

WOMEN ENTREPRENEURS: INFORMAL LEARNING AND THE INTERNET

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Abstract

Women entrepreneurs are one of the fastest growing groups of informal learners in Canada. Although the Internet presents extensive opportunities for informal learning, it remains an understudied area and little is known of the true nature of the learning that takes place in this mode. In this qualitative study, semi-structured e-mail interviews were used to explore the experiences of four Western Canadian women entrepreneurs who used the Internet for informal business-related learning. A sociocultural perspective was found to be helpful in understanding the nature of their informal learning. Results showed that perceived value of the Internet for informal learning included its capability to provide learner control for access to informational capital via the World Wide Web, and connectivity to social capital via e-mail. A taxonomy of informal learning using the Internet suggests that women entrepreneurs' learning exists on a continuum of self-direction, ranging from autonomous (for independent seeking of external learning resources) to relational (for e-mail communication with colleagues as a support), but also includes incidental and social (tacit) learning. Implications for practice and questions for further research are presented.

Introduction

Women entrepreneurs are one of the fastest growing groups of informal learners in Canada, currently owning more than one-third of small and medium-sized businesses (Foundation of Canadian Women Entrepreneurs, 2000; Prime Minister's Task Force on Women Entrepreneurs, 2003), with numbers projected to reach one million by 2010 (CIBC, 2005). Although training programs are available for assisting with business startup, studies show that following launch of their ventures, most entrepreneurs address the challenge of acquiring ongoing business knowledge and skills by pursuing informal learning activities (Doyle & Young, 2003; Fenwick & Hutton, 2000; Hughes, 2001; Livingstone, 2000; Martin & Halstead, 2003; Stokes, 2001). Bateson (1994) suggested that "most of learning occurs

outside the settings labeled as education” (p. 9); the extent of adults’ informal learning has also been compared to “an iceberg...mostly invisible on the surface and immense” (Livingstone, 2002, p. 1), especially among the self-employed. For example, the New Approaches to Lifelong Learning (NALL) survey of 1500 adults showed that 52% of the study's self-employed participants engaged in an average of 14 hours per week of informal learning, with six of those hours work-related (Livingstone, 2000, p. 17).

The Internet, recognized as “an educational tool of enormous potential” (Gray, 1999, p. 125), promises suitability for adults’ informal learning. However, while adults’ learning experiences in formal distance education settings have been studied extensively, a “lack of research about informal adult learning on the Internet is a barrier to fully understanding the extent and type of learning that is taking place” (Imel, 2003, p. 2). Industry Canada estimates that 42% of Internet users are women, a 30% increase since 1996 (Royal Bank Women Entrepreneurs, 2003), but research has often portrayed a “deficit model” (Denis & Ollivier, 2003, p. 263) of feminist pedagogy depicting women as technologically disadvantaged. Studies on women entrepreneurs’ learning also indicated that they do not use the Internet extensively for learning (Fenwick, 2000). Moreover, the primary researcher’s observation as a Chartered Accountant working with small business owners suggested that women entrepreneurs have begun to use the Internet for business-related learning, and inspired the research for her master’s thesis (Thomas, 2004).

With research on entrepreneurial learning also in the early stages (Cope, 2003; Minnitti & Bygrave, 2001; Ravasi & Turati, 2005), few studies have investigated entrepreneurs’ perceptions of the Internet’s value in informal learning. Growing numbers of women are starting businesses, pursuing informal learning opportunities, and accessing the

Internet, so examination of their experiences is important for several reasons. Investigating women entrepreneurs' motivations for using the Internet and the characteristics that they perceive to be instrumental in their learning may provide insight into the provision and accessibility of online resources for small business enterprises. Insight into competencies and skills that women entrepreneurs perceive as being developed may increase our understanding of the types and the extent of informal learning, and identify potential resources and support required to enhance learning. Finally, insight into strategies used with the Internet may contribute to the body of knowledge on informal and online learning.

This article begins by reviewing current literature on adults' informal learning and strategies using the Internet, women as learners, and entrepreneurial learning. Next, the methodology section describes the research design, participants, data collection and analysis. Results are presented and interpreted. Finally, conclusions with implications for practice and suggestions for future research are presented.

Review of Related Literature

Informal Learning and the Internet

Informal learning entails “any activity involving the pursuit of understanding, knowledge or skill which occurs outside the curricula of educational institutions, or the courses or workshops offered by educational or social agencies” (Livingstone, 2000, p. 2). The Internet, considered the “most exciting development in adult education in the last 30 years” (Tough, 2002, p. 9), is potentially suitable for informal learning. With applications that provide convenient access to information through web sites and support interaction through e-mail or discussion forums, the Internet is a potential source of both informational and social capital (Denis & Ollivier, 2003).

Access to informational capital via the Internet places the user in control of information search and environmental scanning activities for locating learning resources (Tisdell, 2000; Leider et al, 1995, Raymond et al, 2001). Studies in formal distance education show that essential attitudes and skills for effective learning include learner autonomy (MacKeracher, 1996), self-direction (Schurgurensky, 2000), and information literacy (Edwards & Bruce, 2002), in order to recognize information needs, then search, retrieve, evaluate, and apply relevant information to generate ideas or solve business problems. In addition, web site evaluation skills (Fogg, 2002) are required to learn to gauge the value and validity of Internet resources. The Internet's communication features can also promote social capital, a "resource that facilitates information exchange, knowledge sharing, and knowledge construction" (Daniel et al, 2003, p. 2), and require effective writing strategies to convey meaning in requesting, giving, and receiving feedback. For example, while e-mail can be used to interact with individuals known to the sender and promote bonding capital, it also supports bridging and linking capital useful for "building links to external sources and for information diffusion" (Putnam, 2000, as cited in Daniel et al, 2003, p. 3).

Other benefits of the Internet for informal learning include convenience, timeliness, and cost-efficiency for information acquisition using web sites and e-mail (Boshier et al., 2002), and support for knowledge sharing in professional development activities using industry list serves (Hara, 2002). Through providing access to information and communication capabilities, the Internet can support adult learner needs characterized by "life experiences and social situations in motivating their learning; their need to apply learning quickly to practical tasks; their ability to pursue self-directed learning; and their struggles to balance learning projects against the constraints of time, space, economic resources and personal

relationships” (Cahoon, 1998, pp. 71-2). Practice using the Internet can also enhance information literacy (Edwards & Bruce, 2002), “the ability to make effective use of information made available through technology and other sources” (p. 181). In turn, well-developed information literacy skills can contribute to Internet self-efficacy (Eastlin & LaRose, 2000), a “belief in one’s capabilities to organize and execute courses of Internet actions required to produce given attainments” (p. 1). Self-efficacy accumulates, developing along a continuum through an individual’s cognitive and social experiences (Bandura, 1994), and is a key concept in understanding the potential for Internet use in informal learning, where “prior internet experience, outcome expectancies and Internet use are significantly and positively correlated to Internet self-efficacy judgments” (Eastlin & LaRose, 2000, p. 1).

While not all Internet use contributes to learning, informal learning can occur when there is a “need, motivation and opportunity for learning” (Marsick & Watkins, 2001, p. 28), and is characterized by the “retrospective recognition of both a new significant form of knowledge, understanding or skill acquired on one's own initiative and also recognition of the process of acquisition” (Livingstone, 2000, p. 2). It can be undertaken individually or collectively, in face-to-face or online settings, and since “hierarchical knowledge/power relations are not necessarily definitive of the learning process” (Sawchuk, 2003, p. 291), in the absence of an instructor. Using intentionality and awareness at the time of learning as parameters, Schurgurensky’s (2000) proposed taxonomy classifies informal learning as self-directed, incidental, or social, incorporating both individual and social learning elements that can be particularly attractive to adult learners.

Informal learning using the Internet, a “non-linear environment ... opens up potential for new approaches to learning” (Phelps, 2003, p. 1), and may not be supported by existing

learning theories. While constructivism and social constructivism theories (Jonassen et al, 1999; Kanuka & Anderson, 1998; Merriam & Cafferella, 1999) are foundational to teaching and learning in formal distance education settings, Livingstone (2004) suggested that informal learning is a more sociocultural concept. In other words, informal learning is influenced by both social and cultural factors, as “an interactive process through which learners socially construct their own understanding of the world” (p. 343). Using e-mail or asynchronous conferencing promotes learner flexibility – the ability of learners “to remain embedded in their cultural environments rather than forcing them to adapt to a new culture” (Leidner et al., 1995, p. 10), supporting enculturalization (Brown, 2000; Leidner et al, 1995) with learners as cooperative meaning-makers (Norton et al, 2003), creating knowledge through web-based interaction with resources and colleagues. That is, the Internet can facilitate “control of learning... interpretation of knowledge by the learners...immersion in experiential activities...learning best occurs in the context in which it will be used” (Leidner et al, 1995, p. 7).

Women as Learners

Studies examining learning styles suggest that women prefer relational and connected learning and value interaction with others as a source of support (e.g., Belenky et al, 1986; Kirkup & von Prummer, 1990; MacKeracher, 1996), demonstrating that within the framework of connected knowing, “the most trustworthy knowledge comes from personal experience rather than the pronouncement of authorities” (Belenky et al, 1986, pp. 112-3). However, other studies (Hayes, 2000; MacKeracher, 1996) caution that stereotyping women’s learning as relational fails to consider that they may also be autonomous and self-directed.

Research in formal distance education across various professions suggests that women face unique challenges and require additional support (Burge, 1994; Conrad, 2002; Kirkup & von Premmer, 1990; Stacey, 1999), and often portrays “women’s exclusion from the culture and practice of technology” (Denis & Ollivier, 2003, p. 261). Barriers to access and participation in formal distance education offerings include time, cost, lack of confidence, and negative experiences with male domination on the Internet (Goulding & Spacey, 2002). Inadequate computer skills, trust, priorities, relevance, privacy, and professional image have also been identified (Vaillencourt, 2002). However, the Internet’s capacity to provide informal learning opportunities, control, and anonymity are features that can be attractive to women (and men alike) for communication, networking, and information seeking.

Learning Strategies Using the Internet

Studies in formal distance education indicate that learners require information literacy, the capacity for web site evaluation, and cognitive and metacognitive skills for effective online learning. Information literacy, “the ability to access, evaluate and use information is critical for successful learning” (Edwards & Bruce, 2002, p. 181), emphasizes assessing web sites for credibility, and highlights the importance of exercising judgment when using web-based resources (Fogg et al, 2002; Brown, 2000a). As King (1998) noted, “Adult learners need to refine their analysis and evaluation skills as they traverse the world of the Web. They will encounter a tremendous amount of information, but just as they have learned to question the messages they receive through traditional media, they must critique web resources” (p. 26).

For example, the Resource Inquiry Model (Nesbitt & Winne, 2003) describes stages for effective online learning as including setting information inquiry goals, planning for study,

searching and selecting resources, assessing new knowledge, and critiquing and recommending resources. Although developed for use in formal distance education settings, these stages could also be applicable to informal, web-based learning. Other studies show that cognitive and metacognitive strategies such as orientation, organization (planning and monitoring), social, and information searching skills are needed to access, engage, interactively use, evaluate, and create using the technology (Kirkup, 2002; Kumrow et al, 2002; Olgren, 2000). In addition, well-developed metacognitive skills (such as self-management, self-knowledge, and task knowledge) are key in solving ill-structured problems (Jonassen, 2003; White, 1999), situations that are common to small business.

Entrepreneurial Learning

The need to understand entrepreneurial learning and development is critical (Cope, 2003; Gartner & Birney, 2002; Mitchell et al, 2002; Prime Minister's Task Force on Women Entrepreneurs, 2003; Rae, 2000) in order to support acquisition of knowledge and skills required for sustainable business development. Yet, research that examines the "complex interactive learning relationship that exists between the entrepreneur, his/her business and the wider environment" (Cope, 2003, p. 26) is still in the early stages (Cope, 2003; Minnitti & Bygrave, 2001, Ravasi & Turati, 2005).

Studies suggest that most entrepreneurs prefer to experience a problem before seeking learning opportunities, then respond by pursuing informal learning (Doyle & Young, 2003; Fenwick & Hutton, 2000; Hughes, 2001; Martin & Halstead, 2003; Stokes, 2001).

Experience can be a powerful catalyst for entrepreneurial learning particularly through "critical incidents" (Cope & Watts, 2000; Hawke, 2000; Lawless, Allan, & O'Dwyer, 2000; Sullivan, 2000). The challenge, as posed by Fenwick (2000), with entrepreneurs "choosing

when and how they learn what they decide they need to know...what, if any, are the pedagogical entry points?" (p. 13).

A review of research on the organizational aspects of women-owned businesses concluded that "women view their businesses as a co-operative network of relationships rather than a separate economic entity" (Brush, 1992, p. 17), an integrated perspective that mirrors connected and relational learning (Belenky et al, 1986). Formal training courses are often viewed as too general or basic, or not accessible due to time or cost (Fenwick & Hutton, 2000). Informal learning activities such as reading (e.g., library books, self-help manuals, government and trade publications) and discussion with experienced others (Fenwick & Hutton, 2000), indicates a strong internal focus of women entrepreneurs' informal learning (Fenwick, 2000; Martin & Halstead, 2003).

Unfortunately, women entrepreneurs are often not aware of the paper- and web-based information resources available to them (Young & Brenner, 2000; Zinger et al, 1996). While women entrepreneurs do not use the Internet extensively (Fenwick & Hutton, 2000), or only on a limited basis for information seeking and market research (Martin & Halstead, 2003), a growing interest in e-learning has also been shown (Hughes, 2003). Other studies have documented entrepreneurs' limited use of telementoring (Stokes, 2001), "sitting in on" electronic forums (Doyle & Young, 2003), and sharing knowledge by e-mail (Bamji et al, 2004; Martin & Halstead, 2003). However, these studies did not explore perceptions of the Internet's value in informal learning.

Methodology

Research Design

A qualitative approach and case study design was used to explore the experiences of women entrepreneurs who used the Internet for informal business-related learning, the strategies they used, and the competencies and skills they gained. While entrepreneurial learning research has been primarily quantitative in nature (Gartner & Birney, 2002), a qualitative approach is useful to extend beyond quantification and description “to providing explanation...of the phenomenon studied” (p. 393). A case study design is “likely to produce the best theory” (Walton, 1992, p. 129, as cited in Neuman, 2003, p. 33); using analytic induction to “examine in depth many features of a few cases” (Neuman, 2003, p. 33) over a limited time period, case studies are effective in exploring topics not previously addressed (Cresswell, 2003), and offer the “greatest promise of making significant contributions to the knowledge base and practice of education” (Merriam, 1998, p. 3).

Participants

Participants consisted of a purposive sample of four Western Canadian women, principal or sole owners of established (in operation for 2 years or more) small businesses, who used the Internet for informal learning. Recruitment was initiated by word-of-mouth requests for volunteer participation through the primary researcher’s informal networks. Invitation, Confirmation and Consent Letters were e-mailed to prospective participants, and once consent was received, data collection commenced.

Data Collection

Multiple methods of data collection--semi-structured individual interviews conducted via e-mail, analysis of participant and researcher learning journals, and document examination

(participant web sites, business plans and articles)--were used to triangulate data (Merriam, 1988). These are described in the sections below.

Individual E-mail Interviews. Individual semi-structured interviews using open-ended questions were conducted by e-mail. Due to the asynchronous nature of this mode of data collection, participants were able to control the timing of responses to research questions. This data collection mode also produced rich data because “writing can be a highly effective form of communication that encourages reflection and precision of expression” (Garrison & Kanuka, 2004, p. 97), reduced transcription time, and provided the flexibility of question customization (ordered questions and open-ended probes) to follow leads and insights (Anderson & Kanuka, 2003).

The following questions were posed in the e-mail interviews:

1. What is the nature of your experiences using the Internet for informal learning?
 - a) What are your motivations/reasons for using the Internet for informal learning?
 - b) What characteristics of the Internet do you consider essential to your learning, and why?
 - c) What forms of interaction using the Internet do you perceive to be valuable, and why?
 - d) What, if any, business-related informal learning experiences have you had using the Internet that were less-than-positive?
2. What strategies do you use when you engage in informal Internet-based learning?
 - a) What learning strategies and resources do you use that you believe are valuable?
 - b) What additional learning resources could be used to provide value? What are the barriers to their use?
3. What competencies and skills do you perceive that you are acquiring by using the Internet for learning about business-related matters?
4. Do you have any other insights to share regarding your experiences using the Internet for informal learning? Any additional comments that the interview questions did not specifically address regarding using the Internet for informal learning?
5. Your feedback on using e-mail for the interview process would be greatly appreciated. What features of the e-mail interview process did you like? What

features did you not like? For next time, how could they be done differently or better?

Questions 1 (a) and (b) were presented together, and following receipt of responses, question 1 (c) was posed. Because preliminary analysis of responses indicated only positive learning experiences, question 1 (d) was then added to determine if participants had any less-than-positive learning experiences. Questions 2 (a), 2 (b), and 3 were posed independently and in sequence. Following participant responses, preliminary analysis and requests for any necessary clarification, questions 4 and 5 were added and posed independently in order to provide an opportunity to gather any other insights into the use of the Internet for informal learning and to obtain feedback on e-mail interviews as a data collection method.

Learning Journals. Following receipt of responses to questions 1 (a) to 1 (d), participants were requested to keep a journal to “freewrite” or record their thoughts about the use of the Internet in their informal business learning. The benefits of journaling include promoting reflective thinking, and emphasizing learning as a process rather than just a product (Park, 2003). While there was no prescribed format for participant journals and preparation time could vary, it was expected that this activity would take 10 to 15 minutes per week. Although the initial plan was to collect the journals three times during the interview period, due to their delayed submission upon initial request, journals were collected only once. To compensate for this adjustment, reflective questions (4 and 5) on other insights and feedback were added to e-mail interviews, and resulted in the collection of thoughtful comments.

Document Reviews. To triangulate data (Merriam, 1988) in this qualitative study, other documents reviewed included three participant web sites, two authored articles from a

participant web site, and two participant business plans. These documents were key in supporting responses obtained through e-mail interviews and in revealing participants' attitudes and beliefs about using the Internet for informal learning.

Data Analysis

Qualitative data analysis is iterative and, as suggested by Merriam (1988), “an interactive process throughout which the investigator is concerned with producing believable and trustworthy findings” (p. 120). As such, rigor and plausibility depend on data triangulation, interpretation, and rich description (Neuman, 2003).

The e-mail message was chosen as the unit of analysis over individual sentences, paragraphs, or other alternatives because it is “defined not by grammar or syntax, but by meaning” (Anderson & Kanuka, 2003, p. 180). In addition to being objectively identifiable, the e-mail message as the unit of analysis produces a manageable set of cases with parameters determined by the author of the message (Anderson & Kanuka, 2003). Disadvantages include more than a single idea being expressed in a message, but this risk is minimized when a single question is asked in each e-mail message, as was often done in this study.

Open, Axial and Selective Coding. Open-coded themes from the research questions were “at a low level of abstraction” (Neuman, 2003, p. 443), consisting of experiences—motivations, features, and interactions; resources and learning strategies; perceived competencies and skills; and less-than-positive experiences using the Internet for informal learning. Tables facilitated data analysis for “each individual case and across different cases” (Cresswell, 2003, p. 194), using a constant comparative method (Merriam, 1988) and, where possible, were “verified by relating them to the literature” (Anderson & Kanuka, 2003, p. 99). Other strategies used to derive meaning from the data included noting recurring phenomena,

seeking plausibility (seeing if it makes sense), and clustering or grouping similarities (Merriam, 1988). These techniques assisted with linking categories, formulating tentative hypotheses, and “moving toward the development of a theory to explain the data's meaning” (Merriam, 1988, p. 146).

Axial coding focused on the initial coded themes to identify the “axis of key concepts in the data” (Neuman, 2003, p. 444), a subjective process of determining the central category from research-generated narrative. A tabular Conditional Relationship Guide and Reflective Coding Matrix (Scott, 2004) used participant narrative to address the questions “what, when, where, why, how and with what consequences” (Scott, 2004, p. 120), and assisted in determining the central category or axial code, with other consequence categories serving as properties or characteristics to support its meaning.

Selective coding was used with the final conceptual categories, and involved “scanning data and previous codes...for cases that illustrate themes and make comparisons and contrasts after most of all data collection is complete” (Neuman, 2003, p. 444). Concepts that formed a theory of women entrepreneurs’ informal learning using the Internet were supported by participant quotes.

Negative Evidence. During open, axial, and selective coding, the researcher was attentive to negative evidence for insights generated due to the non-appearance of data (Neuman, 2003). This required creative and holistic thinking, comparison to the literature review, and in some circumstances, revealed possible researcher bias for anticipation of findings.

Results

Participants

Content of e-mail interviews with the four participants—Jan, Barb, Mary and Paula—combined with information obtained from their learning journals, web site and document reviews were compiled to provide the profiles of study participant. A summary of participant profiles appears in Table 1. Names have been changed to ensure participant confidentiality.

[Insert Table 1 here.]

Overview of Results

Over the two-month data collection period, a total of 92 e-mail messages (representing approximately 45 pages of text) were exchanged. Researcher-originated e-mail messages (51) were more numerous than participant-initiated messages (41) due to the necessity for administrative tasks, such as prompting participants for responses and thanking them for participating in the study. These comprised approximately 35% of researcher-originated e-mail messages. In return, participants responded cordially citing work or travel-related commitments and provided tentative target response dates, or with responses to the questions. Only 18% of participant-originated e-mail messages were administrative without responses.

In total, 95% of participant e-mail was initiated during the Monday-Friday workweek, with almost 60% occurring during the “traditional” 8:00 am. to 5:00 pm. work day. Probes were issued when required, as requests to “clarify an ambiguous answer” (Neuman, 2003, p. 295). Only approximately 15% of researcher-initiated e-mail messages were probes, probably due to the asynchronous nature of e-mail correspondence, which allowed participants adequate time to consider the questions and responses.

An overview of participant responses to research questions is presented below.

Motivations/Reasons for Using the Internet for Informal Learning. All study participants felt that access to up-to-date information and its convenience (time and place on demand) were primary motivations for using the Internet for business-related learning. Other motivations included keeping current on business issues, obtaining unobtrusive access to information on competitors, remaining anonymous, identifying industry trends and potential business opportunities including information on proposals, and having control over the “what and when” of learning.

For example, Paula described her motivation to use the Internet for informal learning, and her enjoyment of learning in the following comment:

Learning is such an integral part of who I am, that I don't need to do anything to get myself motivated to explore...you have someone who can't help herself when it comes to learning. Here I am at a buffet that never ends. The net result ... mental puttering all day long.

Essential Features of the Internet for Informal Learning. Study participants regarded the convenience of 24/7 access to information, the efficiency of search engines, and the ability to communicate via e-mail as characteristics essential to their web-based learning. Mary's comments support this finding:

Being able to communicate at any time and research at any time is essential for me because I am busy and need to have this type of convenience to fit my lifestyle and learning style ... I consider the ability to communicate via e-mail to be essential. Sending links, contacting resources/colleagues, setting up dialogues with people from anywhere in the world for learning purposes is critical.

Quality of information and high-speed access, both for efficiency reasons, were also considered essential features of the Internet for informal learning.

Interaction. All study participants regarded interaction with web site content and sharing information with colleagues via e-mail as valuable in their learning. Resources

included industry-specific web sites, and web- and paper-based books and journals. Industry-specific list serves were not used extensively, and online discussion forums were not used at all due to their perceived time-intensity and participants' reluctance to talk with strangers.

Less-than-Positive Experiences. Technical issues with hardware or software, which interfered with access to information or e-mail connectivity, were identified as challenges. These included trying to communicate with those who were unfamiliar with the Internet or software features, non-response from an "Ask the Experts" web mentoring facility, coping with equipment failure, and unoptimized or poorly designed sites that were difficult to navigate. In addition, pop-up windows, lack of clarity in online purchase sites, and "cyber gremlins" that resulted in e-mail being sent, but possibly not delivered were also identified as less-than-positive Internet learning experiences.

Strategies for Informal Internet-Based Learning. All participants agreed that being goal-focused—having "a specific question in mind"—was essential when using the Internet. Strategies primarily involved information searching, such as "googling", keyword searches, book marking, returning to favorite web sites or emailing colleagues. Other strategies consisted of Internet browsing or scanning without a particular learning goal in mind.

Cost, time, and lack of value were identified as barriers to attending classes offered via the Internet and online training programs. Access to online full-text academic journals was also perceived as too costly. Asynchronous and synchronous conferences were considered too time-intensive and held no appeal to participants who did not wish to communicate with people not known to them.

Competencies and Skills. Participants perceived that they had developed numerous competencies and skills, many related to learning strategies, as a result of using the Internet

for informal, business-related learning. These competencies and skills were categorized into information, communication, and other skills (Table 2).

[Insert Table 2 here.]

The most often identified information skill was effective searching; the most commonly identified communication skill was effective writing. Participants also believed they acquired other competencies and skills that increased their self-confidence and independence as learners, including the ability to gauge the validity of resources and continuously create business ideas and solutions for business problems.

Other Perceptions. Other insights pertaining to Internet-based informal learning included the capability to have a home-based business, the transferability of informal learning skills to formal learning environments, the Internet's contribution to deep learning if the information was discussed or applied, and the importance of maintaining balance between virtual and face-to-face learning opportunities. While the Internet was considered essential for "independent self-directed learning," the importance of maintaining balance between this activity and others was emphasized, as suggested by Paula's comments below.

Danger: risk of losing track of time spent online (a good sign—in that I am engaged); a problem—in that it can suck the life out of me and keep me from other human to human face to face connections.

Negative Evidence. Examination of interview transcripts, learning journals, and documents revealed that participants did NOT: miss having a teacher; consider lack of academic learning materials a problem in their learning; or want to participate in asynchronous online discussions. Nor did they experience male domination on the Internet; think of the Internet as technology; value learning journals; know of or value government information in their learning, or need to use e-mail to communicate with external advisors (e.g., lawyers, accountants, bankers).

Interpretation of Results

Analysis of the results suggests that women entrepreneurs' perceptions of the Internet's value to informal learning is grounded in their commitment to information literacy skills--the capability to access, retrieve, use, evaluate, and apply resources to generate ideas and address business problems. They regard the Internet as valuable in supporting autonomous learning for acquisition of informational capital and relational learning for creation of social capital. The Internet allows them control of individual, social, and experiential learning within the context of their small business situations, portraying a sociocultural perspective on their informal learning. Women entrepreneurs believe that developing information literacy skills contributes not only to Internet self-efficacy, but also to entrepreneurial self-efficacy; facilitating independence and self-confidence as learners and as business owners. A discussion of these concepts follows.

Sociocultural Framework. Women entrepreneurs' informal and entrepreneurial learning using the Internet appears to be sociocultural in nature with knowledge being created within their businesses through Internet-based interaction with resources and colleagues. While information searching is often pursued autonomously (MacKeracher, 1996) in locating resources for generating ideas or solving business problems, its interpretation or meaning-making is often connected (Belenky et al, 1986) and co-operative (Norton et al, 2003), rooted in social interaction with colleagues, and mediated through Internet communication tools such as e-mail. Access to web-based information combined with the communicative and connectivity features of e-mail allows the Internet to form part of women entrepreneurs' cultural environments located within their homes and offices where informal learning and business activity take place. As such, much of their learning is social through "internalization of values, attitudes, behaviors, skills, etc. that occur during everyday life" (Schugurensky,

2000, p. 5), occurring without intentionality or awareness, and contributing to knowledge acquisition from sources both internal or external to their businesses.

Autonomous Learning for Accessing Informational Capital. The women entrepreneurs examined in this study appear to perceive the Internet as natural to their business and learning culture (Castells, 2001; Denis & Ollivier, 2003; King & Waldegrave, 2003), with hardware, software, devices and peripherals regarded as technology. This distinction between culture and technology, and especially their inclusive perspective of the Internet as part of their culture of learning, contrasts with the “deficit model” of women as technologically challenged (Denis & Ollivier, 2003, p. 261).

Similar to the findings of Fenwick & Hutton (2000) and Hughes (2001), women entrepreneurs cited cost, time, and value as barriers to participation in more structured formal learning events, illustrating that they value control over learning (Leidner et al, 1995). Using the Internet to access informational capital (Denis & Ollivier, 2003) positions them to direct information search and environmental scanning activities for locating relevant learning resources (Tisdell, 2000; Leider et al, 1995). Their learning is autonomous (MacKeracher, 1996), self-directed (Schurgurensky, 2000), and requires information literacy skills (Edwards & Bruce, 2002) in order to recognize information needs, and then search, retrieve, evaluate, and apply relevant information to generate ideas or solve business problems. Cognitive and metacognitive learning strategies such as self-management, self-knowledge and task knowledge (Kumrow et al, 2000; White, 1999) are used to engage with relevant web-based content, and contribute to their capability to develop web site evaluation skills (Fogg, 2002).

While books, journals, magazines, and other paper-based media available in bookstores, the library, and by subscription are also used, Internet access to information

resources complements rather than replaces hardcopy, indicating women entrepreneurs' preference for "blended" learning resources (Wellman et al, 2001). The Internet allows convenient access to information that is external to their organizations, providing an opportunity to expand knowledge-acquisition capacity beyond the strong internal focus that other studies (E.g., Martin & Halstead, 2003) suggest characterizes women's businesses.

Connected Learning Through Creation of Social Capital. Women entrepreneurs' appreciation of convenient communication afforded by e-mail supports their perception of the Internet's value in facilitating the creation of social capital (Daniels et al, 2003). The capability to engage in connected learning (Belenky et al, 1986) through e-mail interaction with colleagues allows sharing of resources and opinions, valued in negotiating meaning (Leider et al, 1995) for developing knowledge, and as a source of support in decision-making and evaluating information (Kirkup & von Prummer, 1990). However, their emphasis on the importance of telephone discussions and attendance at face-to-face conferences and meetings, also suggests a preference for a "blended" approach (Garrison & Kanuka, 2004; Rovai et al, 2004; Stokes, 2001) to informal learning that complements, rather than replaces, face-to-face and telephone contact, a finding supported by Wellman et al (2001). This blended approach is also believed to promote balance between independent and connected learning activities.

Numerous references to bonding capital (Putnam, 2000, as cited in Daniel et al, 2003) indicate that women entrepreneurs prefer to use e-mail to interact with people they know to exchange resources and for support and reassurance, similar to findings by Bamji et al, (2004). However, with the exception of e-mail messages to help desks on web sites, their reactions are less enthusiastic with respect to the Internet's value in creating bridging or linking capital (Putnam, 2000, as cited in Daniel et al, 2003) that could be achieved through

discussion forums. This preference suggests, in the absence of any interventions, continuation of the internal focus to learning that other studies (E.g., Martin & Halstead, 2003) have shown to characterize women's businesses.

Taxonomy of Informal Learning. Interpretation of the results of this study suggests a taxonomy of informal learning. Women entrepreneurs' autonomous, connected, incidental, and social or tacit learning using the Internet may be more fully understood using the taxonomy illustrated in Table 3 below.

[Insert Table 3 here]

While women entrepreneurs' goal-focused information searching is self-directed and autonomous, they also use the Internet for goal-free browsing, environmental scanning activities (Raymond et al, 2001) characteristic of incidental learning (Schurgurensky, 2000).

Although self-direction was treated as a single category in Schugurensky's (2000) taxonomy of informal learning, findings from this study suggest that women entrepreneurs' self-directed learning can occur autonomously through access to informational capital, or relationally through generation of social capital. Using the Internet also provides opportunities for knowledge acquisition to be external to women's' businesses through incidental and social (or tacit) learning.

Entrepreneurial Self-Efficacy. Women entrepreneurs perceive that they develop Internet self-efficacy (Eastlin & Larose, 2000) through their use of informational literacy strategies in knowing when information is needed; how to access, evaluate, and use informational capital; and how to communicate effectively to create social capital. This study and others (Doyle & Young, 2003; Fenwick, 2000; Fenwick & Hutton, 2000; Hughes, 2001; Martin, 2001; Martin & Halstead, 2003) supports the concept that women entrepreneurs have

a strong commitment to informal learning. They believe that using the Internet for business learning enhances their independence and self-confidence as learners and as business owners, and, in turn, promotes entrepreneurial self-efficacy (DeNoble et al, 1999). With the Internet an integral part of their learning culture, Internet self-efficacy is viewed as a vital component in women's informal and entrepreneurial learning.

Attitudes Toward Formal Learning. Based on the results of this study, women entrepreneurs do not appear to believe that they need a teacher to assist with learning, or that they miss formal education; they also do not vigorously pursue linking social capital. Instead, for support and encouragement, the participants in this study appeared to prefer bonding activities with colleagues, in person or via telephone and e-mail. This finding supports the concept that women entrepreneurs prefer learner-centered cooperative (Norton et al, 2003), rather than content or teacher-driven collaborative (Oliver, 1999; Garrison & Anderson, 2003) learning environments common in formal distance education. For example, comments from Paula and Mary, provided below, reflect their perceptions of formal learning as pretentious and non-practical.

What I liked least in academia—the preoccupation with typologies, labels, artificially inflated vocabulary (big words), and internal debate amongst the profs as to who's wrong about what and why. From where I stand today, academic sparring matches seem self-indulgent.

I found the traditional learning methods difficult to use—I found them rather useless (memorize and regurgitate).

Similar to Fenwick's (2000) findings, the theoretical focus of academia, including the use of academic journals, seems in contrast to women entrepreneurs' preference for the practical and applied features of informal learning.

Conclusions and Recommendations

Women entrepreneurs' informal learning using the Internet allows them to acquire the "intellectual capacity of learning to learn...retrieving the information that is digitally stored, recombining it, and using it to produce knowledge" (Castells, 2001, p. 278).

Their independence and self-confidence is facilitated as both learners and as business owners, and is an important component in the development of entrepreneurial self-efficacy. Perhaps Castells (2001) summarized the benefits of Internet learning best when he said that it

Is not only a matter of technological proficiency: it changes the kind of education that is required both to work on the Internet and to develop learning ability in an Internet-based economy and society. The critical matter is to shift from learning to learning-to-learn, as most information is on-line, and what is really required is the skills to decide what to look for, how to retrieve it, how to process it, and how to use it for the specific task that prompted the search for information ... the new learning is oriented toward the development of the educational capacity to transform information into knowledge and knowledge into action (pp. 258-9).

Women entrepreneurs who use the Internet for informal business-related learning have learned how to learn in ways that are autonomous and relational, cooperative and blended, practical and application-focused.

Implications for Practice

The results of this research have implications for practitioners, researchers, and policy-makers in the areas of distance education, informal learning, and entrepreneurship. By examining women entrepreneurs' experiences using the Internet for informal learning, insight has been gained into their motivations, as well as the features and interactions they value, namely, flexible access to informational capital and the capability to generate social capital. Insight into their learning strategies highlights the importance of accessibility to resources and opportunities that facilitate blended learning, with the capability for both autonomous and

relational learning. Finally, insight into the competencies and skills that women entrepreneurs believe they are developing through use of the Internet highlights the importance of accessibility to learning resources that facilitate the development of informational literacy skills that are perceived as contributing to both Internet and entrepreneurial self-efficacy.

Areas for Further Research

While the findings of this study provide insight into the stated research questions, other areas could be explored. For women entrepreneurs in this study, cost presented an accessibility barrier to academic journal publications. Further research could explore whether access to online academic publications at a reduced cost would increase levels of readership and generate value for entrepreneurs' informal business-related learning. According to Hindle et al (2004), "if the communication gap between scholarly publishing criteria and practitioners' information needs could be transcended, the benefits to both parties would be substantial" (p. 263). Using the Internet as a two-way avenue for providing access to publications and as a feedback mechanism could encourage communication between academics and practitioners to link research with practice. A first step is to make research findings accessible to small business owners. Participant comments in this study support Hindle et al's (2004) observation that "practitioners come to regarding academic research as irrelevant when it is not" (p. 264). However, increased access may reduce perceptions of irrelevance since self-employed women have higher levels of education than ever before; in fact, "almost one in four of those who have started a business in the past two years have a university degree, double the rate seen in 1990" (CA Magazine, 2004).

While this study used a purposive sample of women entrepreneurs who, according to Statistics Canada, are professional occupation knowledge workers, the growth of Internet

skills is “widespread and not restricted to narrow areas of interest, such as the popularly defined high-tech sectors” (Baldwin & Beckstead, 2003, p. 1). Further research into use of the Internet for informal learning could explore the experiences of both men and women entrepreneurs from a wider variety of industry sectors outside the knowledge worker category.

Women entrepreneurs’ preference for bonding capital using e-mail, rather than linking or bridging capital (for example, through industry list serves or online discussion forums), identifies an inherent risk – that of insularity (Conference Board of Canada, 2004). An area for further research could include offering online discussion forums moderated by the guest speakers from related conference or face-to-face learning events, then following up with a survey to gather user feedback.

These are questions for further research, and because “life is not made up of separate pieces” (Bateson, 1994, p. 9), others are anticipated. This study may also provide, as Bateson (1994) suggested, “Insight... that depth of understanding that comes by setting experiences, yours and mine, familiar and exotic, new and old, side by side, learning by letting them speak to one another” (p. 14). Although findings are not generalizable beyond the population studied, it is hoped that this study has provided insight into the experience of women entrepreneurs’ informal learning using the Internet.

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Table 1 Profile of Study Participants

Name	Formal Education	Business Description	# of Years
Jan	Bachelor of Arts	Creative arts—handcrafted books design and manufacture, film editing	4
Barb	Certificate in Adult Education	Airline industry—flight attendant training and development of safety and training manuals	3
Mary	Masters in Business	Business consulting and training—entrepreneurship and computer applications	10+
Paula	Masters in Continuing Education	Workplace Education and training—speaker, author and workshop facilitator	10+

Table 2. Competencies and Skills Acquired from Informal Internet-based Learning

Information	Communication	Other Skills
Information searching Information gathering Browsing and “googling” “Sleuthing skills” for finding information Search engine tools Storing information Bookmarking information Learning software for managing information	Writing more effectively so intent is understood and miscommunication is avoided Using “Net lingo” for effective communication Asking for and using feedback Engaging clients with questions for feedback Sharing information resources with colleagues	Gauging value and validity of resources Using feedback to shape direction of work Improved typing speed Keeping up with tools and communication preferences of younger people Independence and self-confidence as a learner Marketing techniques Business planning skills Idea testing skills Ability to continually create

Table 3. Taxonomy of Women Entrepreneurs Informal Learning using the Internet

Forms of Learning	Intentionality	Awareness at time of learning experience	<i>Knowledge acquisition potential relative to women entrepreneurs' businesses</i>
Self-directed— <i>Autonomous</i>	Yes	Yes	<i>External through Internet searching</i>
Self-directed— <i>Connected</i>	Yes	Yes	<i>Internal—bonding capital External—bridging or linking capital</i>
Incidental	No	Yes	<i>External through environmental scanning</i>
Social (tacit)	No	No	<i>Internal and external through enculturation</i>

Adapted from Schurgurensky, 2000, p. 3. *Italics added for findings of this study.*