

THE UNIVERSITY OF ALBERTA

EMPOWERING LEARNERS: STRATEGIES FOR FOSTERING SELF-
DIRECTED LEARNING AND IMPLICATIONS FOR ONLINE
LEARNING

BY

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I would like to share with you the true story of a man who was a duck carver (Berger, 1990). During an interview for a study on self-directed learning, the duck carver revealed that he considered himself a non-reader and not a good learner. When asked how he had identified the means to teaching himself this art, he recalled that when attending duck carving shows he made every effort to talk to other carvers. He also read every book on the subject he could find, in spite of considering himself a non-reader. He even raised ducks, in order to be able to observe live models. Reflecting on his learning experience, he realized that he had, in fact, learned well and consequently viewed himself more as a learner than before. Through interaction with people, print resources, and his own experience in raising ducks, significant learning resulted. Given the motivation, he had been able to devise strategies to find out what he needed to know. In taking the initiative and responsibility to achieve his goals, the duck carver demonstrated how he could direct his own learning. What is key for learners is to know how to learn and to take personal initiative in directing one's learning.

Purpose

The purpose of this paper is to explore how educators can empower learners by fostering self-directed learning. It is my belief that giving learners more ownership in their learning results in a deeper, more meaningful experience. It was through my MEd program in teacher-librarianship at the University of Alberta that I experienced the educational paradigm shift from a focus on teaching to a focus on learning. After completing eight online graduate courses in nine

months, I was curious to investigate the elements in the course framework that nurtured self-directed learning. In this paper, I examine the research on online and self-directed learning in light of my MEd distance learning experience and discuss how self-directed learning, an essential skill for learners in a rapidly changing world, can be encouraged both in the classroom and online thereby empowering students to take charge of their learning.

Focus on Process

Why is it necessary to help students assume responsibility and take initiative for their learning? Advances in technology and the learning demands of the information age are changing the nature of learning. The 21st century is marked with an ever-increasing need to learn new skills and develop new perspectives and understandings. In this age where change is constant, the teacher's role cannot simply be to fill students with information. Although basic content knowledge is important, there also needs to be a focus on process. As knowledge and skills change from day to day, what is important is to teach students how to learn. By teaching students to reflect on how they learn and by developing their skills to pursue their learning goals, students will be empowered to change from passive recipients of information to active controllers of their learning. The teacher's role, as facilitator, is to empower learners by promoting student involvement in learning, helping learners to develop skills that support learning throughout life, and helping learners to assume personal responsibility for learning.

Continuum of Self-Directed Learning

According to Knowles (1984), children are naturally curious and can be more self-directing in schools. What is important is not the age, but the learner's situation. In fact, the learner's "need to know" and self-directing capacity increases steadily during childhood and rapidly during adolescence (Knowles, 1984). Schools can foster the development of learners' skills of self-directed learning through inquiry-based learning (Day & Baskett, 1982). Encouraging self-direction does not mean giving learners total control and responsibility but rather providing incremental opportunities on a continuum towards increasing independence for lifelong learning.

Paradigm Shift

What elements in online learning can foster the principles of learner control and self-direction? Technology provides improved access, offers flexibility of time and place, and has the potential to accommodate the educational demands of the information age. The paradigm shift to learning online, however, requires new perspectives in course design and student/teacher roles. I believe that the gap between the learner and the teacher, due to the computer interface, forces the learner into a more active role. An environment conducive to learning requires sound teacher decisions regarding purposeful design, learner-centered activities, and interaction. Learner interaction through dialogue, reflection, and active learning are aspects of andragogical theory that explain how to provide deep learning experiences, both in the classroom and online. Furthermore, the nature of a successful online learner is generally one who has a positive self-concept for

learning, possesses literacy and computer skills, and is highly motivated. This motivation, largely due to the learner's situation, such as self-improvement or new job requirements, is enhanced by teaching approaches based on andragogical theory (Gibbons, 2001).

A Reflective Approach

Upon reflecting on my MEd courses, I began to realize the importance of providing learners with the skills necessary for lifelong learning. It was apparent to me that self-directed learning cannot occur if one doesn't know where to find information. As my own skills in information gathering and research processing improved through practice, these tools for self-directed learning empowered and motivated me to use my own initiative for learning. To start this paper, I began by writing my reflections of my online learning experience. I then read the research on the theory and practice of online learning and self-directed learning looking for what was consistent or not consistent with my own experience. As I examined the elements that motivated me, helped me learn, and changed my thinking, certain themes emerged. In this paper, I present my reflections, outline the theory and practice of online learning and self-directed learning, discuss how teachers can encourage learner self-direction, and make recommendations for online instructors and students.

Reflections on Online Learning

As I read the journal entries I had written during my online courses, I was able to revisit the steep learning curve I experienced as I adjusted to online

learning. I recall my first steps online—I had mixed feelings and many questions. Having met only one other person who had studied by distance, I had little idea of what to expect. Using a reflective approach to examine my online experiences, I now think back on the technology challenges, the process of learning, the motivating factors, the online pitfalls, and the benefits found through collaboration in online learning.

Face-to-Face or Distance Masters?

After teaching many years in the public school system, Grades 4 to 12, I had decided that I would like to do my Masters of Education. From several options of face-to-face, cohort and distance education programs, I finally decided on the University of Alberta's distance education teacher-librarianship program. In the final analysis, I selected it for the flexibility a distance program would provide and the "value-added" opportunity to expand my skills in information literacy and technology. I could take the program and still live at home, and I hoped that I could complete it during a year off from full-time secondary school teaching. Knowing the demands of teaching school, I felt that I would enjoy the process of learning more if my attentions weren't divided. My plan was to take a year's leave of absence and start two courses in the summer. Over the fall and winter terms, I would then take six more courses. That would leave only a face-to-face research course in the summer and then the final capping paper. However, I still had to wonder if my decision to study by distance was the right choice. I wouldn't know until I had tried. The fact that I had to be corrected when referring

to distance learning as “correspondence” indicated that I had much to learn!
Following are some of my reflections at the time.

First Steps Online

Not only was I taking my first tentative steps into the area of teacher-librarianship, a totally new subject area for me, a classroom teacher, but also I wondered if I’d made the right decision to study by distance! Could I do it? Would I like it? I didn’t know. I knew I was able to work hard but, although I had some computer experience, I wasn’t sure if I could cross the technological barrier. I was on the road in an exciting new venture. My emotions went from exhilaration to trepidation. My colleagues’ voices echoed my concerns; one commented, “I could never learn by distance! I have to be face-to-face with my instructor.” I recall being seized by fear that maybe I, too, could not do this. I closed my eyes and literally saw the colour red! Was this a premonition? Then I came to grips with myself and realized that I had committed to this and had foregone a year’s salary to do it. It was up to me. I had to try!

Technology Challenges

The human side of online classrooms. My first assignment was to “post” a brief introduction. Equipped with my new computer, I realized that I first had to learn how to use it. The Logitech mouse with the scroll feature made me lose two postings the first day. I still don’t know what happened to them but I soon learned not to trust the posting site but to use Word to compose a message, and then to copy and paste the message into the course conference site. The prospect of losing work was too real! By reading my classmates’ introductions, I realized that

although we had varied backgrounds and experience in teacher-librarianship, there was real empathy for the “new student” and a true willingness to reach out and help each other. The human side of my classmates and instructors, made possible through email exchanges, postings and online conversations, was very apparent. I realized that we couldn’t do this alone but needed a community of learners within and outside the class.

Not all is intuitive. As I recall my first two courses in the summer of 2001, I remember I learned the ropes as I went along. Certain aspects of online learning, such as hyperlinks and the goals of computer conferencing, were not necessarily intuitive. I was glad to discover early on that there was more behind the discussion hyperlinks than I had at first thought! Initially I had missed them, possibly due to a few dead links in the course, and this led me to believe there was nothing beyond the headings. I had another funny experience, this time to do with online discussions, which came to light when I was asked to reflect on my online participation. Although we were to correspond with our classmates online, I had downloaded everyone’s email address into my address book at the beginning of the class and thought I would respond to individuals using the personal email address so as not to “clog” the online discussions. By the end of the class, I realized that the sharing of everyone’s comments on the course conference was actually purposeful and very powerful for generating discussion! In retrospect, the summer courses had been an excellent learning experience but it took focus, planning, and full-time commitment to keep up with the demands of the courses, particularly because of the challenging tasks and the “newness” of online learning.

Library support. My course assignments gave me the opportunity to use the online library, a new experience. Once I got the hang of it, I felt rather spoiled to be faxed journals and have boxes of books sent to my doorstep by priority post. When I phoned the library, the response was immediate and helpful. It was quite amazing that I was never put on hold and there was always someone to talk to. Apart from the intense frustrations of putting in the wrong password and learning how to access the databases, I found the University of Alberta's library very supportive and understanding of distance students. University library service had changed enormously from what I had experienced years ago at university, not only due to technology but also in attitude.

Process Teaches

Problem-based learning. It had been many years since I had taken a university course. Not only did I have to adjust to going back to school and to using new technologies, but also I had to familiarize myself with the totally new subject matter of teacher-librarianship. My first assignment in EDES 546 School Library Information Materials to make a plan to spend \$7000 on new reference materials seemed initially overwhelming. I had to first understand what reference materials were and then to establish the resource needs. The list of tasks was long: analyze an existing collection, determine the strengths and weaknesses, describe the case, create a rationale, provide complete information about each resource, and write up annotations and reviews about the resources. At first, I didn't know where to get all this information. I chatted with a few school librarians who helped direct me to useful resources. I still needed help. Although I really didn't

want to disturb the instructor, I took the jump and emailed her. I was surprised that my simple and probably obvious questions were answered regardless of how trivial they may have been. It was apparent that reaching out to the instructor for clarification was necessary to allow me to focus in the right direction and use my time wisely.

Practice what you preach. In EDES 541 Collection Development, I very much enjoyed the “process” way of learning. Learning information literacy skills, using rubrics, gaining perspectives from online guests, and responding to questions that had no “right” answer taught me the power of “process” to engage learners and enable student success. Each topic and assignment was a new challenge. I learned how “Ask Eric” and online searches could provide excellent information. Through the skills I gained, I was able to understand the task of the teacher-librarian in teaching students and staff how to access and evaluate information. The criteria-based rubrics were very helpful in ensuring I included everything needed to meet assignment requirements. One innovative activity was inviting online “guests” such as wholesalers to whom students could address specific questions and learn from their perspective. When students were asked to list which competencies described in “Student’s Information Literacy Needs in the 21st Century” were the most important, I learned it was impossible to select only a few, and once again it was open-ended questions and the process that taught!

Invaluable knowledge and skills. The courses I selected in the fall were EDES 542 Information Technologies for Learning, EDES 545 Resource-based Learning, and EDEL 595 Leadership in Information Literacy. What I discovered

was that these classes incorporated many aspects of learning including technology, multiple intelligences, new brain research, resource-based learning, and information literacy that are useful to any teacher, not just the teacher-librarian. What was even more amazing was that this theory was being put into practice in my courses! Through experiencing it, I learned first-hand of its power. I knew that regardless of what I would do when I returned to teaching, the information and strategies learned would be invaluable. Through the information literacy skills and the online search techniques I had gained and through my own innate curiosity, I found I was able to pursue self-directed topics more easily. Access to the Internet and online library databases provided quick and convenient access to information. Together with critical thinking skills and the “need to know,” I was on my way to lifelong learning.

Motivators

In September, I had started three new courses. I was surprised that I could leave home on a Pacific coast kayak trip, catch up on postings en route home via computer, and even meet a few classmates “face-to-face” even though the course had just started. Certainly distance learning required discipline but it also offered great flexibility of time and place. In fact, flexibility became a motivator in itself. If I planned my time and worked ahead, I could control how I used my time. For one assignment I had to create a virtual seminar. Since I had to choose my own topic, I found myself reading on a variety of topics until I settled on one. The choices of format and topic gave freedom and control to the students. This captured my imagination and spurred me on. By seeing others’ projects, I could

more easily envision what I wanted to do. Although I had never made a website before, it was non-threatening because I wasn't required to be an expert. So therefore, the motivation came from within. I wanted to try this and there was no fear of failure.

Active learning

I felt I was learning to learn through inquiry and the content was actually the vehicle for sharing in creative ways using technology. No longer did the teacher present packages of information to be learned; it was the students who created questions and topics of inquiry to explore. I felt actively involved as I learned from multiple resources such as print, electronic, media, plus student responses and reflections. As I developed computer skills and critical thinking skills, I was empowered to share my discoveries with others. I couldn't help compare this learning experience to that of my own students in the classroom. Although I knew that students should be "actively involved," I now realized that this didn't necessarily mean "hands-on" but rather "minds-on," engaged learning.

Impact of Technology

Leadership in Information Literacy EDEL 595 had an interesting twist. We were to write a case study of a school library situation. I chose to write about the conflicting demands of today's teacher-librarian and the hiring practices that reflected the need for technology expertise but too often ignored the need for professional teacher-librarianship education. Huge investments were being made in computer purchases but expertise was needed to teach teachers as well as students how to use computers as a tool for higher learning. Information literacy

was the key. The idea was to describe the “case” based on a problem of practice and follow it up with areas for investigation and questions about the learning issues. We then researched one of the learning issues for current findings, trends and implications. The class participation that ensued was very interesting as all the students in the class helped solve the cases. Questions such as what the role of education is and how this affects how education is delivered initiated many interesting responses.

The first task in EDES 545 Information Technologies for Learning was to reflect on what knowledge, skills, and attitudes teachers would need to be successful in the next century. When asked to select three words or phrases to describe the teacher of the future, I chose *adaptive, good knowledge and use of metacognition*, and a *belief in lifelong learning*. Certainly, I felt I had started on this road where I, too, would need to adapt and take risks. As a teacher and now as a student, I needed to adapt to new technologies. Education wasn’t confined to a specific time or place. In fact, during my second term, my husband and I left our home for four months to live at Whistler. All I really needed was my computer! With the University of Alberta’s distance courses, I was already gaining my own vision of future education.

Metacognition

Changed beliefs. The instructors often asked students to reflect on their own learning. Through reflection, I realized that my beliefs had changed. Although I had asked my own students to write their reflections, I had done this for my own information. I didn’t realize that metacognition is a powerful teaching

tool, not only for the teacher but also for the student, in gaining personal insight as to how one learns best. I learned firsthand of the emotional as well as cognitive challenges. I learned that periods of frustration in the research process are normal and to be expected. In overcoming my challenges through these courses, the value of reflection now seems obvious to me. However, as a teacher, and in spite of perceived curriculum pressures, I learned I must allow students the valuable experience of learning through reflection. Through my own experience in these courses, I had learned to value the students' task of choosing their own research topic. Rather than rush to students' aid during the research process, I should stand back, be ready to guide when needed, but let them take ownership in choosing. Furthermore, it was all right for learners to make mistakes and learn from them. Too often, value has been placed solely on the final product. I had since learned that "process" needs to be valued more and should form part of students' evaluation. Time spent by students in creating rubrics or negotiating goals is worthwhile because it helps them to understand more deeply where they are going and what they need to achieve. Also, topics that relate to what is happening in the world or are related to students' lives provide the relevancy needed to engage the learner.

Online pitfalls. In January, I had three new classes and by now I had developed my own procedures for learning online to keep up with the postings and compiling course material for reading off line. After many hours creating web pages and responding to conference messages, I also had learned, when my back went out, that overdoing it by spending too much time in front of the computer

was not healthy. Message overload is another potential pitfall of online learning. I learned about this first hand in one class where the number of postings reached 2,700 messages! The postings lost meaning and effectiveness; the dynamics of the conferencing changed; and the instructor presence and encouragement faded. In one class where I had to respond to self-studies on various topics at any time during the course, I observed that this had a good and bad side. The postings tended to be very disjointed as no one responded at the same time and when I read a classmate's comment weeks later, it didn't register. It was definitely a delayed conversation. I realized that the many decisions made by the instructor are crucial for course management and for student motivation and success.

Collaboration: Sharing the fruits of labour. In the course EDES 545, Information Technologies for Learning, I learned how to select, evaluate and integrate online resources for use in a classroom lesson. The process taught me the frustrations and rewards of online searching, and the need for scaffolding and rubrics to help students achieve their best. The positive result of this effort was that the class was able to share all the lessons produced by other classmates and build a wealth of resources for the regular classroom. In preparing a virtual seminar, the responsibility motivated me to read wider than my topic and this process was enjoyable and informative. I tried to provide questions for my classmates that related to their personal experience as well as expand their thinking. I had to really understand the task and think what would be of use to them. I found that my fellow classmates motivated me. The authentic experience of preparing something useful for my colleagues made the task more meaningful.

I liked getting positive feedback and believed the other students genuinely felt the seminar was a valuable experience and resource.

For one major assignment, I chose to develop an information literacy program for a school. The instructor, using scaffolding, divided the assignment into different stages. I first had to register the topic, examine the professional and research literature and then present a proposal or plan of action. At the very end of the course, students could choose if they wanted to share the final assignment. Many of us ended up with very thorough action plans for advocacy, information literacy, library policies, distance learning labs, collaboration, and a research skills continuum. I learned a lot from sharing of ideas and it was very useful to be able to “save to file” my classmates’ projects. I couldn’t recall any past university experiences where I was able to read and learn from my classmates’ work.

Not All Online Programs are Equal

By now, I knew I could learn through distance and was especially pleased that it was so rewarding. This didn’t mean that all distance programs would model the paradigm shift to a focus on learning that I had experienced. In fact, other online programs could simply be a depersonalized consumer product lacking the interaction necessary for learning. As a student in the University of Alberta’s teacher-librarianship program, I was learning what it meant to be an active learner in that I was not given any answers but rather the opportunity to construct my own meaning. In the interim, I went back to the classroom as a Teacher On Call. What I saw at times was a passive situation where students, like receptacles, were

waiting to be filled. Something would have to change if students were to have the learning skills they needed for the future!

Technology: Catalyst for Change?

Could technology be the catalyst for change? Could online learning provide a new vision of what learning really is—not just the delivery of content but rather the opportunity for learners to build new understandings and take ownership of their learning? By putting some control of features such as access to resources, communications, assessments, learning styles, time and place, into the hands of the learner, would online learning have the potential to support self-directed learning? Many factors needed to come together to facilitate meaningful online learning and provide opportunities and skills for self-directed learning. These included different views of teacher/student roles, purposeful course design with relevant tasks, and strategies for developing metacognition in students, and the creation of a caring empathetic learning environment. The next section presents the research on theory, practice and potential of online learning, and the value of interaction, instructor role, and learning environment in this evolving medium for education.

Theory and Practice of Online Learning

Definition

Online learning involves using the Internet, intranet or extranet to deliver, manage, support and extend learning (Masie, 2000). Because course content and communications can be accessed asynchronously, online learning is not dependent

on time or place. Online learning is characterized by the quasi-permanent separation of student, teacher and group, the provision of two-way communication between teacher and student, and the use of media to project course content (Keegan, 1986). In fact, anyone in the world with access to the Internet can participate, whether they work full-time, travel, or are medically unable to attend classes. The term online learning is often used synonymously with distance learning, e-learning, virtual or web-based learning.

Theory of Online Learning

Online learning will be effective and provide motivation if the content is relevant to the learner, there is a feeling of rapport between the learner and teacher, course materials can be accessed easily, and if the teacher engages the learner in activities, decisions, discussions and constructive communication (Holmberg, 1986). The theory of online learning involves the following principles (Duffy, 2001):

1. The design of the course should be driven by the learning outcomes, that is, what the learner should be able to do at the completion of the course, and assignments should be relevant to what the student will need and use outside the virtual classroom. The focus should be on engaging the learner through inquiry and problem solving.
2. The teacher needs to provide a structure to enable student success, that is, opportunities for students to develop skills and understanding, access rich resources, and develop a rapport with the group.

3. The teacher is vital for promoting student interaction and collaboration, modeling and sharing deep questions, and facilitating learning.

Online learning offers many advantages such as convenient access for students and instructors, opportunities for active learning, equal student participation and collaboration; and communication among students and teacher via email, bulletin boards, chat rooms, and white boards. One of the main strengths of online learning is its asynchronous nature that provides educational access to people who would otherwise be unable to participate due to constraints of time or place (Boettcher, 1996). The use of technology and multimedia in online learning has the potential of meeting different student needs and learning styles and enhancing learning through discussions, content presentation, and individualization. Research shows the importance of interaction, instructor role, and instructional environment in online learning to increase learner autonomy and to promote self-direction. In line with Knowles' theory of adult learning called andragogy, online learning has the potential to be interactive and learner-centered and to facilitate self-direction in learners (Fidishun, 2000).

Interaction. Interaction is one of the most important components of any learning experience (Dewey, 1938; Vygotsky, 1978). Learning is more than simply the transfer of information. It is an active process in which learners construct their own meaning based on prior knowledge (Shuell, 1986). It is also a collaborative process between teacher and learners in which knowledge is validated through the sharing of meaning (Garrison, 1989). Problem-based scenarios and case studies are effective ways of engaging learners because they

require learners to continuously restructure their knowledge as they work towards a solution. Through communication and regular feedback from peers, teacher, and experts, and through interaction with rich resources, learners negotiate new meaning. Just as interaction is important in the classroom, it is also vital in online learning environments where students interact, via the computer interface, with the instructor, the content and other students (Moore, 1989). A learner's interaction online, or lack thereof, can be equated to his/her motivation (Garrison, 1987) and to student success or failure.

It is up to the instructor to create a context for interaction online through modeling and establishing standards for discourse, asking probing questions, and moderating the process (Blanchette, 2001). Online discussion is very different from classroom discussion in that the former involves synchronous verbal communication while the latter involves asynchronous written communication. In an asynchronous situation, students share hypertext and multimedia links as well as ideas. Asynchronous communication can allow for higher level cognitive transactions in that students can consider the discussions and questions more carefully, research the topic, and consequently elevate the quality of the interaction. The time factor also gives the student more confidence and encourages participation (Blanchette, 2001; Goldberg, 2000). Asynchronous conferencing supports learner-learner interaction as well as the development of higher-order thinking skills (Blanchette, 2001; Shapley, 2000).

Role of instructor. The instructor's role is key to facilitating interaction. Recent research indicates, however, that if instructors are to use the full potential

of technology and develop higher level cognitive skills, a role change for the instructors is necessary (Phipps & Merisotis, 1999). The instructors need to adopt the role of facilitators or “guides on the side” to support learning through content, learner-centered activities, and course management. What also is needed is modeling by the instructors to create a cooperative learning environment based on respect for different perspectives, prior experience, and learning styles. A fine balance is required to design the optimum learning environment. According to Garrison, the separation of instructor and learner may be a characteristic of online learning but, due to the advance of communication technologies, separation is not what defines it educationally (Garrison, 1989; Shale & Garrison, 1990). Since the design of the learner’s interaction with content, instructor and other learners determines the quality of the learning experience, new technologies may actually transform higher education and improve learning (Garrison & Anderson, 2000).

Instructional environment. A shift in emphasis is needed from a focus on delivering information online to a focus on the instructional environment (Rothkopf, 1970) in order to create a learner-centered approach. Course design for the online learning environment should incorporate active learning techniques such as case studies, virtual seminars and problem solving to engage students in inquiry. Active learning focuses more on developing learners’ skills and understanding rather than on transmitting information. Through inquiry-based instruction, learners experience using skills and learning content as a means to develop information-processing and problem-solving skills and inquiring attitudes. Learners can transfer these skills and attitudes to new situations and be

empowered to take control of their own learning. The instructor uses scaffolding, a form of incremental support for learners in organizing and monitoring their learning, as the learners complete different stages in the inquiry process. Opportunities to practice new skills, such as information literacy and computer skills, are embedded into the assignments. Metacognition, the process of gaining awareness and control of how one learns, is an invaluable skill for students that enable them to reflect on their learning process and use to improve their learning.

Potential and Practice of Online Learning

The goal of online learning is to move learners from passively receiving information to critically examining it and, by basing it on their own experience, making it their own (Burge, 1988; Garrison, 1993; Lauzon, 1992). Careful design of computer conferencing can facilitate interaction among class members and instructor and achieve the higher-level cognitive skills desired (Harasim, Hiltz, Teles, & Turoff, 1995; Lauzon, 1992). Asynchronous network conferencing has enormous potential to create a new learning environment of collaboration, knowledge construction and interaction (Harasim et al., 1995; Mason & Kaye, 1990; Riel & Harasim, 1994).

A major criticism of online learning is its failure to generate interaction (Henri & Kaye, 1993; Lauzon, 1992), either due to problems with the quality of participation or the number of messages (Bullen, 1998). Bullen's findings about low levels of participation and information overload reveal that the new paradigm for learning outlined in the literature is not necessarily reflected in practice. Furthermore, the old pedagogy for face-to-face education does not prepare

instructors adequately for the paradigm shift of online education (Berge & Collins, 1995; Harasim et al., 1995). In some cases, the online learning content is merely an electronic version of print content, without attention to pedagogical principles to facilitate learning, but instead produced as a commodity for quick sale.

For the unique features and potential of online learning to be successful, the learner's affective domain must be considered. As well, course delivery requires good design and facilitation (Bullen, 1998). Students need appropriate preparation to work effectively online; they need general literacy, communication, and computer skills as well as self-motivation and self-discipline. Skilled facilitation, motivational techniques, and relevant learning tasks are more important than the technology *per se* (Phipps & Merisotis, 1999). It is not the technology that determines the quality of online learning but rather the pedagogical principles used to facilitate learning.

Theory and Practice of Self-Directed learning

Self-directed learning is often considered the ultimate goal of education (Brookfield, 1986; Mezirow, 1985). The human race needs self-directed learning for survival. This basic human potential, knowing how to learn, is a necessity for living in the 21st century (Knowles, 1975). Self-directed learning, in various forms, has been evident throughout history and is closely related to the concept of andragogy and its assumptions about adult learners (Knowles, 1980, 1984):

1. **Self-concept:** The learners' self-concept or belief about themselves as learners develops on a continuum with learners possessing various degrees of self-direction. Previous success in learning improves learners' general self-concept and capacity for self-direction. Learners have a psychological need to be self-directing but may consciously choose to be more dependent in areas where they lack previous experience or knowledge.
2. **Experience:** Learners accumulate life experiences that are a rich foundation and resource for new learning for themselves and others. Experience must be valued as it is related to personal identity.
3. **Readiness to learn:** Learners are ready to learn as they accept and learn to adapt to new roles, such as a different job or parenthood, or wish to escape from present roles.
4. **Orientation of learning:** As learners mature, they prefer problem-centered learning that they can immediately apply to relevant situations to increase their competency and help them live more effectively.
5. **Motivation:** Adults are motivated to a greater extent by internal factors such as self-esteem, job satisfaction, and quality of life than by external motivators such as promotions and higher salaries.

Definitions of Self-Directed Learning

There are many different definitions of self-directed learning (Hiemstra, 1994). Ideas such as personal responsibility, autonomy, independence, and lifelong learning are all part of self-directed learning. In self-directed learning, the focus is on the learner taking the initiative in the learning process. Ultimately, the

learner determines what needs to be learned; sets the learning goals; determines what resources, both human and material, are required; applies pertinent learning strategies; and evaluates the final results (Knowles, 1975). Through self-management (how learners manage the resources, their actions and the social context) and self-monitoring (the process of monitoring, regulating and evaluating learning strategies), learners become responsible for their own learning (Bolhuis, 1996; Garrison, 1997). In this paper, I shall refer to self-directed learning as the willingness or ability of learners to take control, make choices, and take responsibility for the consequences of their learning (Hiemstra, 1994).

Ten Myths of Self-Directed Learning (Brockett & Hiemstra, 1991)

1. One is either self-directed or not.
2. Self-direction means learning alone.
3. Self-direction is a fad.
4. Self-direction takes more time than it's worth.
5. Self-directed learning mainly involves writing and reading.
6. The facilitator is passive.
7. Self-directed learning is aimed at those who voluntarily choose to learn.
8. Self-directed learning is aimed at white middle class adults.
9. Self-directed learning will destroy traditional and institutional programs.
10. Self-directed learning is the best method for adults.

Self-direction exists on a continuum that increases with maturity, the learner's motivation, and his/her ability to identify needs and access information. The learning environment determines if inquiry and self-initiative are encouraged

and supported. The learner uses many strategies to achieve the learning outcomes, including seeking interaction and support from others yet maintaining primary responsibility for the learning (Chen & Willits, 1999; Moore, 1994). Self-directed learning has existed throughout the ages as a means for people to meet life's challenges and for survival. Scholars throughout Western civilization, such as Aristotle and Socrates, used the tools of self-directed learning (Tough, 1967).

Self-directed learning involves many learning situations such as discussions, interviews, practicums, and a variety of social settings. There are many self-directed initiatives in disadvantaged global communities that seek to empower learners through basic literacy, and knowledge of health, sanitation, education and economic development. A self-directed learning approach can inspire learners. The facilitator is very active, supporting the learner, negotiating meaning, promoting critical thinking, providing resources, and modeling metacognitive thinking in a nurturing learning environment. Although self-directed learning causes a shift in the teacher's role as the "font of knowledge," this change is also mandated by the needs in an information society. Self-directed learning is not ideal in all situations, especially when practical and ethical implications must be considered.

Facilitating Learner Self-Direction

Motivation through collaboration and responsibility. Self-directed learning skills and learner responsibility can be encouraged in a collaborative learning environment. The instructor, assuming an interactive role, helps learners participate in planning learning activities, locating resources, and assessing needs

and progress in achieving goals, and generally guides them from dependence to incremental stages of learner control and independence (Candy, 1981). In order to provide opportunities for responsibility and self-direction in learners, the instructor must accept a change in pedagogical role to facilitator, manager, resource supporter, motivator, and modeler of learning strategies. At the same time the instructor must make educational decisions regarding learner and curricular needs (Garrison, 1991).

In collaboration, learner and instructor analyze issues to help gain new perspectives and understanding. Collaboration becomes a fine balance as the instructor, while still ensuring the foundation knowledge is covered, gives the learner more choice and control within the learning framework (Garrison, 1997; Morrow, Sharkey, & Firestone, 1993). Motivation plays a key role in goal completion and is a determining factor in self-directed learning. Research indicates that the collaborating role of the teacher, and learner control are motivating factors that promote positive attitudes in learners (Verdros & Pankowski, 1980). Students are intrinsically motivated when they are able to choose their own topics of interest and are actively involved in sharing understanding (Garrison, 1997). Through learner-centered activities, interaction, and choice, students can be empowered to develop self-directed learning skills and take more responsibility for learning (Hiemstra, 1994). Research shows that increased learner choice correlates directly with increased learner autonomy (Kearsley & Lynch, 1996) and that adults prefer to have some autonomy in their

learning (Brockett & Hiemstra, 1991; Brookfield, 1985; Knowles, 1975; Long, 1988).

Feedback. It is not so much the geographic distance that separates learner and teacher but how communication is facilitated. As interaction among students and between teacher and learner increases, distance decreases (Shale & Garrison, 1990). In online learning, computer conferencing is the means for increasing communication between teacher and learner and among other learners in order to build understanding. Because it is essential for students to construct meaning, teacher feedback must be prompt and frequent. External and internal feedback is necessary for the learner to self-monitor learning strategies as he/she accepts more responsibility for the learning (Garrison, 1997). By encouraging students to reflect on the process of learning, including the trials and tribulations, they will begin to understand their own learning styles and thinking. By using metacognitive strategies, students learn how they learn and develop a repertoire of thinking processes for problem-solving and lifelong learning. When teachers model learning strategies such as questioning, summarizing, predicting, and clarifying, students can transfer these strategies to other learning situations (Many, Fyfe, Lewis & Mitchell, 1996).

Support. Many of the characteristics that promote self-direction in learning in the classroom can be applied to the online environment through appropriate course design. Due to the physical separation of teacher and learner, the qualities of initiative, autonomy and responsibility are even more important in carrying out the learning process online. An important factor in learner autonomy

is the learners' interaction with and support from other learners (Moore, 1994). Interaction can be achieved through computer conferencing as a means of building understanding and community. Through online discussion, students get to know one another, and feel accepted and respected in their online learning environment. Since learners vary in their readiness for autonomy and self-direction, facilitators need to assist learners with "survival" tips and learning how to learn through scaffolding techniques to develop skills and strategies in learners (Bolhuis, 1996).

Predictors for Success Online

Research reveals that students are not all entirely comfortable with the demands of responsibility and self-directed learning required by online learning. This is partly due to the fact that, in some cases, materials designed for the classroom have simply been transferred online without regard to design (Geursen, 2000). Also, online learning requires students to have a degree of self-direction and an ability to know how to learn (Gallagher, 1994). Rowntree (1995) identifies four skills that are needed by online learners: computer skills, time management skills, interactive skills, and literacy/discussion skills. Research findings correlate student computer skills and interactive skills to learner autonomy. In fact, learner autonomy is considered a predictor for success in online learning (Owston, 1997). Students also need to come to terms with their new role and let go of some of the dependence to which they have been accustomed. This involves a process of change of conceptions of learning (Conrick, 1994) for both student and teacher. The challenge for teachers is to

understand how to make the paradigm shift in roles and how technology can support learning (Tinkler, Lepani, & Mitchell, 1996). In order to maximize the learning experience, it is essential that the instructor understand the learner's need for support, collaborative interaction, and self-direction (Chen & Willits, 1999). For a successful online program, training is necessary for instructors to make the transition to online teaching. This process of change requires substantial ongoing support (Owston, 1997).

Potential for Self-Directed Learning Online

Online learning opens up the potential for rich resources through hyperlinks, online databases and Internet websites. Online learning does not need to be linear; it can be dynamic and allow for divergent thinking and independent learning. Teachers can structure assignments to provide learners practice in the information literacy skills needed for finding and evaluating learning resources on the WWW. The greater the number of quality resources available, the greater the potential for self-directed learning. Purposeful design is also required for asynchronous conferencing to be effective and to encourage interaction. Self-directed learning holds enormous potential for enhancing the learning process and developing lifelong learners.

Discussion

The purposeful course design and pedagogical underpinnings of the University of Alberta's distance education courses are a major reason for the quality of its online program. Certain aspects of learning online made my learning

experience quite different from face-to-face instruction and very different from my previous education experiences. These differences were achieved, not as a result of the medium and its technology, but through using a purposeful framework to facilitate a shift to a focus on the learner. After researching the theory of self-directed and online learning as presented earlier in this paper, it is interesting to note that the principles of constructivism and andragogy, achieved through dialogue, involvement, support, and learner control to facilitate learning and foster self-direction, are consistent with my online learning experience at the University of Alberta.

Principles of Learning

Certain educational principles are fundamental to all forms of learning. The challenge is to make the paradigm shift from teacher-centered to learner-centered with opportunities for incremental learner control and self-direction. My online experience taught me that technology is a powerful tool with the potential to individualize instruction, promote interaction with larger learning communities and provide lightning fast information through hyperlinks and the Internet. It can provide educational opportunities to people who formerly had limited access, and it can enable people to become lifelong learners. However, technology is only a tool and cannot make up for poor design, inadequate feedback, and lack of interaction among students and instructor. Learning outcomes, not technology, should drive the instruction. Online learning involves much more than transferring content to the electronic medium. It involves seeing with new eyes the course content, the activities, and the instructor and learner roles, in order to respond

effectively to learner needs, motivations, learning styles and outcomes. In order to engage learners and make learning meaningful, the principles of constructivism and andragogy are key to successful online course design. I shall discuss these principles as they relate to my online experience and to the four features of online learning, generally recognized as best practice in the research: dialogue, involvement, support and control (Coomey & Stephenson, 2001).

Dialogue

Dialogue occurs through electronic mediums such as email, chat, group discussion and bulletin boards and provides the opportunity for active construction of ideas, reflection and participation. One criticism of online learning by face-to-face learners is that there will be less discussion (Henri & Kaye, 1993; Lauzon, 1992). I actually found the contrary but meaningful dialogue can occur only if the instructor designs effective activities to promote interaction and structure dialogue into course activities. Following are some of my reflections on asynchronous dialogue using the online conference forum. If I were to discuss face-to-face topics such as censorship, copyright, the challenges of the Internet, I would not be able to do as good a job face-to-face as I would online. Why? Since I was new to teacher-librarianship, I initially listened, read and reflected on my classmates' comments. In the absence of a lecture where I would be told what to think about a practice or issue, I needed time in order to construct my own understanding. This process gave me time to inform myself about the topics, do the readings, form my opinions, offer my ideas and learning when I was ready, and receive feedback from students in the class.

The process of building understanding on prior experience and using new information to create meaning made me realize what active learning is. It didn't mean "hands-on" but rather engaged learning using the thought process. In my classes, the instructor asked students probing questions to deepen understanding and promote critical thinking. A new vision of learning based on inquiry, where the students' questions were more important than the teachers, was being implemented. The teacher still had an important role in helping students make personal sense of information but was no longer the "voice of knowledge" but rather a guide and motivator. I appreciated new teacher and student roles in my distance classes where learning was a shared experience.

Involvement

Involvement is achieved through engaging, relevant tasks that are challenging, provide pertinent feedback, and allow the learner to use personal initiative. In my courses, problem-based tasks were meaningful assignments that included challenge, reflection and, most of all, relevancy. The learning experience was not only the task but also the process learned to complete the task. One of my first assignments in EDES 546 School Information Materials was to evaluate the reference section of the school library and then to spend \$7,000 to upgrade the resources. It was almost as if I had been given the position of teacher-librarian and was expected to do the job. Initially, it was a shock. The task appeared overwhelming to me, a neophyte to teacher-librarianship. It was through the process of inquiry and critical thinking skills that I learned what had to be done. Already I had gained practice in retrieving information and how to select

resources. I knew where to go for support and clarification if needed. Through scaffolding provided by the instructor, I was able to break up the task into manageable segments. This task was very relevant to practice and empowered me with responsibility and some control. My choices in resources needed to be supported by a strong rationale. Through skills gained in information literacy and metacognition, I felt confident that I could do this task and surmount the difficulties and challenges ahead.

Support

Affective domain. Learner support is crucial for online learning success. I have shared my reflections on the importance of support from peers, instructor, and library and technical services. One area of support that may not be as concrete but must not be neglected is the learner's affective domain. The instructor makes a significant impact on the learning environment. In the online environment, the instructor must also bridge the gap between the technology interface and the human factors involved in the learning process. A very important role of the instructor is to pay attention to the learner's affective domain (Bullen, 1998). It was interesting that teacher empathy and caring could be seen through the electronic page. I appreciated the instructor's understanding that not all students came to the course with the same background but that each of us had something to learn and contribute to others. Certainly, instructors could make a big difference in humanizing the process of online learning.

Community of learners. In asynchronous conferencing, it was interesting to note that everyone's viewpoint was valued as each presented a different

perspective. I found myself learning a lot from my fellow students. Student opinions could change as one gained further understanding. It was okay to be on the path towards understanding. It was interesting for me that the teacher did not feel obliged to give the “right” answer or be too quick to “enable” before the appropriate time. Classmates were quick to thank others for expanding on their ideas and promoting further thought. Students felt encouraged to model the positive and insightful comments of their instructor and classmates. Appreciation was expressed to colleagues for their precise leads, insights and leadership. In the distance experience, there was more of an imperative to communicate these thoughts. Feeling a little more fragile and alone, it was through the support from the community of learners that I gained strength and confidence. There was also a strong element of modeling on the conference forum that I wanted to emulate. In one class, my instructor thanked the students for posting messages so everyone could see that they could help each other. The students were also asked to send photos that were used to create a collage of the class and returned by mail. This connection to others in the class was important to me. In another class, the instructor gave us a list of participants and geographic location. My learning community included the instructor and also online experts, fellow students worldwide, and colleagues in my own community.

Scaffolding. The instructors’ use of scaffolding helped me develop necessary skills and gain confidence in meeting the learning outcomes. By developing my information literacy skills, I also learned essential abilities for becoming an independent lifelong learner. The instructor also checked to ensure

that students were at appropriate stages of assignments. I appreciated having deadlines for selecting a topic, writing a rationale, and assignment completion. I found they helped me to look forward and plan ahead and they also broke down seemingly monumental tasks into manageable pieces.

Control

Control refers to the extent to which the learner is encouraged to exercise control of learning activities. My experience was that I was motivated when I had flexibility and choice in my learning. Learner control, afforded by the interactive interface of online learning, together with learners having the skills for finding information resources, provided opportunities for self-direction. Knowles' self-direction learning theory in which the learner is regarded as incrementally more independent, having a rich resource of experience to draw from, ready for the task of learning, enjoying problem-centered tasks, and motivated by the intrinsic pursuit of learning provides a framework for meaningful learning online. Relevancy and why the learner needs to know something are imperative for learner motivation. By embedding the "need to know" into the project itself, student motivation is heightened. Open-ended questions, personal case studies, and student-created virtual seminars motivate students to read the responses of their peers. With support, skill development (information literacy, critical thinking), and scaffolding (dividing up the tasks into manageable chunks, attending to metacognitive strategies, and so on), the student learns strategies and skills that can eventually be used outside the classroom for purposes of self-direction.

Metacognition. Teaching metacognitive strategies, that is, teaching the student to become more aware of how he/she learns and how to monitor this learning helps shift the focus of the learning away from the instructor and toward the learner. Through reflection, I learned that periods of frustration in the learning process are normal and to be expected. Even though I sometimes felt that progress was not happening during an assignment, I learned that this process of “spinning my wheels” was a necessary step in the research process. I found that assignments that provided some choice and control for learners also provided avenues for self-direction, freedom and student control. My reflections together with subtle insights shared by my instructor, enlightened me that engagement is much easier when we need something or have a connection to something. The process of seeing myself as a learner was illuminating and I found that lessons learned could be transferred to new situations and that enabled me to monitor my own learning.

Information literacy. Information literacy puts the power “to know” into the hands of the learner. In my courses, I enjoyed making personal sense of educational issues and applying my new information literacy skills. I have never read so much. Access to information and ideas has exploded due to the Internet. Although the Internet has been referred to as one of the most powerful tools in history for self-directed learning (Gray, 1999), I would have been lost in cyberspace without information literacy skills to make sense of the information glut. With electronic database resources, I was able to link my experience with the most recent ideas from around the world. The telecommunication capabilities of the Internet allowed me to converse with people worldwide. I was happy not to

have to write tests since memorizing static data is meaningless in world where knowledge is dynamic and must be constructed and reconstructed as the world changes. Through the skills and knowledge I gained related to information literacy, online search techniques, and online databases, and through my own innate curiosity, I found that after completing this program, I was able to pursue self-directed topics quite easily. Together with critical thinking skills and the need to know, I was on my way to lifelong learning.

Empowerment through choice. Choosing one's topic for assignments was another aspect of my online learning experience that promoted self-direction. I found myself reading on a variety of topics until I settled on one. No longer did the teacher present packages of information to be learned; it was the students who created questions and topics of inquiry to explore. Not only did I gain ownership of newly constructed meaning and develop computer and critical thinking skills at the same time, but also I felt empowered to share my discoveries with others. Options of dates for presentations, choice of topics, and what had to be completed and how, provided me with opportunities for initiative and self-direction. Just as dependency can be taught and learned, self-direction can be taught and learned. By enabling students to make the transition from merely receiving information to actively exploring ideas, from just answering questions to generating them, instructors can encourage learners to take responsibility for their learning leading to self-directed learning. Taking responsibility for learning is a personal choice but it is incumbent upon the instructor to use strategies that allow learners to take ownership of their learning.

Recommendations

Purposeful Framework

My experience of online learning through the University of Alberta would have been very different had the instructors not adopted a framework for learning that is based on sound learning theory and practice. I found myself taking certain features of the courses for granted without realizing that these practices were purposeful and intentional in facilitating student learning. As I experienced relevant assignments, the new role of the instructor, motivational techniques, knowledge construction through online interaction, and the collaborative learning environment, however, I began to realize that there must be a purposeful framework.

Through the reflection activities, I realized that I was actually being taught using methodology that was very effective in creating active learning. Although I mentioned this in reflective journals to my six instructors, I never received actual feedback that this outcome had been intentional. Were the instructors responsible for these positive outcomes? I didn't know, but the effective methods in various courses made me wonder. When I began to prepare this paper, I requested and received an outline of the framework of ideas that the instructors had initially agreed upon. I found these ideas to be consistent with my experience and they helped to explain much of what I had since learned from studying the theory of online learning and self-directed learning. They included such ideas as embedded questions to encourage reflection and extension; relevant assignments incorporating some choice to allow students to shape assignments; extensive use

of the conference for community building; support for library use and modeling of library use; hyperlinks for extension of course information; and instructor and student biographies to help students and instructors get to know each other as people.

Recommendations for Online Educators

Following is a list of recommendations for online instructors. This list is not meant to be comprehensive but one I feel includes recommendations that address particularly the promotion of motivation, independence and self-direction in learners.

1. Create a collaborative online learning community that respects and supports students' learning challenges, values life experience, and challenges thinking. Pay attention to learners' affective domain.
2. Develop collaborative activities and an atmosphere of sharing and mutual support. Allow students to share and teach others what they have learned and produced.
3. Provide a large variety of resources to suit various learning styles and stimulate learning. Hyperlinks can extend topics or fill in potential gaps of understanding. Online guest speakers and experts provide different perspectives and can promote deeper understanding.
4. Provide relevant active learning activities such as case studies, reflective journals, research projects, virtual seminars, problem-based learning, and open-ended discussions for knowledge construction.

5. Embed the need to know into the learning activities themselves and provide practice in information literacy skills such as acquiring and making sense of information.
6. Use scaffolding to guide learners in the metacognitive processes necessary for success in increasing independent research. Negotiate with learners a schedule to facilitate time management.
7. Provide students with choices, learner control and opportunities for exploration. Allow the learners to make decisions and self-diagnose learning needs and personal learning objectives.
8. Provide opportunities for reflection on both the content learned and the learning process. Promote learning through analysing errors, self-correction and self-evaluation. Model the expected behaviours and attitudes so learners eventually internalize the processes necessary for independence and self-directed learning.
9. Promote critical thinking through probing questions to clarify students' thinking. Provide regular, prompt, meaningful feedback to inform rather than to control.
10. Match evaluation with instructional activities. Make the criteria for evaluation clear through the use of rubrics to provide an objective assessment on how the work will be evaluated and indicate specific performance expectations.

Recommendations for Online Students

I recommend online courses that use a constructivist approach to instructional design. This instructional approach emphasizes encouraging learners to take control of and initiate their learning; problems to be solved can support deep understanding; reflection helps learners to understand how to learn, select resources and make sense of information; and learners can trust their prior knowledge and experience to build new understanding. Online learners need to have the personal attributes such as belief in oneself as a learner, self-motivation and perseverance, as well as literacy and basic computer skills. Online learners need to be ready to dedicate considerable energy and time and to reach out to others in the learning community. Interest in online learning is mushrooming and standards and accreditation are not consistent. Students need to beware of courses that simply transfer information to the online environment without the support of interaction and activities that facilitate learning.

Conclusion

The instructor can empower students to accept responsibility for learning and facilitate self-direction skills. Students have varying degrees of self-direction, depending on the situation and subject matter, but this does not mean that the learner must make all decisions or learn alone, nor does it mean that the learners require no instructional support. Learners require information literacy skills in order to access vast resources including the Internet. The instructor's task is to find a balance between the tendency to control the learning and the desire to provide the learner with autonomy (Lebow, 1993). The reality is that the

instructor needs to relinquish traditional control in his/her shift to shared collaborative responsibility with the learner for learning activities. As instructor and student share control, the instructor is ready to provide instructional and motivational support while the student assumes more responsibility. Collaborative control facilitates motivation and responsibility and self-direction in learners. In order to persist in the learning goals, the learner needs to perceive value and anticipate success in the activity (Garrison, 1997). Therefore, the instructor must motivate the learner through encouragement and relevant meaningful activities.

The task of the online instructor becomes a fine balance of control and responsibility. This is not a question of relinquishing all control and responsibility and allowing learners to “sink or swim.” The goal of course design and instruction is to support the students’ learning (Thorpe, 1995). The online instructor and course designer have the power to use technology to enhance learning by offering learners opportunities for greater autonomy and self-direction. Through empowerment, learners can achieve their potential not only in the cognitive domain but also through feelings of self-worth and pro-activity in controlling their life. In an ever-changing world, it is imperative for educators to empower learners with skills leading to self-direction so that they may become lifelong learners.

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