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Spinning a Northern Web

Women Using Information and Communication Technology to Network for Health and Wellness

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Abstract: This paper presents a recent case study which explored the innovative use of information and communication technology (ICT) to promote women's health interests in northern, rural and remote communities in British Columbia, Canada. The setting for the study was a computer-mediated, constructivist-based learning environment created as a means to support northern women to overcome geographic isolation through a variety of information sharing, informal education, and social and health policy development activities. The case study participants offer their views about using ICT and provide an account of what supports and prevents their access to and participation in such a web-based learning network. Also addressed is how ICT can enhance the ability of social workers and other health care professionals to reach out to diverse communities in the course of influencing and developing social and health policy and service delivery in northern, rural and remote communities.

Keywords: Women, ICT, Virtual Community-Building, Online Networking, Health and Social Policy, Northern/Rural and Remote

Introduction

PROSPECTS FOR WOMEN'S health in northern British Columbia (BC) are far less optimistic than for their counterparts elsewhere in the province. The provincial health officer's annual report released in 1999 on the health of British Columbians (British Columbia Provincial Health Officer, 2000) revealed that women in northern BC live an average of four years less than women living in southern, more urban areas. When one considers the current political climate of reduction in federal and provincial funding for public health care and social services, the status of women's health within the socio-economic context of northern, rural and remote communities will only further deteriorate (Hemingway, Fiske, & McLennan, 2002; Leipert, & Reutter, 2005; Madrid, 2003).

Women's health and wellness has been a focal point that has historically mobilized women to collaborate on initiatives, movements, and collective strategies to promote women's health rather than focusing primarily on disease prevention (Alexander, Larosa, & Bader, 2001; Clarke & Olesen, 1999; Ruzek, 1997). More recently, women have recognized the value of utilizing information and communication technology (ICT) in their collective efforts to affect social change through collaboration and community building (Pollock & Sutton, 2003).

The Women North Project

The Women North Network (WNN) was launched in 2001 under the auspices of *Northern FIRE: The Centre for Women's Health Research* at the University of Northern British Columbia. One purpose of the Women North Network Project was to bring women together to discover/uncover the connections in their lives across communities (Rodrigues, 2003). Through a consultative process at community gatherings in 10 communities across northern BC, women discussed and strategized about issues related to health for themselves, their families, and their communities. Women's ways of networking and collaborating locally, regionally, and provincially were also explored. A key outcome of the initiative was the creation of an online (internet-based) adaptation of the Women North Network utilizing an electronic strategy to assist women to build and expand on current collaborative efforts. By becoming part of the online network, women from diverse geographical locations and experiences could continue to discuss and strategize about ways to improve health and wellness, engage in action research initiatives, and strengthen the overall capacity of northern and remote communities to influence the development of health and social policy.

The WNN has several online components. These include a website, an email news distribution list,



and an online “gathering space” available through the Web Course Tool (WebCT) distributive learning program at UNBC. The WNN email news list is a distribution list that disseminates news items and announcements of interest, through email, to the approximately 250 women members from across northern BC. The “gathering space” feature of the WNN is a password protected place for women to communicate, share information, and resources, engage in discussions related to health and social policy and practice issues for women. The interactive nature of the Online Gathering Space provides an opportunity for women to collaborate on a range of action strategies to promote positive change.

An evaluation of the Women North Project in 2002 concluded that it is critical for women in northern, rural and remote locales to explore the experience of the women’s health movement and the use of an electronic strategy to confront the conditions that lead to ill health in women and their communities (Hemingway et al., 2002; Pollock & Sutton, 2003). The current study is a response to the evaluation.

Purpose of the Case Study

This case study was designed to gain a better understanding of the WNN online strategy for women in addressing emerging health issues as well as the experience of women in using ICT to further their networking goals and activities. Specifically the case study addressed the following five questions:

1. What supports women in using the WNN?
2. What information and resources do women gain from the WNN online strategy that they can use in their work and in their day-to-day lives?
3. What makes using the WNN Email List and Gathering Space worthwhile?
4. What specific things about the WNN Email and Gathering Space prevent women from using it?
5. How does the WNN support women in moving their political and social action strategies forward?

These questions were explored entirely online using the WNN Email List, Website and the WNN Online Gathering Space (see Table 1).

Information, resources and news about a broad range of women’s health and wellness topics is regularly distributed through the WNN Email Distribution List. It also provides a means for women to discuss issues of concern and to plan action strategies. A subsidiary list of the regular WNN Email List - The Spinning a Northern Web Interactive Email List - was created expressly for study participants and research activities.

The WNN Website was developed to provide public internet access to information about the Women North Network. As Table 1 indicates, for this project, a Spinning a Northern Web page was created and linked to the main WNN Website.

Table 1: WNN Online Components Used in the Spinning a Northern Web Study

Component	Spinning a Northern Web Interactive Email List (a subsidiary of the WNN News Email List)	WNN Website (publicly accessible on the internet)	WNN WebCT Online Gathering Space (password protected for WNN members only)
Features and Functions	Comprised only of research participants and researcher Email communication amongst participants All messages go to all individuals on the list News items from WNN News email list, also sent to this list	A link to the Spinning a Northern Web page provides convenient access to: Purpose & goals of the study WebCT Tutorials Participant favourite documents and links WNN WebCT Online Gathering Space log in page	Internal email system Discussion Forum Live Chat Links to internal and external websites and documents Women’s Profiles List Calendar of Events WebCT Tutorial and Library of How Tos Spinning a Northern Web Organizer Page with Purpose, Goals and Research Activities and project related links Tracking and recording participant activity

The Women North Network WebCT Online Gathering Space is a password protected internet-available place for women to communicate and interact. The Online Gathering Space (see Table 1) includes a *WebCT Internal Email* communication tool that is restricted to WebCT and allows one-to-one or one-to-many messages; similar to regular email. It also includes a *WebCT Discussion Forum* that functions like a 'virtual bulletin board' where messages and replies to messages can be posted to various topics. Also featured is the *WebCT Live Chat* tool that supports real time text communication. Additionally, there are links to external websites; a calendar of events; links to newsletters and documents; and links to internal 'sites' created by individual organizations. All features were available to study participants. The WebCT software also provided a means for the researcher to track participants. This included how many times they visited various features, how often they read postings, and the number of messages they posted; thus, providing a quantitative look at participant access to and utilization of the WNN WebCT Online Gathering Space.

Research Design

This was primarily a qualitative multi-method case study drawing on features of collaborative and action research approaches (Grbich, 1999; Healy, 2001; Patton, 2002). In addition, it used tools of the WNN WebCT Online Gathering Space to provide descriptive statistics about the usage of the various WebCT features. A bricolage method was incorporated for data collection and analysis; described in Patton (2002) as a process that combines "old things in new ways, including alternative and emergent forms of data collection" (p. 402). This approach brings the flexibility to draw from a variety of methods, theory, data collection and analysis in innovative ways. To fully describe and explore the experiential aspects of the WNN as a case, it was important to not only report how women describe their experience of participating in the WNN, but to explore how they make meaning of this new virtual community.

A case study approach to qualitative research provided a structure and a setting for the research (Creswell, 1998; Lincoln & Guba, 1985) as well as an approach to analysis, that supported flexible and inclusive use of all aspects of the WNN as data for analysis by drawing on multiple forms of information (Patton, 2002).

Collaborative and Action Research Features

Through collaboration aimed at creating change through action, study participants not only provide

information about their experiences but also have a role in shaping the direction of those activities and the nature of their participation. Collaborative, action-focused methodology includes opportunities for creating knowledge through action and practice (Zuber-Skerritt, 2001). This study incorporated the principle of action leading to learning, leading to action by being attentive to and responsive to learning as it occurred. The process of the research evolved as participants collaborated on decisions related to discussion topics, action strategies and useful, meaningful ways of developing the WNN.

Using real experience to guide a process of change, participants were involved in, and in control of, the process of inquiry and of change; where collaboration between academic and community researchers is valued; and where there is a commitment to facilitate the empowerment of study participants (Barnsley & Ellis, 1992; Morris, 2002; Patton, 2002).

Sample

A purposive or criterion, non-random approach to sampling was employed (Dudley, 2005; Patton, 2002). Participants were women from northern BC communities, who had basic computer skills, and consistent access to a computer and the internet. Forty-two women from across the province, and as far away as Rankin Inlet, expressed an interest in participating. The 12 women chosen for the Spinning project were from eight communities located in the region from Prince George north to the Yukon border, west to Haida Gwaii and east to the Alberta border.

Participants ranged in age from 29 to 64 and came from a wide variety of circumstances and diverse backgrounds. Some of the experiences that women brought with them to the project were those related to: coming from First Nations ancestry, becoming older, being lesbian, living on-reserve, living homeless, living with chronic health conditions and disability and dealing with issues related to abusive relationships and lone parenting. There were students, retired women, mothers, caregivers and women involved in paid and volunteer work both in the home and outside the home.

Research Procedure

The study was conducted over an 8 week time period that was divided into three phases of data collection. Table 2 provides the features of each of the components of the WNN online strategy that were used for data collection.

Table 2: Sources of Qualitative Data

Phase 1	Phase 2	Phase 3
Introductory questionnaire Interactive email discussions Direct email messages Phase 1 evaluation	Interactive email discussions Direct email messages WebCT Discussion Forum postings WebCT internal email messages Phase 2 evaluation	Direct email messages WebCT Discussion Forum postings WebCT internal email messages Live Chat Discussions Action planning discussions Responses to five central research questions Phase 3 Evaluation

The first phase took place using the Spinning a Northern Web Interactive Email List. Direct email between the researcher and participants was also utilized. The second phase was a transitional stage moving from using email to using the WNN WebCT Online Gathering Space. The third and final phase was intended to take place solely on the WNN WebCT Gathering Space. Activities were coordinated by the researcher; however, this was done with input and feedback from the group through their discussions and their evaluation at the end of each phase.

Phase 1

During this introductory stage the study participants, all members of the Spinning a Northern Web Interactive Email List, received the news items and articles posted to the regular WNN Email List. The researcher distributed an online introductory questionnaire intended to explore issues related to the participants’ current use of the internet and also posed a series of discussion questions to promote and focus discussion about health and wellness for women in northern, rural and remote communities.

Phase 2

During this transitional stage, participants shifted from using email to learning to use the WNN Online Gathering Space. Each participant was assigned a WebCT username and password that identified them as a *Spinner*. Brief instructions on how to access the WNN WebCT Online Gathering Space were provided through an email message along with a link to a tutorial on the WNN Website.

Discussions also moved to the Online Gathering Space; becoming delineated topics in the WebCT Discussion Forum. The researcher continued to send messages with updates and activity instructions through external email, while at the same time using features in the WebCT space to post this same information.

Phase 3

During this final stage, participants learned more about using the tools provided within the WNN

Online Gathering Space and also continued activities from the previous phase. They were asked to plan a strategy to address an issue arising out of their discussions thus far, using this space to harness their collective energy and to begin discussing the five central research questions.

Data Analysis

Drawing from data sources described in Table 2, coding into categories and themes was accomplished by using a word processor to label, tag and retrieve the text of meaning units (Ryan, 2004). This process was undertaken iteratively to first code data into broad categories and then to code the resulting cluster of data in each category into themes. Features of themes were further coded using this same method.

Preliminary data analysis was undertaken on an ongoing basis during each of 3 phases of data collection. Exploring general themes ensured that the process of the subsequent phase was consistent with the women’s experience and perceptions. The intention was to make certain that activities within each phase were responsive to what the women were saying about their current experience.

Results of Quantitative Analysis

The quantitative, statistical data used in this description were drawn from email messages that were manually tracked by the researcher and through the WebCT tracking features and entered into an Excel datasheet. Participant activity on the WNN Online Gathering Space was both counted manually in some cases and automatically tracked by a feature in WebCT in others.

Table 3 illustrates the distribution of all the messages posted by participants throughout the 8 weeks of the project. Messages in Phase 1 were comprised of responses to the introductory questionnaire, comments on WNN Email new items and to messages from the researcher outlining activities and focusing attention on health and wellness for women. There were also participant discussion messages as topics emerged and finally there were responses to the Phase 1 evaluation that was sent by direct email to each participant.

Table 3: Participant Messages Posted throughout Project

Categories of messages	Phase 1		Phase 2			Phase 3			Total messages
	Week #		Week #			Week #			
	1	2	3	4	5	6	7	8	
Interactive email messages	36	36	13	2	9	0	0	0	96
Direct email messages	35	14	4	8	15	14	5	9	104
WebCT internal email	0	0	17	9	13	1	3	2	45
WebCT discussion forum	0	0	14	16	8	8	24	27	97
Each week Total messages	71	50	48	35	45	23	32	38	342
Each phase Total messages	121		128			93			

Phase 2 messages (see Table 3) were the women's replies to researcher messages that had provided updates, instructions for activities and WNN Email List news items. The Spinners continued to discuss health-related topics through interactive email which also began to shift over to the WebCT Discussion Forum.

Phase 3 messages (see Table 3) were primarily posted by Spinners through WebCT email and to the Discussion Forum topics that had resulted from final phase activities. These were focused on sharing

action ideas and strategies and responding to and talking about the five research questions.

The statistical description of the participants' involvement during the project – the number of messages they sent, the number of visits to the various features on WebCT and their participation in the structured activities, validates the Spinners' own descriptions of their experience of using email and the WNN Online Gathering Space.

Results of Qualitative Thematic Analysis

Table 4: Categories and Themes

Category 1: Supports	Category 2: Gains	Category 3: Barriers	Category 4: Supports Action	Category 5: Health Focus Motivating
Valued feelings Supportive relationships Sense of community More time Coordinator Up-to-date technology Technical support and training Aids to "navigating"	Valued topics Valued resources Women are a source of information and resources EMAIL Uncomplicated WEBCT ONLINE SPACE Interactive Visually welcoming Convenient and accessible	Lack of time Realities of women's lives Text communication Lack of others participating Lack of technical skills Technical issues Challenges with email Challenges with Online Gathering Space	Means of networking Desire to involve other women Creation of a common vision Organizing for change	Connecting supports women's health Health promotion focus Information critical to health Focus for action
Category 1: What Supports Participation in the WNN Category 2: What Women Gain From and Find Worthwhile about the WNN Online Strategy Category 3: Barriers that Prevent Participation in the WNN Category 4: The WNN Supports Political and Social Action Category 5: A Focus on Health and Wellness Motivates Participation in the WNN				

This project generated an enormous amount of rich textual data about the experiences of women using ICT (through the Women North Network) to focus on health and wellness issues in northern, rural and

remote communities in BC. Upon organizing and reviewing the qualitative data, it was found that four broad categories correspond with the topics suggested by the five central questions that were

explored through the research. A further category describes themes related to health and wellness as a motivating factor for women to participate in the WNN. Table 4 provides an overview of the categories and related themes.

The themes and their features were at times quite specific and distinct (e.g., the tangible, specific gains such as information about health and social issues or features that make email or the online space worthwhile). Conversely, themes were at other times interwoven and interrelated (e.g., the issue of time and its impact on when and how women participate thus influencing their perception of what supports them, what they gain, what they find worthwhile and how they take action). The possible variations, combinations and transformations illustrating thematic uniqueness and interrelatedness are too many to reflect on in their entirety; however, the broadest most significant of these will be discussed.

Discussion

The findings from this research provide the basis for an understanding of women's experience of using ICT; in this case, participating in using email, the WNN WebCT Online Gathering Space and Website. This discussion is rooted in the Spinners' own understanding of and perspectives on what supports and prevents their participation, what they gain from and find worthwhile about participating, what supports them in taking action to influence health and social policy and how a focus on health motivates them to participate.

Women recognize the value of the Women North Network and the opportunities it provides for using ICT to share information and resources about health and wellness. They also recognize its worth in furthering their strategies to influence health and social policy, programs and services. They are enthusiastic about the possibilities it offers for them to come together in a virtual way to learn about other communities, to share experiences and expertise, to explore, discuss and gain support for their personal and political concerns and take action on common issues. Finally, they appreciate the WNN as an online venue to build relationships resulting in a sense of community that provides a structure for women to explore and take action toward health promotion.

The women in this project challenge networks such as the WNN to create electronic strategies that contribute to and are amenable with their daily lived experiences. The women-centred, expansive view of health as the foundation for the WNN contributes positively to women's lives and supports them in exploring a vision of health and health promotion for northern, rural and remote communities in BC. Furthermore, it is a catalyst for creating an electronic space that is centred on women, offering them an

opportunity to influence the internet to become a tool that meets their needs.

Access Leading to Participation

The findings in this study underscore the importance of up-to-date computers and software, affordable high-speed internet and skills training to women's access and participation in ICT. This issue is of particular importance to women in northern, rural and remote communities where publicly accessible computer stations and availability of high speed internet access is problematic due to geographic isolation and prohibitive cost.

Other access issues identified by study participants are related to women's unequal access described elsewhere as the digital divide (Baker, 2003; Eckdahl & Trojer, 2002; Huyer, 1999). They provided an account of their difficulties that included heavy workloads due to their multiple roles in the community, workplace and family; a lack of the financial means to purchase computers and high-speed internet; and a lack of women-centred skills training. Some women commented that *'it takes time to really consider the discussions and time is something I do not have a lot of at work OR at home right now'*. Most were interested in learning more about ICT; however, they also reported a sense of discouragement, lack of motivation and insufficient time to focus on learning anything more than the minimum essentials required to use ICT in their jobs and to fulfill their basic communication and information gathering needs.

These digital divide complexities are often related to unequal access for women due to gender issues such as fewer opportunities to benefit from the supports required for effective use of ICT (Huyer & Carr, 2002). Socio-economic inequities that result in barriers such as poverty and lack of employment and education are often associated with women's inequality and oppression and further complicate the digital divide (Baker, 2003; Bimber, 2000; Hackett & David, 2003). Barriers to women's use of ICT in general, and in the WNN in particular, replicate those that complicate women's full access to and participation in the benefits of society which contribute to and promote their health and well-being (Eckdahl & Trojer, 2002; Escobar, 1999).

Despite these barriers, the findings suggest that the WNN is an example of women creating and recreating the internet to become more practical and useful to them. It provides valuable information and resources and augments their networking, relationship and community building activities. It is a way to build on local efforts to organize for action leading to positive change. Furthermore, the data suggest that the WNN offers women the opportunity to expand their local action strategies to a larger

northern and regional level; thus creating a stronger voice for change. Finally, it is useful in furthering their goals to promote health for women by providing a means to advocate for and work towards equality and social justice.

Relationship and Community Building Leading to Action

In this study, women described both the concrete and the intangible things that engage them in using the internet and the WNN. Their interest in learning more about each other and creating supportive relationships developed out of their admiration and respect for one another as they shared stories, experiences and perspectives. They said that their lives are enriched through their interactions with other women in the project: *'the reason I have enjoyed being a member, is the acceptance and understanding that women can give and share. I liked connecting with other women living in rural communities in the Northern Region. I especially liked the diversity of age, ethnicity, economic status, sexual orientation and ability that was in the group and the openness (sic) in expressing the realities of our differences'*.

They identified similar concerns about health and wellness (e.g., the need to shift to a health promotion focus on the social determinants of women's health), had comparable difficulties with managing multiple roles and responsibilities and held common views on the value of ICT and the barriers to using computers and the internet. Participant input highlighted that online community grows when women recognize that concerns in their local communities are comparable to those for women in other communities and as a common vision of the North and northern culture develops. These supportive relationships cannot be underestimated as a foundation for building women's capacity to use ICT for their own benefit and to create an online community that takes action to create positive change (Pollock & Sutton, 2003; Sutton & Pollock, 2000). Further, participants valued diversity and acknowledged that women from many backgrounds, cultures and experiences bring an esteemed perspective and unique knowledge and skills to this virtual community.

By connecting on common interests, issues and values and through promoting inclusion of others, the stage was set for women to begin to consider ways to create a collective voice for addressing their mutual concerns. Participants reported that they felt empowered by the capacity of women in separate geographic communities, distant from one another, to join together through networks such as WNN to create a louder, stronger voice that comes from many women expressing their desire for change. They are

also motivated to influence the policies that have such a profound impact on their lives – policies of governments that are far removed from them geographically and from the values and ideals they wish to preserve.

Contributing to Women's Lived Experience in a Positive Way

Undoubtedly, the factors that support and limit access to and participation in building online community are complex and often indicative of issues that occupy, sustain and burden women in other aspects of their lives. Findings underscore that women have many demanding roles and responsibilities that are complicated by geographic, social and cultural isolation, socio-economic status and health and disability issues. They have strong connections to and concerns for family and community and place significant value on their relationships, community connections and their own self-care: *'this network has helped me visualize and think a larger regional community of northern women is possible . . . to bridge gaps and connect over common ground'*.

To find value in participating in a virtual network such as the WNN, data suggest that there must be outcomes that enhance women's lives and alleviate rather than add to their heavy workloads and responsibilities. Uncomplicated access to current and relevant information that can be used in fulfilling responsibilities and completing tasks would provide that appeal. Support for personal issues and concerns as well as meaningful dialogue on health and wellness topics and social issues in a timely and interactive manner is also engaging. Furthermore, ICT and the WNN will become an integral part of women's networking activities when women can trust that their ideas and strategies will result in concrete action with positive, tangible achievements. As one participant said: *'we need to start making it happen – so that the energy and time is benefited by concrete action. Even if it is a commitment to 'talk' about pieces to the idea or some idea it doesn't matter what – just that we get some commitment to move forward with some thing so we see some thing come of it'*.

Women's involvement in the further development of networks such as the WNN will ensure that such networking contributes positively to women's lives rather than competing for valued attention and time. It is through promoting greater and more accessible participation that internet-based networks and online communities will continue to evolve in ways that are meaningful and valuable for women; consequently making it worthwhile for them to be involved in ICT and contribute to its further development.

Significance to and Implications for Social Work Policy and Practice

As shown in this study, ICT provides a structure for social work advocacy and social and political action using powerful tools for gathering and sharing information and resources, raising awareness of issues, and applying pressure for social change (Harcourt, 2002; Hawthorne, 2001). Perhaps most importantly, it has the capacity to encourage inclusion and participation in activities that promote an equitable society, political action and social change (Hick & McNutt, 2002; Lai, 2002). The social work profession is in a position to adopt ICT, and particularly the internet, to bring innovation to social change objectives. The lessons learned from the women in this study can inform and guide social workers as they create online social work practice.

Effective, practical and fitting social work practice that meets the unique needs of northern, rural and remote communities can find direction through drawing on the grassroots expertise and experience revealed by electronic strategies such as the WNN. Knowledge gained through online networking activities can offer ideas for concrete, substantive processes and tools to promote social change through health promotion and to utilize the power of ICT to build community engaged in action for social change.

Conclusion

This innovative project, undertaken entirely in virtual space, harnessed the voice of participants to provide an understanding of what was practical, meaningful and supportive for women to utilize online strategies to address health and wellness concerns in northern, rural and remote communities.

The importance of access to ICT infrastructure, training and skills as well as opportunities to replicate, in a virtual way, the supportive relationships and connections that they value in their local, physical communities, cannot be underestimated. As part of an online community, women reached out and connected over a vast geographic area to take collective political and social action. Specifically, participants launched the *Hearts from the Heartland Campaign* - a political message campaign focused on informing provincial government representatives about the concerns of women in northern, rural and remote communities.

Finally, advocating for women's greater access to and participation in ICT was identified as a critical component of organizing toward health and social policy change that meets the needs of northern women and their families. Moving into a future where social justice and equality continue to be illusive, social workers who are skilled in the use of information and communication technology can ensure that ICT becomes a force for creating a more just and compassionate society.

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