Figure 1, you see the actual e-mail I received on Monday, March 10, 2008, for two newly available dissertations/theses on distance education. (Most of the 2007 dissertations/theses are already in the database, though a few more may trickle in

through June 2008.) Do the two topics or the institutions from which these dissertations/theses were sponsored interest you like they did me? If the dissertation titles are of no interest, just delete the e-mail and go on to the next. If you want to know more about one of them, click the "abstract" button. How long do you think this whole process will take? 10 seconds? 20 seconds? At most, 30 seconds? Doesn't it feel good to know that you actually did some professional development, kept up on the latest research, and maybe even stumbled onto some insight that may benefit your own distance education program in so little time?

ProQuest is the company that collects, digitizes, archives, and publishes dissertations/theses and now provides e-mail alerts and RSS feeds as they are added to the database. This company is situated in Ann Arbor, Michigan, and the name of its database is ProQuest Dissertations & Theses (PQDT). Some of you may be more familiar with its predecessor, University Microfilms (later known as UMI), which began storing scholarly material on microfilm in 1938 with the threat of war looming over Great Britain, than you are of its successor today, ProQuest.

At the time of this writing, PQDT "has archived over 2.4 million dissertations and master's theses. Some 2 million of them are available in full text in print, microform, and digital format" (personal communication, March 26, 2008). They also informed me that by October 2008, they will have begun allowing full-text searches (not just titles and abstracts) of all digital dissertations/theses dated 2007 and later.

The company has provided this general information about the database on its Web site (see http://www.proquest.com/):

for nearly 70 years, … [ProQuest has] offered superior information services in electronic, microform, and print-on-demand formats to university libraries … 95% to 98% of all U.S. doctoral dissertations are included.… Virtually every major research library in the world provides access to the ProQuest Dissertations & Theses (PQDT) database through one or another format.… [PQDT] database is the most comprehensive collection of dissertations and theses in the world.

My own university librarians annotated our link to PQDT with this introduction: "PQD&T is the single, central, authoritative resource for information about doctoral dissertations and master's theses. Dissertations published from 1980 forward include 350-word abstracts written by the author. Master's theses published from 1988 forward include 150-word abstracts."

How do you set up e-mail alert and RSS feeds? It is easy. After you run a search query on PQDT, as shown in Figure 2, the "Set up alert" button appears in the top left-hand corner and the "Dissertations and Theses RSS Feeds" in the right-hand corner. These options enable, at your request, the company to automatically perform for you the same search you just conducted on either a daily, weekly, or monthly basis and then notify you of any additions to PQDT by e-mail or RSS feed. (See Figure 3 for an example of how to set up your own e-mail alert.)

What happens if your university or college is one of the few that does not subscribe to PQDT? Unfortunately the e-mail alert or RSS feed will not be available to you, but the company does provides a free keyword search service known as DATRIX; they send results by first-class mail to the requestor. Anyone interested in knowing more about this service may call ProQuest directly at 1-800-521-0600, ext. 7044 or 1-800-521-3042.

My 10 reasons for using (and recommending) PQDT alerts are the following:

1. The notification of new studies (and the search of existing studies) is not intrusive; I don't feel overwhelmed by new information.
2. It is only recently that full access to these studies has become so readily

Figure 2.   The results of a search in the PQDT database using keywords "distance education."*

available to distance educators, and I can request digital copies of studies that I am most interested in (1,421, or 81% of the 1,744 studies about "distance education," are fully available through PQDT at the time of this writing).

3. I consider my brief weekly review of new dissertations/theses, if any, a good professional development exercise—I have a tendency not to attend to my own professional development unless it is scheduled.

4. I really do trust the literature review, methodology, and findings of most dissertations/theses—unlike some journal articles—since they are so carefully supervised and peer reviewed by those graduate committees comprised of seasoned research faculty.

5. My review of the title and the abstract (also known as executive summary), if I am interested, is a very efficient use of my time, since so much is packed into so few words.

6. So often most of the research on a relevant topic has been done by someone else. I am actually embarrassed by how much original research I have done in the past on practical and theoretical topics that had already been done (and at a higher level too) by a graduate student and his or her faculty committee.

ProQuest

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Figure 3.   An example of how to set up your own e-mail alert from the PQDT database.*

7. Many times the dissertation will help answer a real-world, not just theoretical, research question. The implications and conclusion of the research and study findings inform my own efforts to improve our educational processes and, ultimately, enhance student learning.

8. It has helped my department and me to stay more connected with (1) some of our own university's graduate students (and potential research topics for them too) who may be interested in distance education, and also (2) the larger academic community.

9. I receive personal satisfaction from knowing that I am doing my utmost to stay current with what others are doing in the field and with what researchers have learned from their own study. I also find fascinating and somewhat engaging those new research questions and frontiers identified by the research of these graduate students (and their faculty committees).

10. I suppose it is really a reminder of the academic in me, either by nature or by adoption as a member of the university community. We all have at least a little of the academic still in us, and it just feels good to know that we haven't totally left our academic lives behind us in our current administrative positions.

In conclusion, are you persuaded to look into PQDT further? If not, what about inviting one of your colleagues to do it for you and your department? Maybe it is something that someone can briefly report on in your staff meetings.

Check with your library to make sure that your institution has subscribed to the PQDT database. After you conduct your own initial search of dissertations/theses using whatever keywords you choose, then you can activate the e-mail alert or RSS feed service to receive a daily, weekly, or monthly notification. I hope you find this new best practice helpful too—and I wouldn't be surprised either if you identified other reasons why this practice proves to be helpful in your own research, program improvement, and professional development.

PQDT = PROQUEST DISSERTATIONS & THESES

Computerized Physician Order Entry

Telemedicine for Patient Safety in Long-Term Care

Darryl P. DeBow

On July 20, 2006, the Institute of Medicine at the National Academy of Sciences published a report (Aspden, Wolcott, Bootman, & Cronenwett, 2006) recommending that by 2010 every health-care organization be equipped to receive prescriptions electronically. This decision was, in part, due to combining the results of statistical analyses of medication errors in hospitals, nursing homes, and outpatient clinics. This study

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estimated that more than 1.5 million patients were adversely affected by medication errors every year (Johnston et al., 2006). Medication errors take place at several stages of administering a drug, including the prescribing, ordering, dispensing, and administering phases of drug management (Sakowski et al., 2005). Recent research studies have suggested that the majority of medication errors occur between the ordering and dispensing phases of prescription drug order management (Patterson, Cook, & Render, 2002; Sakowski et al., 2005).

Medical errors that lead to adverse events in the delivery of health care are most commonly attributed to medication. These medical errors are commonly referred to as adverse drug events, or ADEs (Morimoto, Ghandi, Seger, Hsieh, & Bates, 2004). In 1997 medical errors killed between 44,000 and 98,000 people in the United States, which was greater than the 43,458 killed in automobile accidents, 42,297 killed by breast cancer, or the 16,516 killed by AIDS in that same year (Kohn, Corrigan, & Donaldson, 1999). Among all medical errors, ADEs are the leading cause of death (Sakowski et al., 2005). ADEs can be traced back to errors at every stage of the prescription drug management process (Morimoto et al., 2004), but approximately 62% of these errors occur during the order-

ing and dispensing phases of prescription drug management (Sakowski et al., 2005).

Medication errors continue to adversely affect patient safety in health care (Johnston et al., 2006). Pharmacy is one area of medication management where reducing the risk of errors can increase the quality of patient care. Eliminating medication errors that lead to ADEs is especially critical in nursing homes, where the average patient is taking between five and nine medications, and 20% of the population is using more than 10 medications (Lau, Kasper, Potter, & Lyles, 2004). Since more medication is administered to nursing home residents, and they tend to be more sensitive to drugs, the frequency of ADEs in nursing homes is higher than in other health care settings (Lau et al., 2004; Rochon et al., 2005). In the elderly nursing home population, ADEs are more likely to be fatal (Schmader et al., 2004).

Computerized physician order entry (CPOE) is a technology tool for which research has suggested a positive correlation with reduced medication errors (Rochon, 2005; Shulman, Singer, Goldstone, & Bellingan, 2005). CPOE is defined as "an electronic application that allows physicians to directly enter orders for drug therapy, diagnostic tests, and requests for consultations" (Rochon, 2005, p. 1780).

The benefit of computerized physician order in the effort to reduce medication errors is well established by extensive research. Baldauf-Sobez et al. (2003) performed a pretest/posttest study of adverse drug events at Danville Regional Medical Center in Virginia. By performing a meta-analysis of the cost of adverse drug events the researchers determined that the average cost of adverse drug events is $3,474. Danville Regional Medical Center was able to avoid 10 to 12 adverse drug events each day which, based on the calculated average cost, worked out to an annual savings of $840,809 during the year ending December 31, 2002. In addition, the time saved

worked out to a reduction equivalent to 0.5 full-time equivalent (FTE).

Shulman, Singer, Goldstone, and Bellingan (2005) performed a time-based pretreatment/posttreatment study that compared hand-written prescription orders with CPOE. In their study, they implemented a CPOE system in a 22-bed intensive care unit at a London teaching hospital. By comparing the incidence of medication errors prior to CPOE, as well as 2, 10, 25, and 37 weeks after implementing CPOE, they found that in this study the number of errors were reduced at the introduction of CPOE, and further reduced over time. The study was designed to measure incidence of errors, but not the type of error. It is, therefore, worth noting that three errors that could have led to permanent harm or death occurred in the CPOE environment, so the study makes no claims as to the types of errors that could be eliminated.

Rochon et al. (2005) performed an observational study of CPOE in the nursing home setting. This study was significant because prior to this study, research on implementing this type of technology in nursing homes was rare. The CPOE system implemented in this particular facility also included a clinical decision support system (CDSS), which is a series of "reminders, prompts, and advice regarding issues such as drug selection, doses, interactions, drug allergies, and the need for corollary orders" (p. 1780). This study of a geriatric care hospital with 300-bed chronic care hospital, 472-bed nursing home, and 200-bed residential unit in Toronto, Ontario, produced several insights to the successful implementation of CPOE systems in nursing homes. For example, the motivating force behind implementing CPOE with CDSS should be enhanced patient safety. Also, the prescribing issues that are unique to nursing homes require customizations in software design that accounts for the ways that geriatric treatment differs from standard treatment, as

well as accommodates the unique regulatory environment. Furthermore, adding CDSS to a CPOE system is a critical part of eliminating known causes of ADEs in elderly patients. The result of their observation was a recommendation of formal study of the possible correlation between CPOE and reduced ADE risk in nursing homes.

Conversely, Koppel et al. (2005) identified 22 factors where using CPOE versus a paper-based order entry system could possibly generate more errors. Koppel et al. criticized the current body of research on using CPOE to reduce ADEs for a number of reasons. These reasons included its quantitative focus on studying the reduction of potential ADEs versus reducing actual ADEs, as well as a qualitative focus on physician satisfaction with the ease of using CPOE versus studying its actual efficacy. Koppel et al. went on to cite how very few studies identify the features within CPOE that increase the risk of error, including "ignored false alarms, computer crashes, and orders in the wrong medical records" (p. 1198), which they believed belied the inherent risks associated with the human factors associated with implementing CPOE.

The Koppel et al. study was a mixed qualitative and quantitative study of a 750-bed tertiary-care hospital that used CPOE extensively between 1997 and 2004. The qualitative portion of the study consisted of structured interviews with hospital staff that were involved with the use of the CPOE system (i.e., physicians, nurses, nurse-managers, pharmacists, IT managers, and house staff), as well as shadowing and observation. The quantitative portion of the study consisted of a written questionnaire administered to house staff. Their study revealed 22 potential sources of medication errors that could be categorized as either information errors due to fragmented data, or human-machine interface flaws that increased the potential for human error. Several of these flaws were identified as common or frequent in the operation of the research setting. Koppel et al. identified five courses of action that needed to be followed in implementing CPOE that would reduce this risk: design the technology around the work processes; continually reevaluate the technology in the clinical context; be aggressive about addressing technology problems; understand not only the errors, but the stories behind the errors; and plan for "continuous revisions and quality improvement" (2005, p. 1202).

The prevalence of ordering errors, as evidenced by the work of researchers such as Gurwitz et al. (2005), as well as Lau, Kasper, Potter, and Lyles (2004) suggests that a significant risk of errors lies in the ordering phase of the prescription care process. While Koppel et al. (2005) suggested that computerized order entry has risks that could cause problems, the system that was studied was an antiquated client server system that did not have the user-friendly characteristics of a more modern design that includes an Internet browser as human-machine interface in a Microsoft Windows environment. With the heavy advantages shown in the use of CPOE, both with and without clinical decision support (Baldouf-Sobez et al., 2003; Rochon et al., 2005; Shulman et al., 2005), the future of CPOE will only improve as the graphical user interfaces and implementation processes continue to improve to address Koppel's concerns.

Now that it has been established that CPOE is a beneficial telemedicine application in the quest to eliminate medication errors, our discussion must turn to how a system such as this is deployed. The deployment process for CPOE requires a clinical review phase, a technology implementation phase, a validation phase, a training phase, a go live phase, and a close-out phase. The remainder of this article will focus on these phases and what each might entail, based on the author spending

a year in the field deploying these types of systems.

In the clinical review phase, the project manager and a clinical subject matter expert will meet with the pharmacy and with the facility to discuss the clinical practices that will determine how the user interface and the data will be structured. This discussion will seek to clarify nomenclature, hours of administration, Signature codes (which tie particular administration instructions to hours of administration), and any other policies and procedures that might be relevant to the implementation. It is critically important that during this phase the proper communication channels are established and that the project manager ensures that the project team, pharmacy, and nursing home are all using the same lexicon. Inconsistencies of any kind among these three groups will lead to time-consuming rework and sometimes might completely undermine the success of the project. It is for this reason that the subject-matter expert should be a clinician (registered nurse, licensed practical nurse, or registered pharmacist) experienced in long-term care. This clinician will help to establish the project team's credibility and to help the team to foresee any pitfalls that might otherwise go undetected by the untrained eye.

During the technology implementation phase, the subject matter expert will typically be different from the subject matter expert of the clinical review phase. This person should be more of a technician than a clinician. This phase requires the project team to ensure that the proper infrastructure is in place for a successful deployment of CPOE. This means ensuring that the proper Internet access is in place, as well as computers that meet the minimum requirements for the application. Nursing homes and institutional pharmacies will have varying levels of sophistication in this area, so you must be prepared to lead the way in cases of facilities with lower levels of tech savvy. The important point will be

to coordinate this phase with the clinical review phase to ensure that the infrastructure that is put in place is compatible with the clinical operations of the facility.

The validation phase is probably the most critical phase of the entire project. During this phase, legacy information is converted from existing medical records to an electronic medical record that includes information on the patient and the patient's medications. The time attached to this process will vary depending on whether the legacy data is in hard copy or electronic form. If the legacy data are in electronic form, the likelihood is high that a process can be created to automate the transfer of data from the legacy system to the database for the CPOE system. On the other hand, if the legacy data are in hard copy, a significant amount of time will be dedicated to manual data entry. This poses two problems. First, manual data entry is extremely time consuming and therefore expensive. The project manager must work with both the nursing home and the pharmacy to establish what resources each is willing to contribute to this effort. Setting clear expectations here is a must, as failure to do so could result in disputes and delays. Second, once the data are transferred, the likelihood of human error creeping into the validation process is much higher.

When the data have been translated, they must then be validated. This step must be made the responsibility of the nursing home, which is ultimately responsible for the patient's well-being on a daily basis. Whether resources from the project team, pharmacy, or the nursing home completed the data entry, the nursing staff is responsible for the accuracy of the resultant electronic medical record in comparison to the patient's medical chart. The project manager must take the lead in working with the facility's administrator and director of nursing to make this clear. They must then work together to identify the resources required to complete this

final validation step in compliance with the agreed schedule for completion.

Proper deployment of a CPOE System also requires a well-designed and well-managed program for training. The choice that project managers must make as relates to training is whether the training will be delivered in a traditional classroom or whether distance tools will be used. The tradeoffs between the two are essentially dependent on an analysis of the needs and capabilities of the pharmacy and nursing home personnel and then the availability of the technology. The project team should enlist the expertise of a person trained in instructional technology and distance education to make this sort of determination. Diagnosis of the needs and capability of the trainees can be complex, so an individual trained in systematic analysis of goals, learners, and learning context is critical during this stage (Dick, Carey, & Carey, 2004). The writer recommends the Dick and Carey model for this process, as it is a proven model for designing and developing instruction whether distance tools or other means will be used.

Figure 1 is a sample flow chart of the major steps associated with creating and maintaining patient records for a CPOE system. This set of major steps is based on an analysis of the goals for the instruction based on the tasks that learners will need to master during the course (Dick et al., 2004). Each of these steps will be further broken down into chunks that will result in the creation of individual learning objects for the task.

Breaking these major steps down into subsets comes during the development of the instructional analysis, a much larger diagram that is used as a point of reference to design and develop individual learning experiences.

Tables 1 and 2 are examples of the analysis of the learner and learner context within a sample nursing home. Understanding the learners and their workplace context will be critical in determining what type of instruction will be appropriate for the sites where the deployment will take place. The table shows that collecting data on learners can come from observation, interviews, and surveys (Dick et al., 2004). The goal in these steps is to determine the implications of the characteristics of the learners and their workplace context, so that the most appropriate instructional delivery method and content can be developed.

Much of this information will be quite similar among pharmacies and nursing
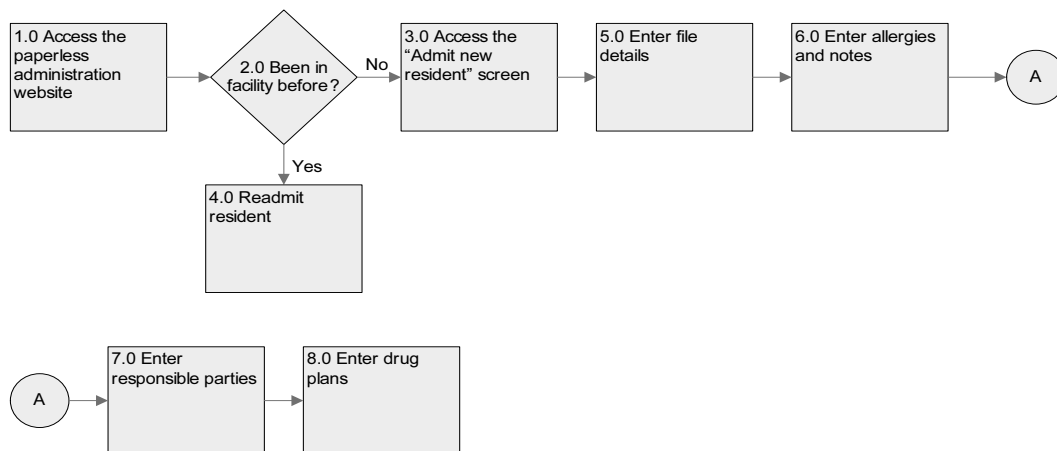
Figure 1.   Major steps for admitting a new resident.

Table 1.   Learner Analysis

Information Categories	Data Sources	Learner Characteristics	Implications
1. Entry behaviors	• Direct observation • Interviews	Learners have varying skill levels with using a PC from none at all to power user status	Formal methodology will need to be developed to ensure learners possess necessary entry behaviors prior to start of training
2. Prior knowledge of topic area	• Direct observation • Interviews	Learners have used different methodology (paper records) to maintain the same information in the past, so are familiar with the medical records process	Instructional design and facilitation methods will need to show how paperless pharmacy processes are analogous to paper record-keeping
3. Attitudes toward content	• Direct observation • Surveys	Learners tend to struggle with retaining knowledge from the time of training to the time of mentoring	Learning delivery system must allow learners to revisit subjects after completion for review and clarity and facilitators must continue to be available between training and mentoring to answer questions and address concerns
4. Attitudes toward potential delivery system	• Direct observation • Surveys	Due to the practicum-based pedagogy of allied health many learners will not have any past experience with synchronous or asynchronous online learning	Facilitators will need to act not only as subject matter experts, but also must guide learners through the online learning experience
5. Attitudes toward organization	• Direct observation • Interviews	Learner attitudes toward organization varies based on the level of support they feel they have from administration	Administrators will need to be made explicitly clear on their role in the change management process associated with the change to paperless
6. Motivation for instruction (ARCS)	• Direct observation	• Attention—Learners will likely be pressed for time and emergencies will lead to distractions during their shift • Relevance—Content will represent a direct change to their daily operations • Confidence—Learners will have varied levels of confidence in mastery based on the level of their entry behaviors • Satisfaction—Some learners will be motivated intrinsically, but the majority will be looking for extrinsic rewards	• Training needs to be delivered in small chunks and accessible 24-hours a day • Facilitators will need to ensure that learners understand how their daily processes will change after the implementation goes live • Facilitators will need to identify individuals with lower entry behaviors and ensure that their confidence levels are maintained • The program will need to develop a system of extrinsic rewards such as certificates and even CEUs for licensing purposes

(Table continues on next page)

Table 1.   (Continued)

Information Categories	Data Sources	Learner Characteristics	Implications
7. Educational and ability levels	• Direct observation • Interviews	Most learners will have completed at least a 2-year allied health program and some will have a bachelor's degree or more	The level of complexity that learners can handle will in most cases be directly proportional to the amount of education the possess
8. General learning preferences	• Direct observation	Most learners will have completed programs where they have completed their learning under the direct supervision of a more experienced professional	Learners will likely desire some "hand holding" as they go through the learning process, so some synchronous learning will likely be needed to maintain their enthusiasm
9. Group characteristics	• Direct observation	Learners typically work with a familiar team of RNs, LPNs, and certified nursing assistants on the same shift and unit unless they are working with or are an agency professional	Many learners will be resistive of the process because of the impact of the process on their routine, so some change management skills will be required on the part of facilitators

Table 2.   Learner Context Analysis

Information Categories	Data Sources	Performance Context Characteristics	Implications
1. Managerial/ supervisory support	• Interviews • Direct observation	Many administrators and supervisors will tend to deal with the implementation at an arms length	Process could benefit from the development of a formal kickoff process with PharMerica documentation and leave-behinds prior to the start of training
2. Physical aspects of site	• Direct observation	Proper technical support and connectivity is often an issue prior to the implementation and training space is typically limited	Sites should ensure that tablets and scanners have been obtained and tested prior to start of training to ensure that hardware is available for training and ensuring proper interface with the paperless pharmacy and a training space for nurses should be identified and formally designated
3. Social aspects of site	• Direct observation	Unit staff is typically close-knit and has some degree of internal competitiveness with other units	Facilitators should leverage this internal competitiveness as a source of motivation in the successful completion of the online training

(Table continues on next page)

Table 2. (Continued)

Information Categories	Data Sources	Performance Context Characteristics	Implications
4. Relevance of skills to workplace	• Direct observation	Many states will soon require electronic transmittal of pharmacy orders, so paper faxes will soon not be an option for many learners	Facilitators need to be briefed on the states and the timelines for movement to electronic ordering so that the information can be leveraged to motivate learners
5. Site compatibility with learner needs	• Direct observation	The paperless pharmacy will be a completely new process for the facility, as well as new technology	Training is the only viable treatment to ensure that the facility is able to use the paperless pharmacy effectively

homes, so as a time-saving measure the writer recommends judiciously reusing as much of the information as possible. The appropriateness of classroom versus online instruction will come out in the differences between locations in terms of readiness of the staff for self-paced versus instructor-paced learning. Eventually, as a project team, a set of standard training materials for both online and classroom training will be the result. The team will then need to adapt the learning materials for each individual deployment. The training phase is time consuming and must be well-planned and then well-executed. Constant contact with the leadership at the pharmacy and at the nursing home is required to ensure that this phase is successful and timely in order to ensure that the system goes live on time.

The moment of truth in any deployment of CPOE is the day that the system goes live. This process is probably the most labor-intensive portion of the deployment because the project team spends a lot of time on-site in a high-touch mentoring role with the end-users. The key to success of this phase is the ensure that the facility has a set of "CPOE Champions" on-site who are designated by the site leadership and made available to the project team to

ensure that the support provided by the project team can be translated into ongoing support within the organization that continues after the project team has exited the site.

If all of these processes go well, the team will be ready to exit the site. The facility will then need to be prepared to operate self-sufficiently with 24-hour technical support provided by the software company, usually via telephone and/or e-mail. The most successful deployments are completed without the need for any return visits by the project team, thus allowing the pharmacy and the facility to work together to communicate and deliver the right medications for the right patient, at the right time, in the right dosage, and using the right route. This set of "rights" is known in the clinical community as the "five rights" and conformance to these five rights determines whether or not a medication error has occurred. Based on the research presented above, if the CPOE deployment goes well, violation of any of these five rights can be significantly reduced.

Based on input from the Institute of Medicine, technologies like computerized physician order entry systems are key to the future of improving patient safety. This is especially true in the case of elderly

patients who make up a majority of the population of our nation's nursing homes. Since research supports the assertion that CPOE reduces medication errors, it is wise for nursing homes to partner with their institutional pharmacy partners to ensure that these technologies are implemented as soon as possible. Many institutional pharmacy organizations are developing their own CPOE technologies or partnering with software development companies to make these technologies available to nursing homes at a reasonable cost.

It is in the best interest of everyone in our society, due to the direct and indirect cost of medication errors and adverse drug events, to ensure that these technologies are deployed quickly and effectively. In order to make this happen, project teams must be assembled and trained to integrate clinical, technological, and instructional design capabilities to ensure the most effective and efficient use of resources during deployment. This means proper planning of every step from clinical review to go live and mentoring to ensure that the technology and the expertise is resident in both pharmacy and nursing home to meet the five rights of medication administration and to eliminate medication errors.

REFERENCES

Aspden, P., Wolcott, J. A., Bootman, J. L., & Cronenwett, L. R. (Eds.). (2006). *Preventing medication errors: Quality chasm series.* Washington, DC: The National Academies Press.

Baldauf-Sobez, W., Bergstrom, M., Meisner, K., Ahmad, A., & Haggstrom, M. (2003). How Siemens' computerized physician order entry helps prevent the human error. *Electromedica, 71*(1), 2-10.

Dick, W., Carey, L., & Carey, J. O. (2004). *The systematic design of instruction* (6th ed.). Boston: Pearson/Allyn & Bacon.

Gurwitz, J. H., Field, T. S., Judge, J., Rochon, P., Harrold, L. R., Cadoret, C., et al. (2005). The incidence of adverse drug events in two large academic long-term care facilities. *American Journal of Medicine, 118*(3), 251-258.

Johnston, P. E., France, D. J., Byrne, D. W., Murff, H. J., Lee, B., Stiles, R. A. et al. (2006) Assessment of adverse drug events among patients in a tertiary care medical center. *American Journal of Health-System Pharmacy, 63,* 2218-2227.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds.). (1999). *To err is human: Building a safer health system.* Washington, DC: The National Academies Press.

Koppel, R., Metlay, J. P., Cohen, A., Abaluck, B., Localio, A. R., Kimmel, S. E., et al. (2005). Role of computerized physician order entry systems in facilitating medication errors. *Journal of the American Medical Association, 293*(10), 1197-1203.

Lau, D. T., Kasper, J. D., Potter, D. E. B., & Lyles, A. (2004) Potentially inappropriate medication prescriptions among elderly nursing home residents: Their scope and associated resident and facility characteristics. *Health Services Research, 39*(5), 1257-1276.

Morimoto, T., Ghandi, T. K., Seger, A. C., Hsieh, T. C., & Bates, D. W. (2004). Adverse drug events and medication errors: Detection and classification methods. *Quality & Safety in Health Care, 13*, 306-314.

Patterson, E. S., Cook, R. I., & Render, M. L. (2002). Improving patient safety by identifying side effects from introducing bar coding in medication administration. *Journal of the American Medical Informatics Association, 9*, 540-553.

Rochon, P. A., Field, T. S., Bates, D. W., Lee, M., Gavendo, L., Erramuspe-Mainard, J., et al. (2005). Computerized physician order entry with clinical decision support in the long-term care setting: Insights from the Baycrest Center for Geriatric Care. *Journal of the American Geriatrics Society, 53*(10), 1780-1789.

Sakowski, J., Leonard, T., Colburn, S., Michaelsen, B., Schiro, T., Schneider, et al. (2005). Using a bar-coded medication administration system to prevent medication errors in a community hospital network. *American Journal of Health-System Pharmacy, 62,* 2619-2625.

Schmader, K. E., Hanlon, J. T., Pieper, C. F., Sloane, R., Ruby, C. M., Twersky, J., et al. (2006). Effects of geriatric evaluation and management on adverse drug reactions and suboptimal prescribing in the frail elderly.

The American Journal of Medicine, 116(6), 394-401.

Shulman, R., Singer, M., Goldstone, J., & Bellingan, G. (2005). Medication errors: A prospective cohort study of hand written and computerized physician order entry in the intensive care unit. *Critical Care, 9*, R516-R521.

International Distance Education Trends and Issues

Open and Distance Learning Teacher Education in Uganda

Sharon DeVary

INTRODUCTION

The world is evolving into a global village as a result of the rapid development of information and communication technology (Adam, Awerbuch, Slonim, Wegner, & Yeshea, 1997). Economics play a major role in the move toward a global economy. Exports and

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imports account for about 50% of the U.S. economy. The ability to compete globally is dependent on the innovation, the skill, and the knowledge of people and their learning organizations. This force is being felt across the globe and touches all economies including those of the third and fourth world.

In addition, the emergence of "knowledge" as an economy is creating an increasing demand for education. This is seen when companies move their training into global arenas. The biggest challenges that are faced are those in the worldwide variations in social, cultural, political, and economic circumstances (Wellins & Rioux, 2000). Language differences, educational systems, learning and teaching styles, government regulations, and infrastructures are also examples of these variations. To adapt training to multicultural settings requires a new paradigm that includes an understanding of the deeper psychology of culture and the uniqueness of the differences culture brings to the global workplace.

This article explores the issue of distance education and the development of teacher education in Uganda. Ely (1996) defines an issue as a fact or matter that is in dispute

between two or more parties. For example, a question is debated among the experts who are trying to find a solution. In order to find a solution, individuals often look for data about the issue, and draw on past experiences for additional insight, clarity, or guidance in developing a solution.

FUNDING ISSUES

Education is the means to build human capital. Today, both developing and industrialized countries recognize that global productivity and competitiveness are enhancing the caliber and resilience of the workforce (Shive & Jegede, 2001). For many countries, distance education provides the sole opportunity for their populations to have access to education. This is particularly true for third- and fourth-world countries. These countries most often do not have the resources to support the needs of a distance education system.

ISSUES OF INCREASED DEMAND

According to Hulsmann (2004), there is an ever-increasing demand for distance education in developing countries. However, because of the lack of funding and commitment to educational investments, the quality of education has suffered and has not produced enough trained teachers to meet the demand. This can be seen in the Improving Access and Quality of Teacher Education in Africa Program. This program faces critical challenges including an increasing number of students seeking access to education while simultaneously facing a lack of adequately qualified personnel.

RESEARCH ISSUES

According to Shive and Jegede (2001), research must be distance education's next important development. Distance education has a history of being application-driven rather than research-driven. Past

research has drawn on theories and methodologies from multiple disciplines.

Some of the problems facing distance education that must be overcome in order to improve the quality of education are how to expand the reach of distance education, reduce inequalities in meeting global learning needs, enhancing the learning experience by fitting the learner's context, and the availability of technology (Daniel & Mackintosh 2005).

Perhaps by establishing an international research agenda that features systematic in-depth analyses, theoretical comparisons of strategies for fostering transformative learning, and the use of alternative methodological designs, some of these problems can be addressed. Distance education research needs to focus on particular components that are known as essential to distance education, such as course design, pedagogy, interaction, class size, and active learning. Summative and formative evaluations are also needed so that learning gains are empirically documented (Bork & Gunnarsdottir, 2001).

ACCREDITATION ISSUES

Accreditation is an area in which educational globalization lags behind economic globalization. Economic globalization has benefited from deregulation for financial markets and reductions in tariffs that allow a fluid flow of goods and services. However, the educational sector is underdeveloped. This is a problem for countries outside the United States on a national and international level. An international system for transferring credits from one university to another would greatly increase the market for global higher education. Unless the monopoly on accreditation held by universities is relaxed, organizations offering courses and educational opportunities that are in demand from the market place. An example of this is information technology accreditation offered by Microsoft certification. In many cases, this

certification is valued more highly than a bachelor of science in computing.

Cultural Issues

Culture is a complex and broad concept, which can be defined in many ways. Culture involves at least three components: what people think, what they do, and the material products they produce (Boldley, 1994; Roblyer, Dozier-Henry, & Burnette, 1996). Culture, shared among society members consciously and unconsciously, shape values, assumptions, perceptions, and behavior. In order to understand the way cultural issues impact distance education, it is necessary to analyze a culture with its unique characteristics and variations.

Open and Distance Learning Teacher Education in Uganda: The National Challenge

During the 1960s, distance education was introduced into Uganda, taking the form of correspondence schools and British correspondence colleges. The late 1970s and 1980s were years of upheaval in Uganda. During that time, distance education made little progress. It was not until the early 1990s that donor funding sponsored distance education projects. These initiatives, for the most part, have ended, but were replaced with the Mubende Integrated Teacher Education project (MITEP). This project was responsible for distance education programs becoming available in northern Uganda. Distance education has continued to expand in spite of the difficulties of civil wars. Scholars such as Aguti (2000), Nsamba and Atim (2004), and Bbuye (1999) observed that Uganda has realized steady growth in the development of distance education. In addition, the Kironde Report (1996) focused on the need to provide continuing education to various populations in Uganda and recommended that correspondence education be expanded. It was also recommended that the Makerere University provide distance education courses. This initiative eventually led to the establishment of an Open University in Uganda. Makerere University was the pioneer for providing correspondence courses.

What Randell and Blitzer (1998) said about teacher training for South Africa is also true for Uganda: overcoming years of reinforcement for a teacher-focused model of teaching and learning and changing underlying conceptions of learning and teaching will be a lengthy process requiring a great deal of skillful professional development. Course and material developers need to develop programs that encourage deep and automatic learning that are culturally and linguistically appropriate. Tutors and counselors need to acquire new student-centered approaches to teaching and learning. In addition, they need to develop diagnostic, problem-solving and interpersonal skills in assisting culturally diverse students. Managers and administrators need to possess the knowledge and ability to provide and evaluate relevant support systems for staff. Randell and Blitzer identified an important tension between what tutors and managers look for in staff development and what practitioners demand the development of a professional learning community (the learning organization).

Dillon and Walsh (1992), in a review of the distance education literature, found that faculty development programs designed to promote distance teaching are concerned primarily with training and do not support a restructuring of faculty roles. They noted that learners will only take ownership of their learning when there is a change in their academic culture. This change is central to the development and successful diffusion of distance education.

INTEGRATED TEACHER EDUCATION

From 1993 through 1998, an Integrated Teacher Integration Project was established by the World Bank in Northern Uganda. It was managed by the International Extension College of the United Kingdom.

This project was part of a wider project called the Northern Uganda Reconstruction Program (NURP). This was an effort to restore and reconstruct the devastated northern areas of Uganda as a result of a 10-year civil war. This project trained 3,000 untrained teachers in northern and northeastern Uganda (Ordukene, 1995).

In order to guarantee quality, students of the course took the same exams given to primary teachers, and there was an abundance of resources, including the use of personal tutors. Wrightson (1998) claimed that 64% of the teachers trained passed their courses and increased the population of teachers in Northern Uganda by 53%. The program had a relatively low dropout rate of 11%. Although this project could be claimed to be a success, it ceased when the funding was finished. Unfortunately, distance education again experienced a setback when local and central governments could not pay the cost of maintaining the project.

OPEN AND DISTANCE LEARNING

Another approach used to develop distance education teaching staff in Uganda was the use of the open and distance learning (ODL) model. The International Extension College (IEC) of the United Kingdom and Kyambogo University (KU) in Uganda collaborated on a training program for distance education teachers. This project resulted in insights into pedagogical and technical issues and provided a look at the program's successes that can be applied in future programs. Some of the advantages for using the ODL model for teacher training are:

1. ODL opportunities for learning are flexible and free of time constraints of time and place of study.
2. ODL can be implemented on a large scale while maintaining quality and cost-effectiveness.
3. ODL is learner centered, creating greater interaction between learners, resources, tutors, and instructors.
4. ODL has a capacity to deliver both quality learning resources and operate effective systems of student support.
5. ODL can provide opportunities for professional development and upgrading without taking the teacher in training away from the workplace.
6. ODL materials can be customized to local needs and priorities.

THE APPROACH

The IEC and KU used the ODL model in the same manner employed by Haigh (1998). He called his approach a "self-directed learning package." His approach earned this description because it was used only at the beginning of the training program, to then be followed by face-to-face educational methods. This approach functions under the assumption that getting practical experience needs to be a priority when learners are novices. It is thought that it is from experience that learners learn how to properly apply learned skills.

Trainers, tutors, lecturers, college principals, and administrators who have personally experienced ODL are likely to empathize with their students, and will be better informed when it comes to the design and delivery of suitable courses. This was demonstrated in Uganda through earlier teacher education practices using ODL as a result of the IEC using funds to enable teacher educators to study at a distance at postgraduate diploma level, as well as in IEC collaborations in other countries (Wrightson, 1998).

An example of this was seen when a group of staff enrolled in courses provided

by the University of London External MA in Distance Education. The learners who worked independently but with peer group support were successful in maintaining their studies while achieving positive results. The KU project made it possible to take this approach a step further when courses were designed for the specific needs of a relatively homogeneous group of teacher educators, all working in the same ODL program.

THE APPLICATION

The course was designed to allow participants to immediately apply their newly learned skills. Wherever possible, examples and activities are to draw from the day-to-day experience of the participants, making the learning highly relevant and practical. In this way, the training program offered by KU can be updated and improved on a continuing basis, providing immediate impact. For example, the assignment in the materials development module was to evaluate sample materials from KU's Diploma in Education Primary External (DEPE) program. The assistant ODL coordinator collected all the critiques produced by the first batch of learners to collate and analyze, in order to make revisions to these materials.

Many course participants commented on the power of evaluating their own materials. The materials they reviewed had up to then been a source of some pride, so this was a real eye opener (Graham & Tierney, 2003). Instruction is paced in order to provide time for learners to put into practice and take into account learners' capacity to absorb new ideas and techniques. Skills and ideas are reinforced through learning sessions, the variety of learning experiences offered, and feedback from other participants, consequently reaching a large number of learners through the use of ODL results in more educators with a shared understanding of the topics with whom to interact.

TECHNOLOGY

Although KU is the lead institution for teacher education in Uganda, its funding is not adequate for any significant investment in technology. Its registry still uses a paper-based record system that often proves inefficient, as documents get lost or are difficult to find. It is still unthinkable that the Department of Distance Education (DDE) should use the Internet to download materials or for interactive learning with teachers. What connectivity there is is minimal and is only made available to learners during face-to-face sessions. The ODL courses use delivery systems consisting of printed modules and face-to-face sessions. The choice of this low-tech approach has to be seen in the context of the issues surrounding connectivity in Uganda. The advance of the mobile telephone is making communication possible, while reducing the need to travel to training areas.

EVALUATION

The project's evaluation showed the course provided learners with exciting, transforming, and inspirational experiences. Participants noted that they realized from their own experience just what learners need and that bringing people together in peer groups and to experiencing support had a profound effect (Graham & Tierney, 2003).

In addition to the skills and learning, many also said the experience of peer-group support had the additional benefit of building relationships and teamwork throughout what is essentially a decentralized operation. In terms of capacity-building activities, it was noted that the course was far more cost-effective than funding 10 individuals for full-time academic study (Graham & Tierney, 2003).

This course seems to have been of particular value in the sharing together of the ups and downs of isolated study and the collaborative benefits of the face-to-face

tutorials and workshops. Learners from diverse jobs and locations who shared the unifying interest in teacher education were brought together. This experience of peer group support seems to lay down a strong foundation on which to improve and promote ODL for teacher education in Uganda. This form of training has proven so successful and popular that it will be continued for future training. Future research will be conducted to further the value of the project.

LESSONS

Collaborative efforts using the ODL model is essential for growth by sharing the cost of capital and human resources. However, as Spronk and Radtke (1988) observes, such collaboration is by no means easy to establish or maintain. Trust and respect are crucial for all those involved. In our case, KU and IEC already had a good relationship, and there was a desire in both to cooperate further. According to Koul (1998), unilateral collaboration in staff development and long-term bilateral relations are the ideals to work toward.

IEC and KU recognize the importance of the receptiveness of the group of learners, as compared with many academics (Abdullah, 1998). Also, judging the appropriateness of the course methods and content can be difficult, since what is modern in one context is already dated—or outdated—in another, and only a dream for the future in yet another. With a relatively small clientele and pragmatic projections for human-resource requirements, participatory models emphasizing more reflective approaches may be employed (Koul, 1998).

According to Spronk and Radtke (1988), it was advantageous to use a curriculum that had evolved over time. There were problems with student overload in the self-study part of the course. However, the demanding and time consuming assign-ments were manageable. Face-to-face communications were extremely important. There were money, transportation and accommodation problems. These issues required the training programs to be flexible by allowing students to work with others, catch up on late assignments, or receive extra help from the instructors. These accommodations are critical to help students to achieve their goals.

It was not always possible to deliver all aspects of the distance study course on time. Delays in the shipment of materials, the receipt of funds by the local bank, and approval for release of funds from the KU accounts, led to the postponement of one or two activities. These were also useful learning experiences for the participants by learning first hand what not to do.

CONCLUSION

We would like to find a way of offering learners who completed this course an accredited certificate that could be counted toward a recognized qualification. The IEC is working to make this same basic curriculum available to more students and to expand its geographical outreach.

Organizations in other developing countries have approached us about providing this training for similar groups. Delivering this course is being considered using a low-cost strategy and appropriate technologies such as print, e-mail tutorial support, and the option for students to work together using e-mail contact.

REFERENCES

Abdullah, S. (1998). Helping faculty to make the paradigm shift from on-campus teaching to distance education at the Institute of Technology. In C. Latchem & F. Lockwood (Eds.), *Staff development in open and flexible learning* (pp. 85-94). Routledge: London.

Adam, N., Awerbuch, B., Slonim, J., Wegner, P., & Yesha, Y. (1997). Globalizing business, education, culture through the Internet. *Communications of the ACM, 40*(2), 115-121.

Aguti, J. N. (2000). *Distance education in Uganda.* Paper presented at the Workshop on the Support for Distance Education Students, Kampala, Uganda.

Bbuye, J., & Mango, M. J. (1999). *Origin and trends of distance education in Uganda.* Kampala, Uganda: Department of Distance Education, Department of Mathematics, Makerere University.

Boldley, J. H. (1994). *Cultural anthropology: Tribes, states and global system.* New York: Academic Press.

Bork, A., & Gunnarsdottir, S. (2001). *Tutorial distance learning: Rebuilding our educational system.* New York: Kluwer Academic.

Daniel, J., & Mackintosh, W. (2005). Leading ODL futures in the eternal triangle: The mega university response to the greatest moral challenge of our age. In M. Moore & W. Anderson (Eds.), *Handbook of distance education* (pp. 493-499). Mahwah, NJ: Erlbaum.

Dillon, C., & Walsh, S. (1992). Faculty: The neglected resource in distance education. *American Journal of Distance Education*, *6*(3), 5-21.

Ely, D. P. (1996). *Trends in educational technology 1995.* Syracuse, NY: ERIC Clearinghouse on Information and Technology.

Graham, K., & Tierney, J. (2003). *Improving teacher education through human resource development at ITEK* (Midterm review for Nuffield Foundation Commonwealth Program 2001-2005). Oxford, England: Nuffield Foundation.

Haigh, N. (1998). Staff development: An enabling role. In C. Latchem & F. Lockwood (Eds.), *Staff development in open and flexible learning* (pp. 85-94). London: Routledge.

Hulsmann, T. (2004). Guest editorial: Low cost distance education strategies: The use of appropriate information and communication technologies. *International Review of Research in Open and Distance Learning, 5*(1), (pp. 498-504).

Kironde Report. (1966). *Report of the visitation committee to Makerere University.* Kampala, Uganda: Ministry of Education.

Koul, B. (1998). Proactive staff development: The Indira Gandhi National Open University experience. In C. Latchem & F. Lockwood (Eds.), *Staff development in open and flexible learning* (pp. 75-84). Routledge: London.

Nsamba, S., & Atim, D. (2004). *Fifty years of adult education at Makerere University.* Kampala, Uganda: Institute of Adult and Continuing Education, Makerere University.

Ordukene, J. (1995). Distance education in Uganda. Unpublished manuscript. In J. Bbuye & M. J. Mango (Eds.), *Origin and trend of distance education in Uganda.* Kampala, Uganda: Department of Distance Education, Department of Mathematics, Makerere University.

Randell, C., & Blitzer, E. (1998). Staff development in support of effective student learning in South African distance education. In C. Latchem & F. Lockwood (Eds.), *Staff development in open and flexible learning* (pp. 137-147). London: Routledge.

Roblyer, M., Dozier-Henry, O., & Burnette, A. (1996). Technology and multicultural education: An uneasy alliance. *Educational Technology, 36*(3) 5-12.

Shive, G., & Jegede, O. (Eds.). (2001). Introduction: Trends and issues in open and distance education in Asia and the Pacific. In *Open and distance education in the Asia Pacific region* (pp. 1-24). Hong Kong: Open University of Hong Kong.

Spronk, B., & Radtke, D. (1988). Problems and possibilities: Canadian native women in distance education. In K. Faith (Ed.), *Toward new horizons for women in distance education* (pp. 214-228). New York: Routledge.

Wellins, R., & Rioux, S. (2000, May). The growing pains of globalizing HR. *Training and Development, 54*(5), 79-85.

Wrightson, T. (1998). *Distance education in action: The northern integrated teacher education project in Uganda*. Cambridge, England: International Extension College.

Leadership Attributes Bringing Distance Learning Programs to Scale

Daryl Diamond

As our nation demands system-wide improvement in education, distance learning leaders of secondary and postsecondary schools are being challenged to offer reforms and to implement them more widely, deeply, and rapidly than ever before. Is there a different leadership skill set needed to bring distance learning programs to scale? Research suggests that leadership in the realm of educational technology is significantly different in various ways from leadership in general (Kearsley & Lynch, 1994). The con-

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tention is that many educational technology efforts fail due to the lack of good leadership at all levels of the school system. This suggests that technology leaders must develop skills specifically aimed at conceiving technical solutions to identified educational problems and then building theoretical, political, and financial support structures to ensure the success of the solution. This implies a need to identify the appropriate skills underlying technology leadership such that they can be incorporated into training programs for teachers and school administrators to ensure the success and scalability of distance learning reform efforts.

Elmore (1996) proposes that the "failure to scale up educational interventions was not so much a failure of a theory of how to reproduce success but the absence of a practical theory that takes account of the institutional complexities that operate on changes of practice" (p. 21). Maxcy (2000) describes the increased presence of technology as a sensitive area of cultural change where "little reference is harbored within [these] educational leadership reform agendas for dealing with it" (p. 142). He reports that educational institutions have been blinded to the increased use of computers and the Internet, encouraging neither professors of educational leadership nor student leaders-to-be to learn how to both understand and use new technologies. This suggests that edu-

cational reform leaders have stepped into the twenty-first century viewing technology as invisible, even though the place of computing and information technology has become a defining feature of our culture and its leadership since the 1990s and into the new millennium.

How can distance learning educational reforms develop into sustained practices within institutions blind to the use of technology? The optimism for distance learning as an educational reform model stems from the increased use of distance learning activities that are in large part due to the popularity of the Internet. The very nature of distance learning offers us the ability to test the current school model which many argue is obsolete and insufficient to meet current and future demands (Dede, 1994; Moore & Kearsley, 1996; Roblyer, 2006). Some current research contends that as a model it had reached the upper limit of its potential effectiveness and efficiency many years ago. Whereas distance learning programs are seen as potential positive additions to the traditional classroom experience, they are thwarted as catalysts for systemic change because they are revolutionary and represent a fundamentally different delivery system that breaks the monopoly of the classroom and forces us to examine habits of teaching and learning that for too long have gone unchallenged.

As we witness the explosive growth of distance learning programs throughout the United States and as we watch these programs expand their reach globally, we need to determine:

- their ability to change basic pedagogical principles;
- their viability for longevity;
- their ability for replication;
- their acceptance in the mainstream educational arena;
- their impact for improving practice in education;

- their effectiveness in terms of student learning; and
- the required leadership skill set to bring them to scale.

Scalability of distance learning initiatives involves a more challenging set of circumstances for leaders than do other types of reforms. Kearsley and Lynch (1994) suggest that technology leadership requires unique considerations. Whereas leadership usually involves dealing with change, technology leadership deals almost exclusively with new procedures, policies, and situations. Moore and Kearsley (1996) point out that leadership is essential to the proper administration of distance education courses and programs. They assert that leaders must "participate in the political process, helping policy-makers to understand the potential of distance education, obtaining funding, and bringing about the organizational culture change that is needed to accommodate this new form of education" (p. 12).

What is the leadership skill set capable of confronting resistance from the status quo such that distance learning innovations can be brought to scale? Specifically, how can school leaders successfully promote school redesign and reform strategies for systemic change through distance learning innovations? Some research proposes a cultural view of leadership as most useful in the domain of education and technology leadership (Kearsley & Lynch, 1994). This theory suggests that leader success is determined by an ability to articulate and influence cultural norms and values while shaping the culture of the individual schools and school systems through new visions which organizational members can believe in and act on. Hughes and Zachariah (2001) concur: "Successful leaders not only challenge the existing educational process and inspire a vision for meaningful change, but also provide the necessary support and modeling

strategies to enable teachers to become part of a learning community" (p. 3).

How can such a learning community emerge? Healey and DeStefano (1997) offer a dichotomy of actions regarding the relationship between leadership and organizational change. They suggest that *scalability* requires two skill sets, *space clearing* and *space filling*; both of which have implications regarding the type of leadership capabilities to successfully perform both actions. Space filling consists of actions that define and implement things that constitute good educational practice. Healey and DeStefano suggest that schools in the United States have concentrated largely on space-filling activities, and advocate that the problems we face with *scalability* indicate that we have done very little in regard to space clearing. They define space clearing as "activities that work to overcome the impeding effects of many obstacles that stand in the way of reform going to scale" (p. 14). These activities would include policy dialogues that afford changes in the legal structure of the system, policy marketing which enables understanding of constraints and options, coalition building that levels the political-economic playing field, networking which develops a support infrastructure for the reform, and consensus generation that leads toward decisions of important policy directions for the reform.

They advocate for reformers to expand their space-clearing efforts in order to push the pockets of reform to a theoretical maximum in terms of both size and number. They contend that to push reform beyond this point, "to effect a wholesale restructuring of the way in which the United States does education—will arouse an opposing force the resistance of which will require an entirely new set of strategies aimed specifically at strategically orchestrating space-filling and space-clearing activities" (p. 15). In this manner, they propose that *scalability* necessitates being both purposeful and strategic in its facilitation.

How can the notions of space filling and space clearing be used to better understand how distance learning leaders can take their reform effort to scale? Diamond (2007) proposes that scalability is comprised of two levels, *scaling up* and *going to scale*. Scaling up refers to the expansion of a program, practice, or product. Twenty years ago, the process of scaling up was defined as a replication model characterized by a one-way flow of information and mandates from external providers or districts to schools and teachers. This definition offers scaling up as simply a marketing problem needing strategies and incentives to persuade local decision makers and teachers to adopt a particular reform and scale up its use.

In contrast, going to scale refers to the ability of an innovation to sustain itself over time and for its participants to assume ownership of the reform. Going to scale implies full utilization of a program, practice, or product in a jurisdiction such as a nation, state, region, or school district. It refers to achieving reform in such a large number of schools and classrooms that the norms of the profession are altered, and the reformed practice becomes the new standard. Scalability refers to the movement from scaling up to the ability of an innovation to go to scale.

Diamond (2007) utilized the tenets of Pisapia's (2006) strategic leadership theory to develop a practical checklist for educational leaders to use when designing strategies to bring distance learning innovations to scale. Pisapia suggests that postmodern leaders need to adaptively balance four counterweights: change, stability, ethical action, and political possibility. The theory posits that modern challenges are forcing leaders to develop new skill sets that afford them the ability to both lead for change while also leading for stability.

> The leader's effectiveness in maintaining this balancing act determines his or her relevance, competence, and acceptance

by their organization. This ability to balance provides leaders with the flexibility and endurance to survive because they have the capability to continually adapt their strategy to the changing environment (Pisapia, 2006, as cited in Diamond, 2007, p. 124).

Strategic leadership is an expanded leadership framework enabling leaders to alter their thinking and actions to adjust to a contemporary world. Pisapia (2006) describes a fundamental shift in the environment(s) in which organizational work is taking place. The modern age, with its emphasis on rationalization and stability, is transitioning to the hyperrationalization and chaos of the postmodern condition. Therefore, leaders must "fit" their organizational reforms into its environment in order to survive. Fit organizations have the ability to perceive the themes in their environment and evolve appropriately. Because the environment is constantly changing, the application of this principle necessitates a continual rethinking, revising, and restructuring of the organization in order to stay connected to the environment. Also implied is the establishment of a learning process to ensure that the organization continues to develop.

Pisapia's (2006) strategic leader actions are found in the transformational, managerial, political, and ethical leadership sets. Transformational leadership is the ability to use frame-breaking (space-clearing) actions that develop a new normative order and include the ability to challenge mental models, set direction, enable self-management, and prioritize learning. Managerial leadership is the ability to use frame-sustaining (space filling) actions to create structural changes that improve the efficiency and effectiveness of the current organization. Skills include the ability to plan, organize, allocate, and monitor the organization.

Ethical leadership is the ability to follow self-chosen principles and virtues, valuing rights of others, and upholding absolute values and rights in any situation. Leadership actions include acting virtuously, using best practice in making decisions, infusing values into the organization, and being the steward of the common good. Political leadership is the ability to barter, engage in relationships for the purpose of exchanging valued things, and form temporary (or materialistic) relationships. As such, the leader acts as a broker for the organization capable of building coalitions and facilitating transactions. It also includes the ability to develop networks with other people and organizations with common goals and direction.

The balancing of leading and managing (transformational and managerial) while considering the politics and values (political and ethical) is at the heart of strategic leadership. Dede, Honan, and Peters (2005) affirm Pisapia's framework, stating that "people often see leadership as a combination of meticulous management, adept political maneuvering, and responsive facilitation of other's activities" (p. 128).

The constructs of strategic leadership become the primary attributes that describe how distance learning leaders can initiate, develop, and carry out significant change and effective educational reform. Diamond (2007), in her research regarding the scaling up of virtual high schools, identifies these leadership capabilities and separates them into the two distinct categories of scaling up and going to scale. Scaling up leadership capabilities represent the traditional notion of taking reforms to scale (space filling), whereas going to scale leadership capabilities are comprised of actions that push the envelope (space clearing) to strategically alter how we conduct the business of teaching and learning while ensuring a place for the distance learning initiative within the political context and climate of an organization. Scaling up leadership capabilities have the distance learning leader able to:

- manage the interrelated financial, human, and intellectual resource needs to maximize the benefits and build the infrastructure of the organization;
- display self-determination to reaching organizational goals;
- establish formal plans, policies, routines, and priorities to maintain reliable performance and task accomplishment; and
- monitor and emphasize the organizational priorities and operational standards by enforcing organizational rules to ensure success.

Going to scale leadership capabilities have the distance learning leader able to:

- commit to and demonstrate evidence of endorsement and continued support for the distance learning initiative;
- minimize the constraints from external and internal factors that can limit what the organization accomplishes;
- promote change and a new normative order by challenging the mental models of all members of organization;
- use knowledge of best practice as the basis for action by focusing on what needs to be done and what is right;
- stay the course of the reform while planning and preparing for succession;
- place a high priority on individual and organizational learning through continuous professional development opportunities;
- construct and communicate a compelling shared vision, values, and priorities;
- create a process that strategically places the organization into its competitive environment; and
- motivate people to work through rewards and punishments.

Elmore (1996) suggests that much of what passes for "change" in U.S. schooling is not really about changing the "core of educational practice." He argues that educational changes and practices are superficial because they "seldom translate into changes in the fundamental conditions of teaching and learning for students and teachers" (p. 3). Distance learning reform programs are all about high aspirations. Somewhere between the Federal No Child Left Behind mandate for equal access to quality education by highly qualified teachers, and the local reality, stands the unrelenting wall of the status quo. The attributes of scalability offers the road map for states and school districts to get around it, through it, or over it. It is the process, the techniques, and the system for implementing sustainable reforms that become embraced, and ultimately embedded within the fabric of an organization. Diamond (2007) concludes that in order for distance learning initiatives to incorporate space clearing efforts (going to scale) that enable changes of practices, they must first develop strong space filling (scaling up) efforts capable of withstanding the organizational complexities that wreak havoc on innovative designs. Her research concludes that when scaling up attributes are strongly developed and incorporated into distance learning interventions, going to scale attributes are more likely to occur. The development of a practical theory such as one described by Elmore must include both of these types of attributes in order for distance learning initiatives to go to scale.

REFERENCES

Dede, C. (1994). Leadership without followers. In G. Kearsley, & W. Lynch, (Eds.), *Educational technology leadership perspectives* (pp. 19-28). Englewood Cliffs, NJ: Educational Technology Publications.

Dede, C., Honan, J., & Peters, C. (2005). *Scaling up success: Lessons from technology based educational improvement*. San Francisco: Jossey-Bass.

Diamond, D. (2007). Attributes that enable a virtual high school to go to scale. *Dissertation Abstracts International Section A*, *68*(05) (UMI No. 3264771).

Elmore, R. F. (1996). Getting to scale with good educational practice. *Harvard Educational Review, 66*(1), 1-25.

Healy, F. H., & DeStefano, J. (1997). *Education reform support: A framework for scaling up school reform.* (Report prepared for the U.S. Agency for International Development, Advancing Basic Education and Literacy Project). Retrieved December 23, 2005, from http://www.rti.org/pubs/Educ_Reform_Support.PDF

Hughes, M., & Zachariah, S. (2001). An investigation in to the relationship between effective administrative leadership styles and the use of technology. *International Electronic Journal for Leadership in Learning, 5*(5). Retrieved January 13, 2006, from http://www.ucalgary.ca/~iejll/volume5/hughes.html

Kearsley, G., & Lynch, W. (Eds.). (1994). Educational leadership in the age of technology: The new skills. In *Educational technology leadership perspectives* (pp. 5-15). Englewood Cliffs, NJ: Educational Technology Publications.

Maxcy, S. (2000). Leadership reform in a postmodern world. *Journal of educational Philosophy and History, 50,* 140-144.

Moore, M. G., & Kearsley, G. (1996). *Distance Education: A systems view.* Belmont, CA: Wadsworth.

Pisapia, J. (2006). *Mastering change in a globalizing world: New directions in leadership* (Education Policy Studies Series No. 61). Hong Kong: The Hong Kong Institute of Educational Research, The Chinese University of Hong Kong.

Roblyer, M. D. (2006). *Integrating educational technology into teaching* (4th ed.). Upper Saddle River, NJ: Pearson Education, Merrill.

Distance Education Initiatives at Pearson

Maureen Martin

WHAT IS PEARSON

As the global leader in educational publishing, Pearson is a large, multinational company with more than 29,000 employees based in 60 countries. Pearson's business is comprised of three main units: Penguin Books, the *Financial Times*, and Pearson Education. Within Pearson Education, the business is subdivided into print and digital components offering customers basal and supplemental instructional materials as well as professional development solutions, all of which are research based. The education group's mission is "to help students of all ages learn at their own pace, in their own way" (Pearson Education Web site, 2007).

This article addresses a threefold approach to various aspects of distance learning in a corporate setting. Pearson's New Hire Sales Orientation (NHSO), the Summer Cruise program for educational consultants, and the Connected Training department are the three areas addressed. While these three are nascent efforts in such a large organization, the intention is to start small and design effective models which allow for scaling up as the programs take hold.

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ONLINE OFFERINGS

Pearson's exploration of distance learning is comprised of three unique initiatives. The NHSO offers the sales team a blended approach that takes advantage of anytime-anywhere learning with a level of transparency and accountability through built in reports to help managers get their new hires up to speed effectively. The Summer Cruise program, for existing employees in the Instructional Services group, provides relevant and timely information about product development and new offerings. Lastly, the Connected Training program gives customers a way to gain basic product training in a more efficient, time-saving method.

NEW HIRE SALES ORIENTATION

For the digital sales group, new hires are brought on board as quickly as possible in

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order to increase productivity and lessen ramp-up time. However, in order to learn complex programs and meet business goals, sales management realized it was necessary to examine current practices and build something new. Kristina Potter, sales development manager, was hired to design a series of self-paced, Web-delivered learning experiences that would allow maximum growth in minimum time. The NHSO is a 10-week self-study program to help new employees in the digital sales group gain an initial orientation to Pearson products, processes, and people.

New employees in the sales department are assigned to NHSO during their first week on the job. Each week, the new employee is assigned a module to complete. The modules consist of a series of brief presentations, exercises, self-study materials, and follow-up tasks. Each day, the new employee has between 1 and 2 hours of material to cover, in addition to meeting with his or her manager, other team members, and customers.

At the start of every week, participants receive an e-mail with an Excel spreadsheet. The week's activities are listed with suggested timing for each day of the week. The timings are provided as a guideline, not necessarily a requirement. Learners must log-on to the Pearson People Development Network (see Figure 1) to access the self-paced content modules. After viewing the content, the learner completes an assessment and has a task or two to complete off-line. Tasks range from finding a file and printing it out for his or her custom training notebook to calling a team member for a phone interview. Supporting
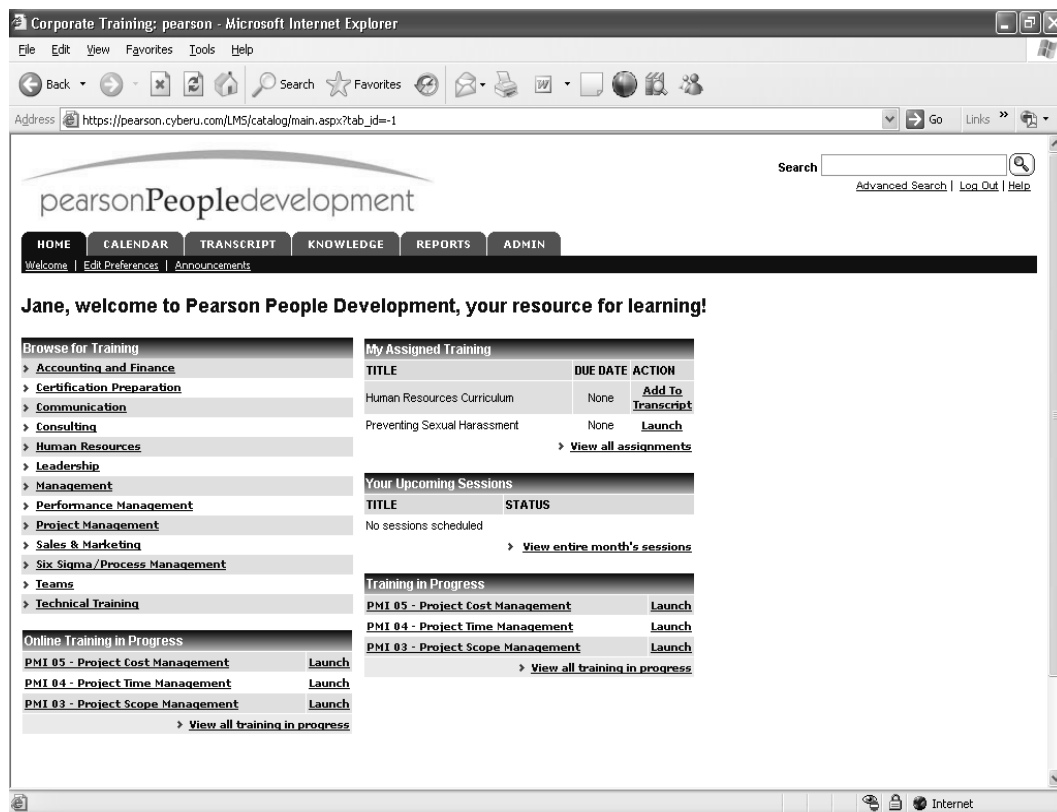
Figure 1.   Screen shot of Pearson People Development Network.

materials for each module are hot-linked in the Excel sheet so that learners simply click on the link to get to the resource.

The modules are designed to cover a variety of topics in increasing order of complexity. Below is an overview of the content by week.

- Week one includes basic information from human resources such as benefits and health plans, a defensive driving course, and a course on preventing sexual harassment.
- Week two begins introducing other departments in the organization and respective roles they play.
- Week three moves into the product suite the individuals will be representing, including model presentations and assignments related to finding product information on the company intranet pages.
- Week four introduces and explains the use of specific job tools like the customer database, pricing tool, and expense report system.
- Week five takes new hires on a deep dive on the product offerings and either shadowing a colleague or attending a live-product training session at a customer site.
- Week six moves the focus to the customer experience with an in-depth look at product implementations.
- Weeks seven through 10 break down job tools and activities into microsteps that new hires practice in a safe environment. They learn to create a cost proposal, enter new contacts into the customer database, and hone their sales skills in minitrainings.

Assessments are built in to the modules through multiple-choice quiz questions and surveys delivered through the learning management system. After completion of each module, a score is recorded so that management can view each individual's progress.

Joshua Brown, a new sales executive, recently completed the 10-week program. He liked the flexibility the program offered because he was able to view material when it was convenient for him. He notes that during a traditional, face-to-face training "certain folks ask a lot of questions that are not pertinent to the whole group [while] this is specific to what I need" and can be done anytime. He prefers the individualized nature of the online experience to large-group trainings. Christy Berarducci, another new hire who went through the program, agrees that she was able to "gain more information and experience in this way than in a week long [on-site] face-to-face training." Christy also commented that "instead of everything being thrown at you at once, I am able to do it at my own pace" which gave her "time to absorb the information" for maximum learning.

SUMMER CRUISE PROGRAM

Pearson's educational consultants (ECs) in the digital group are product experts who are responsible for delivering training to customers. Thus, they must be kept abreast of all new product developments and features as they are released. As their work schedules are dictated by the traditional school calendar, there is often a downturn in demand for training during the summer months. The Summer Cruise program was designed to take advantage of this down time by offering ECs up-to-date product information and polishing their skills and knowledge without taking them away from schools or time with customers. The Summer Cruise program, launched in June 2006, was a way to blend technology resources to respond to different learning styles, scheduling needs, and diverse geographic locations of the ECs.

The Summer Cruise series included a catalog of over 55 courses (see Figure 2), which were delivered by training specialists located in the corporate office in Arizona. Training specialists designed the

Summer Cruise Syllabus

Cruise Insurance: Motivating the SuccessMaker Student to Ensure Success
Over time, teachers may need to fix some problem areas of their implementation. That's where cruise insurance comes in! Learn some of the best motivational activities to recommend to your travelers in an effort to fix those problem areas and enable their implementation to continue to cruise on smooth seas.
Offered: June 4, 13, 14, 18, 19, 22, 25, 26 and July 9, 11, 12
Prerequisite: None
Length: 50 minutes

Welcome to the Big Island! SMe Central District Server
Aloha! This session will focus on the unique implementation characteristics and need of a central district server implementation.
Offered: June 7, 12, 13, 19, 22, 26, 27 and July 10, 11, 13
Prerequisite: None
Length: 50 minutes

Your Vacation Has All the Comforts of Home: SMe @ Home
Packed your bags already? Well, unpack them and stay at home for this vacation. This session will focus on implementation SMe @ home.
Offered: June 8, 12, 13, 14, 19, 22, 25, 27 and July 10, 11
Prerequisite: None
Length: 50 minutes

SM Courseware Fleet
Set sail with the various SuccessMaker Fleet of Courseware to explore the exciting opportunities that each course offers. Each Courseware ship will have a cruise which extends beyond the course overview, and moves into proven

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Figure 2. Screen shot from Summer Cruise catalog of offerings.

modules to be as hands-on as possible. The sessions were 50 minutes in length. The sessions looked and felt very similar to face-to-face training. The only difference was that the trainer was not physically present in the room. The ease of use for presenters and attendees allowed the focus to be on the content and interaction with participants rather than the technology. Attendees were encouraged to participate and interact. The training specialists took advantage of the ability to share control of their desktop through the presentation software. The remote control allowed attendees to work on the presenter's computer just as if they were working on their own. This was important because the trainer could demonstrate a process, and then have the attendees demonstrate it also. This was an excellent way to check for understanding. Course evaluations were completed electronically by participants after each course. The feedback was used to fine-tune and make adjustments to each course offering.

Sessions were delivered via GoToMeeting, a Web-based presentation software program. For the synchronous sessions, the facilitators engaged in sharing product updates, modeled new delivery strategies, and hosted question-and-answer time. The live sessions utilized communication tools such as polling, chat, and sharing control of the presenter's laptop remotely, all in an effort to boost interactivity for participants. All sessions were recorded with Camtasia

Studio software for later use in an asynchronous mode. This allowed for ECs to join some sessions live while attending others at their own convenience. The recorded webinars were hosted on the company intranet and available for download. Some innovative ECs were even able to leverage their iPods as a viewing device for the recorded versions.

Pearson recognized a cost savings of at least $73,000 by offering training for existing employees through the Summer Cruise program in 2007. Instead of flying people in from all over the country, virtual meeting software and conference call lines were used to link people with the knowledge they needed. It is expected that the summer of 2008 will bring another round of remote training for employees based on the success of the previous year's program. The blended approach, offering both live and recorded sessions for remote employees, is a very sustainable and cost-effective model.

Jan Van Dam, Vice President, Instructional Services—Digital, notes that the increase of effectiveness was seen even after the summer program ended. When ECs went back to a full work schedule in the fall of 2007, the performance rubric used to evaluate them included some reflections from the summer program. The "skills to keep you up-to-date" were requirements for success in the field which the Summer Cruise program provided in an easily accessible and flexible format.

DISTANCE LEARNING IN SCHOOLS

Traditionally, educational publishing companies include (either "free with order" or paid as a separate expense) some type of product training with their print and digital offerings. The customer then chooses when and where to deploy such training. However, the challenges for school administrators include release time for teachers to be away from their students, payment of stipends if training occurs outside of contracted hours, travel delays, weather delays, and scheduling issues. Most school administrators find it a daunting task to organize a training that lasts longer than 30 minutes at a scheduled monthly staff meeting, yet true professional growth comes from sustained study and focused efforts. These factors make distance learning an attractive option for many school leaders.

It was partly in response to this growing need that Pearson decided to scale their DE initiative to include product training for customers. Providing online, remote delivery met the criteria of having flexibility in deployment and also loosened scheduling constraints for school administrators. Modules were designed to be taken in 1- or 2-hour chunks.

CONNECTED TRAINING

Face-to-face product training has been the norm for Pearson for many years. However, when it became apparent that a new way was needed, it made sense to look to technology for an alternate delivery mode. As Pearson's customer base has grown more sophisticated in their use of technology for instruction, the Connected Training model was conceived to create efficiency and sustain training for Pearson applications that are currently in use in a school or district. Connected Training is simply a modularized version of all the product training that Pearson ECs conduct, delivered via the Web in brief 1- or 2-hour chunks.

School leaders are looking for ways to maximize the hours set aside for training and staff development. Teachers do not want to be bored by a long session that may not pertain to their job responsibilities. With Connected Training, administrators can decide who needs what modules and design a schedule to accommodate small or large groups. Some schools opt to use the connected sessions during grade level planning or at monthly scheduled

"in-service" times. They even have the flexibility to include teachers from multiple buildings across a district for the same session. This encourages collaboration among staff members and serves as a built in "user group."

Connected Training was first offered to customers in the fall of 2005. Since that time, eight specially certified ECs have been delivering between 300-350 hours of training per month in the connected format. This is roughly the equivalent of 50 on-site training days, at a greatly reduced cost for both the customers and Pearson. The trainers are dispersed throughout the United States and work from home offices. The only difference between the connected model and a face-to-face experience is that the trainer is not physically present for the training session. The participants and the trainer interact via GoToMeeting software and a phone line.

In order for schools to participate, they need to have a high speed Internet connection and either a speakerphone or headset capability for all participants to join the audio conference. A projector is recommended for larger groups, but is not necessary. Usually, a contact person (lead teacher or technology facilitator) is designated as the point person on site. The contact's job is to ensure that everyone is following along and that audio quality is good. The contact can also serve as the virtual eyes and ears for the trainer, making sure that all questions are heard and addressed.

For the trainer, special attention has to be paid to ensure a high level of learner participation. Since the trainer is not able to see the faces and watch reactions, he or she must rely on using a conversational tone coupled with strong inclusion activities and engaging presentations formatted for remote delivery. It is not uncommon for the trainer to use icebreakers or other games as a way to set customers at ease if they have never before participated in a connected session.

Julie Martin, a former connected trainer for Pearson who now works in another department, often relied on specific questioning strategies to keep learner engagement high. Having participants find information in the application they were learning, in a scavenger hunt format, led them to discover features that Julie knew they needed to master in order to be successful. She utilized the voting buttons in GoToMeeting to gauge if more time was needed for a particular activity or as a check for understanding with a concept. "Giving teachers activities to meet the training objectives, like tasking them with running a report, was key," she notes, because it "forced them to use" the software.

Both customers and trainers expected more challenges than they actually encountered during a connected session. Bev Stone, lab manager at Omaha School in Omaha, AR, explains that she was "very concerned at the beginning, but after the first one, I felt relaxed. We got to cover more [content]. With a person onsite, everyone wants attention" and it can be hard to accomplish the tasks at hand. Initially, Martin, the former trainer, worried that her inability "to see the participants and how they are reacting" would impact the quality of interactions. However, she employed tactics mentioned above and found that asking the right kinds of questions and how she structured learning activities made the difference between a successful experience and a frustrating one.

After one connected session, a teacher remarked to Martin, "Wow! I didn't know I could learn this much without you in the room with me!" This type of comment was what sold Martin on the connected approach to delivering product training. It gave her the flexibility to create unique and very pointed learning experiences and work with customers based on their immediate needs. From the customer's point of view, they got the information that they

needed at a time and place convenient to them.

CONCLUSION

Pearson has spent a good deal of time and money to develop three distance learning initiatives for their people and their customers. Initial results are encouraging. The NHSO has produced approximately 28 newly trained sales team members since its launch in the fall of 2007. Another group of 11 new hires began the program in January 2008. The Summer Cruise program presented nearly 250 hours of refresher training attended by more than 300 individuals in the summer of 2007 alone. The growth of Connected Training has necessitated hiring of additional trainers to provide remote delivery to customers across the United States. The leadership teams are now looking for ways to expand the reach of each of the three programs in order to reach more people, more effectively, through distance learning.

REFERENCE

Pearson. (2007). *Pearson Education page.* Retrieved November 10, 2007 from http://www.pearson.com/index.cfm?pageid=18

Designing Effective E-learning
Guidelines for Practitioners

Angelene C. McLaren

INTRODUCTION

When discussing e-learning, there are a myriad of viewpoints about what it is or is not, depending on who you ask. According to Hall (2000), e-learning is the acquisition of knowledge and skills at a distance through a variety of technological mediums. Urdan and Weggen (2000), view e-learning as a subset of distance learning, and online learning a subset of e-learning. For the purposes of this article, however, the National Center for Supercomputing Applications' (NCSA) definition will be adopted: "e-learning is the acquisition and use of knowledge distributed and facilitated primarily by electronic means" (NCSA, 2000). As instructional design practitioners, there are usually six categories of consideration that must be addressed when designing, developing and implementing e-learning initiatives. These categories usually are: learner support and resources, online organization and design, instructional design and delivery, assessment and evaluation of student learning, innovative teaching with technology, and use of student feedback (Rubic for Online Instruction, 2003). This article will only address one of these categories—instructional design. It will address the designing of effective e-learning according the following topics: learning and performance outcomes, instructional methods, instructional media, e-learning and learning theories, e-learning and instructional system design, and e-learning and instructional theories. The article will also incorporate practical guidelines based on theory. This will enable e-learning instructional design practitioners to move toward a grounded "theory-to-practice" paradigm for design.

LEARNING AND PERFORMANCE OUTCOMES

When designing e-learning, or any type of learning for that matter, it is imperative that the learning and performance outcomes are understood and agreed on by the instructional design team and the cli-

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ent from the very beginning of the project cycle. By understanding the specific learning requirements, instructional designers can then map out successfully how to best meet these learning and/or performance goals according to the requirements of the learners. Each type of performance or learning outcome will require a different instructional strategy (Gagne, 1985).

INFORMATION TRANSFER

Information transfer is the most basic of learning tasks. During information transfer, learners are usually passive participants in the learning process. They are given information, either in verbal, written, graphic and/or pictorial forms. At the end of the transfer session, learners are then required to retrieving this stored information. Unfortunately, most of what passes as e-learning today is nothing more than the passive transfer of informational content from an electronic source to a learning population, regardless of the knowledge or performance outcomes expected. These learning modules usually have a fixed content and structure, offer no interaction or collaboration, and are usually not facilitated (eLearnity, 2001). There are instances, however, when this approach is logical and effective. These instances might include: teaching new policies, cultivating corporate culture, or giving directions.

BASIC SKILLS ACQUISITION

Teaching basic skills can range from something as mundane as learning how to tie one's shoe, to something as complicated as learning how to use a new telephone transfer system. When creating e-learning geared to basic skill acquisition, the structure of the course should be fixed, the content can be fixed or flexible depending on the learners, and there should be supportive cooperation and directed facilitation (eLearnity, 2001).

ADVANCED SKILL DEVELOPMENT

Advanced skills development requires that learners be able to do more than read information from a screen or projector. It requires them to build on current levels of knowledge and expertise. As instructional designers, when creating e-learning for this learning and performance outcome, it is important to go beyond just providing static content and standard assessments. Learners here need dynamic course structure and content—one that can adjust or be modified according the level of expertise or need. Learners will need to be in collaborative learning environments where they can share and learn from their peers. Also, these e-learning initiatives need to be virtually facilitated. At this level, it would be easy for learners to get lost (eLearnity, 2001).

ADAPTIVE EXPERTISE DEVELOPMENT

Adaptive expertise encompasses a range of cognitive, motivational, and personality-related components. The thing that separates adaptive expertise from mere competency is the ability to apply knowledge effectively to novel or atypical problems. When creating e-learning for this learning and performance category, designers must provide dynamic structure and content as well collaborative and facilitated learning experiences (eLearnity, 2001).

These four preceding performance and learning categories lead nicely into the next section of this article, which addresses the issue of instructional methods. As an instructional design practitioner, when addressing a particular learning or performance outcome (category of instruction), one must match it effectively to corresponding instructional methods for learning to occur (Gagne, 1985)

INSTRUCTIONAL METHODS

According to Clark (2002) there are three distinct elements to any e-learning lesson: instructional methods, instructional media,

and media elements. Unfortunately, for a long time, a lot of emphasis has been placed on the latter two categories, with less emphasis on the former. Despite the fact that several studies have concluded that there are no significant differences in achievement between students who take courses face-to-face or via e-learning (Chute, Thompson, & Hancock, 1999; Clark, 2002), designers and clients often get caught up in the tools at the expense of how to best utilize those tools to achieve the learning and performance outcomes desired. E-learning lessons that are jam-packed with all the latest bells and whistles, but lack sound instructional design principles, will not maximize the effectives of information processing or learning (Shute, 2003). It is not the medium that causes learning to occur, but rather it is design and instructional methodology that make the difference (Clark, 2002).

Instructional methods are strategies, means, and ways to deliver new information in ways that foster learning. This could be through the use of examples, by providing opportunities for rehearsal and practice, and via simulations (Clark, 2002). When designing effective e-learning, the literature points most often to the following three instructional methods: learner-centered design, scenario-based learning, and problem-based learning. Learner-centered designs offer lots of practice with individualized feedback, while scenario-based and problem-based learning integrate self-study and collaboration, along with the use of simulation to accelerate learning (Clark & Mayer, 2003).

LEARNER-CENTERED DESIGN

Learner-centered design is focused on the nature of the active learning process and the unique qualities of individual learners. A learner-centered approach builds the learning experience around the learners and not around the content. Don Norman states that, "The first step in learner-centric design is to understand how learning takes place…. It is very important that people learn not by reading a book and not by listening to a lecture, but by doing tasks that can engage the mind" (in Hsi & Gale, 2003, p. 7). Hsi and Gale also point out that learners need more "scaffolding" at the beginning of instruction. Scaffolding is an instructional technique in which the desired learning strategy or task is modeled by the instructor, then is gradually shifted to the students. This scaffolding serves as cognitive structural support, stepping stones and building blocks on which learners can comfortably constructs new knowledge and expertise. As learners grow in competency, this scaffolding should be faded out and then removed altogether (Hsi & Gale, 2003). Learner-centered design understands the need to offer learner support while at the same time encourages independent learning. Instructional methods should foster interest in the learning task and motivate further inquiry (Hsi & Gale, 2003).

SCENARIO-BASED LEARNING

Traditional page-turner types of e-learning modules are increasingly being replaced by a more dynamic learning experience known as scenario-based e-learning. This approach does away with the telling and showing, and offers learners opportunities to learn by doing relevant tasks, making mistakes, and then redoing them until mastery is attained (Kindley, 2002). Scenario-based learning is learning that occurs in a contextual, situational, or social framework (Kindley, 2002). It springs from the concept of situated cognition, which proposes that knowledge cannot be fully understood outside of its context (Kindley, 2002). Knowledge then is constructed as a natural byproduct of doing natural tasks that are expected to be performed in the learners' natural learning, working or social environments. In

this way, scenario-based learning is very similar to the experiential learning model. Accordingly, both adhere to the notion that learning occurs as a result of performance. The outcome, therefore, is focused on improved performance, not on the acquisition of knowledge and skills (Kindley, 2002). Scenarios may be built around a story, a role play, or a simulation. The focus of the activity must be to help learners contextualize the learning content. The more "authentic" these scenarios, the more likely it is that learners will transfer new knowledge and skills back to their real-world environments (Brodsky, 2003).

PROBLEM-BASED LEARNING

Problem-based learning is centered on solving "real-world" problems. Learners are given ill-structured, authentic problems to solve by finding the necessary knowledge and applying it appropriately. This approach encourages higher critical thinking, analytical, and reasoning skills. As in the learner-centered approach, problem-based learning utilizes scaffolding to reduce cognitive load and improve learning outcomes (Merrill, 2002a). This scaffolding comes in the form of instructor guidance that is faded out as learners attain competency. It is important to provide this guidance early on in the instructional cycle, because novices may spend a lot of time looking for solutions without actually learning (Sweller, 1988). The key to successfully utilizing this methodology is to move from the simple to complex and from guidance to independence. As learners gain expertise and ownership over the learning process, make the problems more realistic to reflect real world conditions (Merrill, 2002a).

At the root of every decision about the design of e-learning courseware should be the sound understanding of what is learning, how it takes place, and what research tells us about what factors lead to learning (Clark, 2002). Learning theories attempt to explain how learning takes place. The two learning theories that will be discussed here are behaviorism and cognitivism. How can behaviorism and cognitivism be best utilized for designing effective e-learning courseware?

APPLYING LEARNING THEORIES TO E-LEARNING

BEHAVIORISM

According to behaviorist learning theory, learning is the ability to perform new behaviors (Skinner, 1954). These changes in behavior are a result of constantly manipulating environmental conditions. Pleasant experiences (such as rewards or praise) are positive reinforcements. The goal of the behaviorist is to cause learners to make desired connections between stimuli and responses. Unpleasant experiences (such as punishment) are negative reinforcements. The introduction of negative reinforcements causes learners to avoid undesirable responses to stimuli. Continuous reinforcement increases the rate of learning, while intermittent reinforcement contributes to longer retention of what is learned. Both positive and negative reinforcement can shape behavior, and result in learning.

Behaviorist learning theory has great influences on e-learning. Basic tenets, such as individualized instruction, operant conditions, feedback, a linear approach to instruction, and instructional prompts all work well in the context of e-learning. E-learning relies on observable changes in behavior as the basis for instruction. Performance and/or behavioral objectives are used to describe learning outcomes. Assessments, evaluations, feedback, and reinforcements are all geared toward facilitating new learner behaviors. Most online instruction is built around this behaviorist framework. Learners are given information, solicited for a response, they receive feedback, and then are either positively or negatively reinforced.

COGNITIVISM

Cognitive learning theories seek to explain how the brain processes and stores new information. Cognitive psychologists wanted to explain learning beyond the limitations of behaviorism and its focus only on observable behavior. Piaget (1985) suggested that the learning process is iterative. New information is shaped to fit with the learner's existing knowledge, and the existing knowledge is modified to accommodate new information. Interactive Web-based tools such as automatic feedback and interactive activities allow learners to modify their behavior by assimilating and accommodating new information from their peers and/or instructor.

This learning theory also has great impact on how e-learning is designed. One aspect in particular, cognitive load theory, is especially applicable in e-learning environments. Cognitive load theory revolves around manipulating intrinsic, extraneous and germane cognitive processes (Van Merrienboer & Ayres, 2005). The goal is to decrease extraneous cognitive load and to increase germane cognitive load. Strategies to accomplish this might include: taking learner expertise into consideration, moving from simple to more complex tasks, chunking information into easily assimilated chunks, presenting information bit by bit, and building on prior knowledge.

For e-learning to be effective, it must be grounded in sound learning, teaching, and design theory. According to Bednar, Cunningham, Duffy, and Perry (1991), "effective design is possible only if the developer has a reflexive awareness of the theoretical basis underlying the design" (p. 90).

APPLYING INSTRUCTIONAL DESIGN TO E-LEARNING

Designing effective e-learning requires that it be grounded in a sound design approach. The need for instructional design as a necessary component to effective e-learning design is now being real-ized (Siemens, 2002). The successful design of e-learning relies on the careful consideration of underlying pedagogy of how learning takes place online (Conrad, 2000). Instructional design, in this context, is "the act of combining the elements of content and display to effectively present the instructional content in a way that promotes learning through organized instructional resources and a user interface that is not confusing, dissatisfying, or cognitively taxing" (Mehlenbacher et al., 2005).

Instructional design models for e-learning closely follow those of traditional classroom learning. The steps of planning, implementation, and evaluation are present in most instances. From a design perspective, various models can be used, either alone or in tandem, during the design process (Siemens, 2002).

ADDIE

ADDIE is a generic model that is used by instructional designers as a guideline to building effective instructional materials. The acronym stands for analyze, design, develop, implement, and evaluate. The design phase deals with learning objectives, assessment instruments, exercises, content, subject matter analysis, lesson planning, and media selection. The design phase includes planning strategies for attaining the stated learning and performance outcomes. This process should be systematic and precise. It is this phase that instructional designers must apply instructional strategies that best fit the intended learning or performance outcome. The domain of learning must be considered, whether cognitive, affective, or psychomotor, for effective matches to be realized. The design phase then is focused on documenting specific learning objectives, assessment instruments, exercises, and content (Siemens, 2002). Many in recent years, however, have accused ADDIE of being too rigid, too systematic, and too linear, especially for use in online environ-

ments (Kruse, 2000). As an answer to this, many designers are modifying the traditional ADDIE model and utilizing rapid prototyping as a viable option.

RAPID PROTOTYPING

> Rapid prototyping
> … involves learners and/or subject matter experts (SMEs) interacting with prototypes and instructional designers in a continuous review/revision cycle. Developing a prototype is practically the first step, while front-end analysis is generally reduced or converted into an ongoing, interactive process between subject-matter, objectives, and materials. (Thiagi, in Siemens, 2002, p. 2)

Rapid prototyping borrows from the best systematic processes of the ADDIE model, and is usually an extension of the design phase. In its simplest form, a rapid prototype is a quickly assembled instructional module that can be tested with the student audience early in the ISD process (Kruse, 2000). Designers are typically looking for how learners respond to instructional strategies, learning activities, and how well the technology chosen fits the learning requirements. Based on feedback, designers can then go back and make necessary changes as required. This process continues until there is agreement and confidence in the prototype. Designers do not move to the development phase until this process is completed (Kruse, 2000).

E-LEARNING DESIGN MODELS

Just as there are many models for designing traditional classroom instruction, there are now many models for designing e-learning instruction. Many build on the traditional ADDIE model, with some modifications. Although they are varied in their approach, all emphasize the following issues (Engelbrecht, 2003).

Needs Analysis. A needs analysis is needed to answer questions related to the demand for instruction, the need for online delivery, and the cost of design, development and implementation.

Learner Analysis. A learner analysis seeks answers to questions about the learners. What are their ages, gender, culture, prior knowledge, learning patterns and styles, goal, and motivations?

Institutional Support. This investigates support structures related to the vision and the mission of the organization, implementation costs and sustainability, training for instructors, and technological infrastructure.

Pedagogical Choices. Pedagogy choices must meet the need of the learning outcome and the target audience. Key considerations include: learning models, delivery methods, interaction, and assessment (Engelbrecht, 2003).

Instructional design, when implemented correctly, serves the learning needs of students through effective presentation of content and the fostering of interaction (Siemens, 2002). Another component necessary in the designing of effective e-learning is the utilization of sound instructional theory.

APPLYING INSTRUCTIONAL THEORY TO E-LEARNING

What is instructional theory and why is it important to practitioners designing e-learning courseware? Well, as for the first, it depends on who you ask. According to Richey (1986), theory can either explain relationships among variables, or how to do a procedure. Seels (1997) describes theory as an explanation of phenomena that help us understand and deal with the world. Reigeluth (1997) says that design theory is goal-oriented and tries to offer means for accomplishing a given end. As for the second, Winn (1997) would argue that theory is important to practitioners because a lot of the things we design just don't work. A discussion of the instructional theories of Gagne, Merrill,

and Keller, and their application to designing effective e-learning courseware follows.

ROBERT GAGNE

Robert Gagne's instructional theory was not rooted in any particular learning theory, although he was considered a behaviorist. Some of the major contributions of Gagne to the field of instructional technology are: cumulative learning theory and learning hierarchies, the domains of learning, the conditions of learning, the events of learning, and learning enterprises. Gagne is most famously known for his domain of learning, events of instruction, and conditions of learning.

The Domains of Learning. This theory illustrates Gagne's views about the different categories of learning outcomes and their influence on instruction (Richey, 2000). According to Gagne, learning can be categorized under the following outcome headings: verbal information, intellectual skills, cognitive strategies, attitude, and motor skills. Each learning outcome required a different instructional approach. Gagne felt this was a necessary component to the design of sound instruction because different parts of a content area are subject to different instructional treatments, similar parts can be found among different content areas, and different domains of learning require different techniques of assessment of learning outcomes. There can be no one way of measuring what has been learned (Richey, 2000). For example, in the cognitive domain, learners should be offered the opportunity to develop new solutions to problems; in the attitude domain, learners need be exposed to credible role models or persuasive arguments. Unfortunately, most e-learning concentrates on the basic level of learning, which is verbal information, and even skills that require changes in cognitive strategy or attitude are designed according to the ver-

bal information domain. This explains a lot of why most e-learning is ineffective.

The Events of Instruction. Utilizing Gagne's nine steps of instruction in e-learning will aid learners' acquisition of the requisite knowledge presented (Gagne, Briggs, & Wager, 1992). These events of instruction are: gaining learner's attention, inform the learner of the objectives, stimulate recall of prior learning, present the learning stimulus, provide learning guidance, elicit appropriate performance, provide feedback, assess the learner's performance, and enhance retention and transfer (Gagne et al., 1992). These steps are necessary to designing effective e-learning, while providing e-learning that is chock-full of the latest technology that is not grounded in sound instructional design will not produce the desired learning and/or performance outcomes.

The Conditions of Learning. Gagne distinguishes between two types of conditions: external and internal (Gagne, 1985). The internal conditions observe attention, motivation, and recall, while external conditions focus on the arrangement and timing of stimulus events. His phases of learning included: receiving the stimulus situation, acquisition, storage, and retrieval. For practitioners designing e-learning, this is extremely important. Instructional design practitioners must pay close attention to how instructional events are designed. Aligning internal and external conditions in the learning environment is critical for designing effective e-learning.

M. DAVID MERRILL

David Merrill has evaluated hundreds of instructional products and have found that an alarming number of them are ineffective and do not teach at all. While reviewing a number of instructional design theories and models he tried to find fundamental principles to which all of these various approaches agree. As a result, he called these principles the "first

principles of instruction." Merrill is also widely known for his component display theory and instruction transaction theory.

First Principle of Instruction. According to Merrill, in the instructional phase, the most effective learning environments are those that are based around a problem and offer learners four phases of learning: activation of prior knowledge, demonstration of skills, application of skills, and integration of these skills into the real world (Merrill, 2002b).

Component Display Theory. According to Merrill's component display theory (CDT), learning is sorted into two categories: content and performance. Content includes such this as facts, concepts, procedures, and principles; while performance focuses on remembering, using, and generalities (Merrill, 1983). The theory specifies four primary presentation forms: rules, examples, recall, and practice Secondary presentation forms include: prerequisites, objectives, helps, mnemonics, and feedback (Merrill, 1983). The theory asserts that instruction that contain all primary and secondary forms will yield more effective learning results. By first deciding on what learning and/or performance outcomes are to achieved, choosing the most appropriate strategies to reach those outcomes will then become much easier. For designers of e-learning, Merrill's CDT can be utilized effectively. One of the strengths of e-learning is the learner control. CDT stresses learner control. The theory propones that by giving learners control over the number of practices and examples they receive, this will result in more effective learning (Merrill, 1983).

Instruction Transaction Theory. According to Merrill, Li, and Jones, instructional transactions are patterns of learner interactions that are designed to facilitate the learning of a certain kind of knowledge or skill (Merrill, Li, & Jones, 1991). This theory asserts that different kinds of knowledge and skills require different kinds of transactions. A transaction shell is the structure of a transaction, which identifies the interactions parameters and knowledge representation needed for any given class of transactions (Merrill et al., 1991). The transaction configuration system provides instructional designers with a wide range of instructional parameters. These parameters control the nature of the interactions with the learner, and allow transaction shells to be tailored to a particular student population, learning environment, and learning task (Merrill et al., 1991). Transaction theory was created around the use of interactive technology, and thus is uniquely applicable to e-learning environments.

JOHN KELLER'S ARCS MODEL

John Keller's ARCS model is a problem-solving approach to designing the motivational aspects of learning environments to stimulate and sustain students' motivation to learn (Keller, 1983, 1987). Motivation is a desire to reach a goal, and is divided into two parts: extrinsic and intrinsic motivation. Extrinsic motivation comes from outside the learner, while intrinsic motivation comes from within the learner. The four components of the ARCS model are attention, relevance, confidence, and satisfaction. Motivation is an essential variable in the successful completion of any educational task (Briggs, 1980). Keller asserts that his model offers instructional designers systematic guidelines for designing the motivational components of instruction (Visser, Plomp, Amirault, & Kuiper, 2000). Even though technology offers a variety of ways to deliver effective learning opportunities, learners face the same motivational issues in e-learning environments as they do in traditional classroom environments (Visser et al., 2000). Therefore when attempting to design effective e-learning, it is imperative that the designer keep learner motivation and the use of motivational strategies in mind. Motivational strategies should be incorporated in the

design of instructional materials, as well as in the steps that guide learners through the learning process to deliver the best outcomes (Visser et al., 2000).

SUMMARY

E-learning involves the interplay of conceptual and procedural knowledge, in both the instructional content and the instructional environment. Care must be taken in the design phase to ensure that choices made are based on sound learning theory, instructional methods, instructional design practices, and instructional theory. E-learning is not about the technology, and should not be driven by the technology. Instead, effective e-learning is created only when the pedagogy of the course drives the design (Nichols, 2003). Therefore, instructional design practitioners should keep the following in mind as guidelines for effective e-learning design.

KNOW YOUR LEARNER

At the center of any e-learning environment is the learner. It is therefore imperative that e-learning courseware be learner-centered and not content-centered. By paying close attention during the learner analysis phase, will allow designers to create e-learning courses based on learner characteristics, and not based on the content and the technology.

DEFINE LEARNING AND/OR PERFORMANCE GOALS

Unfortunately, many e-learning courses fail to identify learning and performance goals (Clark & Mayer, 2003). If design practitioners do not know where their learners are going, how can they affectively map out the best route to get them there? By neglecting this step, the result is courseware that does not build knowledge or skills. The result is e-learning that does not foster learning at all.

SELECT APPROPRIATE INSTRUCTIONAL METHODS

A byproduct of knowing the learning and/or performance goal upfront is being able to select appropriate instructional methods. By selecting appropriate instructional methods, such as learner-centered design, scenario-based learning, and problem-based learning, learning is accommodated. E-learners will be more likely to reach the learning and performance goals more effectively and efficiently (Clark & Mayer, 2003).

APPLY APPROPRIATE LEARNING THEORIES

At the root of every decision about the design of e-learning courseware should be the sound understanding of what is learning, how it takes place, and what research tells us about what factors lead to learning (Clark, 2002). Learning theories attempt to explain how learning takes place. Utilizing concepts of behaviorism and congitivism appropriately will influence the success rate of e-learning courseware.

APPLY SOUND INSTRUCTIONAL DESIGN METHODOLOGY

Designing effective e-learning requires that it be grounded in a sound design approach. The need for instructional design as a necessary component to effective e-learning design is now being realized (Siemens, 2002). The successful design of e-learning relies on the careful consideration of underlying pedagogy of how learning takes place online (Conrad, 2000). In most instances, instructional design models for e-learning closely follow those of traditional classroom learning. The steps of planning, implementation, and evaluation must be present to increase effectiveness.

APPLY SOUND INSTRUCTIONAL THEORIES

According to Richey (1986), theory can either explain relationships among variables, or how to do a procedure. Seels (1997) describes theory as an explanation of phenomena that help us understand and deal with the world. Reigeluth (1997) says that design theory is goal-oriented and tries to offer means for accomplishing a given end. It is important for practitioners to implement sound instructional theory into their everyday practice because a lot of the things we design just do not work (Winn, 1997).

By following these guidelines, e-learning designers will create learning courseware that delivers the learning and performance results wanted. They will also help to facilitate learning and build knowledge and skills that can be transferred back to the learner's real world environment (Clark & Mayer, 2003). Also, by following these guidelines, learning will be more effective and efficient for the learners. This will no doubt have a positive effect on learner motivation and decrease attrition rates (Clark & Mayer, 2003).

CONCLUSION

Emphasizing the systematic use and interaction between pedagogical models, instructional strategies, learning theories and instructional theories will produce a more grounded approach to design of effective e-learning. Practitioners must adopt a "theory-into-practice" design framework in order to craft effective e-learning courseware. E-learning, like all other forms of learning, must be grounded in sound epistemological frameworks in order to be effective (Bednar et al., 1991). As practitioners, e-learning designers must develop an awareness of what theories underpin learning and instructional design. By developing this awareness, a true marriage between theory and practice can take place. It is only through the sys-tematic blending of sound learning theory, instructional design theory, and instructional design practices, that effective e-learning courseware can be obtained.

REFERENCES

Bednar, A. K., Cunningham, D., Duffy, T. M., & Perry, J. D. (1991, September). *Theory into practice: How do we link?* Paper presented at The World Conference on Educational Media and Hypermedia & World Conference on Educational Telecommunications, Frieburg, Germany.

Briggs, L. J. (1980). Thirty years of instructional design: One man's experience. *Educational Technology, 29*(2), 45-50.

Brodsky, M. (2003). E-learning trends, today and beyond. *Learning and Training Innovations.* Retrieved November 20, 2007, from http://www.elearningmag.com/ltimagazine/article/articleDetail.jsp?id=56219

Chute, A. G., Thompson, M. M., & Hancock, B. W. (1999). *The McGraw-Hill handbook on distance learning.* New York: McGraw-Hill.

Clark, R. C. (2002, September 10). Six principles of effective e-learning: What works and why. *Learning Solutions,* 1-8.

Clark, R. C., & Mayer, R. (2003). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning.* San Francisco: Jossey-Bass/Pheiffer.

Conrad, K. (2000). *Instructional design for Web-based training.* Amherst, CA: HRD Press.

eLearnity (2001). *Design dynamics for e-learning: Making e-learning successful.* Retrieved November 19, 2007, from http://www.elearnity.com/index.html.

Engelbrecht, E. (2003). A look at e-learning models: Investigating their value for developing an e-learning strategy. *Pregressio, 25*(2), 38-47.

Gagne, R. M. (1985.) *The conditions of learning and theory of instruction.* New York: CBS College.

Gagne. R. M., Briggs, L. J., & Wager, W. W. (1992). *Principles of instructional design* (4th ed.). Fort Worth, TX: Harcourt Brace.

Hall, B. (2000, January-March). How to embark on your e-learning adventure: Making sense of the environment. *E-learning, 1,* 10-16.

Hsi, S., & Gale, C. (2003, April). *Effective e-learning using learner-centered design (CHI 2003).*

Tutorial notes of paper presented at the annual meeting Computer Human Interaction, Ft. Lauderdale, FL.

Keller, J. M. (1983). Motivational design of Instruction. In C. M. Reigeluth (Ed.), *Instructional design theories and models: An overview of their current status.* Hillsdale, NJ: Erlbaum.

Keller, J. M. (1987). Strategies for stimulating the motivation to learn. *Performance & Improvement Journal, 26*(8), 1-8.

Kindley, R. W. (2002). Scenario-based e-learning: A step beyond traditional e-learning. *Learning Circuits.* Retrieved November 20, 2007, from http://www.learnigcircuits.org/2002/may2002/kindley.html.

Kruse, K. (2000) *Technology-based training: The art and science of design, development and delivery.* San Francisco: Jossey-Bass.

Mehlenbacher, B. Bennett, L., Bird, T., Ivey, M., Lucas, J., Morton, J., et al. (2005). Usable e-learning: A conceptual model for evaluation and design. In *Proceedings of HCI International 2005: 11th International Conference on Human Computer Interaction: Vol. 4. Theories, models, and processes in HCI* (pp. 1-10). Las Vegas, NV.

Merrill, M. D. (1983). Component display theory. In C. Reigeluth (Ed.), *Instructional design theories and models* (pp. 279-333). Hillsdale, NJ: Erlbaum.

Merrill, M. D., Li, Z., & Jones, M. K. (1991). Instructional transaction theory: An introduction. *Educational Technology, 31*(6), 7-12.

Merrill, M. D., (2002a). A pebble-in-the-pond model for instructional design. *Performance Improvement, 4*(7), 39-44.

Merrill, M. D. (2002b). First principle of instruction. *Educational Technology Research and Development, 50*(3), 43-59.

National Center for Supercomputing Application. (2000). *E-learning—A review of literature.* Retrieved from the Internet November 19, 2007 from http://learning.ncsa.uiuc.edu/papers/elearnlit.pdf.

Nichols, M. (2003). A theory for e-learning. *Journal of Educational Technology & Society, 23*(3), 305-336.

Piaget, J. (1985). *The equilibration of cognitive structures.* Chicago: University of Chicago Press.

Reigeluth, C. M. (1997). Instructional theory, practitioner needs, and new directions: Some reflections. *Educational Technology, 37*(1), 42-47.

Richey, R. C. (1986). *The theoretical and conceptual bases of instructional design.* London/New York: Kogan Page/Nichols.

Richey, R. C. (Ed.). (2000). *The legacy of Robert M. Gagne.* Syracuse, NY: ERIC Clearinghouse on Information and Technology.

Rubic for Online Instruction. (2004). Retrieved November 20, 2007 from http://www.csuchico.edu/celt/roi/index.shtml

Seels, B. (1997). Theory development in educational/instructional technology. *Educational Technology, 37*(1), 3-5.

Siemens, G. (2002). *Instructional design in e-learning: elearningspace.* Retrieved November 19, 2007, from http://www.elearnspace.org/articles/instructionalDesign.htm.

Shute, V. (2003). Adaptive e-learning. *Education Psychologist, 38*(2), 105-114.

Skinner, B. F. (1954). The science of learning and the art of teaching. *Harvard Educational Review, 24*(2), 86-97.

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science, 12*(2), 257-285.

Urdan, T. A., Weggen, C. C. (2000). *Corporate e-learning: Exploring a new frontier.* Berwyn, PA: W. R. Hambrecht.

Van Merrienboer, J. J. G., & Ayres, P. (2005). Research on cognitive load theory and its design implications for e-learning. *ETR&D, 53*(2), 5-13.

Visser, L., Plomp, T., Amirault, R., & Kuiper, W., (2000). Motivating students at a distance: The case of an international audience. *ETR&D, 50*(2), 94-110.

Winn, W. (1997). Advantages of a theory-based curriculum in instructional technology. *Educational Technology, 37*(1), 34-40.

Broward Community College's E-learning Strategic Plan

Donna L. Merolle

A good plan is like a road map; it shows the final destination and usually the best way to get there.

—H. Stanley Judd

INTRODUCTION

Establishing an organization's direction will help in selecting the right road and assist the organization in increasing its growth and effectiveness. Periodic evaluations by institutional leaders are required to determine if the needs and expectations of its members and constituents are being met. According to Wilbur, Kudla Finn, and Freeland (1994),

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"There should be a well-defined and understood strategic plan which the organization's staff, as well as its board or governing body, uses to guide program activities, allocate resources, and assess the organization's achievements (p. 1).

Strategic planning is not a laundry list of changes and programs that contributors desire. Instead, it is a realistic look at the changes that are taking place, both inside and outside the organization that are and will influence the ability of the institution to carry out its mission. A strategic plan does not provide the who, what, and when; these are the function of an operational plan. Instead, it broadly maps out the strategies the organization should pursue to maintain its desired character and identity within a prescribed timeframe (Wilbur et al., 1994, p. 2).

EDUCATION MASTER PLAN— BROWARD COMMUNITY COLLEGE

Broward Community College (BCC) has three main campuses and six educational centers. Each campus, in addition to offering a comprehensive curriculum of university transfer programs, offers career and technical programs that prepare students for careers in health science, aviation, automotive, and public safety, to name a few.

In August 2004, Broward Community College contracted with the Voorhees Group LLC to assist in the development of an educational master plan (EMP). The purpose of the plan was to address BCC's ability to respond to the projected growth in Broward County and to make strategic choices about the future of the college. The process used by the Voorhees group to establish the EMP consisted of 11 county-wide strategy sessions as well as interviews with college administrators, faculty leadership, and students. In addition, business leaders, economic development specialist, and personal from the public school system along with administrators from universities located in close proximity to BCC were interviewed. The final plan consists of 26 strategies to meet nine major goals.

The EMP called for the institution to "reach out in new ways to new and existing students thorough a range of new activities (Voorhees Group, 2006b, p. 3). Specifically, goal seven called for the re-examination of format and delivery options for all courses. Recognition of e-learning's strategic importance by BCC leadership cumulated in a task force composed of 25 faculty, staff, and administrators that went on to develop a blueprint to guide the growth and impact of e-learning at Broward Community College. The EMP elevated e-learning as a means of addressing some of the challenges BCC is facing and as a result a 3-year e-learning plan was developed that defined the scope, goals, and outcomes for e-learning along with strategies and initiatives for implementation.

E-LEARNING AT BCC

BCC has a track record of successful e-learning initiative over the past seven years. Driven by operational strategies such as "developing the 21st century professor," enrollments in fully online, blended e-learning and WebCT based course sections exceeded 47,000 in 2008. In the 2008-09 academic year, students will be able to earn an AA degree in the several programs as well as a number of AAS and AS degrees totally online.

According to Russ Adkins, associate vice president of instructional technology at Broward Community College, "What began as a faculty development initiative in the late 90s is now a strategic initiative impacting all campuses, nearly 50% of the full-time faculty, and thousands of students" (personal communication, December 13, 2006). Roundtable discussions produced the following working objectives:

- to increase strategic awareness of current flexible learning alternatives at BCC as well as how flexible learning growth is accelerating nationally and globally;
- to demonstrate how flexible learning can provide new choices for BCC especially as a tool to manage enrollment growth and classroom capacity.
- to provide twenty-first century learning options that provide flexibility for "digital natives" (students) who find commuting, employment, and family responsibilities inhibit their access to BCC;
- to use the education master plan as a tool to engage BCC's administrative leadership and faculty in planning to position flexible learning as a key strategy for student access to course and degrees;
- to create a 3-year plan to strategically increase the use of flexible learning at BCC, and secure the internal resources through BCC's budgeting cycle to effectively operate BCC's plan;
- to evaluate contemporary content, course development, and delivery models that support increasing the scale of BCC's e-learning activities while ensuring quality learning;
- to prepare BCC for a Southern Association of Colleges and Schools substantive change review of its e-learning initiatives (Voorhees Group, 2006a).

IMPETUS FOR CHANGE

Since more than 95% of courses offered at BCC are delivered face-to-face in a traditional classroom setting, what are the forces behind the increasing commitment to distance education? Several factors have been identified that address this question.

According to Oblinger, Barone, and Hawkins (2001), the force driving e-learning initiatives at most institutions falls into one of four categories. They either wish to expand access, generate new revenue, serve as a catalyst for institutional transformation or alleviate capacity constraints. Capacity constraint is one of the issues at BCC. The infrastructure cannot accommodate the growing college-aged population and enrollments, making more distance education programs necessary. It is hoped that by leveraging scalability of e-learning, existing place-bound capacity constraints can be avoided.

The timing for BCC to plan for expansion of e-learning is especially good, as e-learning throughout the United States is experiencing rapid growth. According to the Sloan Consortium (2006) "Nearly 3.2 million students were taking at least one online course during the fall 2005 term, a substantial increase over the 2.3 million reported the previous year" (p. 1). Institutional transformation is also a motivating factor. Planning for e-learning can provide a powerful catalyst for transforming a wide range of current practices at BCC as it seeks ways to best to serve current and emerging learners.

A second reason for institutional support of e-learning is that students are shopping for courses that meet their schedules and circumstances. Adult learners need flexibility, choice, and convenience. Adult focus groups conducted at BCC in 2004 found that participants agreed that flexible class schedules and learning options were major motivators in persuading them to select a school. Many stated they would be drawn to a college that understood the need to maintain full-time jobs and responsibilities associated with families. Online courses were consistently mentioned as a desired alternative or supplement to traditional course hours. Learners, including adults who commute to work in ever more congested conditions, are increasingly cautious about how they allocate their time. Development of alternative formats (compressed, 5-week, 8-week, Saturday) for courses as well as accelerated alternative online delivery strategies (Internet, hybrid, technology-enabled) will help BCC meet learner needs (Broward Community College, 2006). This was affirmed by older students who view online as a reasonable alternative to battling traffic to attend traditional classes.

Technology expectations are another driving force behind BCC's commitment to e-learning. Students are increasingly savvy when it comes to technology. Today's teenagers are unlike any previous generation in their exposure to multimedia and the Web. A recent survey by Lenhart, Madden, and Hitline (2005) found that 87%, or 21 million, teens use the Internet; 51% go online on a daily basis; 81% play games online; 76% get news online; 43% have made purchases online; 45% have cell phones, and 33% are texting; 75% use instant messaging to communicate but also share links, photos, music and video; 51% report broadband access.

Millennial students (born between 1982 and 2002) consider technology a natural part of their environment and want to learn collaboratively, online, in their time, and working on solving problems that matter (Apple Computer, 2003). The simultaneous use of multimedia (i.e., instant messaging while playing a computer game) adds up to 8½ hours of recreational media exposure daily (Kaiser Family Foundation, 2005). These traditional age students (18 to 24) are making up a large and growing segment of community college enrollments. As of 2001, students under the age of 22 constitute 42% of all credit-seeking students at community colleges (Adelman, 2005). In general, stu-

dents expect faculty to incorporate technology into their teaching and be proficient at it. At the very least, communication via e-mail, access to online resources, PowerPoint presentations, Internet activities, discussion boards, and electronic classrooms are expected.

According to the Sloan Consortium (2005), online education has become part of the mainstream of American higher education. They report that the majority of academic leaders feel that online education "is critical to the long-term strategy" of their institutions (p. 7). BCC believes the development of e-learning programs and degrees is a service to their students and a marketing/positioning strategy for the college. The goal is to ensure that students in BCC's service area can find the courses, programs, and degrees they need, in the delivery format most suitable for them, without having to look elsewhere.

BCC is, however, seeing competition not only from public community college in Florida, but also private institutions who offer online associate of arts degrees. Almost 5 million of the 20 million student enrolled in degree-granting institutions attend for-profit colleges (National Center for Education Statistics, 2005). Abolishment of the 1992 federal 50% rule which in the past had prevented any college that enrolls more than 50% of its students at a distance or provides more than half of its courses via distance education from participating in federal student-aid programs, will spur on a new wave of for-profit schools offering online education (Carnevale, n.d.). Public institutions are also a big part of the growth of e-learning. In Florida, 13 of the 28 community colleges offer complete online degrees (Florida Distance Learning Consortium, n.d.).

STRATEGIC E-LEARNING PLAN

The E-learning Task force adopted seven strategies to expand e-learning options at Broward Community College.

- Strategy 1: Select programs/certificates/degrees for priority e-learning development and delivery.
- Strategy 2: Improve and accelerate the course redesign/e-learning course development process.
- Strategy 3: Develop master e-learning courses that can be readily adopted for delivery by full- and part-time faculty, collegewide.
- Strategy 4: Seek approval from the Southern Association of Colleges and Schools to offer online degrees. Satisfy all qualitative criteria associated with this "substantive change."
- Strategy 5: Align collegewide procedures, policies, and collective bargaining agreements procedures with e-learning initiatives.
- Strategy 6: Develop internal and external awareness of e-learning's role at BCC.
- Strategy 7: Ensure that e-learning delivers return on investment and is sustainable (Voorhees Group, 2006b, p. 2).

A graphical representation (Figure 1) of the strategic plan denotes a linear process that progresses through a logical sequence of events. The first step is to identify those programs/certificates/degrees that should receive priority for e-learning development and delivery. These programs will be both new and those that are nearly complete but have gaps that can quickly and easily be completed. Alignment of these programs to the mission and goals of the college will need to occur on several levels. Approval from the Southern Association of College and Schools to offer online degrees is paramount to the success of online education at BCC. Preparation for a substantive change visit will require compliance with issues related to academic and student services, course quality, congruency with the college mission statement and student readiness and success. Collegewide policies/procedures, along with faculty collective bargaining, will also have to
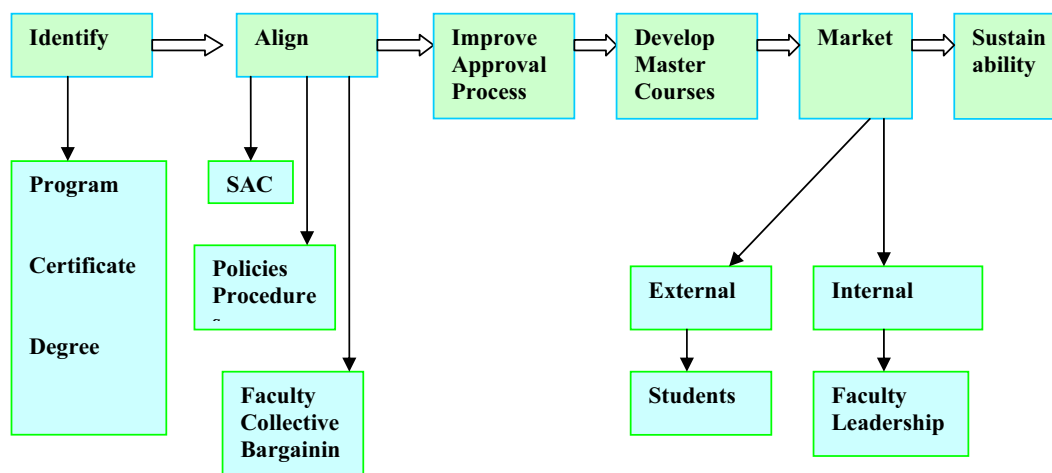
Figure 1.   Graphical representation of e-learning strategic plan.

be considered. Current contractual requirements related to work load, student contact, and office hours are not congruent with actual roles and responsibilities of online faculty. Resolution of these types of issues must be part of the strategic plan if e-learning is to move forward and diffusion of technology is to occur.

The third step will be to improve and accelerate the course development process. This will affect how courses are designed, developed, and updated. With the approval process smooth, timely, and efficient, the focus can shift to course design and development. Master course is a strategy for adding additional sections of an existing e-learning course. Full-time and part-time faculty can be utilized to teach courses they themselves have not developed. This allows flexibility and opportunities to meet scheduling needs that was not possible when a single faculty member was responsible for teaching a course.

The final two strategies are an integral part of the strategic plan. Marketing e-learning to various stakeholders at BCC is tied directly into the sustainability of the programs and department. Positioning e-learning among existing and potential students ensures that e-learning classes are

full and student learning needs are being met. Consumer satisfaction goes a long way in retaining old and recruiting new students. Internal awareness by faculty and college leadership regarding the importance of e-learning is also important. The goal is to make e-learning a thread in the very fabric of BCC. Aligning strategic initiatives between the college and instructional technology is one way of doing this.

SUMMARY

There are many reasons why institutions of higher education do not develop strategic plans for e-learning. Broward Community College's work in this area is unique and will pave the way for ongoing planning, implementation, and evaluation of future e-learning initiatives. This plan will need to be modified on the short-term and definitely will undergo revision over the long-term. It does, however, provide a venue for recognizing the progress made by BCC while detailing the steps needed to continue that progress. The ultimate outcome for this plan is to increase e-learning opportunities for students. According to the Voorhees Group LLC (2006b), the accomplishment of this has been initiated

by incorporating the following elements of strategy into the e-learning strategic plan:

- the foundation, direction, and outcomes for expanding flexible learning opportunities for students;
- quality assurance for e-learning, relying on assessment of learning and student feedback;
- the development and use of learning objects as an efficient vehicle for promoting quality and access to courses;
- data collection, analysis, and synthesis to guide future choice in e-learning;
- seeking wide support of the college community including periodic reporting on progress in providing flexible learning opportunities for students, whether by e-learning techniques or otherwise throughout the college's courses and programs;
- a collaborative model that ensure efficient scheduling of classes and other learning experiences for the benefit of current and future students;
- a stance that does not create dependencies on external vendors, rather a set of strategies that provides for BCC to control and refine its own curricular destiny;
- accountability for units and individuals to specific actions over specified time frames; and
- standards, criteria, and evaluation to ensure that accountability (p. 26).

REFERENCES

Adelman, C. (2005). *Moving into town—and moving on: The community college in the lives of traditional-age students*. Retrieved December 15, 2006, from http://www.ed.gov/rschstat/research/pubs/comcollege/index.html

Apple Computer. (2003). *Achievement for all children: An apple perspective*. Retrieved December 15, 2006, from http://images.apple.com/de/education/digitalkids/pdf/041503Achievement.pdf

Broward Community College. (2006). *Educational masterplan: E-learning*. Retrieved December 11, 2006, from http://www.broward.edu/confluence/pages/view-page.action?pageId=1786

Carnevale, D. (n.d.). Rule change may spark online boom for colleges. *Chronicle of Higher Education.* Retrieved December 15, 2006, from http://chronicle.com/errors.dir/noauthorization.php3?page=/weekly/v52/i22/22a00101.htm

Florida Distance Learning Consortium. (n.d.). *Degree options.* Retrieved December 15, 2006, from http://www.distancelearn.org/degreeOptions.cfm

Kaiser Family Foundation. (2005). *Generation m: Media in the liver of 8-18 year olds.* Retrieved December 15, 2006, from http://www.kff.org/entmedia/7251.cfm

Lenhart, A., Madden, M., & Hitlin, P. (2005). *Teens and technology: Youth are leading the transition to a fully wired and mobile nation.* Retrieved December 14, 2006, from http://www.pewinternet.org/pdfs/PIP_Teens_Tech_July2005web.pdf

National Center for Education Statistics. (2005). *Digest of education statistics: 2005*. Retrieved December 15, 2006, from http://nces.ed.gov/programs/digest/d05/tables/dt05_001.asp

Oblinger, D., Barone, C., & Hawkins, B. (2001). *Distributed education and its challenges: An overview.* Retrieved December 15, 2006, from http://www.acenet.edu/bookstore/pdf/distributed-learning/distributed-learning-01.pdf

Sloan Consortium. (2005). *Growing by degrees: Online education in the United States, 2005.* Retrieved December 15, 2006, from http://www.sloan-c.org/publications/survey/pdf/growing_by_degrees.pdf

Sloan Consortium. (2006). *Making the grade: Online education in the United States, 2006.* Retrieved December 14, 2006, from http://www.sloan-c.org/publications/survey/index.asp

Wilbur, R. H., Kudla Finn, S., & Freeland, C. M. (Eds.). (1994). *The complete guide to nonprofit management.* New York: Smith, Bucklin & Associates and Wiley.

Voorhees Group. (2006a). *Planning for flexible learning alternatives: Broward Community College.* Littleton, CO: Author.

Voorhees Group. (2006b, September). *E-learning strategic plan: Broward Community College.* Littleton, CO: Author.

Web-Based English as a Second Language Instruction and Learning

Strengths and Limitations

Daisy Pino

INTRODUCTION

The increasing use of personal computing and the Internet makes available a new set of instructional possibilities. Web-based language instruction offers various innovative alternatives to conventional modes of language learning. Second language (L2) acquisition is a complex process that requires extensive exposure to the target language within a wide variety of authentic auditory, verbal,

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and written contexts, so new forms can be constructed and incorporated into the learner's linguistic repertoire (Chomsky, 1959). As the Internet has become more readily accessible, institutions have extended the use of online language materials and course delivery systems (Chapelle, 2001; Liu, Moore, Graham, & Lee, 2002).

Statistics regarding the increasing number of foreign-born U.S. residents demonstrate the present growth in demand for schools to provide English as a second language (ESL) programs at all levels of instruction. Data from the U.S. Census Bureau indicate that in 2004, 34 million U.S. residents were foreign-born, a 2.3% increase from 2003, representing 12% of the nation's total population (U.S. Census Bureau, 2006). Waters (2007) reports that between 1989-1990 and 2004-2005, enrollment of ESL elementary and secondary school students increased 150%, from 2 million to more than 5 million. Consequently, using the appropriate tools and technologies that help teach English as a second language has become critical. Therefore, it is becoming increasingly important to analyze the strengths and limitations of Web-based instruction to determine what principles and practices are most effective with ESL students.

STRENGTHS OF WEB-BASED ESL INSTRUCTION

Most ESL learners from culturally and linguistically diverse backgrounds generally reveal different learning strategies, attitudes, and motivations. In traditional language classroom settings, ESL learners are constantly exposed to communicative tasks in which they are expected to demonstrate their language competence in front of others. In such situations, self-consciousness and the fear of making mistakes can cause strong feelings of frustration and anxiety. The Affective Filter Hypothesis of L2 acquisition proposes that negative emotions such as anxiety or simply lack of confidence can function like a filter that blocks the language acquisition process. Therefore, for optimal learning to occur, the affective filter must be weak (Krashen, 1982).

Web-based language instruction can promote independent learning in a non-threatening environment. Seferoglu (2005) analyzes ways computers allow learners to enjoy privacy while practicing foreign sounds and words which facilitates the mastery of communicative skills. Learners can imitate native speaker models of pronunciation while acquiring contextualized listening skills, readily available at any time. Even introverted learners can listen to their voices and use self-correction methods without being witnessed by anybody else. Online language instruction can provide a sheltered learning environment conducive to improvements in learners' pronunciation. Learners can practice at their own pace and then demonstrate their newly acquired language skills without experiencing intense feelings of anxiety.

The adaptation of traditional language instruction to an online environment provides ESL learners with abundant opportunities for the acquisition and mastery of challenging English patterns. When compared to receptive skills, productive skills such as speaking and pronunciation have been proven to be a much more difficult process, and learners usually do not have natural exposure to the target language out of the classroom (Seferoglu, 2005). Computer-mediated instruction can facilitate exposure to the target language by acting as a tool to increase verbal exchange (Green, 2005). In online settings, ESL learners can interact with other learners and perform a variety of verbal language functions by asking questions, giving responses, sharing opinions, making suggestions, and correcting themselves and each other. This interactivity would add the human element that computer-assisted learning components lack. Students and language instructors would be able to communicate with each other across geographic boundaries mostly through synchronous or asynchronous communications (Dekaney, 2003). In synchronous communications, users carry out discussions using the technology at the same time (e.g., instant messaging or chats). In asynchronous communications, users transmit information at different times (e.g., messaging on electronic discussion boards and e-mail). Electronic discussion boards are now being used to provide a natural language learning environment that promotes learners' social interaction and creates an authentic discourse community (Al-Jarf, 2004).

When providing online instruction, it is essential to take into consideration the students' individual leaning styles. Arnette (2000) stresses that when the appropriate learning environment is provided, learners can choose the best time for them to practice without embarrassment, practicing as many times as necessary until mastery is attained. Web-based instruction and other technological resources give language learners the flexibility to select their own learning material adapted to their individual interests and capabilities. Therefore, instructors should introduce flexible, resource-based ways of learning which enable greater learner control and autonomy (McDonough, 2001).

The rapid increase of global educational opportunities is constantly breaking geographic boundaries. Electronic modes of instruction that are commonly used to deliver education at a global level generally require the use of the English language. Online learning provides an equal opportunity for learners with different cultural backgrounds and personalities, thereby diminishing apprehension as well as increasing involvement in the use of language. Within this context, the Web can be a significant resource to obtain English language proficiency. Furthermore, computer-mediated interactions between users in different locations present possibilities for academic and professional advancement (Wang & Sutton, 2002).

The acquisition of a foreign language requires a language-rich environment in which learners are continuously exposed to productive skills. McDonough (2001) refers to the extensive variety of approaches online programs offer as a way to provide engaging multiple-format methodologies to language learning. Such applications contain humorous clips, colorful graphics, motion pictures, video, and sound, all integrated into real-life settings. In addition, language learners have limitless access to videotaped instructional sessions, notes, PowerPoint presentations, podcasts, tutorials, practice exercises, and assessments, among other learning materials that generally provide immediate feedback minimizing the possibility of acquiring inaccurate language patterns.

Another way to improve L2 language skills using the Internet is electronic mail. Exchanging e-mail can be a productive, creative, and motivating communicative way to learn and apply writing abilities in L2 environments (Arnette, 2000). The use of the Internet serves as a virtual moderator between the learner and the world, shaping and expanding L2 knowledge of English patterns. While writing e-mail, learners can build vocabulary and master grammatical forms required for successful communication. Since the use e-mail to communicate has become so widespread, ESL learners can practice their English writing skills in various contextualized real-life environments.

The Web offers language instructors an array of possibilities to create teaching resources. There is a wealth of easily accessible, user-friendly information on the Web for instructors to develop online materials or integrate existing language learning activities into their lessons. Morrison (2002) identifies accessibility—24-hour independent access to course information, renewability—updating course material, and adaptability—modifying Web-based activities to provide attention to students' special needs, as some of the multiple advantages to designing online interactive language learning activities. Web pages that meet accessibility guidelines for individuals with disabilities should also be considered, so that students with special needs are not ignored. It is important to mention that the integration of Web-based language instruction also demands teacher expertise in the use of technology, which can be acquired through hands-on training programs (Torres-Velasquez, 2006).

LIMITATIONS OF WEB-BASED INSTRUCTION

Despite its rising popularity, Web-based language instruction has also been subject to extensive criticism. Mason, Manton, and English (2005) affirm that inequitable access and failure to keep pace with technology represent aspects of concern, since this situation has created a divide among learners. This division predominantly affects economically deprived learners who do not have full access to technology at institutions or at home. For learners with disabilities, it could also be difficult to participate in activities that require the use of technology because some instructional settings do not have the equipment compati-

ble with their learning or physical needs (Jerome & Barbetta, 2005).

In terms of the benefits of student interaction using the Internet within culturally diverse environments, Kramsch and Thorne (2002), question the assumption that computer-mediated communication naturally helps learners to understand their cultural conditions of language use and to build a global common ground for intercultural understanding. In their study of French-American telecollaboration, they found that students faced intercultural misunderstandings based on the limited knowledge of the "different social and cultural conventions under which each party is operating" (p. 90) and "very little awareness that such an understanding is even necessary" (p. 98).

Although some language instructors acknowledge the variety of authentic audiences the Internet provides, they fear certain online contexts such as blogs may contribute to "the demise of the written word." These instructors have noticed that students' blogs show a great deal of slang, graphics, as well as fewer prepositions and capitalizations (McPherson, 2006). These emerging patterns could be particularly problematic for L2 students since they may still be trying to incorporate new language patterns and are not able to discern correct usage. It is interesting to note that while some researchers assume that e-mailing has promoted a lack of seriousness regarding writing usage (Burns, 2006), others consider that Internet writing is just adapting some inconsequential changes (Goldstein, 2005).

E-mail has become an accepted means of communication between university students and their professors. However, many ESL students seem to ignore certain e-mail etiquette rules, probably because of lack of experience or because they have never been exposed to such rules. According to Biesenbach-Lucas (2007), reports of faculty disturbed by the frequency, content, and linguistic form of their ESL students'

e-mail messages are common. Aspects such as inappropriate salutations, abbreviations, spelling and grammar errors, impolite tone, proficiency level, length, and e-mail etiquette rules often result in negative assessments of the students' personalities.

Some scholars regard the use of the Internet as inapplicable in terms of optimal instructional practices. Mason et al. (2005) claim that the Internet can divert learners from their work, promote superficial and injudicious reasoning, substitute social interaction, and lead to short-term memory problems as well as difficulties concentrating. Once submerged in the cyberworld, learners tend to procrastinate and waste time while surfing, looking for unrelated information, or playing computer-generated games instead of focusing on their learning tasks. Some critics observe that through the use of the Internet, students have access to undifferentiated information. If learners are not able to distinguish accurate from inaccurate, outdated from updated sources of information, they could apply erroneous data to their learning tasks (Moreno & Valdez, 2005). From a cognitive and psychological perspective, Schwartzman and Tuttle (2003) maintain that since computers are incapable of transmitting emotions, a variety of essential cognitive functions such as decision making, perception, and meaningful learning, among other complex tasks, may not be properly developed. Consequently, the lack of personal interface while interacting with technological devices could interfere with creativity, an essential component in L2 learning.

Another important aspect to consider regarding online language instruction is the problems that may emerge from Web-based testing. Familiarity with computers, typing speed, and accidental double-clicks are just a few of the many factors that can negatively affect students' scores. Download times, complexity of the page, computer speed, server failure, browser incompatibilities, and a series of other situ-

ations could affect students while taking timed tests. Some online tests require considerable student expertise because of their sophisticated design. Instructors consider that cheating, confidentiality, and item exposure are also great sources of concern in facilities that are not monitored or supervised (Roever, 2001). Some scholars also claim that for those students whose expertise is not optimum, the integration of computer-mediated instruction has resulted in high levels of anxiety (Matsumura & Hann, 2004).

THEORETICAL FOUNDATION

The convergence of constructivism, as a learning theory, and technologically advanced instructional practices in second language acquisition, have gained increasing attention (Wang & Sutton, 2005). Language is assumed to be individually constructed by incorporating meaningful associations obtained through past experiences into an existing set of linguistic elements; therefore, integrating constructivist perspectives into L2 acquisition can serve as a theoretical foundation for the implementation of effective instructional practices (Liu, Moore, Graham, & Lee, 2002).

Piaget (1929) refers to learning as an active process of accommodation and assimilation in which new ideas or concepts are constructed through the exposure to new experiences, based on current and past knowledge. Piaget's theory of learning has been of vital importance on the development of current constructivist positions. Piagetian principles focus on learners' freedom to achieve meaning construction through personal experiences as well as collaborative peer interactions as an individual process. As a result, learners can assert absolute ownership of their knowledge construction capabilities. The role of technology would then be to provide additional opportunities to learn and practice the new language in real-world contexts (Green, 2005).

In language learning, the use of the Internet represents a significant element of technology that supports the constructivist learning theory. In one exercise, multiple-choice questions to check comprehension and vocabulary are presented. If answered correctly, a piece of a puzzle shows. Then, the completed puzzle becomes an authentic picture related to a certain culture linked to a relevant site on the Internet, so the learner can go exploring topics related to that culture. This exercise provides the learner with opportunity for cognitive discovery and the construction of meaning (McDonough, 2001). In addition, learners have access to thousands of valuable language learning activities, drills, tutorials, and quizzes that facilitate practice in reading, speech, grammar, and writing, the four literacy skills necessary for language acquisition.

In terms of cognitive constructivism, Jonassen, Peck, and Wilson (1999) agree with constructivist views that knowledge is constructed by the individual, rather than transmitted to the individual for the construction of meaning. They stress that sense-making develops through inferences that have been built and tested by means of sensory experience, a crucial element in L2 acquisition. In this view of learning, it is assumed that one individual cannot fully understand anything in exactly the same way that another individual understands it. Meaning making, Jonassen (1996) explains, is at the core of constructivist philosophy. Taking this theory into consideration, Winn (2002) notes that instructional technologists design sophisticated language learning and teaching tools that integrate a variety of learning styles.

Elaboration theory and cognitive flexibility theory both relate to views of learning within the framework of Web-based instruction and learning. Elaboration theory (Reigeluth) refers to the organization of course materials and serves as a prescriptive framework for selecting, sequencing and organizing instruction. According

to this theory, in order to attain optimal learning, instruction should be organized in increasing order of complexity (Reigeluth, 1992). Cognitive flexibility theory (Spiro) addresses learning and instruction in complex and ill-structured knowledge domains. The theory addresses advanced learning, the development of flexible cognitive representations, and the ability to use knowledge adaptively. It was formulated to support interactive technologies that provide a case-based approach to knowledge acquisition, including hypertext and Web-based instruction (Spiro, Collins, Thota, & Feltovich, 2003).

CONCLUSION

The potential to integrate effective Web-based instruction into ESL courses for their immediate application can add a valuable new dimension to language teaching and learning. Web-based instruction offers a variety of content, approaches, and media that allow flexibility. It also offers a great number of meaningful activities, often available at no cost, designed according to different learning styles and within productive, authentic contexts. The Web is an innovative tool for language teaching that presents both strengths and limitations. Unconstrained access to Web resources breaks the limitations of time and space, presents a flexible platform for learning, and offers engaging structures for active, authentic, student-centered learning. It facilitates a collaborative language learning in which ESL learners may even become willing collaborators in the construction of knowledge. Of the many available options, instructors should select the appropriate technology that meets practical instructional objectives, definite application of instructional materials, and active learning within pedagogically and scientifically sound contexts.

REFERENCES

Al-Jarf, R. S. (2004). The effects of Web-based learning on struggling EFL college writers. *Foreign Language Annals*, *37*(1), 49-57.

Arnette, P. (2000, September). Mastering reading and writing with technology. *Media & Methods,* *37*(1), 12-14.

Biesenbach-Lucas, S. (2007). Students writing emails to faculty: An examination of e-politeness among native and non-native speakers of English, *Language Learning & Technology, 11*(2), 59-81.

Burns, M. (2006). Improving student writing through e-mail mentoring. *Learning and Leading with Technology*, *33*(5), 38-43.

Chapelle, C. A. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing and research.* New York: Cambridge University Press.

Chomsky, N. (1959). Review of B. F. Skinner's "Verbal Behavior." *Language, 35*, 26-58.

Dekaney, E. M. (2003). The effect of computerized versus classroom instruction on the phonetic pronunciation of English. *Journal of Research in Music Education, 51*(3), 206-217.

Goldstein, N. (2005). Does technology hurt student writing? Speed kills good writing skills. *American Teacher, 89*(6), 4.

Green, T. (2005). Using technology to help English language students develop language skills: A home and school connection. *Multicultural Education*, *13*(2), 56-9.

Jerome, A., & Barbetta, P. (2005). The effect of active student responding during computer-assisted instruction. *Journal of Special Education Technology, 20*, 13-23.

Jonassen, D. H. (1996). *Computers in the classroom: Mindtools for critical thinking*. Englewood Cliffs, NJ: Prentice-Hall.

Jonassen, D. H., Peck, K. L., & Wilson, B. G. (1999). *Learning with technology: A constructivist perspective.* Upper Saddle River, NJ: Prentice Hall.

Kramsch, C., & Thorne, S. (2002). Foreign language learning as global communicative practice. In D. Block & D. Cameron (Eds.), *Globalization and language teaching* (pp. 83-100). London: Routledge.

Krashen, S. (1982). *Principles and practice in second language learning and acquisition*. Oxford, England: Pergamon Press

Liu, M., Moore, Z., Graham, L., & Lee, S. (2002). A look at the research on computer-based

technology use in second language learning: A review of the literature from 1990-2000. *Journal of Research on Technology in Education*, *34*(3), 250-272.

Mason, C. Y., Manton, E. J., & English, E. D. (2005). Bridging the digital divide. *Issues in Science and Technology, 84*, 24-30.

Matsumura, S., & Hann, G. (2004). Computer anxiety and students' preferred feedback methods in EFL writing. *The Modern Language Journal*, *88*(3), 403-415.

McDonough, S. K. (2001). Way beyond drill and practice: foreign language lab activities in support of constructivist learning. *International Journal of Instructional Media,* 28(1), 75-81.

McPherson, K. (2006). Wikis and student writing. *Teacher Librarian, 34*(2), 70-72.

Moreno, R., & Valdez, A. (2005). Cognitive load and learning effects of having students organize pictures and words in multimedia environments: The role of student interactivity and feedback. *Educational Technology Research and Development, 53,* 35-45.

Morrison, S. (2002). Interactive language learning on the Web. *Center for Applied Linguistics,* Retrieved August 1, 2007, from http://www.cal.org/resources/Digest/0212morrison.html

Piaget, J. (1929). *The child's conception of the world*. New York: Harcourt, Brace Jovanovich.

Reigeluth, C. (1992). Elaborating the elaboration theory. *Educational Technology Research & Development*, *40*(3), 80-86.

Roever, C. (2001). Web-based language testing. *Language Learning & Technology, 5*(2), 84-94.

Seferoglu, G. (2005) Improving students' pronunciation through accent reduction software. *British Journal of Educational Technology, 36*(2), 303-316.

Schwartzman, R., & Tuttle, H. V. (2002). What can online course components teach about improving instruction and learning? *Journal of Instructional Psychology, 29*, 179-88.

Spiro, R. J., Collins, B. P., Thota, J. J., & Feltovich, P. J. (2003). Cognitive flexibility theory: Hypermedia for complex learning, adaptive knowledge, application, and experience acceleration. *Educational Technology, 43*(5), 5-10.

Torres-Velazquez, N. (2006). How well are ESL teachers being prepared to integrate technology in their classrooms? *Tesl-Ej, 9*(4), 1-28.

Winn, W. (2002). Current trends in educational technology research: The study of learning environments. *Educational Psychology Review, 14*, 331 -351.

Wang, L. -C. C., & Sutton, R. E. (2002). Effects of learner control with advisement on English-as-a-second-language students in a web-based learning environment. *International Journal of Instructional Media, 29*(3), 317-24.

Waters, J. K. (2007). The universal language. *T.H.E. Journal, 34*(1), 34-6, 38-40.

U.S. Census Bureau. (2006). *Facts for features.* Retrieved August 5, 2007, from http://www.census.gov/Press-Release/www/2006/cb06ff-09.pdf

L2 = SECOND LANGUAGE ACQUISITION

The University of South Carolina Distance Education Program

Southern Tradition Updated for the Twenty-First Century

Julie Prommasit

INTRODUCTION

The University of South Carolina is the oldest institution for higher learning in the state. It was first chartered in 1801 as the South Carolina College and was a highly respected institution. The university was rechartered in 1906 as the University of South Carolina (USC). It was the first South Carolina college to gain regional accreditation. In the early decades of the twentieth century, the university flourished. The Depression, however, had a negative effect on enrollment, and the need for a distance education program became apparent.

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THE ERA OF DISTANCE EDUCATION

In 1937, Havilah Babcock, a long-time professor and administrator, summed up this new feeling: "If you can't come to the university, then the university will come to you." Correspondence courses began to be offered, and professors traveled to meet with groups of students. In the 1950s, regional campuses began to open. The first extension campus opened in 1957 in Florence, followed by campuses in Beaufort, Lancaster, and Conway in 1959, and in Aiken in 1961. The extension campuses were envisioned as entry points for students. These campuses had the same standards as the main campus in Columbia, but were only intended to be 2-year institutions. After students completed their freshman and sophomore years, they would have to transfer to the main campus of USC or another state university

(Lesesne, 2001). The satellite campus approach continues today. Currently, there are campuses in Aiken, Beaufort, Lancaster, Salkehatchie, Sumter, Union, and Spartanburg.

TELEVISED COURSES

The advent of the televised courses came in the 1960s with a partnership between South Carolina Educational Television and USC (Bridwell, 1981). It began with closed circuit television broadcasting of classes, and has grown to a mix of closed circuit classes and satellite uplinked classes that can be viewed literally nationwide. The satellite classes are made possible by sharing of six channels with K-12 education programs. During the day, from 8 A.M. until 4 P.M., the channels are mostly reserved for K-12 education. There are some time slots available for daytime broadcasting, and the university takes advantage of these slots whenever possible. However, the bulk of satellite broadcasting of USC's distance education classes occurs between 4 P.M. and 10 P.M.

There are 10 studios on the USC campus, scattered among the colleges that use the distance education classes the most. All studios are linked with the Master Control Center, located in the USC School of Law building. Here, technicians supervise the classes being recorded in the studios around the campus. The Master Control Center, which is operational from 8 in the morning until 10 at night, serves as the uplink point for classes being sent to either closed circuit television or the satellite (B. Jenkins, personal communication, January 30, 2007).

These classes are designed for synchronous instruction, and the studios allow the instructors to display information to the audience in a variety of ways. There are large Smartboards in the classrooms, which allow instructors to use their computers or slates to share information to the class. There is an overhead camera that looks directly down on the instructor's desk as well. This allows the instructor to share books, articles, or other materials that are not in an electronic format.

The instructors have several resources at their fingertips. A clip-on microphone ensures acceptable sound quality while they are lecturing. Since it is wireless, they are not restricted to their desks during the class period. While the technician controls most of the signals, the instructors can choose what signal they want to be shown on the air. They can switch between the computer, their laptop, an overhead shot, or one of the other three cameras in the room.

The overhead camera in particular is an important tool for the instructor. While some professors prefer using computer programs, some materials, such as books, are not easily converted to digital format. A book, map, or any physical object can be placed on the instructor's desk or podium for demonstration. The overhead camera can be adjusted for angle and focus to obtain an optimal view of the object, allowing all students, both in the classroom and in satellite viewing stations, to see the object clearly.

A monitor shows the instructor what is going out over the air, as well as messages from the technician who is recording the class. The monitor allows the instructors to see the view the students are receiving, so they can adjust the object if needed. The technician also uses the monitor to send the instructors messages, such as time warnings when it is almost time for the class to end. This is essential, since scheduling for studios and satellite channels is arranged ahead of time, and it is critical that classes begin and end on time.

Since the classes are televised, students at other locations can call in with questions or comments during the class. When a call comes in, the technician turns on the sign to let the instructor know that there is a caller, and the instructor will engage the switch to put the caller on the air. The

phone system is also used for class presentations. Students will send their projects in to the instructor. They will be told in advance their call-in order, and when it is their turn, the instructor will show the project to the class as the student narrates. PowerPoint, in particular, is used for this purpose. Even without video conferencing, a synchronized satellite class can be very interactive.

Not all of the studio classrooms are the same. Some classrooms have slightly different arrangements or equipment, but all classrooms allow for an interactive, multimedia learning experience. There are a few classrooms that have been recently upgraded. These classrooms, in addition to having the same basic setup as the others, also have the specialized equipment needed for videoconferencing. This allows the on-site class to see the satellite campus class. Both video and audio connections are two-way, enriching the learning experience for both groups.

BEHIND THE SCENES

Every day, USC broadcasts hours of classes, through closed circuit television and satellite. But how does all of this happen? What makes the program work? It takes a great deal of coordination and effort. The Media Distribution and Delivery Organization is headed by a director. Under the director are eight departments, each with its own role to play.

The Master Control supervisor is in charge of running the master control room, which directs the feed from all ten classrooms to the closed circuit television system and to the satellite uplink. Master Control also connects satellite viewing stations to the appropriate studios for phone communication. The supervisor is assisted by two operators, who make sure that all equipment is operational before classes are scheduled to begin, and that all studios are online at the scheduled times. The video output of all studios can be monitored from Master Control. All classes are recorded and will be converted to streamed video format within 24 hours.

The information resource coordinator is in charge of the logs. It is the coordinator's duty to keep track of the schedule of classes, as well as the locations and requirements for all classes. The Information Distribution Department is responsible for ensuring that all departments know the schedules and commitments for the organization, as well as any other information that is deemed important. Any changes that are made, such as cancellations, must be reported to the IRC so that all parties, including satellite class locations, are aware of the schedule changes as much in advance as possible.

The technology development technician serves as the expert for all technical matters. The TDT creates any special projects or materials needed by the instructors. If there are any questions about how something involving technology should be done, the TDT is considered the resident expert.

The studio classroom manager ensures that all ten studios operate in an efficient and timely manner, and handles any scheduling changes, in coordination with his studio directors. The studio directors work closely with the instructors of the classes. They make sure that everything is in place, so the class will run and air smoothly. The directors coordinate the cameras and instructional input so that students at satellite class locations are able to have an experience that is as much like a live class as technically possible.

The Course Materials Department has several areas of responsibility. A major task is checking to make sure all course materials are in compliance with copyright law; there is a staff member who is devoted to only that job. In addition, this department serves as streaming site coordinator and is responsible for ensuring that the site stays completely up to date. They also prepare

the material packets needed for each course.

The resource library keeps track of all materials and records. Once material is created for a course, it is maintained within the collection. Last of all, there is an editing department, to make sure that all materials used in class or on the air is free from errors, maintaining the professionalism of the program (B. Jenkins, personal communication, January 30, 2007).

STREAMING VIDEO: AN INTEGRAL ADDITION

While the synchronized distance education program was very strong, an external review of the university's use of information technology noted a deficiency in asynchronous instruction, and recommended that the university work diligently to supply other methods of instructional delivery (Bottum, Conrad, & Meachun, 2003).

Since the university was already experienced in creating televised classes, the first step was to create streamed videos of class sessions, which would be available online. The streamed classes are posted on the USC Video Web site, ready to be accessed, within a day of taping. Students can access these videos by logging on a secure site with their student id numbers. Instructors may either allow students to view a class at any time, or within a set time period. Most courses, however, remain available for the duration of the course, as evidenced by the listings under individual courses. Students first go to the video on the Web page, and from there, access the pages for their school and their course. The courses are password-protected, and may also be downloaded for students to review at a later time. Podcasts, the newest form for media, is the next step that is currently being considered for development. With the prevalence of MP3 players, the demand for "lectures to go" is growing. While podcasts are not now widespread, this is expected to change in the future.

Some colleges within the university only offer limited televised classes. For example, the Arnold School of Public Health and the School of the Environment only have one class each currently listed on the streaming video page. On the other end of the spectrum, the College of Engineering and Information Technology offers 23 courses in streaming video format. Most colleges list anywhere from four to seven classes on USC's Video Web site.

ASYNCHRONOUS EDUCATION: ONLINE COURSE OFFERINGS

In addition to the televised courses, there are other distance education courses that are designed to be asynchronous in nature. These courses utilize Blackboard as the teaching platform. Most course interaction occurs in this arena. Additional materials may be provided to the students as well. Students might have to participate in discussions, post assignments, or complete other tasks through the term. While occasionally the class might meet as a group, the asynchronous format is designed for students who need classes that fit into their schedules.

ONE STUDENT'S STORY

One student in a distance education program shared her experiences:

I had transferred to a new job within the school. I had been an English teacher for 5 years, and I was offered a chance to become a media specialist. The only provision was that I had to earn a master's degree in library science. The nearest program was in Columbia, about 2 hours away from my home. Since I was expecting my first child, I knew that driving that far on a weekly basis wasn't an option. The distance education program gave me a chance to work on my degree without traveling. I was able to view the satellite class this past term from the library at school. I didn't have to travel at all. This term, I am taking a class that is com-

pletely online, and I can work when I have the time. It fits in to my schedule perfectly. (S. Coward, personal communication, January 7, 2007)

A NATIONWIDE SUCCESS

Perhaps one of the most surprising elements of the program is the range that USC's program has achieved. Since there are many regions of the United States that lack strong colleges in various disciplines, USC's courses are sometimes viewed by satellite classes thousands of miles away from South Carolina. One example is the School of Library and Information Science. There are satellite classes in Maine that connect by satellite uplink every week to participate in the class sessions being recorded in the studio in Columbia, SC. The students in Maine were unable to find a library science program locally, and there was no distance education program available from a state university, either. USC's library science distance education program, with its mix of online and satellite classes, has allowed several groups of students to earn their advanced degrees. The quality and accessibility of USC's televised classes have enabled students from across the country to attain their educational goals, while establishing the university as a key provider of distance education.

WEB DESIGN: AN IMPORTANT ELEMENT OF DISTANCE EDUCATION

Another recommendation of the external review was to address the poor quality of the school's Web pages, which provided information, but nothing else. The visiting committee urged USC to examine the Web pages of other institutions and to create a source that students, faculty, and Web site visitors could use to directly interact with organizations and access services while online (Bottum et al., 2003). The current Web site for USC is more interactive and service oriented.

For example, after creating an online log-in name and password, a prospective undergraduate student can apply online, saving time and making the application process as easy as possible. Catalogs for courses can be requested through the Web site as well. These convenient online options do away with the need for students to either go to the campus in Columbia or spend a long time on the phone, trying to track down the correct office. The application process becomes less stressful and can be done at the students' convenience, any time of the day or night.

Current students can use the VIP Web page to conduct a number of online tasks. Blackboard, used by many instructors in both traditional and distance education, is accessed from this page. Another great resource is a listing of college e-mail addresses for all faculty, staff, and students on campus, making communication very easy. The related sites and services link provides connections to most of the offices that students might need in the course of their education.

The USC library system also has a Web page that, among other things, allows students to access the catalogs for all of the branches and even reserve books. By determining whether or not a particular branch has a desired text, time is saved. If students have checked out books but later determine they need more time, they may extend the time by visiting the library's page before the due date for their books.

With these resources and others, both traditional and distance education students can conduct business and prepare for classes without setting foot in a campus office. USC has worked diligently to provide as many services as possible with the single click of a mouse.

CONCLUSION

Thanks to the hard work of everyone involved, the University of South Carolina has modernized its program, working dili-

gently to upgrade and improve the learning experience of its distance education students. With the constant evolution of technology, the challenge will be to keep the program updated and fresh, providing the best education possible for current and future students. USC has gone through many changes through the years, and is making a strong effort to stay at the forefront of educational technology in order to provide the best educational experience available for its distance education students.

REFERENCES

Bottum, J. R., Conrad, L. D., & Meachun, E. (2003). *External review of information technology at the University of South Carolina*. Columbia: University of South Carolina Press.

Bridwell, S. (1981). *Telecommunications operations instruction manual: Acquisition, production, and administration*. Columbia: University of South Carolina Press.

Lesesne, H. H. (2001). *A history of the University of South Carolina*. Columbia: University of South Carolina Press.

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SILVER
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*Connect for Education, Inc.
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*Aventa Learning High School Biology
Online Technology ~ Pre K – 12*

*1st Grade Phonics and Reading, BJ HOMESAT
Video/Satellite ~ K-12-Homeschooling*

*Virtual High School Global Consortium
Online Technology ~ K-12*

*Athena Action in Education
Video Conferencing ~ Pre K – 12*

BRONZE
*Arkansas Department of Education Distance Learning Center
Video Conferencing ~ Pre K - 12*

*Center for Development of Human Services and
OCFS Bureau of Training
Online Technology ~ Government*

*TRC Interactive, Inc.
Online Technology ~ Corporation*

*Drexel University's - School of Education,
Master of Science in Higher Education
Online Technology ~ Higher Education*

*Dr. Samuel B. Slike and Pamela D. Berman,
Bloomsburg University
Online Technology ~ Higher Education*

Cyber Home Learning in Korea

Sook-Young Choi

INTRODUCTION

Over the past decade, online learning has grown into a significant component of educational pedagogy worldwide. Online learning has been promoted as being more cost-effective, convenient, and increasing opportunities for lifelong learning (Olson & Wisher, 2002; Richardson & Swan, 2003). It has demonstrated several advantages over traditional learning, especially in allowing someone to learn anytime and anywhere. In addition, it has been noted as an appropriate education system for a twenty-first knowledge-based and open-education society that enables a learner-oriented education.

Korea is experiencing a weakening of its public education system due to a dramatic expansion of private education, generating an increasing demand for private education. The issue of private education expenses has emerged as a national concern that provokes depression and conflict within society beyond individual or household matters since it threatens the family's financial security and creates the sense of incompatibility between the social classes. Such problems may be caused by a combination of many factors. However, seeing this situation from an educational perspective, the fundamental reason may be caused by the fact that it is unlikely to satisfy the needs of students or parent with only the current public school education system (Song, Jo, Jung, Che, & Lee, 2005).

In this situation, the Ministry of Education has undertaken "cyber home learning" for the purpose of substantiating public education and reducing private education expenses, and it has been adopted in 16 provinces and cities nationwide since 2005. Cyber home learning is an Internet-based learning service in which students have supplementary studies for classroom learning at home themselves (Oh et al., 2006). Through the cyber home learning service, a student receives various instructional materials based on their ability level, course consultation, academic diagnosis, and guidance and feedback on learning.

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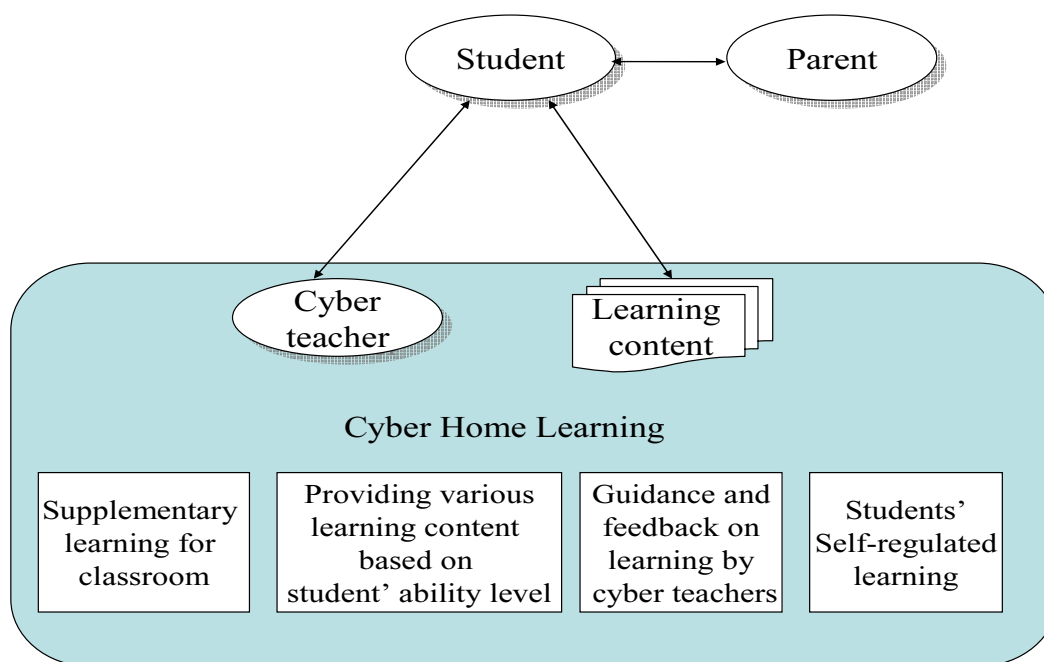
Figure 1. Cyber home learning service.

In this article, the concept of such cyber home learning will be described, and its learning theories and operation models will be examined. Also, the overall operation status of the cyber home learning and its three practice cases will be described.

WHAT IS CYBER HOME LEARNING?

Cyber home learning is an Internet-based service that supplements classroom-based learning. It consists of a cyber class, cyber teachers who provide the advice and feedback on learning for cyber students, learning content, and parents as assistants.

In cyber home learning, students may select a desired course and study with a tailored learning content based on students' ability level. The cyber home learning has slight differences in its forms and names for each province and city. It is generally classified as "class assigned learning" and "self-regulated learning" type (Jung, 2006). The "class assigned learning" is a type in which students are assigned classes

and their cyber teachers by grades and subjects, and the "self-regulated learning" is a type in which students can have any time access to cyber learning system and learn what they want to study. In addition, attendance records, learning progress, results of learning assessments, and other learning information is available through the cyber learning system. Students may make inquiries anytime during their lessons, and feedback and responses will be provided by their cyber teachers.

The cyber home learning service, which has been operating at the national level, was launched with the following goals (Lee, Kwon, Jang, Kim, & Yoo, 2003). First, it aims to contribute to the normalization of public education and reduce private education expenses. Second, it aims to supplement public education by constructing a cyber education environment to link school education and home learning. Third, it aims to provide students with various learning content based on their ability

level so that they can improve their academic competency and self-directed learning skills. Fourth, it aims to implement a life-long learning society in which whoever wishes to learn can do so. Lastly, it aims to resolve the issue on uneven balance of education among regions and income levels.

OPERATION MODEL FOR CYBER HOME LEARNING

In a study by Song, Jo, Jung, Che, and Lee (2005), following the purpose of operation for cyber home learning, it was classified into six models; lesson support type based on students' ability level, supplementary type of regular curriculum, learning support type for individualized learners, cyber learning community type, specialized type for class activities, and assessment type of academic achievement.

The lesson support type based on students' ability level is a model that provides in-depth supplementation of each lesson during regular school hours. It is the method that operates the cyber home learning in conjunction with the lesson during the regular school hours. Its purpose is to overcome the limitations of learning in a classroom setting, such as restrictions of time for group study based on students' ability level, and difficulties in preparing various learning materials for supplementary learning and extra learning challenges for each lesson. The supplementary type of regular curriculum is to implement regular classes with a cyber home learning system in a school where learning is difficult due to the lack of teachers, students, and others. Specifically, in the remote rural and island areas where curriculum operation is insufficient due to the insufficient number of teachers and students, this cyber home learning model may be implemented. The learning support type for individualized learners is a model to support the improvement of basic competency of students or to satisfy

specific educational demands of students. It includes the operation of cyber home learning for the purpose of satisfying various demands for learning according to the student's ability level and of improving fundamental academic competency of students who lack the basic competency. The cyber learning community type is a model that supports online learning communities for students who have common interests. The specialized type for class activities will implement the hybrid learning (b-learning) with the purpose of conducting a new type of class learning activities or opening cyber lectures for specialty fields. Lastly, the assessment type of academic achievement is a model to operate the cyber home learning for the purpose of satisfying students' demands for assessing their academic achievement or preparing for school tests.

LEARNING THEORIES RELATED TO CYBER HOME LEARNING SERVICES

Considering the learning characteristics of students in cyberspace, the characteristics of media used by cyber education, its educational possibility, and the linkage between the school education and cyber education, Lee, Kwon, Jang, Kim, and Yoo (2003) presented learning theories to provide implication points on the design of the cyber home learning system. Self-regulated learning, computer supported collaborative learning, problem-oriented learning, and reflective learning were considered.

According to their study, the self-regulated learning theory may be considered for the environmental composition and learning strategies in constructing the cyber home learning system so that students can have self-directed learning ability. Second, the computer supported collaborative learning theory may be considered for making a learning environment that forms the shared knowledge in a group through the efforts of sharing and
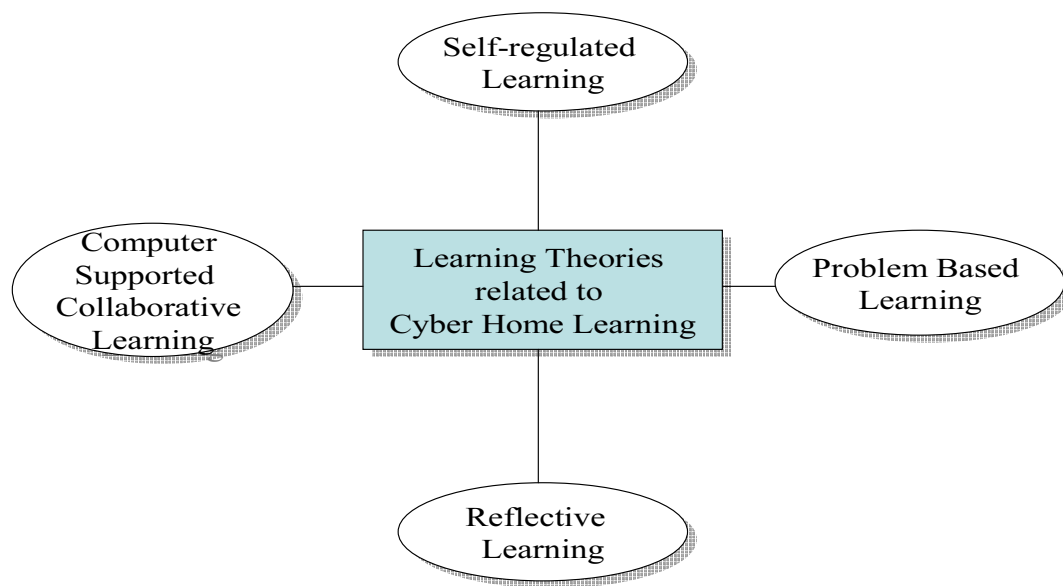
Figure 2. Learning theories related to cyber home learning services.

negotiating the meanings formed by the individuals in the cyber learning environment. Third, the problem-based learning may be considered for generating problems, providing necessary information and tools, and designing interactions so that students can develop creative and active problem-solving capability on the basis of real-life situations. Fourth, the reflective learning may be considered for a strategic plan in which students can reflect their learning path within the cyber learning environment, revise flaws through the path, and internalize the newly acquired knowledge.

OPERATION STATUS OF THE CYBER HOME LEARNING SERVICE

A plan to develop the cyber home learning system was studied from September to December 2003. Based on the outcome of the study, the cyber home learning service system was established in July 2004 (Kim, 2006; Jang, Song, Park, Che, & Lee, 2005). Key matters related to its progress were fully discussed through the "cyber home

learning operation council," organized with pertinent institutions such as the Ministry of Education, city and provincial boards of education, Korea Education and Research Information Service, and Korea Institute of Curriculum and Evaluation as its members. In addition, a cooperative system between the central and provincial governments was established for the efficient implementation of cyber home learning. The central government set the basic direction, laws, and regulations for cyber home learning to enable the provincial boards of education to be self-reliant in developing and operating the cyber home learning system.

In August of 2004, pilot cyber home learning services were operated in Daegu, Gwangju, and Gyeongbuk. Through several stages of processes including promotion council, training, and inspection, the cyber home learning service has been available nationwide since March 2005. Currently, cyber home learning sites have been developed for each city and province, and have been operating with services to meet the requirements and characteristics

of each region. As of August 2005, there were 830,000 elementary, middle, and high school students subscribed as members of the cyber home learning, with a daily average of approximately 70,000 students accessing online classes after school, and approximately 3,000 cyber teachers.

For effective settlement and operation of the cyber home learning service, there have been training programs for operations personnel such as cyber teachers and staff. There have also been overseas training programs for cyber teachers and staff to experience online programs and evaluate e-learning trends internationally. In addition, an evaluation on the cyber home learning service of each province has been conducted by the board of education in the central government in order to provide the incentive for outstanding sites and to improve the quality of the cyber home learning service.

THREE CASES OF CYBER HOME LEARNING

Three cases of the cyber home learning will be described: Chungnam Boryeong middle school, a linked-type of three middle schools (Ma-ryung, Bu-gui, and Jin-sung), and Daegu e-study.

CHUNGNAM BORYEONG MIDDLE SCHOOL

This school developed a cyber home learning system on its computer server (Oh et al., 2006). The system includes a learning management system (LMS) and a learning content management system (LCMS). LMS is a system to support and manage students' learning by opening cyber learning courses and by providing functions such as students' attendance check, learning progress, and history. The LCMS is a system to perform the delivery of learning content requested from the LMS and to manage the learning content for service in systematic ways.

In this school, teachers who operate the cyber class reorganized the learning content according to the school curriculum and uploaded it in order to link the cyber home learning with school classes. Cyber home learning could be taken as one of the learning methods available after school. In addition, providing learning content based on students' ability level for supplementary leaning and extra learning challenges for classroom, and thematic learning for collaborative group projects were helpful for students to develop their self-directed learning ability.

The survey found that only 8.7% of students were not satisfied with the cyber home learning service, and over 80% of students were neutral, satisfied, or very satisfied. Further, the number of students who responded that cyber home learning is helpful and satisfactory increased approximately 20% compared to the previous year.

LINK-TYPE CYBER HOME LEARNING IN A RURAL AREA

Students in rural areas in Korea suffer from a poor educational environment. Compared with urban areas, there are few private educational institutions in which students can supplement their classroom learning. As a result, the gap of academic competency between urban and rural areas has been widening. Therefore, to minimize the problems of small schools in rural areas and to provide the students with learning opportunities for academic achievement, a cyber learning program to link with nearby schools with similar academic experience and environment has been established. A cyber class linking three schools (Ma-ryeung, Bu-gui, and Jin-sung middle schools) has been operating (Oh et al., 2006). Teachers for cyber classes have made efforts to efficiently manage the cyber home learning program so that there would be expansion and growth of

educational opportunities and academic advancement for students in rural areas.

For the cyber home learning service, the students from each school were divided into groups, and teachers were assigned to each group. The teachers have supported various learning activities such as attendance check, feedback and guidance of learning, question and answer, and so forth. In addition, they have uploaded learning content and references and encouraged learners to actively participate in cyber home learning.

According to the survey, most of students and teachers were satisfied with the cyber home learning service linked with three schools, and they thought that it may solve the problems of small-scale schools in the rural areas. Furthermore, the survey showed that the students participated much more in the cyber home learning had higher academic achievement than the students who did less.

DAEGU E-STUDY

The Daegu e-study is a cyber home learning system that the Daegu city board of education has been providing since 2005, in which 35% of the entire student body in the Daegu area participated in cyber home learning in 2006 (Kim, Kim, Lee, Lee, & Kwon, 2006). It has provided various educational materials developed by current teachers who are commissioned as cyber teachers. The educational materials are filled with various learning content that includes basic contents of textbook, in-depth learning content, and reference data. Learning content with video and animations are included to heighten student interest.

In particular, "Daegu e-study mathematics class 3-1" of Daegu Boram middle school is a case of "class-assignment type" of cyber home learning. It supports the mathematics curriculum for third-year students in middle schools, and has had a great effect. According to the Jung study

(2006), the "Daegu e-study mathematics class 3-1" demonstrates that the capability of teachers with specialization and their passion for students had a significant effect on cyber home learning. The assigned teacher of "Daegu e-study mathematics class 3-1" presented learning content for students along with various examples and detailed description in a way to present factors to help students. This case shows that diligent feedback and interactions of teachers that can inspire students are needed in order to improve the quality of school life as well as the learning capability of students.

CONCLUSION

In order for cyber home learning to be extended, it may be necessary to analyze problems that have occurred in the cyber home learning systems and to consider improvements for them. In addition, outstanding examples of cyber home learning, their effective strategies and factors of success, need to be publicized. On the other hand, there might be a need to seek a way to decrease the teachers' workload since it increased from cyber home learning and to arrange a plan to include the participation of parents and local members. Furthermore, in order to effectively operate cyber home learning, the quality of learning content provided may be very important. Hence, a support plan is required for the development of high quality of educational materials that students can easily understand and learn with interest.

REFERENCES

Jang, S. H., Song, S. H., Park, J. S., Che, B. Y., & Lee, G. S. (2005). *Operational guidance on the cyber home learning* (KERIS Rep. CR-2005-4-2). Seoul: Korea Education & Research Information Service.

Jung, Y. R. (2006). *A study on the analysis and recognition of cyber home study sites*. Unpublished master's thesis, Ewha Woman University, Korea.

Kim, Y. A. (2006). *Analysis on educational satisfaction by learner's background variables and learning strategies in cyber home learning service for junior high school*. Unpublished master's thesis, Keimyung University, Korea

Kim, Y. C., Kim, D. H., Lee, K. H., Lee, H. C., & Kwon, H. J. (2006). *The qualitative study of best practice cases for cyber home learning* (KERIS Rep. CR 2006-12). Seoul: Korea Education & Research Information Service.

Lee, S. J., Kwon, S. H., Jang, S. H., Kim, K. H., & Yoo, S.. Y. (2003). *The study on the methods in constructing cyber home learning* (KERIS Rep. RR 2003-12). Seoul: Korea Education & Research Information Service.

Oh, J. D., Bae, D. Y., Han, T. M., Song, J. S., Che, B. Y., Kim, J. W., & Kwon, H. J. (2006). *A report on the management of 2006 U-learning model schools announced by the Ministry of Education and Human Resources Development* (KERIS Rep. CP 2006-3). Seoul: Korea Education & Research Information Service.

Olson, T. M., & Wisher, R. A. (2002). The effectiveness of Web-based instruction: An initial inquiry. *International Review of Research in Open and Distance, 3*(2). Retrieved August 15, 2007, from http://www.aln.org/publications/jaln/ v7n1/ pdf/ v7n1_richardson.pdf

Richardson, J. C., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks, 17*(1). Retrieved August 15, 2007, from http://www.irrodl.org/ index.php/irrodl/ article/viewArticle/103/182

Ru, J. S. et al. (2004). *A Study on the development of the guidance for the content in different subjects* (KERIS Rep. KR-2004-05). Korea Institute of Curriculum & Evaluation.

Song, S. H., Jo, M. H., Jung, H. M., Che, B. Y., & Lee, G. S. (2005). *The research on the cyber home study model and implementation strategies in Korea* (KERIS Rep. CR 2005-4). Seoul: Korea Education & Research Information Service.
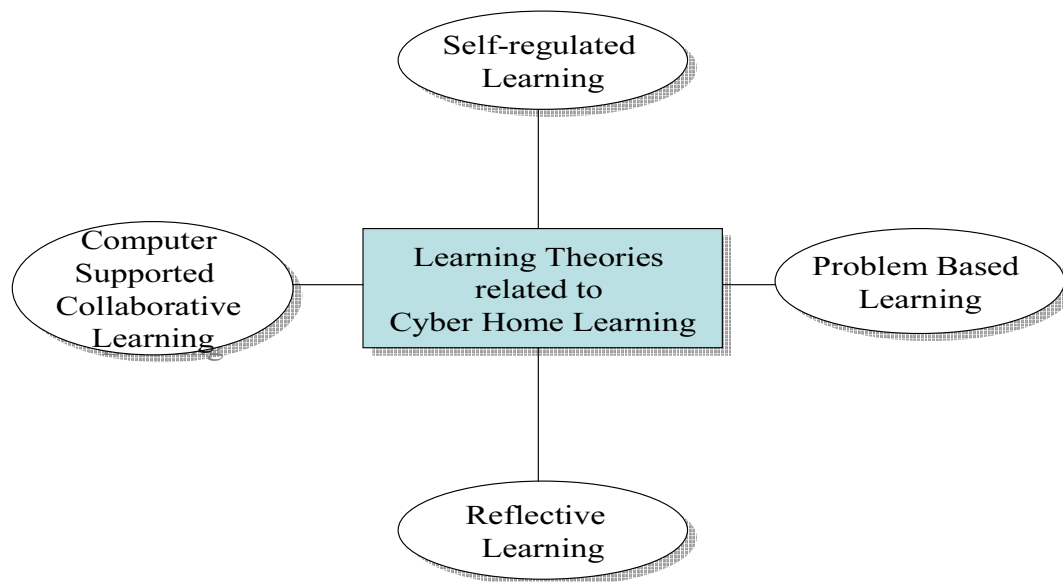
Learning theories related to cyber home learning services.

Putting High-Quality, Affordable Videoconferencing Into Education

Peter Csathy

A new generation of high quality, low-cost, and fully interactive video communications is prompting a second look at videoconferencing as a way to bring geographically dispersed educators and students together for effective learning in classroom settings and even after classes.

This flexible new brand of Internet-based, face-to-face video collaboration can

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enhance student participation in the learning process while overcoming the isolation some students may feel if they are relegated to mere "distant observer" status instead of feeling fully engaged with their instructors. Some studies have shown a higher dropout rate (21% versus 14%) among students involved in online education compared to classroom education due to a sense of ambiguity with the progression of course material and a lack of interaction with the instructors (DiRamio & Wolverton, 2006).

Personal video communications via Web applications can overcome that. For instance, the School of Journalism and Mass Communication at the University of North Carolina in Chapel Hill uses Sight-Speed to allow one student to participate in classroom discussions from Washington, DC, according to Fred Thomsen, the school's director of information technology. "We turned to SightSpeed because we want her to be involved in classroom discussions on a regular basis. The quality of the video is great; the service is good for synchronous discussion and that leads to better class participation," says Thomsen.

SightSpeed (www.sightspeed.com) is an award-winning, simple-to-use, and low-cost videoconferencing solution. It brings high-quality video conferencing to people who, until now, had only traditional high-

cost, room-based hardware solutions that are very complex to set up. On average, the cost to set up one location with capabilities to initiate a multiparty video call can exceed $10,000. That doesn't include outfitting each remote participant with his or her own hardware to participate in a video call.

Instead, SightSpeed offers a free download for students and a low monthly cost for educators. And now that webcams are becoming more commonly embedded into monitors and laptops, there no longer is any need to buy additional hardware.

SightSpeed also makes it simple to set up and add students or colleagues to the SightSpeed network for easy one-click video calling. It works across both Windows and Mac platforms, and it's mobile, not tied to an expensive, dedicated video-conferencing room.

Bandwidth is becoming less of an issue, too, making high-quality online video even more attainable. With broadband becoming less expensive and 70% of all Internet connections in the United States on broadband connections, online video becomes a more than viable solution.

Some innovative educators have already begun using the record functions of online video communications services like SightSpeed, exporting the video programs to iTunes U and allowing students to download lectures and other instructional sessions to their iPods to absorb at times and under conditions they feel suit them best.

Another recent educational use was Focus the Nation, a grass-roots event on January 31, 2008, which has been called the largest "teach in" in U.S. history. SightSpeed was used so that members of Congress—including Speaker of the House Nancy Pelosi (D-Calif.)—could reach out directly to college students and other constituents all around the country and engage in a dialog about global warming.

Other nonclassroom uses for affordable and mobile personal video communications include virtual office hours for teacher-student conferences, virtual student study groups, and student-to-student connections between friends now far away from each other because they attend different colleges or universities. Although separated by great distances, they can remain face to face; that means emotional bonds are not broken and friendships are retained.

From our perspective at SightSpeed, it is clear that forward-looking educators and students are seeing a new way to interact face to face and using our award-winning Internet video communications service to enhance both the traditional classroom-education environment as well as learning that occurs after classes.

REFERENCE

DiRamio, D., & Wolverton, M. (2006). Integrating learning communities and distance education: Possibility or pipedream? *Innovative Higher Education, 31*(2), 99-113.

SIGHTSPEED ALSO MAKES IT SIMPLE TO SET UP AND ADD STUDENTS OR COLLEAGUES TO THE SIGHTSPEED NETWORK FOR EASY ONE-CLICK VIDEO CALLING.
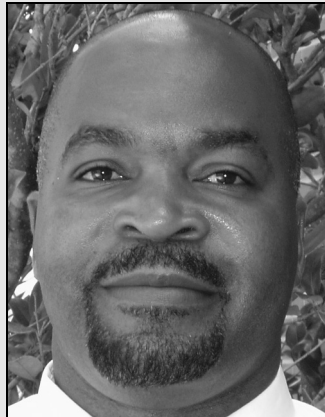
In Search of Autonomy
Multimedia's Influence

John W. Lesley

INTRODUCTION

In today's changing technological climate, instructional technology and distance education (ITDE) managers must be prepared for autonomous learners and their needs. Because of their attitudes and behaviors, autonomous learners require a different type of guidance than do conventional students. Contrasting the two, conventional learning environments usually consist of students who prefer direct instruction by the teacher, whereas learning environments with self-directed or autonomous learners mostly consist of learners who operate well with a facilitative style of instruction (Azevedo, Cromley,

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Winters, Moos, & Greene, 2005). It is important that ITDE managers understand the special needs of autonomous learners and provide media that correspond to their learning styles. This understanding not only assists the learner, but improves the overall instruction as traditional students may pick up some of the habits of autonomous learners, transforming the course into a more interactive learning environment. This interactivity has the ability to provide unique learning experiences within the classroom that can be transferred to outside settings. This information transfer would then hold the greatest educational benefit for learners, as application is considered one of the main objectives of education. Staples (1996) suggests that the great aim of education is not knowledge, but action. To this end, it is the goal of this article to describe autonomy and discuss the impact of multimedia technologies on autonomous learners. Damico and Quay (2006) suggest that, just as learning styles and preferences vary, so do the teachers' instructional styles. Therefore, the exact method used to integrate the presented technologies into the learning environment will be left up to the instructor. This will serve to maximize the overall effect for optimum results.

AUTONOMY

Outside of educational constructs, it may be arguably said that when a baby begins to hold her own bottle she is autonomous. Equally, a blind man who catches a bus

alone on his way to a favorite sandwich shop is autonomous. In the same manner, a puppy that has finally become housebroken is indeed operating in autonomy. These examples all highlight behavior that is goal-directed and performed to address a specific long-range goal. Given these very different examples of autonomous behavior, we must begin to sort out and inquire what autonomy really is. What exactly are we attempting to identify when we look for autonomy in education? And, finally, what treatments can we provide inside the learning environment that will engender autonomous behavior? These are questions that have puzzled and, in some cases, divided the educational community as it presses to find these answers.

The term "autonomy," when used in education does not suggest that learners operate independently of the instructor. Just as autonomous nations sought independence from ruling authorities in order to avoid destructive outcomes, autonomous learners are skilled at functioning independent of external control and behavior that will deter them from their educational goals. From this definition it may be easier to recognize that autonomy and self-directedness must have measurable goals and outcomes. But once again we are faced with the same question. How much do we really know about autonomy and how can we accurately describe autonomy within the boundaries of emerging educational media?

Traditionally in education the emergence of the word autonomy has captivated both student and teacher in its perceived power to enhance learning. The mere notion of instructing autonomous learners provides images of learning environments that are highly structured and full of interactive students. It would be reasonable to believe that this environment is one where all students are engaged in work that reflects the highest academic standards. Sadly, autonomy has also come to hold meanings within the realm of edu-

cation that refer to individualized non-educational attitudes and behaviors. Furthermore, an in-depth evaluation of the uses and connotations of autonomy reveals that the phrase takes on meaning apart from that with which it had originally been associated. There then becomes an obvious need to redefine the term in wording that more succinctly describes educational goals and objectives. For instance, it is not unusual to hear an educator refer to all students as being autonomous in their own way. Surely, within the confines of education and without having a stated educational objective, downloading songs to an MP3 player does not constitute autonomous behavior. To be properly interpreted, ITDE managers must evaluate autonomy using the context in which they were discussed.

The presence or absence of autonomous learners within a learning environment definitely affects the delivery and vigor of the instruction. Autonomous learners come to the learning environment self-regulated, possessing a well-established locus of control, and armed with behavioral skills that allows them to properly manage the presented material. These skills surely make them an asset to the distance learning environment and to the instructor.

Self-efficacy or autonomy is thought to be developed in different areas and to different degrees, which suggests why learners with similar skills perform differently. With the proliferation of equitable online class frameworks, distance-delivered courses routinely require the same amounts of reading, research, and coursework as that of traditional classes. In addition, online classes demand greater time management skills and require the learner to possess higher levels of self-motivating ability and a degree of self-efficacy (Olson & Werhan, 2005). Although autonomy is a common thread in many learning theories and pedagogical methodologies, this concept is paramount to the ITDE manager because distance learners are usually geo-

graphically separated from the instructor. Because of this, task progression and assignment completion must be somewhat of a self-directed activity, requiring students to overcome the problems associated with asynchronous communication (Ko & Rossen, 2004).

THEORETICAL FRAMEWORK

Prior to fully understanding multimedia technologies and how they help to facilitate autonomous learners, it may be necessary to discuss the basic tenets of autonomy as they apply to multimedia content. Autonomy has been a concept that is often discussed but not very well understood. Indeed, all learners can greatly benefit from multimedia technologies, but what are the connections to autonomous learning, and how can the ITDE manager best apply these concepts to create enhanced learning environments?

Within distance learning environments there is constant need to provide media content that is relevant and beneficial to the learner. Simonson, Smaldino, Albright, and Zvacek (2006) discuss the parameters of distance learning in which variations of time and place result in four combinations of approaches to distance education. Because distance learning environments and distance learners are distinctively different from traditional learning environments and traditional learners, technologies must constantly be sought that enhance the learner's cognitive experiences. Learner-content interaction is an important aspect of distance education because learners, instructor, and content usually exist in different physical locations. Furthermore, this separation of participants and materials negates the use of conventional visual aids and creates the need for resources that are rich in visual content. In the absence of resources to fill this void, chances are high that a learning environment will be created that relies heavily on one or two media sources. Moore (2003) discusses generative

learning environments and gives the following explanation:

> Generative learning environments are based on a theoretical framework which emphasizes the importance of anchoring or situating instruction in meaningful, problem solving contexts. A major goal of this approach is to create shared learning environments that permit sustained exploration by students and instructors and also enable them to understand the kinds of problems and opportunities that experts in various areas encounter and the knowledge that these experts use as tools. (p. 354)

There are many kinds of multimedia available for use in an online format. Some types, however, are extremely technical and require long periods of interaction with tutorials and the material for basic proficiency. Less-skilled learners who undertake these media types run the risk of encountering a reduction in overall motivation as well as a poor information retention rate (Clark, 2004). Following best practices, ITDE managers must apply pedagogical methodology such as that proposed by Dale's cone of experience. Dale (1999) proposed an instructional technology model that explained the levels of information that are retained by the learner. This model is related to performance-based learning, although not directly related to motivational strategies. Dale theorized that as experiences become more concrete and actual, learners will retain more information. Dale's cone of experience is shaped in the form of a triangle or pyramid where the base of the pyramid represents direct and purposeful experiences. The upper portion or vertex of Dale's cone of experience represents indirect experiences and includes such as things lectures and written media. The experiences that are at the base of the pyramid are more tangible things and include those things that the learner simulates, sees in action, or has done himself. As the

learner moves up the triangle or pyramid experiences transition into models and simulations of actual experiences, role-playing, viewing of demonstrations, still and moving pictures, and ends with information that is heard and read. Dale's cone of experience is based on what he terms experiential learning or learning from experience. According to this model, multimedia technologies because they can incorporate audio, video, and simulated content, fulfill the criteria of media that correspond to the base of the pyramid and thus represent higher levels of retainable content.

In the past, one of the main limitations of multimedia resources has been the inability of the networks to host these technologies as well as the limited amount of bandwidth to support them (Moore & Anderson, 2003). Advances to the infrastructure of the Internet as well as the recent educational proliferation of resources have made online content readily available for learners. Multimedia options for the ITDE manager are plenteous and exist in forms such as video mail, podcasting, audio and video teleconferencing, as well as one-way audio and video capabilities. Multimedia technologies can also include audio and video streams, downloadable audio and video, compact disk, and other interactive media. Although many resources are available, the ITDE manager must use vigilance in selection to ensure the chosen media address the cognitive need. This would follow Clark's (2001) argument that media is merely the vehicle.

MULTIMEDIA IN AUTONOMOUS LEARNING ENVIRONMENTS

Multimedia can greatly enhance the autonomous learning environment. While multimedia of all types may be useful within a conventional educational setting, they are more important in environments with autonomous learners present. Autonomous environments, because they are usually more learner-centered, challenge the learner to operate outside of their existing knowledge base. Both types of technology represent content that, when properly utilized, can dramatically enhance learning in the distance education environment. These technologies also are an enormous asset to autonomous learners, as they can provide instant additional resources. Multimedia technologies have the ability to expand learner capabilities and provide the basis for cognitive and meta-cognitive opportunities. Facilitation of autonomous groups by ITDE managers requires providing them with readily available challenging materials that will build a solid foundation of knowledge. Clark (2004) suggests that it is possible that when moderately challenging learning goals and tasks are presented, mental effort increases. Multimedia technologies can also help the ITDE manager within the learning environment by providing a medium by which the content can be accessed at any time. This anytime availability for learning provides the maximum advantage to the autonomous learner by providing good content, anytime availability, and connected content for mastery.

In conclusion, the presence of autonomous learners within the learning environment affects how the ITDE manager selects media, content, and additional resources. Self-directed or autonomous learners are motivated by situational motivational circumstances and thereby are not as affected by distracting internal or external cues. Helping such learners entails providing greater resources that provide opportunities for them to research, evaluate, and reflect upon the material. In turn, this creates a unique learning environment that is beneficial to both instructors and students. Integrating multimedia technologies with their anytime availability, viewing capability from any computer location, and simple accessibility, can go far to advance autonomous learners.

REFERENCES

Azevedo, R., Cromley, J. G., Winters, F. I., Moos, D. C., & Greene, J. A. (2005). Adaptive human scaffolding facilitates adolescents' self-regulated learning with hypermedia. *Instructional Science, 33*(5/6), 381-412.

Clark, R. (2001). *Learning from media: Arguments, analysis, and evidence*. Greenwich, CT: Information Age.

Clark, R. (2004). What works in distance learning: Motivation strategies. In H. O'Neil (Ed.), *What works in distance learning: Guidelines*. Greenwich, CT: Information Age.

Dale, E. (1969). *Audiovisual methods in teaching*. New York: Dryden.

Damico, A. M., & Quay, S. E. (2006). Stories of boy scouts, Barbie dolls, and prom dresses: challenging college students to explore the popular culture of their childhood. *Teachers College Record, 108*(4), 604-620.

Ko, S., & Rossen, S. (2004). *Teaching online: A practical guide* (2nd ed). Boston: Houghton Mifflin

Moore, M. G., & Anderson, W. G. (Eds.). (2003). *Handbook of distance education*. Mahwah, NJ: Erlbaum.

Olson, S. J., & Werhan, C. (2005). Teacher preparation via online learning: A growing alternative for many. *Action in Teacher Education, 27*(3), 76-84.

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2006). *Teaching and learning at a distance: Foundations of distance education*. Upper Saddle River, NJ: Prentice Hall.

Staples, W. (1996). *In search of your true self*. Gretna, LA: Pelican.

USDLA AWARD WINNERS

Best Practices Awards for Excellence in Distance Learning Teaching

PLATINUM

Professor Debra J. Dewitte,
University of Texas at Arlington
Online Technology – Higher Education
Tony Duncan
Video Conferencing ~ Pre K-12
Tom Young, iQ Academy Wisconsin
Online Technology ~ Pre K-12

GOLD

Cynthia D. Green
Video Conferencing ~ Pre K - 12
Dr. Margaret Riel
Online Technology ~ Higher Education
Gabriela Hogue, ODE Spanish Instructor
Video Conferencing ~ Pre K - 12
Dr. Patricia McGee
Online Technology ~ Higher Education

SILVER

Diane Zorn, Course Director, Philosophy Program,
School of Arts & Letters at York University
Online Technology ~ Higher ED

Outstanding Leadership by an Individual in the Field of Distance Learning

Gail Wheatley - Video Conferencing ~ Pre K - 12

Dr. Kenneth E. Hartman - Online Technology ~ Higher Education

Keith Oelrich - Online Technology ~ Pre K-12

Marilyn Mosley Gordanier - Online Technology ~ Pre K-12

Lance Ford - Video Conferencing ~ Pre K-12

Dr. Janet Schnitz - Online Technology ~ Higher Education

Janine Lim - Video Conferencing ~ Pre K-12

Dr. Ron Legon - Online Technology ~ Higher Education

Anton Leof - Online Technology ~ Pre K-12

Chris Robbins - Video Conferencing ~ Pre K-12

Strategies for Participating in Online Conferences and Discussions

Natalie B. Milman

R ecently, I was asked by one of my students in an online course for tips for managing the volume of posts to read and respond to during the course of a week's discussion (also known as an online "conference"). My first course

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of action was to search for online resources that provided such information; however, the majority of sites I found introduced recommendations for instructors or those facilitating discussions rather than strategies for students to make the most of their participation in online discussions. The second step in helping my student was to review the research articles and books I had amassed over the years about online discussions and distance education. Upon reviewing these, though, I encountered the same dilemma: the majority provided strategies for how instructors and facilitators could structure discussions to improve students' experiences but not ways in which students could better manage the process themselves. Therefore, I decided to develop my own recommendations. Below is a summary of the strategies that I have found to be helpful for students to be successful when participating in online discussions, no matter the setting. I am sure there are others applicable to unique settings and situations, but hope these will serve as a foundation from which to build.

Become Familiar With the Requirements for Posting

To ensure you address the minimal requirements of participating in online discussions, it is important to become familiar first with what these are! If the requirements are not clear, be sure to ask the instructor for clarification. Your progress (and also very often your grade) depends on the quality and quantity of your participation and, in many cases, also when you participate. If you are not sure about how you are graded or would like an explanation for why you earned a particular grade–ask! It is your right to know and understand the assessment criteria utilized by your instructors.

Do Not Read and/or Reply to Every Post

In a face-to-face discussion, would you be expected to answer every question asked by your instructor during class, or comment on every reply made by a peer? The answer is "no"! Likewise, you do not need to read or engage in *every* thread of a discussion. Read the subject heading for each post to help you determine if you believe you should read it. Of course, it helps if you and your peers use appropriate subject headings in your posts! One caveat, though, is that your instructor may require you to read every post—so ensure you fully understand the participation requirements.

Use Appropriate Subject Headings!

It is very frustrating to read an entry that essentially says nothing new or is directed at a particular individual. Also, it is maddening to read a list of headings that are all identical. To ensure that your peers and instructor understand what is in your post, provide a clear, concise subject heading that elucidates just this. And, if a particular posting is directed to a particular person, use a heading such as, "To Natalie– I disagree!"

Rephrase and/or Quote Your Peers

To ensure everyone understands your reply or question, be sure to include the portion of the question or comment and the author that your reply builds on in your response by highlighting it or posting it in a different color to differentiate it from your response.

Develop a Personal Schedule— And Stick to It!

After you become familiar with the participation requirements for the online discussion, set a schedule to ensure you address the requirements. Many instructors of online courses factor in the quantity and quality of your postings for your grade, as well as *when* you post your comments. For instance, to earn full points, you may need to post throughout the course of a week as opposed to only the last 3 days of a week's discussion.

Spell Check

Spelling is not each one of our strengths. No need to fear, though—spell check can help. Simply type your reply to a posting in a word processing program first, then conduct a spell check. Then, copy and paste your comments in the online discussion. Note also that many current versions of discussion boards include a spell check feature, so why not use it?

Review Your Response Before Hitting Submit!

Have you ever received or, even worse, sent an e-mail that you did not intend to send yet? This can happen with your posts, too. Before you submit a posting, be sure to read it to ensure the response reflects what you really want to communicate about a topic.

BE PROFESSIONAL AND RESPECTFUL

It is imperative that you show humanity, respect, and professionalism in your posts, even if you wholeheartedly disagree with someone's views! Although we might think that no one will post "ugly" remarks, occasionally some people do. And, sometimes it is not even on purpose. So, be careful, polite, and tactful. In an online environment, words can speak louder than actions. And, if a post is upsetting to you, contact the individual in person or via e-mail directly, or contact your instructor to ask that he or she contact the individual personally—but please do not humiliate or antagonize by making a questionable post that everyone can see.

AGREE TO DISAGREE

It is important to keep in mind that the point of participating in online discussions is not to agree on everything; rather, it is to share and examine various perspectives about different issues. In fact, some of the best discussions I have participated in were those in which I did not agree at all with some of my peers and students. As such, let us agree to disagree!

CONTRIBUTE MEANINGFUL CONTENT AND RESOURCES

Participating in online discussions (and hopefully also an online learning community) involves the sharing and receiving of meaningful information, pertinent to course content. The Web affords us with the opportunity to link to definitions or other resources of interest, so please take advantage of the Web in making a meaningful contribution about the topics examined.

INCLUDE APPROPRIATE REFERENCES

Where applicable, include appropriate references—not only to give credit where credit is due, but also to substantiate your reply. Plus, it shows you have done your homework when you can weave in references from your reading and other sources.

PRACTICE PARSIMONY

Just because you can write a whole lot of information and link to many, many resources does not mean that doing so will add to the "conversation." It is important to practice parsimony in your postings by answering question(s) in a concise manner.

ASK QUESTIONS

If you do not understand a particular post, concept, or acronym offered, ask the author for clarification. Oftentimes, students in online discussions shy away from asking a "dumb" question. Well, there are *no* dumb questions when it involves learning about a topic. And, chances are, if you do not understand something, there are many others who do not, too!

STICK TO THE TOPIC AT HAND

Sometimes students go off on tangents about topics that are not relevant to the topic being discussed. Be sure to stick to the topic at hand, and if you do have something very, very important to share that is somewhat related, ensure that you make this clear in your subject heading.

"COLLECT" OR DOWNLOAD ITEMS IN AN ENTIRE THREAD

Most systems that support online discussions include a feature that allows you to "collect," download, and/or print a group of postings. For many, this is an easier way to read posts (all in one long "thread") that saves time from having to click on individual posts. Also, most systems that have this feature allow you to select which items have been read, too. Thus, there is no need to sift between items that have and have not been read previously.

Summarize and Reflect

To help you get the most out of a discussion, reflect on your learning by summarizing the major points discussed and learned during the course of a discussion (e.g., during one week). This will help you understand the material better, as well as remember the information covered. You may even wish to enlist some peers in dividing up the work if writing a summary is not a required follow-up assignment to the discussion.

Expect the Unexpected

Although most systems that support online discussions are stable, you may encounter a problem accessing it or getting online; therefore, do not wait until the last minute to make posts. And, you may wish to have a backup plan for accessing the Internet to make your posts in case, say, your electricity goes out and your laptop is not charged!

USDLA AWARD WINNERS

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Dr. Thomas Kenan Miller III - Online Technology ~ Higher Education

21st Century Awards for Best Practices in Distance Learning

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C2 Technologies, Inc. - Blended Learning ~ Corporation

Western Governors University - Online Technology ~ Higher Education

Virtual High School Global Consortium - Online Technology ~ Pre K–12

Webcampus at Stevens Institute of Technology - Online Technology ~ Higher Education

7city Learning - Online Technology ~ Corporation

Joint Knowledge Development and Distribution Capability's Joint Knowledge Online - Online Technology ~ Government / Military

Army Distributed Learning System - Online Technology ~ Government / Military

USDLA 2008 HALL OF FAME

Elliott Masie, Founder and President, The MASIE Center in Saratoga Springs, New York was selected by the USDLA board of directors for elevation to the USDLA Hall of Fame.

USDLA 2008 EAGLE AWARD

The Eagle Award was presented by USDLA to a nationally recognized public official that demonstrated unique leadership in distance learning. This year USDLA recognized Florida Senator Daniel Webster for his commitment to providing greater educational opportunities in his state by means of distance learning technology and especially his support of the Florida Virtual School.


New Journal Issue Information

Quarterly Review of Distance Education
"Research That Guides Practice"

Editors **Michael Simonson** and **Charles Schlosser**, *Nova Southeastern University*

The Quarterly Review of Distance Education is a rigorously refereed journal publishing articles, research briefs, reviews, and editorials dealing with the theories, research, and practices of distance education. The Quarterly Review publishes articles that utilize various methodologies that permit generalizable results which help guide the practice of the field of distance education in the public and private sectors. The Quarterly Review publishes full-length manuscripts as well as research briefs, editorials, reviews of programs and scholarly works, and columns. The Quarterly Review defines distance education as institutionally based, formal education, where the learning group is separated and where interactive technologies are used to unite the learning group.

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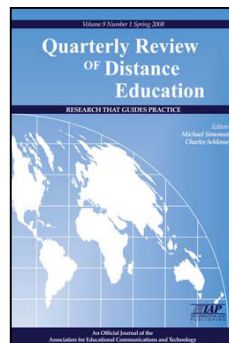
CONTENTS: ARTICLES. Problem-Based Learning in Online Environments, *Yun-Jo An and Charles M. Reigeluth.* Using Online Concept Mapping With Peer Learning to Enhance Concept Application, *Shujen L. Chang and Yegmin Chang.* Getting It Right Gradually: An Iterative Method for Online Instruction Development, *Douglas A. Kranch.* The Construction of Knowledge Through Social Interaction Via Computer-Mediated Communication, *Tuncay Saritas.* The Self-Reported Impact of Graduate Program Completion on the Careers and Plans of Graduates, *Patrick J. Fahy, Bob Spencer, and Tara Halinski.* Perceptions of Satisfaction and Deeper Learning in an Online Course, *Leah E. Wickersham. and Patricia McGee.* **INTERNATIONAL.** Training of Distance Education Tutors at Wawasan Open University—One Semester Later, *Wai-Kong Ng and Sow-Lai Kong.* **BOOK REVIEWS,** Mark Hawkes, Book Review Editor. Online Education for Lifelong Learning by Yukiko Inoue (Ed.), *Maureen Murphy.* Conference Calendar. *Marsha Burmeister.* Author Biographical Data. Index, Volume 8.

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Subject:
Education, Distance Learning

New Book Information

Service-eLearning:
Educating for Citizenship

Edited by **Amber Dailey-Hebert, Emily Donnelli-Sallee,**
and **Laurie N. DiPadova-Stocks,** *Park University*

This edited collection, the first of its kind, marries the two fastest-growing movements in higher education: service-learning and eLearning. While these two innovative pedagogies are widely assumed to be incompatible, this collection highlights their complementary approaches as a new teaching method for 21st Century learners. The collection offers a new pedagogical model—*service-eLearning*—defined as *an integrative pedagogy that engages learners through technology in civic inquiry, service, reflection, and action.*

Service-learning, which focuses on involvement with local needs and reflective thinking, appears to contrast with eLearning, that implies autonomous education through technology. The goal of this edited collection is to consider how these two educational innovations have and can combine to further encourage civic engagement while meeting the demands of an increasingly global, competitive, and diverse educational marketplace. This edited collection, defines and addresses the emergent blending of service-learning and eLearning to create a new integrated pedagogical model: *service-eLearning.*

Service-eLearning: Educating for Citizenship starts a conversation about the marriage of two powerful educational innovations. While readers of this collection may be familiar with existing work on service-learning and technology use, this book demonstrates the potential of a new model which acknowledges eLearning as a pedagogy within its own right. The new model presented here blends eLearning pedagogy with existing approaches to service-learning. The result is an integrated pedagogical approach: *Service-eLearning.* As the work presented herein highlights, service-eLearning responds to the challenges of today's rapidly-changing, technology-mediated reality.

CONTENTS: Foreword, *Edward Zlotkowski.* Preface to This Collection. Service-eLearning as Integrated Pedagogy: An Introduction, *Amber Dailey-Hebert, Emily Donnelli-Sallee, and Laurie N. DiPadova-Stocks.*

PART I: HISTORICAL PERSPECTIVES, CURRENT WORK, AND FRAMING QUESTIONS. Creating Paths Forward for Service-eLearning: A Ten-Year Review of the *Michigan Journal of Community Service-Learning, Amy Kenworthy-U'Ren.* Service-eLearning: A Burgeoning Field. *Susan W. Post.*

PART I I: SERVICE-ELEARNING APPLIED. Incorporating Technology in Service-Learning: A Case Study of Appropriate Use, *Randy Stoecker, Amy Hilgendorf, and Elizabeth Tryon.* Constructing Experiential Learning for Online Courses: Two Models of Service-eLearning, *Jean Strait.* How Discussion Boards Drive Course Concept Mastery in Service-eLearning, *Kristine F. Hoover, Maureen Casile, and Ralph Hanke.* Service-eLearning and Professional Writing, *Sandra Hill and Christopher Harris.* Service-eLearning: Meeting the Objectives of Community-Based Nursing Education, *Christopher W. Blackwell.* Creating International, Multidisciplinary, Service-eLearning Experiences, *Hilary E. Kahn, Sarah M. Stelzner, Mary E. Riner, Armando E. Soto-Rojas, Joan Henkle, Humberto A. Veras-Godoy, José L. Antón de la Concha, and E. Angeles Martínez-Mier.*

PART I I I: MOVING FORWARD WITH SERVICE-ELEARNING. Shaping the Unscripted Future: The Role of Service-eLearning, *Laurie N. DiPadova-Stocks and Amber Dailey-Hebert.* Service-eLearning Best Practices: Possibilities for Engagement, *Emily Donnelli-Sallee and Amber Dailey-Hebert.*

Afterword: New Frontiers and Institutional Commitments to Service-eLearning: A Call to Action, *Beverley Byers-Pevitts.* About the Authors. References.
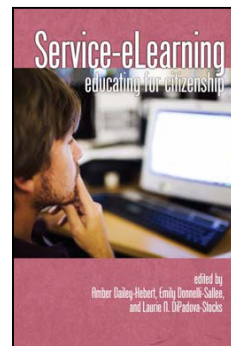
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between the user and provider. Examples are eBay, Wikipedia, Skype, and Craigslist.

So, what does this all mean to the distance educator? Certainly it is nice to have friends, even virtual ones, and social networks seem to have reached the point of "critical mass" and are here to stay, at least until a new innovative use of the Web evolves.

The importance of social networking makes the concept important to distance educators. At the least, a modest understanding of social networking is a must for distance educators. And, it is likely that more depth of understanding will be needed. The taxonomy of social networking for distance learning might look like this:

- Level 1: Learning about social networks—definitions, history, background, and examples.
- Level 2: Designing for social networks—profiling, blogging, wiki-ing, and friending.
- Level 3: Studying social networks—ethics, uses, misuses, policing, and supporting.

- Level 4: Learning from and with social networks—social networks for teaching and learning, science, research, and theory building.

And finally, maybe we do not need to worry about solitary learners poised in front of a computer. Obviously they want friends, just as the child on the playground does. Virtual friends perhaps, but in many cases true friends. And, for all those social networkers out there, remember the old saying, "we are known by our friends!"

REFERENCES

Boyd, D. (2006, December 12). Friends, friendsters, and top 8: Writing community into being on social network sites. *First Monday, 11*(12). Retrieved from http://firstmonday .org/issues/issue11_12/boyd/index.html

Boyd, D., & Ellison, N. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), article 11.

Sunden, J. (2003). *Material virtualities: Approaching online textual embodiment*. New York: Peter Lang.

"… SOCIAL NETWORKS ARE WEB-BASED SERVICES THAT ALLOW PERSONS TO CONSTRUCT A PUBLIC OR SEMIPUBLIC PROFILE WITHIN A SYSTEM" … "TO 'TYPE ONESELF INTO BEING.'"

Will You Be My Friend?

Michael Simonson

W e all know what it means to be a friend. We learn early in life that, as Emerson said, "the only way to have a friend is to be one." A friend is a person admired, respected, whose company is enjoyed.
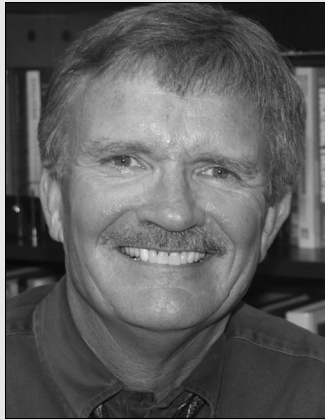
The idea of friends has recently changed, however, at least in social networking applications. According to Boyd and Ellison (2007), social networks are Web-based services that allow persons to construct a public or semipublic profile within a system, to articulate a list of other

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users with whom they share connections, and view and move through a list of links made by themselves and others. Most often these locations are called "social networking sites." Social network sites such as MySpace and Facebook have attracted millions of participants who blog, share messages, post photos and videos, and list their friends, all in personally constructed profiles.

To participate in a social network site a user constructs a profile and by this act the social networker becomes real in a virtual world. They "type oneself into being," as Suden (2003) stated. One characteristic of most social networking sites is the listing of friends; friending. Social networkers name those they want to list as friends, and in most cases the request to be a friend requires an affirmative response. Some sites even allow top eight or top 10 lists of friends; as Boyd (2006) said, "in a culture where it is socially awkward to reject someone's Friendship, ranking them provides endless drama and social awkwardness" (p. 11).

Many who study the phenomena of social networking refer to the idea of Web 2.0, a trend in the use of the Internet and Web that is based on collaboration and information sharing. Web 2.0 is not a new network, nor a thing. Web 2.0 is an idea in people's heads, based on the interaction