Forum / Tribune

Reaching and Teaching Women on the Web: The Challenge of Barriers and Bottom Lines

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Abstract

This paper describes the experience of a private-sector facilitator in developing and offering an online course through the Women's International Electronic University. It highlights the challenges that many women face in overcoming barriers to participation in continuing education. In particular, the difficulties of balancing the demands of work, family, and educational responsibilities are noted. The paper also considers the difficulties the provider encounters when trying to balance the demands of cost-recovery with pedagogical goals.

Résumé

Cet article décrit l'expérience d'une facilitatrice venant du secteur privé et ayant développé et offert un cours en direct par l'intermédiaire du Women's International Electronic University. Dans l'article, on y souligne les défis auxquels plusieurs femmes font face en surmontant les obstacles ne leur permettant pas une participation en éducation permanente. L'auteur note particulièrement les difficultés éprouvées afin d'équilibrer les exigences du travail, de la famille et des responsabilités pédagogiques. Aussi sont-ils considérés les difficultés qu'éprouvent le prestataire pour équilibrer les exigences de la récupération des coûts avec les besoins pédagogiques.

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Introduction

This paper explores the potential of Web-based instruction for overcoming gender-specific barriers to learning about technology. It also proposes that a single-gender educational Web environment provides better learning opportunities than mixed-gender environments for women who want to acquire Internet skills. A case study of an on-line course taught by this author through the Women's International Electronic University (WIEU) is presented. The study is used to highlight some of the challenges that women face in balancing family, work, and continuing education; it also illustrates the difficulties of reconciling the sometimes competing philosophies of altruism and cost-recovery .

The course, *An Introduction to Information Technology for Women: A Social, Theoretical and Practical Approach (Course 003)*, was taught to English-speaking women from several different countries from April 1997 to August 1998. WIEU[1] is a unique project that attempts to offer both credit and non-credit courses to women of all socio-economic levels through the Worldwide Web. Currently, the project offers non-credit and credit courses through several private educational companies, universities, and colleges from around the world, including Keyano College at the University of Alberta and Grant MacEwan Community College in Edmonton. Despite the attempt to overcome some of the barriers to learning that women face, several challenges repeatedly arose, preventing the full potential of Course 003 from being realized. These challenges included significant financial and time costs, and issues of accessibility and family/work/education balance. Some suggestions for meeting these challenges are offered as a conclusion to this paper.

Benefits of Web-based Courses for Women

Several advantages of Web-based instruction are also common to more traditional methods of distance education. For example, both are available on a 24-hour basis, so modules can be worked when it is convenient for students, particularly those who have working schedules outside of normal business hours. Those who do not have proximal access, or who are uncomfortable in institutional environments, may also find Web-based instruction, like that of correspondence courses, a welcome alternative to face-to-face instruction.

However, courses offered via the Web can offer some unique advantages beyond those of more traditional modes. For example, when educating students through more traditional correspondence-type courses, it is difficult for an institution to provide support to participants who may need to overcome problems such as study fear or lack of confidence, particularly if the student lives in a geographically isolated area (Evans, 1995). The Web's capacity for providing more opportunities for interactive communication between student and faculty, and among students themselves — via e-mail, real-time discussions, or electronic bulletin boards — enables students to obtain academic and social support from a wider network than that possible through other distance education modes.

Web-based courses also have the potential to promote a student-centred approach to learning that goes beyond what is possible through more traditional distance course delivery. This is because the Web enables participants to engage in many different forms of "active learning" from one location, namely the computer. Active learning via the Web can include, but is not limited to, knowledge/information gained through computer-based networking (learning through communication), political action (learning through participation), purchasing (learning through exchange), and/or recreation (learning through exploration). Menzies (1997) asserts that active learning is an ideal model for new learning technologies because such technologies build students' local knowledge bases (what can be learned around them), while providing opportunities to extend local and personal knowledge beyond that which can be learned solely from an individual's own environment. In addition, students not only learn about a particular academic topic while engaged in a Web-based course, but they also work on computer proficiency at the same time. This links learning to real life skill development (Menzies, 1997).

Nevertheless, Web-based continuing education may fall short of achieving important pedagogical goals and community service mandates if the context of its learners is overlooked. For example, ignoring gender-specific barriers to continuing education is a contextual oversight that places many women at a distinct disadvantage in comparison to men (Nelson Knupfer, 1997). Whether they are employed outside of the home or not, women traditionally assume a greater role in child, spousal, and elder care than do men (Lamphere, 1993; Martin, 1991; May, 1994; Morritt, 1996). As a result, women tend to have less free time than men to spend on continuing education. Research on self-reported deterrents to participation in adult education shows family and childcare responsibilities as

representing the greatest barrier to further education for adults, with women making up 80 percent of respondents citing this barrier (Valentine & Darkenwald, 1990).

Research by Ross (1998) shows how in a mixed gender environment, women, but not men, reported that they were unable to participate fully in course group activities because of family/work/education balance difficulties. In a study of women as distance learners, May (1994) reiterates how women students themselves perceive that making time for studying is much easier for men than it is for women. Even in the best of circumstances, women students, including those who work outside of the home, are more likely to shoulder "double-duty" work and study responsibilities than their male counterparts. The demands of children and elderly parents do not cease after a set period as do the demands of paid employment, and the length of "free time" between care-giving episodes is never predictable. Thus, the fixed hours and attendance requirements of traditional classroom-based instruction constitute serious institutional barriers that can significantly affect women's opportunities to pursue continuing education (Evans, 1995). Web-based instruction, however, can provide women with an opportunity to participate, to interact, to actively engage in learning, or to gain support during the learning process in small or large free-time segments whenever they may arise.

Other factors that play an important role in creating barriers for women who want to learn about technology are often overlooked in course design and development. Some women are intimidated and find it difficult to learn non-traditional skills in a mix-gendered environment, where subtle gender biases, power structures, and lack of role models chip away at their self-confidence and trivialize their alternative interests and perspectives (Nelson Knupfer, 1997). This is particularly true when women attempt to acquire skills thought to be of greater interest or aptitude to men, such as those associated with computers and technology (Evans, 1995). Not only are women less likely than men to compete for attention in mixed-gendered computer classes, but studies show that they are also less likely to get assistance from male staff who often run such facilities (Menzies, 1998). In his study of teachers engaged in a mixed-gender on-line course, Ross (1998) also found that women did not participate to the same degree as their male counterparts, and women had less influence on group deliberations. Indeed, there is a plethora of educational research that shows how girls (and women) receive less attention from their teachers than their male counterparts, are often interrupted by males, and have their suggestions

overlooked in favour of those advanced by men (Miller-Bernal, 1991; Nelson Knupfer, 1997; Parelius, 1991). If this was not true, ". . . there would be no need for recent efforts to attract girls into the study of math and science . . . and the number of distressing stories about some females succeeding despite the myriad of obstacles . . . would no longer need to be told" (Nelson Knupfer, 1997, p. 12).

Mulvaney (1994) argues that world view and language interpretation between men and women are points of difference similar to those found in "intercultural" communication, and this too points to the benefits of a single-gender learning environment. Describing a study of women managers, Korabik (1993) highlights how women's perceptions of feeling professionally marginalized in a male-dominated role follow a similar pattern to the experience of being an immigrant from another culture. Korabik suggests that because women have been socialized differently than men, their needs, values, and perspectives may be different from those of men. These differences in communication and viewpoints between men and women may contribute to a reluctance on the part of women to pursue studies in a male-dominated technological learning environment. Miller-Bernal (1991) concludes that there is enough research evidence to suggest that single-gender education provides environments in which women are free to be accepted and fulfilled, as opposed to those in mixed-gender environments where women can be made to feel subordinate and inferior to men. Moreover, the resulting sense of empowerment for women who do learn to use technology in this protected environment has been shown to extend beyond the single-gender classroom and into everyday, mixed gender life. It is upon this premise that the goals of WIEU are based.

The Women's International Electronic University

The Women's International Electronic University (WIEU) is an independent, non-profit educational project founded by Dr. Madonna Kolbenschlag. She has an international reputation as a writer and lecturer on women's development and gender issues (specifically on cultural analysis and public policy), holds two doctorates, and is currently a clinical psychologist and a clinical associate professor of Behavioural Medicine & Psychiatry at the West Virginia University Health Services in Morgantown, West Virginia. The Board of Advisors includes representatives from the United States, Norway, Canada, Costa Rica, Australia, France, and Germany and its Board of Directors consists of seven distinguished

academic scholars from West Virginia University.

In the mid 1990s, Kolbenschlag developed the WIEU project with the intent of providing opportunities for women worldwide to gain technological skills and increase their knowledge about the significant role (both historical and contemporary) that women have played in the development of computer technology. Knowledge about women's contribution to developing technology has, until fairly recently, been largely overlooked or understated. While many people recognize the name of Bill Gates, for example, and know of his accomplishments, few know the women who have been leaders in the development of computers. Not many people are aware that it was a woman, Augusta Ada Byron, the Countess of Lovelace, who programmed the first analytical machine, the forerunner of the computer, invented by Charles Babbage. She served as the inspiration for The Ada Project[2] at Yale University, which also works to raise the profile of women such as Grace Hopper and the women programmers of the World War II ENIAC decoding machine, who made significant, but, until recently, much overlooked, contributions to their professions.

WIEU provides a central cyber "space" that links students and educational professionals to each other. Qualified educators who wish to develop and provide Web courses from their own locations to women around the world apply and are selected by WIEU's Board of Directors. Courses are restricted to women.

Course 003, *An Introduction to Information Technology for Women: A Social, Theoretical and Practical Approach*, was offered by this author for four sessions in 1997 and 1998. A few men requested information about participating in the sessions and they were re-directed to institutions that offered similar on-line courses in a mixed-gender, Web-based environment. A total of 27 female students participated in the four courses and registered via e-mail. Students logging in to the course came from Afghanistan, Botswana, China, Singapore, Hong Kong, Australia, New Zealand, the United States, and Canada. The course was organized into six units (three hours per unit) and was offered initially as a three-week session, then later as a four-week session. Course material included descriptive text, graphic images, and hypertext links to other Web sites for supplementary readings. There was also an e-mail-based group discussion component to the course that was factored into the three-hour-per-unit work estimate.

Students were encouraged to participate in an educational "MOO" (Multi-user domain, object oriented) at the end of the course session in order to maximize personal interaction and discussion; this was arranged

and supervised by the facilitator. A MOO consists of participants from around the world connecting to a central on-line site via Telnet software to discuss course topics in a real-time, text-based environment. To minimize the inconvenience of having to deal with different time zones, participants were provided with several time slots during the day and week when they could connect to the on-line educational MOO.

Students were assessed on the basis of their participation in on-line discussions, and on a personal journal that was intended as an ongoing sustainable reference tool for the student. There were no text books or external readings required in view of the lack of opportunity many women (particularly in non-Western countries) might have for acquiring specific textbooks, as well as the prohibitive cost of sending material out to them. Consequently, students in each session did course work and research solely through the Web.

Many participants who were unfamiliar with the Internet stated that the course provided new skills and a greater feeling of competence and technological literacy. In addition, since students came from many different countries, the course provided an opportunity for cross-cultural dialogue on issues of interest and concern to women participants. It was fascinating to read the exchanges between Western and non-Western women as they sought to teach each other about what it was like to be a woman from the perspective of their own native cultures. Yet, at the same time, it was equally interesting to observe the development of a common understanding, across cultures, of the challenges that many women face with respect to learning and using technology. Students often expressed this understanding as a sense of "separate sphere," or female "culture," in ways that mirrored the observations of Mulvaney (1994) and Korabik (1993), mentioned earlier in this paper, and of Kramer (1991) who also speaks about gender as "culture." The exchange not only provided students with a forum for developing and sounding out thoughts, ideas, and impressions gained from readings, but also provided, on many occasions, an environment of academic and emotional support rarely possible through traditional distance education formats.

Active-learning exercises encouraged students to join list serves, to participate in leisure/hobby/social support communities, and to become exposed to Web-based political activism. This gave the students an opportunity to discuss their ideas with others outside of the class. Students chose sites from a list provided by the facilitator or through their own initiatives. Many students were surprised at the range of topics on the Web,

and at the versatility of the Web; in addition to being an information tool, it is also a place for discussion, exchange, and activism.

Issues and theories discussed in the course exposed students to both traditional and alternative perspectives. Most hyperlinked articles were written by or about women. The topics came from a broad interdisciplinary focus and were consciously chosen by the course facilitator (this author) for their non-patriarchal, non-hierarchical, and non-imperial content, except in instances when it was deemed important to highlight such pitfalls.

In early offerings of the course, a few students expressed concern about the minimal amount of cultural diversity in the course material. Unfortunately, this reflects the current, although slowly changing, mono-cultural paradigm of the Web, which tends to be dominated by "white, middle-class American" perspectives. Attempts were made to broaden the cross-cultural information in subsequent sessions, but it was hard to find information on the Web that addressed the topic of technology and women from a non-Western perspective. Although it has been argued that women in many Third World countries worry more about their next meal than about computer technology, it is nevertheless important to reach those women who do have access so that they might gain insight into how technology affects women worldwide, including those who do not have access.

Unfortunately, the course did not generate any opportunities for the collaborative teaching, research, or projects that had been anticipated. In fact, a difficult ethical situation arose when a student taking the course began to collect socio-demographic data from other students for her own research purposes without either the facilitator's permission or full disclosure of her intentions to the other students. However, in principle, the WIEU framework offered considerable potential for professional development and professional networking through its central cyberspace location.

Although feedback confirmed that students were very pleased with what they had learned, there were some factors that confounded a potentially ideal teaching and learning experience for both the students and the facilitator.

Financial Constraints

After being selected by WIEU to facilitate a course, the author offered Course 003 through her small, private, educational program evaluation company, Quality E-Val, located in Ontario. Thanks to the portability of the

Web-based platform, the course was also offered, during a four-month sabbatical period, from New Zealand. When Course 003 was initially run, WIEU did not pay any salary or expenses towards course development or facilitation, and revenues were generated solely through student tuition. The facilitator ran the course on the company's own Web site, at its own expense, while also assuming responsibility for levying and collecting tuition fees and marketing the course. WIEU listed a brief description of the course on its home page, and provided an electronic completion certificate to students who fulfilled the course requirements as determined by the facilitator. Overall, the costs in time and money were significantly higher for Quality E-Val than for WIEU.

Research suggests that the cost of educational programs is a major barrier to continuing education for many women (Evans, 1995). Since WIEU is non-profit and attempts to encourage women of varied socio-economic levels to participate, all course providers are asked to keep tuition low. For a small company such as Quality E-Val that depends upon cost-recovery for survival, it can be very difficult to recover the initial development and set-up costs under such financial constraints, or even to recover the ongoing course administrative costs, unless enrolments are high. For Course 003, tuition was kept low — $45 US for a three-week course. However, there was only an average of seven students, out of approximately 30 inquiries each session, who participated in the course. Fortunately, Quality E-Val was engaged in other external contracts that enabled it to continue to support the project at a loss. Nonetheless, this situation highlights the difficulties of adhering to a pedagogical philosophy when challenged by the constraints of a cost-recovery structure.

Targeting

The implicit goals of WIEU are admirable in their attempt to reach all women regardless of socio-economic background, education, nationality, or age. In reality, these goals are extremely difficult to achieve given the economic constraints of WIEU's infrastructure. No course can reach its targeted student body unless it is well advertised using appropriate marketing strategies. In the case of Course 003, in order to keep the cost of advertising down, it was necessary to use the low-cost Internet (e-mail) to inform potential participants about the course. Although efforts were made to put up posters in public libraries in Canada, New Zealand and Britain when the facilitator visited these countries, it was otherwise impossible to reach those women who were not currently using computers since mailing costs on a worldwide basis from Canada to agencies, libraries, or other

public centres were prohibitive. However, using the Internet as the primary means to inform women about the course created a "catch 22" scenario: Women who have access to the Internet generally tend to be from higher socio-economic levels, are better educated, are usually employed in established professions, and tend to be young (Balka, 1995) — not at all the broad spectrum of women who were being targeted by the project. In fact, the majority of participants recruited for Course 003 were teachers, university professors, doctors, lawyers, computer technicians, health care workers, media personnel, or government officials. Under the financial constraints imposed upon the provider, it was nearly impossible to reach those non-professional, lower income women for whom Web-based courses might be most valuable.[3]

Keeping in mind the issue of cost as a barrier for some women, an attempt was made to initiate a partnership tuition payment scheme. Two such sponsorships were undertaken, one by a physician and the other by a university professor. While participating in the course themselves, each sponsor subsidized another woman to take the course at the same time. One sponsored a colleague known to her, and the other paid the tuition of an anonymous refugee living in the United States who had made a request for assistance through the facilitator. Information about who was receiving support, and who was sponsoring someone, was not given to any of the other participants. Of the two students sponsored, one was given permission to use her employer's computer for the course, and the other was able to use computers at her local university. Although this partnership was received enthusiastically by both sponsors and recipients, there were no other opportunities for women of limited financial resources to participate in the course. Clearly, given the predominantly professional student profile for the course, this low-cost program was being pursued primarily by women who, in all probability, could have afforded a more realistic tuition fee. Moreover, a higher tuition fee may have offset the cost of providing more sponsorships for other needy women.

Research shows that women's access to, and use of, the Internet are issues of real concern worldwide. For example, in Canada, Angus Reid reported in 1996 that 39 percent of women, compared to 61 percent of men, had Internet access (as cited in Menzies, 1998). Internationally, in China, where the infrastructure is just beginning to accommodate an increase in computer use, the majority of users are male (87.7 percent) and less than 30 years old (China Matrix, [online]).

In a study of women's groups in Newfoundland that highlighted the

difficulties that these organizations faced in gaining access to computers, Balka and Doucette (1994) noted that there was a growing uncritical acceptance by government and political sectors within society that technology will lead to a more participatory democracy. At the same time, there has been little reflection by policy makers on what lack of access to the technology would mean for women, and how that exclusion might impact upon the delicate balance between state, societal institutions, families and individuals (Balka & Doucette, 1994).

Given the implicit goals of WIEU to reach women regardless of their socio-economic status, and given the constraints on its ability to provide financial support to meet those goals, it became virtually impossible to reach many of the women who might have wanted to learn about technology but who were prevented by barriers of cost and accessibility.

Time Costs for the Facilitator

Auter and Hanna (1996) note that: " . . . high-tech courses come at a high cost in both human effort and equipment costs. Development and maintenance time for these courses can often be double that of ordinary courses, yet this is rarely reflected in evaluations for tenure and promotion" (p. 4).

In the case of course 003, the facilitator had to develop the six-unit (three hours each) curriculum, design the Web pages, and test the course before advertising it to the world on the WIEU home page. This process took approximately one month of full-time work and required an additional paid staff member to assist part-time with html programming. Had the course already existed (as might be the case for university or college offerings intended for conversions into Web-based formats), the initial time costs might have been reduced. However, there is still a significant amount of time/work needed to adapt existing courses into engaging Web-based platforms. While it could be argued that all academic courses need time to be researched and developed, Web-based courses also need to be written or converted to html hypertext computer code and require more graphically aesthetic presentations than do traditional courses because of their reliance on predominantly visual presentation.

Before listing with WIEU, Course 003 was tested on a small sample group of women from Canada and New Zealand; based upon their feedback, the course was revised. When the course was ready to launch, the facilitator spent a significant amount of time searching for Web sites and e-mail contacts through which to advertise the course, and responding to the many e-mail inquiries that resulted from advertising. The time cost was

reduced in subsequent sessions by editing existing advertising and sending it out to the same contacts again in order to recruit students. However, once participants had registered for a session, the facilitator had to then ensure that tuition was received and recorded, a process that required e-mail reminders, confirmations of payment, and bookkeeping. Once finally in progress, the time required to facilitate the course dropped to approximately one-half to one hour per day. In addition to this, and despite the course requirement that students be familiar with sending e-mail (in fact, they had to register via e-mail to prove it),[4] the first few days were often spent providing computer support to those who were having difficulty with software connections.

When a session was finished, a course evaluation questionnaire was sent out to all participants by WIEU. Suggestions were noted by the facilitator, and, if possible, revisions were implemented for the next session. It is not difficult to see that development and facilitating time can be a significant expense attributable to on-line courses and can represent considerable concern to cost-recovery-based educators.

Time Costs for the Student

As noted earlier, the course was comprised of six units that took approximately three hours per unit to complete. Student feedback suggested that this estimate was reasonably accurate. Thus, if taken over a four-week period, the student was required to participate in the course just over four hours per week on average (if taken over a three-week period, six hours per week). Yet, despite the flexibility and low time demand of the course, students still noted significant time-related obstacles to participation. Although participants acknowledged that one advantage of taking a Web-based course was that information could be accessed at any time, day or night, seven days a week, the most consistent comment on the course evaluation was that students found they did not have enough time to complete the course. The initial three-week time limit was thus extended to four weeks in later offerings, but, even with the expanded time frame, students continued to request longer sessions.

Since concerns about lack of time resurfaced in the second session and began again in the third, the issue was raised in the group e-mail discussion. Participants were invited to respond with reasons why they thought that there was a need for more time to complete the course. Some stated that they simply did not want the pleasant experience to end and thus wanted more time to re-read the information and to reflect upon it for

discussion. However, a majority of responses highlighted a lack of time to participate due to work/family/education balance — the very barrier thought to be overcome by Web-based instruction.

Several students stated that their work and family responsibilities made it nearly impossible to connect to the computer on a regular basis, and they felt that they had fallen behind the others in the course work. One woman even responded with a heartfelt description of how torn she felt while participating, her young son sleeping peacefully in one arm as she stretched out toward the keyboard with the other. Another responded by saying how exciting her job had recently become, and how learning about the Internet had temporarily moved to a low priority while she concentrated on those issues that would help her keep abreast of new work-related developments. The solution that held so much potential for overcoming an important barrier to continuing education for women was surprisingly unsuccessful at doing so in this case. Yet, if the length of the course was extended even further, there would be significant implications for the provider who is dependent on cost-recovery. This was the dilemma of barrier versus bottom line for
Course 003.

Conclusion and Recommendations

Many women tend to learn technological skills better in a single-gender environment that reduces the stress they may experience in a mixed-gender learning environment. However, women fall considerably behind men in having the time to pursue technological continuing education opportunities because of the difficulties of balancing the time demands of family, work, and education.

To meet this need, WIEU has a unique pedagogical philosophy that was incorporated into Course 003, resulting in the development of a flexible, on-line format where women could learn about technology in a single-gender learning environment. Yet, this attempt to overcome some of the barriers to learning that women face encountered course difficulties that were often directly related to the cost-recovery constraints of the providers.

Some of the challenges that arose during the marketing and offering of course 003 included a "catch 22" scenario that confounded the goal of recruiting less technologically literate women students. There were two reasons for this: first, the necessity of relying solely on the low-cost Internet

for advertising the course due to the significant costs associated with developing and facilitating a Web-based course; second, the failure of Course 003 to accommodate women who were trying to balance the demands of family, work, and education.

Nevertheless, it is still difficult to dismiss the Web as lacking the potential to reach and teach women about technology. Perhaps what is required is a more imaginative approach to course design and development that can work within the context of women's lives, while keeping the practical needs of cost-recovery in mind. One approach to meeting the challenge of cost-recovery constraints and time balance demands may be found in designing a course that has an ongoing subscription. With this option, students would make a low but regular payment to access the course and set their own learning goals, in consultation with the facilitator, for a short or long term. When the goals and requirements were met (no matter how long this may take), the student would receive a certificate of completion/achievement. This would provide women who are balancing the demands of family, work, and education an opportunity to have their place in the course "held" for them while they attend to other external demands. Course material that may have been forgotten could be reviewed when reconnecting to the site, and the student could progress at her own pace to completion. If tuition was kept low and subscription rates were due on a regular (e.g., monthly) basis, barriers such as cost, time and stress might be more easily overcome for student, facilitator, and provider. Online discussion, an important part of active learning on the Web, might also be enhanced by longer-term participation and might even evolve into the formation of a kind of supportive educational "community" over time.

Valentine and Darkenwald (1990) suggest that "By its very nature, American adult education separates individuals from their families . . . [and] this can create problems for all learners" (p. 40). Therefore, another approach may be to develop courses that could enlist family participation along with the students. This option may make the learning experience something that can be achieved together rather than in isolation from each other, and would reduce the need to separate the demands of education from those of family. Learning goals for this scenario might be designed at one level for the primary student (the one enrolled in the course), and at another level, in a more flexible fashion for the secondary students (family members). Properly orchestrated, with context and abilities in mind, this option might still preserve the benefits of a single-gender learning environment for the primary student, while offering a mixed-gender

learning environment on another level where secondary and primary students learn together.

Regardless of what is needed to overcome the barriers that women face when pursuing continuing education, it is paramount to keep in mind why it is so important to find these solutions. There are many people (women among them) who believe that information technology is an academic demon, and that issues of accessibility, cost, and family balance are insurmountable through this medium. Then there are those who would turn their backs on technology, like Luddites, directing women to avoid cyberspace as a way to provide, promote, or tap important resources. In the meantime, women continue to fall behind men in understanding and mastering the powerful tool of the Internet, simply because of a contextual barrier, which is both a needless acceptance of defeat and a potential loss of significant contributions from those who do not have access. Until we bring context into the design and delivery of adult education courses, we continue to do ourselves, both individually and collectively, a great disservice. Moreover, if we always place a higher priority on the bottom line at the expense of breaking down barriers to learning, we cease to use education for personal and community betterment of the world and instead commodity information for only those who can afford it. I am confident that somewhere in all of this there is balance between barrier and bottom line for the benefit of all concerned.

Endnotes

1 The URL for WIEU is: http://www.edu/~womensu.

2 The URL for The Ada Project at Yale University is: http://www.cs.yale.edu/~tap/

3 Recently WIEU secured non-profit status and is now able to provide some financial support to course developers/facilitators. In turn, private facilitators are in a better position to offer lower tuition and to absorb costs of advertising outside of the Web.

4 Those women who were not online were expected to find someone familiar with the technology to show them how to use the e-mail feature, as had most of the women who were already familiar with e-mail.

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Biography

Gillian M. Joseph is the owner of a private-sector educational program evaluation company called Quality E-Val: Adult Program Evaluation & Consulting that operates out of Guelph, Ontario. In addition to working in program evaluation, Quality E-Val also develops and facilitates computer-based adult education courses, including the online course described in this article, through the Women's International Electronic University. Along with an extensive career teaching computer-based continuing education courses, Gillian has an MSc in Family Relations and Human Development from the University of Guelph with a focus on the social factors that prevent adults from participation in retraining and continuing education programs.

Gillian M. Joesph est propriétaire d'une entreprise-évaluatatrice de programmes pédagogiques dans le secteur privé qui s'appelle Quality E-Val: Adult Program Evaluation & Consulting et qui se situe à Guelph en Ontario. Quality E-Val fait non seulement l'évaluation de programmes mais aussi le développement et la direction de cours informatisés pour l'éducation aux adultes, y compris un cours en direct, décrit dans cet article, et offert par The Women's International Electronic University. Ayant fait carrière considérable en enseignement des cours informatisés en éducation permanente, Gillian détient aussi une M.Sc. en Relations et Ressources humaines de The University of Guelph avec une concentration en andragogie. Quant aux recherches, elle s'intéresse particulièrement aux facteurs sociaux ne permettant pas aux adultes une participation pour retenir ou pour continuer dans des programmes d'éducation permanente.