On-line Learning For Abused Women and Service Providers In Shelters: Issues Of Representation And Design

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ABSTRACT

The challenge and potential of Internet technology to deliver learning services to increasing numbers of diverse learners who may not be included in formal continuing education settings are beginning to be addressed. VIOLET (http://www.VIOLETnet.org), a web site for abused women and their service providers, is designed to provide relevant legal information, an on-line community for support and sharing of experience and information, and ongoing updates of legal information and community services. The project emerged out of a unique collaboration among women in

RéSUMÉ

On commence à aborder les questions du défi et du potentiel de la technologie de l'Internet offrant des services d'apprentissage à un nombre accrue d'apprenants divers, ne faisant peut-être pas partie des milieux d'éducation permanente institutionnelle. VIOLET (http://www.VIOLETnet.org), un siteWeb pour des femmes exploitées et leurs dispensateurs de soin, est conçu pour offrir des informations juridiques pertinentes, une communauté en accès direct soutenant et partageant des expériences et des informations ainsi que des mises à jour continues des informations juridiques et des
Graham-Bermann, 1993; Campbell, Sullivan, & Davidson, 1995; Harris & Dewdney, 1994). These problems contributed to the growing sense of frustration, alienation, and endangerment felt by information-seeking clients and were further exacerbated by long waiting lists at available agencies and lack of support at others once they were located. Increasing access to reliable, current information via the Internet could reduce some of these pressures.

VIOLET presents three different approaches to information retrieval and learning (described in detail in the section titled “Learning Design”). Grounded by principles of adult education and instructional design for web-based resources (Hill, 1997; Jonassen, 1999), learners are encouraged to develop their own understanding based upon their personal experiences and needs. By naming their own experience, women realize they can plan successfully for the future, and this learning increases their repertoire of cognitive skills, going beyond simply being able to understand a legal definition to using the tools embedded in the design to build on and share insights from new understanding in a sociopolitical community. Collectively, this type of learning facilitates personal growth and self-empowerment.

Technology, however, has often been a barrier to learning and to access for women around the world, conceivably contributing further to the stress, anxiety, and depression of women who are experiencing abuse (Ayerson & Reed, 1995-96; Igbaria & Chakrabarti, 1990; Okebukola, 1993). Aware that many computer-based resources are gender-biased and have marginalized women technology-users (Campbell, 1999), the VIOLET project partners were determined to develop a plain language, woman-friendly, safe space on the Internet, inclusive of gender, language, culture, and diverse learning styles. To this end, the site design was guided by five intended project outcomes:

1. develop an Internet-based learning service to support abused women and their service providers;
2. provide learning opportunities in the area of relevant legal information;
3. develop an on-line community for support and sharing of experience and information;
4. raise awareness of an increasingly knowledge-based economy and society;
5. introduce women to, and enable them to work with, Internet technology.

These project outcomes were identified with different wording in the above-mentioned monograph (Sy & Anderson, 1999).

**Women Learning with Technology: Barriers and Design Issues**

The abilities and skills of learners are defined based on their perceived role in society (Magolda, 1992). As the predominant experience in our society has been characterized by the term “malestream,” the ways in which women learn may not always coincide with what is deemed to be the norm (Belenky, Clinchy, Goldberger, & Tarule, 1986; Merriam & Caffarella, 1999; Stalker, 1996). The literature suggests that most technology-mediated environments are gender-biased and may ultimately exclude the female experience (Culley, 1993; Knupfer, 1997; Moore, 1986). This process of social domination is an issue of power—power of the representation of, and access to, information. Thus ways of learning and knowing that are not reflected in the design of the learning environment may lead to stress and alienation from the learning experience.

**Stress and Technology**

Studies completed in the 1990s (Elkjaer, 1992; Reed & Overbaugh, 1993; Shade, 1997; Taylor & Mountfield, 1994) concluded that women experience more anxiety than men in technological learning contexts due to a lack of experience, unequal access, low self-efficacy and motivation, and cognitive and learning styles ill-supported by traditional learning designs. These factors may be attributed to patterns of socialization at home, school, and the workplace, and in the political views and values that they represent. For example, studies of school-age boys and girls have demonstrated important differences in how they approach new learning with computers. Boys persist with a trial-and-error method that encourages manipulation of the keyboard; girls work in groups in a cooperative mode and are less persistent in attempting to learn the new technology (Culley, 1993). Girls and women either appear to see the computer as a practical tool or develop a more holistic view of learning (Anderson, 1998; Spender, 1995), although they tend to have higher anxiety related to computer use.

Abused women have high levels of stress and depression (Campbell,
finally, a plan for sustaining the information/activism needs of women in crisis as they return to their communities.

**The Learning Design**

![Image](http://www.violet.org/arts/toe.htm)

**just the facts**

**General information about abuse**
- What are the definitions of abuse?
- Here are some things you should know about woman abuse
- What can you do if you have been abused?
- What are some of the warning signs?
- What do we know about abuse?
- Women do not have abusive relationships
- What are the effects of abuse on women and children?

**Getting out**
- What to do when leaving an abusive relationship
- Safety plan
- Women's shelters
- Key numbers

**Understanding the legal implications of partner abuse**
- Physical abuse
- Sexual abuse
- Psychological abuse

Figure 1: *Just the Facts*. The title screen for Approach 1.

VIOLET incorporates three design approaches designed to support the information needs of abused women. Each one includes interconnected links to layers of information about wife abuse, legal remedies, and sources of assistance. *Just the Facts* (Approach 1), which is linear and procedurally based, allows the user to review or renew the information as she gains a better understanding of legal terminology and possible remedies. *Mary's Story* (Approach 2) encourages the client to name her experience through a case study format. It's *Your Story* (Approach 3) embeds the information in an authentic narrative that simulates a dialogue between an abused woman and a service provider in a women's shelter; representing a woman's own understanding of the situation may encourage both deep and new learning.

*Just the Facts* is based on principles of didactic, procedural learning and provides a rich needs-based, referential source of legal information that serves as a resource rather than as a problem requiring action (see Figure 1). Procedural learning is highly structured, individual, sequenced, has a fixed pace, and reflects the instructor's or designer's understanding of learner needs. In this model, "tasks" are fixed, there are right and wrong "answers," and learning takes place at a low level of cognitive complexity. Although it may be necessary as a building block for higher-level learning, in general, learning is more effective if it is practical, situated, context-dependent, and self-paced (Sherry & Wilson, 1997).

I finally made the decision to leave after he hit me again. The police came and laid charges against him. The police took me to a nearby women's shelter. My children and I stayed there for three weeks.

While I was at the shelter, I found out that he had charged me with kidnapping because I took the children with me. I had to rush to court to get an interim custody order.

While staying at the shelter, I looked for a new place to live. I was worried that once we left the shelter he would find us. I shared these concerns with the shelter workers and they suggested that I would need a restraining order. A restraining order is a type of protective order. They also told me that if I wanted to get a divorce, I might need to apply for Legal Aid to get a lawyer as I did not have any money.

I was also called to testify about what happened the last time he hit me, when the police had charged me. I was scared to go to court and I was afraid to think that he would be there too. I was relieved to find out that there were victim's services to help me through the court process.

As I was going through this, I had many questions. I found out about FAQs (Frequently Asked Questions). It helped me answer my questions. I think I'm now ready to make some decisions about my future.

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Figure 2: *Mary's Story*. An excerpt from Approach 2 that shows the information retrieval process.
EVALUATING VIOLET

Evaluation Components and Process

This paper details the formative evaluation of VIOLET and concomitant design implications. Since VIOLET reflects a framework of critical feminist pedagogy (Weiler, 1991), the evaluation was designed as a process of participatory action research. In other words, the participants and the project collaborators worked together to identify intended project outcomes, several of which are embedded in social and political action, to examine their own contexts and form personal learning objectives, and to create opportunities to develop a sustained community. This process is progressing in several ways—through VIOLETForum, the redesign of VIOLET, and the evolving design of ROSENet.

In a formative evaluation, data is gathered on the effectiveness and efficiency of instructional materials in order to provide feedback for revision, before the product is released. A traditional formative evaluation process involves three stages:

1. one-to-one evaluation, to test segments or prototypes of the materials. This stage determines if the approach is suitable, identifies early mistakes in interface design, etc.

2. small-group evaluation with a larger, more diverse group, occurring after the first revisions are completed. At this stage, the designers seek to eliminate bias, get a more accurate picture of the target user group, and to test delivery assumptions and appropriateness of interface, interactions, and pacing, and determine learner support needs.

3. field evaluation, with a larger target population, in the actual learning environment. This stage is often referred to as the pilot stage, in which the intended instructional, delivery, and assessment approaches are reflected.

Formative evaluation of the learning design of VIOLET took place in three stages: one-to-one interviews with representative women (not currently in shelters) after they had explored all the approaches; an external review by a design expert; and on-site or field testing with the target users in shelters. In the shelters, the participants/informants were both shelter workers and abused women (or clients), considered as subsets of the

"abused women." Most of the shelter workers had been abused women, and were both empathetic to their clients' information and learning needs and sensitive to issues of power and control. For these reasons, and because of confidentiality agreements, participant comments remained anonymous. Together, these women not only provided insights about design, content, and implementation of the current site, but also identified areas for revision within the sociopolitical context of this project. The project designers are currently involved in a collaborative relationship that includes the Department of Legal Studies at the University of Alberta, the Status of Women and the Office of Learning Technologies on a national level, and the Alberta Council of Women's Shelters (ACWS) and other associations and individuals involved with the problem of domestic violence at the provincial and local levels. This group negotiates content, interactivity, access, dissemination, instructional purposes, and the resource implications for continued development of the site.

Formative evaluation of VIOLET occurred at seven shelter sites and three non-shelter sites, which dealt with family violence, between February 4 and June 14, 1999, and in individual sessions with the external evaluator. Informants/participants were as diverse as the project's target audience and included shelter clients, shelter workers, administrators, legal interns, educators, and government representatives. A typical evaluation session involved an initial orientation for shelter participants, followed by opportunities to work individually or in groups on the site (participation was voluntary). Project evaluators worked actively with the participants; narrative comments, recorded either in writing or by audio-recording, were subsequently annotated by observers. In most cases, an informal focus group was conducted immediately after the working session. The women's remarks were provided where appropriate, or for purposes of illustration. Given the sensitive nature of these environments, the evaluation team rejected the idea of a formal survey.

Materials were examined for the “rightness of fit” of the design to intended outcomes, that is, for the information/data elements incorporated to support learning, the cognitive and metacognitive skills and strategies included; the learner control and support mechanisms provided, the degree of interactivity allowed, and the tools available to the learner for navigation and use of the site. For each component, evaluation feedback was followed by its implications for redesign. This information is summarized in Table 1.
practise information skills; and support for individual learning needs and preferences.

Interacting with content is key to learning with hypermedia, because interactivity underlies active learning. Active-learning strategies require the learner to manipulate and transform information (e.g., text) into new knowledge. Cognitive strategies that encourage active learning include discrimination and/or elaboration exercises; embedded questions; manipulating models; applying learning to a new problem or situation; evaluating information, writing, and/or annotating; asking questions; and organizing information into new forms such as databases or semantic maps (Jonassen, 1996). This learning is a desirable outcome for VIOLET because it implies the critical use of information and resources to effect change at personal and political levels.

Since the target audience for VIOLET usually has immediate and specific information needs, an immediately apparent benefit is necessary to convince this group to use technology. A flat, static web site provides no added value over print materials, thus, VIOLET must meet information needs in other ways. Functionality that encourages responsiveness and learner engagement is key to longer-term use, while engagement is enhanced by interactivity related to learner choices and needs.

VIOLET’s learning interactivity is found mainly within It’s Your Story, which contains an ordering exercise based on a role-play and other activities. During the formative testing, participants were intrigued with this approach, although all found the interface somewhat difficult to use. Still, the interface required negotiation and prompted discussion as participants became more confident using it. Participants commented that they learned about alternative ways of assisting clients and enjoyed working with colleagues to answer inquiries from the virtual client.

Comments about this approach reflected the increased commitment of time and cognitive engagement required by active-learning activities. One participant stated she would work on this only at home, without interruptions. Other participants were not satisfied with the activity’s limits—they wanted to challenge the “expert’s” rankings, seek more information, and ask “Why.” Although learners have many opportunities here to go beyond the information given and engage in concept learning, ill-structured, associative environments (i.e., hypermedia) pose challenges and increase stress for adult learners (Cognition and Technology Group at Vanderbilt, 1993), perhaps particularly for non-traditional women learners.

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**Design Implications**

Typically, adults are task-oriented and expect to receive clear directions for completing the task, guided by a hierarchical structure-defined path through the information. A design and cognitive strategy known as “learner control with advisement” provides advice about the optimal path through the lesson, the appropriate lesson sequence, or the optimal amount of instruction (Clariana, 1993; Santiago & Okey, 1992). Advisement may be more frequently sought and more effectively used by females than by males (Clariana, 1993), since there seems to be a relationship between achievement and motivational effects for women. This strategy might have increased the effectiveness of the more open-ended It’s Your Story.

Schank and Cleary (1994) described the importance of scaffolding through expert coaching in designs like It’s Your Story. A roster of lawyers and other related practitioners and service providers will perform this function in VIOLETForum, initially reviewing important items for inclusion.

**Contextual Components: Descriptive Feedback**

In the field evaluation stage, the following conditions were expected: users would have diverse educational backgrounds and learning style preferences; they would work on a computer station at the shelter; Internet access would be by dial-up modem; neither the women nor the workers would be experienced computer or Internet users; users would be under a great deal of stress; the learning environment would not be protected from distractions; and the time available to use the resources would be constrained, both in the short and long terms. In other words, the field evaluation context would reflect the authentic learning environment.

**Shelter environment and working context:** The test sites, both rural and urban, reflected community needs and resources. Access to VIOLET ranged from relatively open and unrestricted, to controlled and secure. In one shelter, the computer was placed in the entryway; at another, it was in a dedicated education room; in a third, it shared space with the room from which the Food Bank operated on Tuesdays. If these shelters are representative, women cannot expect “anytime” access at them. Also, the policy of shelters may reflect discomfort with open access to information. One shelter director felt that unsupervised Internet use could lead to identifying inappropriate sites. Educating for information literacy, (e.g., issues of authorship, currency, and ethics of information) could be an important
work with the site at a time (for example, temporary carrels with removable three-sided "borders"). Since physical surroundings may influence women's attitudes towards computers (Canada & Brusca, 1991), shelters should consider locating workstations in aesthetically pleasing, non-technological surroundings. In the end, the learning environment is the natural and continuing environment in which these women work, and ways must be found to shape the information and the technological support around these continuing realities.

This challenge can be met by chunking and sequencing the information content appropriately. A client should be able to achieve her information goal, whether in 15 minutes or in 90 minutes, through evaluating strategies such as modularization, short information bursts, and scaffolded activities. One focus of the formative testing was to assess the preferred or typical working contexts of shelter participants and to evaluate the related scope and sequence of the site (as reported above). Just the Facts met immediate information needs best, as specific information could be located and absorbed very quickly, but, users had to locate information within designer-defined categories. A search engine or personal assistant could maximize their time on-line. More complex needs and activities need longer dedicated periods, especially when working in role as in It's Your Story. For this approach to be effective, users need to be trained, coached, and supported, which requires a significant and sustained time commitment.

Training and working sessions therefore need to be timed for periods of low activity. Alternatively, one worker might be delegated to deal with emerging shelter needs, or a train-the-trainer solution could be implemented. One participant suggested individual or self-paced orientations in the shelter's office as an alternative. Training designs could range from short introductory sessions to longer sessions devoted to using VIOLET as an education tool. Just-in-time training relates to emerging needs and could be streamlined with job aids such as manuals, training tapes, etc. As learner support is critical for success in technology-mediated learning, developing self-paced, off-line and/or on-line training for maximizing VIOLET could be effective. Access would be improved by wiring the shelters for portable Internet access (a "plug and play" solution) and by maximizing working space. At a minimum, log-on procedures should be streamlined, clearly outlined, and posted. Directions for accessing the Internet and for standard computer operation (e.g., mousing) should be available, if just-in-time assistance is not. Very simple, graphical directions should either be posted or packaged in a robust user manual. The site could be made the default homepage and always be "up." Cable modems or high-speed connections would eliminate long download times and minimize errors in dialing (the modem). Efforts should be focused on robustness and transparency, and because the users are already in a state of anxiety and stress, they should not be expected to trouble-shoot technical problems.

Cooperative and group activities were a preferred learning style for many participants. Since cooperative work requires a greater time commitment, it must be designed to accommodate time available in each shelter. A range of activities could be developed to be completed in short working sessions to longer terms (days), acknowledging different learning preferences. In terms of modelling technology use and information-retrieval skills, peer educators are quite effective. Shelter workers may have additional needs: self-education and assessment, extended resources that clients can utilize and educational tools to use in counselling or consultation. Because "buy-in" from these individuals is essential if VIOLET is to be supported and recommended, an emphasis on implementation to enhance the worker's job is important. If VIOLET offers a unique experience, commitment to use it will increase despite the inconveniences of time and setting. In fact, during testing, service providers began to refer to VIOLET as "their site," so this emotional and conceptual commitment had already begun, and appeared to be gaining momentum in the post-research training sessions.

Abused women clients, and service providers, may or may not be computer literate, but low-literacy clients had trouble with technical jargon. Several users recognized this and made some specific recommendations, including "explain the lingo with a graphic. For example, when saying toolbar, give a picture of the toolbar." If clients can be partnered, confidence and self-esteem may be enhanced for both. Several comments reflected this outcome, for example, "Even one of the participants who had never used the Internet before... was pleased with herself and her ability to master the Internet."

Message Design: Descriptive Feedback

Good message design depends on more than well-constructed text that privileges the verbal learner. Other considerations include appropriate choice of data elements; support for diverse learning styles and preferred perceptual modalities; readability; language use and tone; user control of options such as translation or a glossary; effective use of visual cues and design elements; and inclusivity such as gender, age, and culture.
project, could make recommendations related to content, jargon, unclear terms, complex sentence construction, etc.

Content validity and utility are key to encouraging women to use the site, even if this requires a difficult time commitment. Users must be encouraged to identify key information or information most urgently needed on a personal level; Mary’s Story appeared to do this. As one participant noted, “And I think if I had more time to go and just wanted to browse around, I’d probably look at Mary’s Story.” Others spent more time working with It’s Your Story because they were able to personalize the experience and share it with others. This group suggested revising this story to make it more urgent, for example, by having the abusive partner still in the home. This implies adding more personal stories, including different and more challenging scenarios (scaffolding), and providing opportunities to share experiences, negotiate actions, etc. A method for collecting ideas and new content must be developed; an online survey could be utilized as a transition to an authentic participatory and emancipatory environment such as the one Winkelman (1997) described.

Interface Design: Descriptive Feedback

A well-designed interface is intuitive, or transparent. The dictionary interface is a good example because it works well for the underlying content it organizes and represents. In other words, interface both represents and supports message design by making the message accessible to the learner. A good interface allows cognitive effort to be utilized in learning and elaborating new knowledge, rather than trying to locate where it appears on the screen. Predictability, consistency, coherence, transparency, learner-controlled pacing, and a number of other elements (Mok, 1996) characterize good interface design.

Users found the site interface quite intuitive and transparent. Information was well laid out and relatively easy to access, although there were too many levels in the architecture. Participants at one non-shelter site felt that the use of technical jargon (such as “icon”) and problems navigating “backwards” should be addressed. One informant complained of too much scrolling, which relates to the extensive use of text. It should be noted, however, that topics are contained within one screen or file, which minimizes navigation errors and load times, and eases printing.

Design Implications

An interface that adapts to learner needs enhances the learning environment and can be accomplished in various ways, including a queryable site map, an alphabetical index, a search engine, or an intelligent help facility. The VIOLET site architecture should be re-evaluated to see if several layers could be collapsed or combined.

A parallel VIOLET site, modelled after the Yale Web Style Manual (2000), might eliminate separate files to facilitate printing, while the main site architecture reflects shorter individual modules that minimize scrolling. Other navigation strategies include “Top of Page” indicators, a site map, and a history, footprint, or bookmarking function.

CONCLUSIONS

VIOLET is in the second phase of a planned development of an Internet based resource for abused women and their service providers in Alberta. Currently, the site design reflects an information approach over a learning approach. Although Mary’s Story was actually the first approach developed, It’s Your Story could be developed as a comprehensive learning approach that encourages the user to synthesize her own learning in light of the role-plays.

Outcomes: Intended and Unintended

Anticipated outcomes for VIOLET included the following:

- increased awareness, for shelters and abused women, of available information that is current and consistent, legal issues and language, and alternative formats;
- an educational and information service for shelter workers, and a training tool for shelter volunteers and new staff;
- introduction to learning with technology for shelter workers and their clients;
- increased technological literacy for both groups, including the ability to critically evaluate information on-line;
- opportunities for abused women to develop community networks.

In many ways, however, the unanticipated outcomes of the project are more interesting and compelling. As VIOLET is made accessible throughout
common, "multi-accented" goals (p. 26). Hypertext is the tool of choice, as the reader becomes the co-creator of the text by choosing a personal path through the links, establishing her own semantic links. In Winkelman's project, Sheila, an abused woman in a shelter, told her story in a series of conversations with Winkelman, who posted them to a restricted newsgroup. Through women's participation in this newsgroup, Sheila's story was continually refashioned or reinvented in every retelling. Sheila herself became transformed, seeing her story through new eyes as she participated in the "second level narrative" (Borland, 1991). She became "available to an electronic hermeneutic as readers discover, interpret, reinvent, and release her story" (Winkelman, 1997, p. 29). This accounting of a political activity reflects case based learning design, in which personal stories provide examples of experience and practice in which we participate (through conversation) and from which we learn. Cyborg writing enables social activism, through "language that exposes androcentric oppression and constructs alternative consciousness" (p. 30).

The extension of VIOLET's design into this area requires further study and implementation, as access is of major concern when developing computer based resources for women. In addition, the learning task involved in CMC is quite complex, for both learners and facilitators. Since this design would involve a degree of social activism, political concerns are a significant barrier to immediate implementation of case based learning in this project.

Ideally, VIOLET will be available to all abused women in the province through public access terminals placed in relatively safe environments such as libraries, community centres, grocery stores, doctors' offices, post offices, etc. These points of access are considered safe because the source of the originating request is anonymous and the project continues to work towards providing this access. However, implementing this goal is more expensive and complex than locating stations permanently in shelters. Since many abused women neither physically reach shelters nor have equal access compared to men, the project leaders are strongly committed to this goal. Presently, women may access information through a shelter by telephoning a crisis worker who can provide both current and relevant legal information and advice as well as the site URL and recommendations for its use.

Women's learning styles appear to be relational and cooperative; cooperative learning is a complex strategy in which process is made explicit and participants identify, articulate, implement, and reflect on goals related both to cognitive and affective outcomes. This type of learning reflects principles of social constructivism, which aligns with women's ways of knowing. These social negotiation skills must be taught explicitly in order to realize the model's effectiveness for developing higher-order critical thinking, and thus may require the development of related training activities for shelter workers. This will be a longer-term goal for VIOLET.

Expanding the clientele and purpose of the site to include resources for the family members of abused women, including children, was not an intended outcome for VIOLET. Several participants noted that VIOLET facilitates discussion and could be used as an anchor for family counselling: the project leaders will need to evaluate the value of this intriguing extension to the project.

VIOLET can provide the foundation for a knowledge base containing stories related to abuse and related issues, which can then be used by abused women, related agencies, program developers, and scholars. An online forum has excellent potential for developing and maintaining a network of abused women, their supporters, and other related individuals. Not only can it support both an educational and political community that, in sharing, discovers its own voice, but it can also serve as a growing knowledge base for its participants. Issues needing resolution before this phase include safety and access. In addition, forums of this nature are most effective if facilitated, again requiring a substantial commitment of resources. Research questions related to these initiatives include the following: To whom would this knowledge base be accessible and for what purposes? How would potential participants be encouraged to contribute, or even be made aware that they might?

Learning Designs that Support Women

The VIOLET project has been presented in a feminist context. In other words, we acknowledge that technology is a social construct that has, to date, disenfranchised women, and that gender as a social construct has not existed comfortably alongside technology. VIOLET plans to use technology to empower abused women by providing access to essential information, models of decision-making, and membership in a community of social activism. The research on learning attributes, such as motivation, inform this framework and influence the site design. A stance of critical pedagogy was used to design an emancipatory environment in which women have a voice, and in which they can participate in safety. It meant telling women's stories of abuse through their own voices. Winkelman (1997) refers to a
On-Line Learning for Abused Women and Service Providers in Shelters

Related to feminist, gendered, and social uses of technology


