Technology's Role in SDL

Similar to the way that it impacted many other areas and fields, it did not take a very long time until technology was making a strong impact on self-directed learning. Commenting on this growth, Hiemstra (2007) writes,

> The Internet's growth in the past few years has been rapid. For example the WWW grew from 130 sites in 1993 to more than 100 million as of November 2006 (Zakon, 2006). Today, the U.S. has more than 211 million Internet users; there are nearly 322 million European Union users and China has more than 162 million (Miniwatts International, 2007).

In the same writing, Hiemstra (2007) continues, "Horrigan and Smith (2005), for example, noted in nearly 2007 half of all U.S. adults had broadband connections at their homes, a five percent increase over the previous year. Rainie and Horrigan (2005) suggest this: 'The Web has become the 'new normal' in the American way of life; those who don't go on line constitute an ever-shrinking minority'" (p.59). In other words, if you do not have, or are not using, technology in your house, then you are in the smaller percentage of United States' citizens, according to the 2007 statistics. Which, mentioning the year, caught my attention. I wanted to know if I could find an estimate to what the numbers are for adults today, in the year 2010. Unfortunately, I was not able to find any figures/statistics that close to date; however, I did find remarkable data, which I have provided the links for you to look at on the links below:

- http://www.researchandmarkets.com/reportinfo.asp?report_id=655269
- http://www.longbets.org/267
- http://www.switched.com/2009/06/07/percentage-of-homes-with-internet-triples-in-the-past-10-years/
- http://www.websiteoptimization.com/bw/0403/

The numbers that are seen on these links are lower than what the number of broadband and wireless access Internet users are today, I simply could not find data to support the evidence to which I have heard and been shown this data myself in person in seminars, training sessions, and classrooms.

So, what do all of these numbers and statistics mean? I'm glad that you asked! These statistics strengthen the case for using technology as a medium, to help adults with self-directed learning. Referring to Phelan's (1994) writing concerning power utility employees once again, he writes,

> PC-based tools are used in various ways to facilitate the workshop. For example, seven to ten days prior to the first session, participants are sent a pre-workshop package containing

> the input sheets for a PC-based assessment tool called 'Successful Career Planning' (Bonnstetter, 1989). The data are collected and entered into a computer by career development staff between the first and second sessions. Software created by Bonnstetter (1989) produces an eight to twelve-page individualized profile based on the DISC instrument developed from Marston's work (1928). The instrument draws its name from the first letter of the first word in four defined areas that are examined: Drive-Challenge, Influencing-Contacts, Steadiness-Consistency, and Compliance-Constraints. The profile focuses on employee feelings about the present work environment and an ideal environment (p.56).

Without using technology, the process of performing these tasks mentioned takes more than two sessions. Not only that, but the tasks would also require more people; i.e., more overhead in the long run, in order to perform these tasks. But, with the use of technology, it takes a fewer number of people to distribute, collect & gather, and then enter the information into the computer. The computer performs the remainder of the work, in a time period, which is also faster than the time it would take the people to perform the tasks. The attitudes' of the employees are also strengthened.

> The benefit to corporations in using such an assessment lies in improved employee attitudes. Employees who understand their strengths and how those strengths contribute to success in their jobs are more apt to feel satisfaction in their present position. 'If your current employer offers what you want, you will probably be more committed to the organization and will work harder' (Fox, 1992, p.12) (Phelan, 1994, p. 56).

The Internet is not only helping large corporations, it is also helping people in rural areas as well. Studies were conducted on these "rural people," and, according to the *International Journal of Self-directed Learning*, Volume 3, Number 2, Fall, 2006,

> A study of rural people in the U.S. new to broadband Internet to better understand such changes. The study's purpose was guided by three broad objectives:
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> 1. To better understand how people living in rural areas use the Internet when it is available via broadband connectivity.
> 2. To better understand what types of resources, databases, and collaborative opportunities rural users access when broadband Internet is available.
> 3. To examine the impact on individual learning for rural users who access the Internet over a broadband connection.
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> (as cited by Hiemstra, 2007, p.45)

The acceleration in the world of technology's changes and the alacrity that our world has for changes, the future appears to be unbounded. "In *The Futurist*, Cetron and Davis (1991) predict that today's technical knowledge will be only one percent of that available in the year 2050" (as cited by Guglielmino & Guglielmino, 1994, p. 40). These astonishing statistics may be what have so many colleges and universities competing with one another to have the best "online programs" to offer "non-traditional" students.

One of the possible definitions, according to *Wikipedia©,* for a "non-traditional" student is, "a student who is older than the historically typical undergraduate student (usually aged 18-23), and had interrupted their studies earlier in life." Some of these people who have the luxury of being able to return to school and not have to work while doing so. For others, however, life is not as easy. They need programs, such as those described by Phelan (1994), when he writes about the Niagra Mohawk Power Corporation.

The Career Development center at Mohawk Corporation is a very valuable asset to the employees. Phelan (1994) writes,

> For example, when employees need information about local colleges or, university programs, they can use the internally developed Guide to Colleges and Universities Within Our Services Territory. This guide lists key information about nearly sixty institutions of higher learning located in the company's upstate New York service territory, including a regional index, maps, and glossary of college terms. (p.56)

Whether they use this or not, the employees are being provided with a great service by their employer. Even though this is a self-directed program, the employees are given a great deal of assistance / support to help them through the program. Assistance such as a program called "Career Development and Self-Directed Learning." Sturman (1991) writes, "This career development program also provides employees at all levels of the organization with knowledge and skills basic to a career management process. The process has five steps: assessment, investigation, matching, choosing development targets, and "Matching Your Career With P-O-W-E-R" (as cited by Phelan, 1994, p. 58). The purpose of having five different process components is to show participants that they can develop a career in more than one way; similar to the way that self-directed learning works.

I would now like to shift my attention to the role that technology has in SDL more specifically to *education*. One of the roles that self-directed learning has in education can be found in "programming efforts." Hiemstra (1994) writes,

> For example, establishment of the Open University in England in 1969 generated similar efforts [to developing innovative responses to self-directed learning preferences] around the world. St. Francis Xavier University (Antigonish, Nova Scotia), Teacher College (Columbia University, New York City), Syracuse University's Adult Education Program (Syracuse, New York), and the Ontario Institute for Studies in Education (Toronto, Canada) have incorporated self-directed learning principles into various of their adult education efforts. These latter two (Syracuse University and Ontario Institute) have assimilated some computer-mediated instruction into their programs. (p.1)

At England's Open University, mentioned, the "open learning" is similar to our distance educational classrooms today. Hiemstra (1994) describes and makes the comparison, when he writes,

> Open learning is individualized study often is associated with external degree, open learning, or non-traditional programs where most learning takes place outside formal classrooms. One of the most widely known is England's Open University, started in 1969, and emulated now in many countries. Currently, development of many distance education efforts using computer-assisted learning is necessitating new research and understanding regarding how technology can enhance self-directed learning (p.3).

As the self-directed learners continue to push forward with their internal motivation for learning. And, as the horizons to expand the campus "home bases" continue to need to be broadened, the need for self-directed learning will continue to surge through academia. A positive point is that the "experts" are paying attention. When discussing trends of emerging trends and issues of technology and education, Brockett and Hiemstra (1991) point out, "Another trend is efforts to better understand the role of technology in self-directed learning" (as cited by Hiemstra, 1994, p.6). Hiemstra (1994) goes on to add, "In the 1992 International Symposium, eight of thirty-five sessions dealt with self-directed learning and technology or distance education" (p.6).

Finally, I would like to end my discussion on technology and the role it plays in SDL, by discussing the "Barriers to Implementing SDL in Institutions." As is the case when trying to bring anything new into a long-lasting, surviving, institution, there is going to be the question of, "Why do we need to change?" or, translated into technological terms, "Why do we need to put classes online?" As stated earlier in this paper, I am glad you asked, because I am, once again, going to explain to the reasons why implementing these changes and others will help not only the regular student population, but especially the self-directed learners.

Cross (1981) suggests there are at least three types of barriers that inhibit adult learning, and that each of these types has relevance for self-direction in learning:

> *Situational barriers* are those arising from one's situation in life at a given time. Lack of time due to job and home responsibilities, for example… *Institutional barriers* consist of all those practices and procedures that exclude or discourage working adults from participating in educational activities – inconvenient schedules or locations, full-time fees for part-time study, inappropriate courses of study, and so forth. *Dispositional barriers* are those related to attitudes and self-perceptions about oneself as a learner (p.98) (as cited by Brockett and Hiemstra, 1991, p.165-166).

These examples could include a person not having an appropriate studying place at home to work on an independent learning project. Or, as the methods of teaching change, if professors do not change with these methods, an institutional barrier would arise that would block the professor from seeing the potential of students' learning capabilities in self-directed learning. The key, as Brockett and Hiemstra (1991) stress, is that, "Facilitators, program designers, and administrators need to work constantly in attempting to remove or lessen such barriers" (p.166).

Another barrier to think about is the *quality* of online courses / degrees / programs. With the development and "boom" of so many online colleges and universities, the responsible party (parents, students, etc.) must be careful to what they are paying for and the quality of education that the students are receiving must also be closely monitored.

Brogue (2001) uses several examples from other authors as reasons to take heed to this warning. First, Clarke (1999) and Sikora (2002) write "Most college and universities now deliver at least some courses online" (as cited by Brogue, 2001, p.1). Next, Noble (2001) adds, "This competition has raised serious concerns about the quality of online courses especially when they are offered primarily as a means of creating revenue for the sponsoring institution" (as cited by Brogue, 2001, p.1). Then, Symonds adds, "It has also prompted speculation about a shakeout of organizations providing Internet-based education courses" (as cited by Brogue, 2001, p.1). And, finally, Gunawardena and Duphorne write, "Longevity as a provider of Internet-based courses may depend largely on participants' satisfaction with their experience of learning in the online environment" (as cited by Brogue, 2001, p.1).

Each of these questions posited are asking the same thing, which is this: "Do the ends meet the means?" Are the online courses that are being delivered meeting the students' needs? And, are these online courses

meeting these courses meeting these needs in the most cost-efficient matter for the universities / colleges?

Fortunately, there is an effective, researched tool that was developed by the Institute for Higher Education Policy (IHEP), which is used to promote excellence in Internet-based distance learning. "The Institute for Higher Education Policy (IHEP) identified 24 benchmarks for excellence in Internet-based distance learning (as cited by Fogerson, 2005, p.26). Looking for answers, researchers, Heterwick and Twigg (2001) utilized these benchmarks to construct a sample of the kinds of questions that could be posed to participants to create a satisfaction index for a course. They added two additional questions to the 24 from IHEP, to make the total number of question equal to 26, and then constructed a Likert satisfaction scale.

An example of the questions that Fogerson (2005) writes IHEP used that were related to technology included:

* Was the technology used in the course easy to use?
* How reliable was the technology?
* Did you have sufficient access to learning resources—e.g., libraries, databases?
* Did you know how to access online resources? (Fogerson, 2005, p.26-27).

Using questions such as the ones listed above in the research, as well as tying in research from "Satisfaction from Users," suggests that the overall benefits of online learning outweigh the barriers. In closing, one such satisfaction, Moore (2002) writes is, "Satisfaction has been linked to various facets of the (online) experience such as: … (d) the belief that the learning medium helps to 'level the playing field' in that personal characteristics that students sometimes perceive as provoking discrimination in face-to-face settings are not apparent online" (as cited by Fogerson, 2005, p. 7). By 'leveling this playing field' all learners are capable of entering a class with no fear of discrimination, even though there is not any intended to exist in the first place. In other words, a person / person(s) who may perceive themselves to be at a disadvantage will not do so in an online class, because they are not "seeing" any other classmates that are in their class. This will set them more at ease from the beginning.