NEW HORIZONS IN ADULT EDUCATION
ISSN. 1062-3183

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Volume 15 Number 1 Spring 2001

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New Horizons in Adult Education, founded in 1987, is a refereed electronic journal published by Nova Southeastern University's Programs for Higher Education. The journal provides faculty, graduate students, researchers, and practitioners with a means for publishing their current thinking and research within adult education and related fields: research, thought pieces, book reviews, point-counter-point articles, conceptual analysis, case studies, interactive articles, and invitational columns. The journal is available electronically on the Adult Education Network (AEDNET) web page http://www.nova.edu/~aed/newhorizons.html

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N E W H O R I Z O N S I N A D U L T E D U C A T I O N
Volume 15, Number 1, Spring 2001

C O N T E N T S

N E W H O R I Z O N S I N A D U L T E D U C A T I O N
Volume 15, Number 1, Spring 2001

EDITOR'S PREFACE

The use of web-based bulletin boards is becoming increasingly common in higher education and training. However, considerations regarding the effectiveness of this medium in helping adults learn are only recently beginning to surface. Playing Out the Realities of Web-based Bulletin Boards: Enhancing Face to Face Learning by Kathleen P. King presents the results of a study of university graduate students taking education courses. The article gives ample support for the benefits of this technology, as well as some of the possible limitations. In addition, the author provides some valuable recommendations for those considering the use of web-based conferencing.

The use of computers in adult literacy programs is a topic for debate among those involved in these programs. In the article Computers in Canadian Adult Literacy: The Need for Curriculum Deliberation by Lori-Kyle Herod the case is made for the implementation of a curriculum deliberation process that would support the integration of technology into these programs. The article underlines the importance of a coherent curriculum that includes both content and process. The application of the principles of adult education in this deliberative process is shown to enhance the use of new technologies and benefit the learners.

Readers are invited to make these articles "interactive" by responding on AEDNET and sharing their comments. (Directions to guide this discussion are given in this issue on page 23). Readers also are encouraged to submit an article for consideration by the editorial board of New Horizons on a related topic or other topic relevant to adult education philosophy, research, and practice. (See Call for Manuscripts on page 23 for details.)

N E W H O R I Z O N S I N A D U L T E D U C A T I O N
Volume 15, Number 1, Spring 2001

PLAYING OUT THE REALITIES OF WEB-BASED BULLETIN BOARDS:

ENHANCING FACE TO FACE LEARNING

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Abstract

Using web-based bulletin boards in classes elicited enthusiastic responses from graduate education students. In addition, the participants' perspectives as educators and educators-in-training enabled them to reflect on how it enhanced learning, created a greater sense of community and encouraged participation through its use. Some negative aspects of web-based conferencing also emerged. This article is based on a study of 109 students and describes the technology used, where it is freely available, student reflections on the experience, and recommendations for use in higher education instruction. The findings will encourage educators to consider incorporating this technology even into their non-distance education classes.

Introduction

Just as directors desire to craft a performance that will deeply impact the audience, so do educators desire to create teaching and learning experiences that will have specific outcomes. Dialogue, learner-centeredness, and critical reflection: these are common goals that we desire to cultivate among students in the course of their higher education experience (Brookfield, 1990). What if there was a way to accomplish these goals while also meeting the demands of accrediting, state, and national standards for the integration of technology into the education experience in sound pedagogical, and andragogical ways? In addition, what if this method was freely available, accessible and required only novice technical skills to setup and use? This should be appealing to many faculty members and administrators interested in innovative instructional teaching and learning. Based on my experience and research among 109 graduate education students enrolled in "traditional" face to face classes, web-based conferencing, variously called electronic bulletin boards, web boards or threaded discussion boards, may be one means to facilitate reaching these goals.

Background

Throughout this inquiry into teaching and learning through web-based conferencing, the instructor was reminded of the theater. This observation is in part due to the fact that web-based conferencing is text-based and reads much like a script where each "player" speaks at different times and attention shifts from player to player as they contribute. However, it should be remembered that in this case the students are writing to "script" themselves as the discussion progresses, so it is similar to an improvisational theater. This article makes use of the concept of a play to discuss the web-based conference, because such a parallel draws attention to the "learner-players" and still recognizes the important, yet less conspicuous, role of the "teacher-director" in a manner that mirrors the experience.

I had been using a variety of online technologies with my educational technology classes for many semesters, when I started to use web-based conferencing with one of my non-technology content classes, a human relations class. The students were so overwhelmingly enthusiastic about this format that I began to ask them and my educational technology students to reflect on the experience and to identify what they felt were the significant advantages to the medium. This paper is intended to share their excitement, the findings, and recommendations for the use of this technological teaching and learning tool.

Web-based conferencing can be used to enable students to carry on conversations by posting comments at a private, specifically designated and designed web site. Several free web-sites, and many commercially available educational software packages, offer the capability for instructors to easily construct "web boards" for use with their classes. At the time of this writing, Nicenet (http://www.nicenet.org), Delphi (http://www.delphi.com), and Tapped-In (http://www.tappedin.org) are examples of some of these free services. Working as a prepared "teacher-director", I used one of these web-sites to design a web board for each class and included instructions in the syllabus as to how to access and sign in to the site. In addition, I conducted "rehearsals" for the learners as I either facilitated hands-on practice or demonstrated via overhead projector the process of registering and using the web site.

When it was convenient for the students, they went online to register and browse the designated web site. After they signed in to the site, they found introductory comments, discussion questions, technical question and answer postings, and a social center (a "cyber cafe") that I had already inputted specifically for their class. All they had to do was select the topic headings, read the related comments and respond with their answers, questions and insights. They then could continue reading and responding or sign in at another time to see what responses and comments had been added by their classmates or instructor. Two major features of this technique make it valuable for instructional purposes. First, it is asynchronous: the participants do not have to be online at the same time to engage in the "conversation." This technology is also aptly referred to as "anytime, anywhere" technology and points out one of the practical strengths of this medium for adult learners- its convenience (Eastmond, 1995, Moore & Kearsley, 1996;

Paloff & Pratt, 1999). Second, the postings are displayed at the web site in a topical manner so postings regarding the same and related topics are linked together. This format referred to as “threaded discussion” and facilitates access, understanding and participation.

The Setting

The setting for this discussion of the experiences of teacher-director and learner-players was a research design embedded in the existing structure of classes conducted at this particular private university. Information was to be gathered from adult learners engaged in communicating via web-based bulletin boards in graduate education courses. In contrast to much of the existing literature, these classes were not distance education courses, but instead were traditional, face-to-face classes and the Internet conferencing was used to supplement the weekly, 2-hour class meetings. While other technology-based learning experiences (such as listservs, live chat, electronic journals and teleconferencing) were included in some of these courses, the emphasis of these observations were web-based conferencing because of its wide-spread availability, the remarkably enthusiastic responses of the participants, and its notable enhancement of teaching and learning.

An important condition of this learning experience was that all of the students had Internet access. Services provided to students enrolled in this graduate school included free dial-up Internet access and computer labs with full Internet access. In particular, the graduate education students had Internet support and access in an especially designed, equipped and staffed technology lab for their use. Even if the students did not have Internet access through home or work, they could come to the lab and have full access along with individual, trained technical support. Students could conveniently use this lab before and/or after class, or anytime during the week and specific hours on the weekend.

Before the semester started, the instructor had set up specific web-based conferencing sites for each class that included class information and specific discussion questions. These sites were fully designed and functional before they were introduced to the classes. During the first two weeks of each class, the professor explained and demonstrated how to use that course's conferencing web site and written instructions were distributed. At this time, the professor made provisions for all who were uncertain of their technical ability to learn how to use it.

At the class sessions indicated in the course syllabi, the teacher introduced the discussion questions to the classes and asked them to start signing in and using their class sites to discuss the questions as "homework." When students signed in and wrote responses, they were immediately and automatically posted to the web site for others to see. In this way, the students could then read and respond to one another.

As the students engaged in asynchronous communication, the professor occasionally checked in to monitor progress. Her comments were purposely kept to a minimum so as not to further direct or curb the conversation and communication

dynamics. At the intervening face-to-face class sessions, the professor would ask whether there were any difficulties or questions she could answer. When the students first started using the system, they occasionally asked questions about the features of the conference board in class.

The experience of the 109 adult learners was documented in several ways:

1. All of the students' 354 entries in the conferences were retained at the web sites.
2. At the end of the semester, all of the 45 postings that discussed the web-based communication process and the students' perceptions and reactions to it were printed out.
3. Three of the classes were asked to write brief reflective essays and/or journal entries about the experience (a total of 46 entries).
4. Class discussions were conducted to provide formal closure to the experience.

In order to allow the adult learners' perspectives to be foremost, these data were coded by identifying emergent themes through the process of constant comparison in which themes are generated by and confirmed in the data (Gall, Borg, & Gall, 1996). Immediate themes were easily identified, while others were only evident after extended study of the data. The responses were then grouped by theme and analyzed for further characterization. Follow-up class discussions served to check the validity of the analysis (Johnson & Christensen, 2000).

The Players

There were 109 participants from five classes in this study, 82 women and 27 men. They ranged in age from 21-56 and all were taking graduate education courses at the same East Coast urban university. Their programs of study included TESOL, educational psychology, early childhood education, elementary education, secondary education, adult education and administration and supervision. All but one of the classes had the same professor, but the courses were in three different content areas. Three courses were on the subject of educational technology, one was on computer applications in school administration and supervision, and one was on human relations in adult education. This profile of the participants reveals the variety of educators involved in the study and will later serve to demonstrate that the reflections of the teachers, teachers-in-training, and administrators about their experience in electronic conferencing provided valuable insight for educational practice.

Recurring Themes

As the participants engaged in reflection about their conferencing experience, they identified several recurring themes - predominately positive, but also some negative. In addition, the teacher-director observed several notable characteristics of the exchanges.

Positive Perspectives from the Players

In these instances, students became very enthusiastic about the medium and maintained that online engagement with their peers provided deeper communication and facilitated an increased sense of connection, or community, in their face-to-face encounters. They cited the experience that because time constraints were not as pressing an issue as in face-to-face class time, that they were able to reread their classmates' contributions, engage in deeper thought about the subject matter and ultimately provide **thoughtful and substantial responses**. In this context, they also referred to using **critical thinking skills** to a greater degree than they usually did in classroom discussions. These references about the deeper level and greater engagement in discussion dominated the participants' reflections.

The next most frequent theme of reflection was regarding the experience and perception that this technology would provide a user-friendly opportunity for **shy classmates to participate**. This theme was expressed in various terms, but was one of the major benefits these adult learners saw of the technology. Indeed, several students posted messages that stated that they usually were hesitant to speak in public or were less verbally articulate and that this medium helped them to be active contributors in the discussions. Quotes from two of these students are provided here, because they particularly express firsthand experiences of this nature:

> I enjoyed our class last night. Chatting through our bulletin board was a new way for our class to communicate. It made me feel comfortable expressing my thoughts to everyone without having everyone look at me while I speak. I'm very shy and on rare occasions am I capable of speaking in public.

> In my opinion classroom discussions sometimes frighten the person(s) in the class thereby, causing them not to participate in discussion. Secondly, people are afraid they might say the wrong thing, then the class will laugh at a person or tell them that was the wrong answer. This class conferencing allowed everyone to open up freely without feeling any restrictions. Through this class conferencing, people spoke a lot that don't usually speak in class, **like myself.** I have found that participating in this class conferencing I spoke more and I really enjoyed it and I realize through this class conferencing that I had some valued points to make.

In addition, many of these students' classmates echoed the importance of providing "voice" for the reticent or less verbally proficient through this medium. It should also be noted that unlike public web boards (Hatton, 1995), no difference in participation based on gender was evident in this study.

The participants were very enthusiastic about the fact that this technology generated more **peer-to-peer interaction** and developed a **greater sense of community** among them. This was the theme of many of the class discussions about the experience

and was seen as a consequence of the fact that the technology was being used to supplement face-to-face classes and not as a substitute (Davis & Holt, 1998). The combination of these experiences cultivated a remarkable dynamic of community that energized the formal classroom experience and relationships beyond the individual courses. Interactions of this depth are also evident in some public web-based conferences (Miller & Gergen, 1998).

The web-based bulletin board was also appreciated for the ability to **organize (thread) discussions** in contrast to other technology services, such as e-mail, listservs or chat rooms. The students mentioned that many times they felt overwhelmed by these other technologies, because "conversations" were received in patterns that were sometimes incoherent. Instead, the web board messages were posted by topic and this was a major benefit for accessing, understanding and contributing to discussions.

Typical of web board users (James, Wotring & Forrest, 1995), the **convenient**, anytime-anywhere nature of the web boards was also appreciated by the participants. Many of the learners noted that they signed on late at night or early in the morning, and they were able to interact more frequently because of the asynchronous nature of this instructional tool. In the class discussions, it was apparent that convenience was a major benefit of this technology for learners. One student identified this as a benefit in his contributing to discussions, because he could sign on when he was rested and alert, in contrast to trying to engage in discussion during class when he was tired from working all day.

Finally, the participants noted the **motivation** that this **valuable tool** for teaching and learning provided. As educators they felt this was very important in realizing that web boards (a) could motivate learners not usually reached through face-to-face teaching methods and (b) should be only one of many teaching tools. They also emphasized that educators need to plan the use of the web boards like they do any other teaching and learning experience.

Negative Perspectives from the Players

The responses from the participants about the negative aspects of the experience can be divided into two categories: problems related to communication and technology. First, these education students recognized that a successful participant in this activity needed to be a **self-directed learner**; otherwise he or she may never "get around to" signing in to the board and contributing. This observation spawned several reflections about the limitations of the web boards for students who might not be so inclined. Though, few in number, other communications problems were recognized in that this mode entails **delayed responses** as classmates eventually log into the system, read and responded to postings. In addition, when no one responded to a posting, the person who posted it sometimes wondered if anyone had read the post at all. A few participants also remarked that the asynchronous nature of the discussions **lacked the spontaneity** and group energy that comes from face-to-face engagements. At the same time, other learners felt the discussions generated more dialogue and excitement than usual. This was coupled

with the fact that some participants stated that there was **no non-verbal communication.** While this observation could be debated because online posts are in a sense entirely nonverbal in the sense of not being audible, the fact that it is difficult to convey subtle emotions, emphasis and meaning through informal written discussions without non-textual cue is well taken (Gazda, 1998).

A final observation is cause for concern and seed for thought. One participant articulated the thought that the web boards could develop a sense of **false anonymity** among participants. Certainly given the context of their use as a supplement to the face-to-face class, this should not happen. However, given the asynchronous nature and other experiences users may have with public and popular web-based bulletin boards where they never meet the participants, it is worth consideration and thought as to the consequences for those learners who may be lulled into thinking they are anonymous on the class web boards. Participants thinking that they are anonymous may say things they regret. Such an experience was not apparent or cited by any of the participants, but does pose a potential risk.

Several remarks about drawbacks of a technical nature were made as well. The most prevalent observation was that use of this mode would have obstacles for those **intimidated by technology**, or those who did **not have the necessary skills** (such as poor keyboarding skills, no Internet experience, or what they perceived as inadequate writing skills). The learners proposed these as potential problems, but did not give indication that they had experienced these barriers firsthand. As a sign of the times and our expectations of technology, two comments were made about the **lack of spell checking** features at the web boards.

The most difficult technical problem to overcome was the reality of occasional problems with **Internet connections**. One student was unable to connect over a weekend because her Internet service provider was having difficulties. While, this is a recognized wrinkle in technology, would it be a serious deterrent to long term participation? In some cases, it could be; this highlights the paramount importance of educational institutions providing accessible, available and technically supported services in order to ensure equal opportunity through this medium.

Director's Notes

As the facilitator of these conferencing experiences, several observations were salient. Premiere among these remarks, is that I was tremendously impressed by the **nature and substance** of the students' participation. Their postings demonstrated a **liberal affirmation** of one another's ideas and opinions, private and inconspicuous **help** of those who were less technically proficient, **in-depth dialogue** about the issues they addressed and exuding enthusiasm for the opportunities to **get to know and interact with their classmates**. While I knew these learners from the classroom, I had not seen such outstanding support and dialogue among them before. In addition, once such rapport and depth was experienced on the web board, it positively "infiltrated" our classroom encounters as well.

Also, I agree with the learners when they herald the benefits of **enabling shy or hesitant students** to enter into discussion; this is one of my most valued characteristics of the web-boards. At a time when we are increasingly concerned about diversity and voice in educational experiences, technology appears to provide a means to overcome barriers of participation. Once again, having had some of these students in previous classes, I witnessed their first voluntary class contributions on the web boards translate into spoken participation in later face-to-face class sessions.

In addition, as I reviewed and analyzed the web board postings as a single body, I was impressed by how this technology teaching tool elicited **emotion-laden responses** from the participants. As mentioned previously, they frequently expressed excitement, affirmation, and occasionally, frustration firsthand. From an adult learning perspective, if we could get our students this positively involved with all learning activities, we could transform the higher education teaching and learning experience.

The web-based project was an "eye-opener" for these education students to experience firsthand **how technology can be used for educational purposes**. Most of them had never thought of how the Internet could be used in classes. For many of them, their concepts of distance education were dim and unformed. The idea that web boards could be used to further learning in the face-to-face classroom was exciting and had a compounding effect, as it encouraged them to consider and explore other non-traditional teaching methods.

Finally, I was pleasantly surprised at how **few technical difficulties** we experienced among 109 students using this technology. With the growing familiarity with the Internet and greater access to it, the simple interfaces provided with these web boards created little confusion. This is one of the reasons that I believe that this technology is now a viable tool for many educators. In the late 80's and early 90's a lot of technical expertise, institutional resource commitment, and support were needed to use "electronic bulletin boards" (Smith, Kim, & Bernstein, 1992). That need for expertise is decidedly less the case today and more of us can supplement our classes with these rich learning experiences.

Recommendations for Future Performances

In considering using web-based conferencing with classes, several recommendations for practice emerge from these experiences. First, I am of the persuasion that education has to drive technology and not vice versa. That is, I use technology to enhance my teaching and students' learning; I do not use it just because it is popular and "glitzy." The intent of this article has been to highlight some of the sound teaching and learning benefits of appropriately using this technology. In this vein, when educators are looking for ways to increase peer-to-peer communication (Collins, 1998), encourage discussion (Collins, 1997; Paloff & Pratt, 1999; Smith, Kim, & Bernstein, 1992), promote deeper thought and reflection on issues (Brookfield, 1990), encourage the participation of silent class members, and foster a sense of community in their classes (Eastmond, 1995; Paloff & Pratt, 1999), web boards can be an excellent choice.

From the beginning, the educator must recognize the technical resources and limitations of both the educational institution and the students. If these are adequate and there are sufficient resources, access, and support, one can begin planning. Exploring and experiencing the capabilities of private web-based conferencing software or public web board sites is necessary for educators to make choices about how they will use it to prepare students in their specific field of expertise. They should also create simple, concise instructions for the students, plan for hands-on instruction or demonstration of the web board, and consider how students who need extra help in the technical aspects will be able to get it.

If instructors want to promote peer-to-peer interaction and community, they must adopt, both in theory and practice, the role of facilitator-director and not be the focus of activity on the web boards. After carefully creating the class web site and posting thought-provoking and yet friendly questions and topics, instructors should assume a behind-the-scenes role. After all, in improvisational theater the audience does not see the director during the performance, the players are on their own and the script is spontaneously created by the players with minimal formative direction. In good adult learning practice, we cultivate learning experiences that promote self-directed learning (Brookfield, 1990; Paloff & Pratt, 1999). At the same time, we, of course, do not abdicate our responsibility as teacher, but seek a balance of overt control. This facilitator role can be seen in several ways including (a) encouraging discussion, (b) prompting for clarification, and (c) at times, keeping a watchful (Gazda, 1998), yet inconspicuous, eye on the web board interactions. For instance, in one very unusual case, I privately emailed a student about a posting he had made that sounded harsh towards another student's posting. The student responded well to me and made very appropriate edits to his post.

Another important recommendation is that instructors incorporate individual reflection and group dialogue about the experience. Individual reflection encourages students to engage in critical thinking and understand of the impact of the experience on them (Brookfield, 1990). The experience with these 109 students demonstrates that they have valuable insights as educators. The class discussions serve many purposes: demonstrating that although you may not be frequently posting to the online discussion, you are reading the posts; helping them to see their posts' impact on others; highlighting the fact that the web board is a shared experience; and providing a forum to address technical problems. In addition, dialogue about the experience can reveal problems that students might be having before they become too great; as with all teaching and learning methods and with technology, things can and will go wrong (Davis & Holt, 1998). Being current with the status of the project and looking for ways to facilitate the experience will help in this regard.

Additionally, all teacher-directors do not have the same style. Practice with the web boards on a small scale first will help educators determine how this teaching tool can be integrated into their practice to benefit their classes. Educators also need to continue to be mindful of different learning styles and preferences as they anticipate, prepare, and facilitate web-based conferencing. These concerns can be addressed by providing

alternative methods of instruction and support in learning to use the technology and the use of a variety of teaching tools in the entire class experience.

Finally, the use of web boards should not be an "all or nothing" effort. The benefits of web board use as a supplement to traditional face-to-face classroom experiences are many. As described here, the increased sense of community, substantial dialogue and participation begun on the conferencing web site initiated these same results in the classroom. The excitement and depth of teaching and learning that resulted form this dual experience, in class and on the web, has been remarkable. In addition, the focus should remain that the web board is but one teaching tool and that in these cases it is supported by quality and varied classroom learning experiences. I strongly suggest that relying solely on conferencing to stimulate classroom instruction would reap similar, but not the identical benefits.

Conclusion

At a time when technology is taking on increasingly larger role in our society and lives, we have the opportunity to use it in higher education to enhance learning. Building upon our expertise as educators and content experts, we are poised to prepare and facilitate additional significant learning through our classes. By using this technology, we also have the potential of increasing participation of previously reticent and all class members. In addition, we no longer have to be confined to the limitations of a scheduled class hour and location. Technology has broadened our concept of society to global proportions, and by utilizing web-based conferencing to supplement our face-to-face classes we can have "classrooms without walls." Web conferencing provides the opportunity to facilitate meaningful dialogue and learning anytime, anywhere and to foster communities of learners beyond the confines of teacher-led classroom meetings. As teacher-directors we can coordinate creative teaching and learning experiences that take advantage of the World Wide Web to further our educational goals in ways that may not happen otherwise.

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N E W H O R I Z O N S I N A D U L T E D U C A T I O N
Volume 15, Number 1, Spring 2001

COMPUTERS IN ADULT LITERACY: THE NEED FOR CURRICULUM DELIBERATION

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Abstract

Whether or not to integrate computers into curriculum is currently the subject of some debate amongst educators in general (Amos, 1998; Bennett, 1996; Chandler, 1995; Postman, 1993; Robertson, 1998). For adult literacy practitioners in particular, the issue is an especially crucial one and for several reasons, not the least of which involves resource concerns. This paper discusses various factors surrounding this issue and identifies the need for a curriculum deliberation process in Canadian adult literacy.

Background

The use of computers to support adult literacy programs administratively is not at issue among practitioners. Rather, it is their incorporation into teaching and learning that raises questions(Amos, 1998; Ginsburg, 1999; Hopey, 1998; Hopey, Harvey-Morgan & Rethemeyer, 1996; Sabatini & Ginsburg, 1999; Stites, 1999; Stites, Hopey & Ginsburg, 1998; Turner, 1999; Wagner & Hopey, 1998; Wilson, 1998). Concerns center around three main intertwined themes:

1. The **practical** - the use of scarce resources to fund technology. One or two computers can be used to support a program administratively, but more are required for use in instruction. This use comes with costs in terms of money, time, and effort.
2. The **philosophical** - the place of technology within literacy teaching and learning. Programs are stretched just teaching the basics -- reading, writing, spelling and numeracy. Layering technology on top of this will stretch scant resources to the limit. There is also the question of whether *computer* literacy is integral to any definition of being literacy in general.
3. The **educational** - the effectiveness of technology with regard to literacy teaching and learning. Can computers actually be used to enhance learning? Are there aspects or features of computers that may diminish learning outcomes?

Many who disagree with the incorporation of technology do so for practical reasons. Since funding in the field of adult literacy is historically very limited, many believe that scarce resources must be directed at fundamental literacy skills; that is,

reading, writing, spelling and more recently, numeracy. Those on the opposite side of this argument, however, argue that programs cannot afford NOT to become involved, for the reason of what may be termed "technological determinism" (Chandler, 1995). This concept likens technology to a 'steamroller' and suggests that if one is not driving the steamroller one is 'part of the pavement' so to speak. The result will be that the well acknowledged gap between those who are literate and those who are not will widen further, perhaps to the stage where the gulf is too far to bridge:

> It has been said occasionally that technology is "too expensive" given the particular dearth of funding in literacy work .... The reverse may be true: literacy work (and basic education more broadly) cannot afford to ignore the tremendous potential of the network technologies and distance education, otherwise that gap between the informationally rich and the informationally poor will continue to grow. (Wagner & Hopey, 1998, p. 5)

Discussions around this theme also tend to include the notion of access. For some, the cost of technology represents a major barrier to both programs and individual learners (Amos, 1998), while others suggest that cost must be weighed in terms of the benefits. One major benefit according to these educators is that technology will actually increase access and allow the field to reach far more students than ever before (Garner, Dilloway & Whiten, 1999; Meyer; 1999).

A second theme regards the place of technology within teaching and learning, and questions about the nature of being literate. Ginsburg (1999), for example, proposes that because technology is inextricably integrated into society already, the field of literacy must necessarily adapt. "We all acknowledge that the information age has had a profound impact on the world around us; thus it is not unreasonable to posit that the information age should also affect the form and function of adult education." Those on the opposite side of this argument propose that technology is not inevitable unless we allow it to be, and that educators should not get caught up in thinking they ***must*** incorporate technology in order to be effective and relevant (Postman, 1993; Robertson, 1998).

A third theme regards the efficacy of technology regarding educational outcomes. As Hopey (1998) writes, "The hard questions have less to do with the quantity and availability of technology than with the quality and effectiveness of technology use" (p. 4). Many believe that technology represents a panacea or 'magic bullet' for literacy. Bennett (1996), for example, suggests, "Wherever illiteracy is a problem, it could be eliminated" (p. 1). Educators such as Robertson (1998) regard this as "misplaced enthusiasm for techniques and technologies that promise to transform education, " but which, invariably, are "revealed as duds" (p. 6).

Curriculum Deliberation

Hannay & Seller (1990) suggest that curriculum deliberation involves an organized effort "to look at what is, in order to examine what should be" (p. 241). That is, it is a review process in which curriculum is examined from a variety of points of view in

order to determine its efficacy, and to develop recommendations for its improvement. As Walker (1978) writes, "The heart of the deliberative process is the justification of choices" (p. 272). Schwab (1973) offers a deliberative model that includes a wide variety of 'stakeholders' such as learners, practitioners, subject matter 'experts' (scholars, practitioners), and something he terms the "relevant milieus" (the community, political bodies, funding agencies, and cultural groups). Schwab terms these the "four commonplaces." In addition to being inclusive, another strength of this model is that it emphasizes the need for a "curriculum specialist." The primary role of this specialist would be as a "countervailing force" to the four "commonplaces," that is, a mediator whose mandate would be the reconciliation of divergent views/needs/wants into defensible curriculum.

In general, the curriculum specialist role is important to the success or lack thereof of any curriculum deliberation process from a human nature or group dynamics point of view. As Schwab suggests, "The usual developing behaviour of such curriculum groups operating without a representative of this fifth body of experience is one of resentful or resigned submission of three of the groups to a fourth" (p. 504). A good example of this very situation occurred in literacy in Ontario in the 1990's. Although curriculum control had historically been left to individual programs as in other provinces, a new government was brought into power and clawed back this control. Almost unilaterally this government shifted the focus of literacy curricula from a "transformational" (Miller & Seller, 1990) or humanistic and learner-centred orientation, to outcomes-based learning relating primarily to the employability of learners. Programs were obligated to de-emphasize dearly held humanistic values in favor of "utilitarian/practical criteria" (Miller & Seller, 1990). A deliberative process would not necessarily guarantee that those who hold ultimate control over programs would not override the other "commonplaces," even with the intervention of a specialist. However, the process would at least offer some opportunity for equal representation and (hopefully) fair discussion which, in the case of Ontario, might have prevented or offset the government's actions.

In terms of the field of adult literacy specifically, the curriculum specialist role is particularly important since trained, full-time practitioners are few and part-time volunteers with limited training are many. What training is available for practitioners/volunteers tends to relate to content-specific knowledge (such as, numeracy, reading, and writing) versus curriculum development and teaching skills. An experienced curriculum specialist would offer guidance in these areas with the aim of developing coherent curriculum for the field.

Coherent Curriculum

The purpose of a deliberative process is not to *standardize* literacy curricula per se, but rather to ensure that curricula are "coherent." (Beane, 1995). The notion of "coherence" refers to relevance, usefulness, and quality as determined by a variety of "stakeholders" (Brandon, 1999). Coherent curriculum is curriculum that 'makes sense' to those involved with it, be they politicians, funders, learners, practitioners/volunteers, the

larger community, etc. A deliberative process, properly conducted, would be inclusive and would capture and reflect such factors as regional differences in economics, politics, geography, etc., and individual differences such as gender, age, and culture.
Coherent curriculum also refers to the "repositioning [of] learning experiences into meaningful contexts" (Beane, 1995, p.8). That is, the more situated curriculum material is in learners' experience and the real world, the more effective learning will be. For example, Brown, Collins and Duguid (1993) describe the necessity for context in learning language:

> Teaching from dictionaries assumes that definitions and exemplary sentences are self-contained "pieces" of knowledge. But words and sentences are not islands, entire unto themselves…. Experienced readers implicitly understand that words are situated. They, therefore, ask for the rest of the sentence or the context before committing themselves to an interpretation of a word. And then go to dictionaries with situated examples of usage in mind. (p. 1)

Of particular importance to coherent curriculum is also the inclusion of both "referent-" and "problem-centred" knowledge (Bereiter, 1992). Referent-centred knowledge refers to content-specific material such as the operational or computational aspects of mathematics. Problem-centred knowledge refers to the process of solving problems; that is, our strategies, our ability to communicate, to reason, and so on, mathematically. As Bereiter writes:

> The development of problem-centred knowledge depends on problems that persist or recur so that they become the organizing point for knowledge. Problem solving as it typically appears in mathematics and science curricula is the antithesis of the kind of activity that could be expected to lead to problem-centred knowledge of high-level concepts. It consists of strings of problems that are forgotten as soon as the assignment is completed. (1992, pp. 346-347)

Coherent curriculum then, would emphasize both content **and** process. It has at its heart the application of knowledge to solving real world problems. This shift away from content-specific curriculum toward active and authentic learning that addresses both content and process is not an easy shift for many practitioners to make. A curriculum deliberation process with a curriculum specialist at the helm would ease this transition greatly.

Rationale

Although provincial education ministries and regional literacy agencies hold varying degrees of control, in general, curriculum development is completed at the individual program level. As such, many programs expend a good proportion of their limited resources developing curricula "from the ground up" so to speak. The curricula developed may range from somewhat loose and haphazard, to well-thought out and defensible depending on the will, resources, and expertise of each program. As such, the quality of literacy curricula varies greatly between provinces, regions and programs. This

alone speaks to the need for an explicit and formal curriculum deliberation process. Adding technology to this mix only makes the need for such a process that much more critical. One of the major disadvantages of curriculum deliberation, however, is the amount of time and energy that must be devoted to the process. Adult literacy, more than other areas in the field of education, is extremely limited in terms of the resources it can expend in this direction. In addition, since provincial education ministries and regional literacy agencies tend to be more involved in administration and promotion of services than program curriculum, organization of any deliberative process is unlikely from either level. Add to this is the fact that practitioners and volunteers at the program level rarely have formal training in curriculum theory/practice and are working with extremely limited resources, and the absence of any deliberative process in the field is understandable.

Benefits

That said, the rapid and increasing integration of technology into all aspects of life in North America exerts a pressure that the field of adult literacy cannot ignore. It is an issue that is best addressed in a collaborative fashion. A deliberative process offers the best use of limited resources and promises rational debate regarding the place of computers in adult literacy curriculum. Beyond addressing practical and/or philosophical considerations, a deliberative process would necessarily assess the educational benefits of computers. Research data regarding the efficacy of technology in adult education are beginning to emerge (Hopey et al, 1996; Stites, 1999; Stites et al, 1998; Wilson & Javed, 1998), and it is crucial to turn to these at the outset, rather than formulate curricula around what Walker (1978) describes as "hunches" or "speculative hypotheses" (p. 278).

The benefits of a curriculum deliberation process in the field of adult literacy cannot be overstated. These include the following: (a) the rationalization of computers in literacy curriculum; (b) representation by primary and peripheral stakeholders in curriculum development, implementation, and evaluation; (c) the development of coherent curriculum; (d) the sharing over time of "best practices" and "lessons learned" as computers are integrated into curriculum; and (e) collaboration in other areas of literacy, such as advocacy.

Vision

How can a decentralized field with a varied and limited accreditation system put in place a deliberative process that will achieve coherent curriculum? By harnessing the very technology that is currently putting pressure on the field to establish just such a process. The relatively fast, inexpensive and effective communication ability of the computer makes collaboration in just such a process possible among practitioners at the national, provincial, regional or local level. Ideally a national effort would seem to offer the greatest potential for success. A nationally coordinated project could result in extensive curricula being developed relatively quickly and easily with the voluntary participation of many programs across Canada. Curriculum deliberation could be coordinated by a centralized team who would use the Internet to disseminate and collect

information (such as e-mail, web site, and message boards). The resulting "cohesive" curricula could be placed online in a database for all to draw upon and "tweaked" or adjusted as necessary to fit the needs of individual provinces/regions/programs.
It is suggested that the National Literacy Secretariat (NLS) has the necessary resources (such as funds, full-time staff, ability to communicate nationally), and indeed a mandate to spearhead such an effort. Although the NLS is a government agency and as such, has the potential to override other stakeholders, this would be balanced by the fact that participation in the effort would be voluntary. Curricula would be made available to those who wish to use it rather than imposed on programs. And as Schwab (1973) would suggest, the involvement of a curriculum specialist/mediator would also go a long way toward ensuring balance in the deliberation process.

Conclusion

The issue of integrating technology into adult literacy programs would benefit greatly from the implementation of a curriculum deliberation process such as that suggested by Schwab (1973). Technology, computers in particular, presents the field with a range of questions from the philosophical to the educational to the practical. This presents both an opportune time and a compelling reason to establish a deliberative process. The inclusion of the "four commonplaces" suggested by Schwab – practitioners, learners, subject matter experts, and milieus – would ensure the development of coherent curricula; that is, curricula that is meaningful and useful to a wide range of stakeholders. The key consideration in any deliberative process, however, must be the efficacy of computers in terms of educational outcomes:

> When used well, new and emerging information technologies can be powerful tools for expanding learning opportunities across the lifespan. The potential for technology to expand and improve learning by adults is especially great. To take advantage of technology's potential, adult educators, planners, and policymakers need to critically access the performance of the technology and the quality of learning that technology supports. (Stites et al, 1998, p. 1)

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N E W H O R I Z O N S I N A D U L T E D U C A T I O N
Volume 15, Number 1, Spring 2001

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