EMPOWERING WOMEN THROUGH LEARNING TO USE THE INTERNET-
An Ethnographic Action Research Project To Address The Second Order Digital Divide

ABSTRACT

Information and communication technology plays a crucial role in the social, economic, and cultural development of a country. Of all the ICTs, the Internet is the tool that has touched upon all aspects of life. Thus, there is an increasing need for digital content and networking skills. The Internet has brought substantial changes to the ways people communicate and how information is exchanged across the globe, making it difficult for people to function without it in this new information age. One of the sectors that has been immensely influenced by the growth of the Internet is education. Around the globe, educational institutions are taking advantage of the benefits of this powerful technology to make learning more effective to prepare students for the knowledge economy. While the developed economies are reaping the benefits of the new information age, the developing economies still have a long way to go to make the benefits of Internet and other ICTs widely available for its citizens, including students. While the fortunate are able to take advantage of the unlimited repository of information, many are left behind in the information revolution, thus creating a digital divide between the developed and the developing nations and within nations in terms of ICT, computer, and Internet adoption and usage.

There are two factors that make access to the Internet difficult for individuals in developing regions and that create two orders of divide. The first order divide arises because of physical and infrastructural difficulties, and the second level divide arises because people do not make use of the available Internet services. Those who are the most severely affected by the digital divide and thus face barriers in participating in the knowledge economy are women from the developing regions.

The overall aim of this research is to empower Indian women students through the use of the Internet. To address this issue, I posed three research questions:

• What are the barriers which constrain women to access Internet in a developing country context?
• How can women be empowered through learning to use the Internet?
• What are the issues that need to be considered when designing learning to use the Internet by women users intended for their empowerment in a developing country context?

Since these questions involve the complex interplay of ICT, gender, and culture, the research used a mixed-methods approach. The research intervention was done at the Department of Women's Studies, University of Calicut in Kerala, India. The participants of the research were twelve masters' students who were all women. Ethnographic action research was the research methodology adopted. It was employed to determine what keeps women away from the Internet and which strategies to use in order to empower women through becoming Internet participants. Ethnography provided an understanding of the rich and complex socio-cultural environment and the gendered role definitions that influenced Internet usage. Ethnography also facilitated an understanding of the perceptions and the values, beliefs, and attitudes of women toward the Internet.

Action research helped to build a project that facilitated learning to use the Internet, using the core principles of plan, do, observe, and reflect. The research was based on a real-world situation and focused on change, the empowerment of women. Action research facilitated achieving this aim as it helped to bring the desired change through the intervention that the research demanded and helped in documenting the empowerment that occurred in the women who learned to use the Internet.

The intervention design was unique and comprised a "future workshop", four Internet training sessions, four action research workshops, and an evaluation workshop. The "future workshop" was designed to learn from the students what problems they faced in using the Internet and what the possible solutions may be. Internet training introduced the students to Internet tools and applications that were selected based on the Bloom's Digital Taxonomy of learning domains (Churches, 2007, 2008). Action research workshops provided opportunities for students to share and reflect on their Internet learning experiences. This design facilitated more participation and involvement of the research participants than technically based training, usually seen in the Information and Communication Technologies for Development (ICT4D) context, could have done.

The research findings show that the barriers that the women faced in accessing the Internet were due to the first order and second order digital divide. Even though literacy and educational levels are a privilege in using ICT, it cannot be concluded that just because a woman is educated means that she accesses the Internet in the Indian context. The findings also revealed some unexplored areas of the second order divide in the ICT4D literature in the Indian context, such as lack of knowledge and skills to use the available Internet services, technophobia, Internet self-efficacy, and a lack of motivation. The research also reveals that socio-cultural factors, for example, gendered role definitions, restricted mobility arising from time restrictions that constrained their access to public Internet cafes. The research finding regarding the barriers of Internet usage shows that a machine connected to the Internet does not signify development. Based on these findings, I recommend that apart from providing access to everyone, governments need to consider what strategies should be adopted to encourage people use the available Internet facilities. Another research finding is that women from a developing country context can be empowered through learning to use the Internet by creating a conducive and supportive learning environment. The research findings show that empowerment is a process that can be experienced as well as an outcome that can be measured.

Wenger's social learning theory was used to understand the process of empowerment. This helped in understanding how the women students identifies themselves with the Internet world and became Internet users specific to the context where the learning took place. The fundamental principle of Communities of Practice (CoP), which focuses on "belonging" rather than "ability," suited the research as the emphasis was on learning how to use the Internet and not about making the students experts in its use. The reflective skills that they gained in learning how to use the Internet are life-long skills and focusing on the content of the Internet is not as effective as the Internet is not a static technology.

The findings also show that the empowerment that took place can also be measured at the micro level. Empowerment indicators that take into account what empowerment means for the project participants can be used to measure the empowerment. The Measuring Empowerment Framework applied in this research facilitated not only the measurement of the indicators of empowerment developed for the research but also the determination of whether there were favorable opportunities available for the participants to use the acquired competences and skills in Internet use in the future.

The research also proposed a design for learning the Internet for women users in a developing nation context based on the empirical findings and theoretical discussions of the study. The design was driven by a Human-Computer Interaction for Development (HCI4D) approach. The learning design created is novel to the field of HCI4D. The design stresses understanding the background of the research participants, their values and beliefs about the Internet, and why the Internet is important for the participants. The research takes the position that Nardi and O'Day's (1999) work on technology use at the local level can be used to inform design for learning Internet in an ICT4D context.

The design is also based on the notion that learning to use the Internet in an ICT4D scenario should provide opportunities for the women participants to construct identities as Internet users. Based on the empirical findings, the research recommends that Wenger's (1998) learning framework can be used as a theoretical underpinning to facilitate this process of identity construction. Viewing learning as "becoming an Internet user" can make the learning more effective for the participants as they realize what they have missed out on by not being members of the Internet world and learn how to manage their multiple identities, which is at the core of what it means to be a woman in a specific cultural context. Thus, by constructing identities, the participants can develop a sense of belonging to the Internet world that motivate them to use the Internet after the developmental intervention. Based on the findings, another proposed element of the design is gender-sensitive training. The research uncovers the reasons for the need for gender-sensitive training and throws light upon the importance of women trainers training women to use the Internet or any ICT tool in a developmental context so as to bring effective outcomes.

The study brings new visions to policymakers, scholars, and designers in the field of ICT4D on how to do intervention-oriented research aimed at bridging the digital divide among women. The research fills the gap in the literature by introducing some of the novel elements of the second order divide and also provides new theoretical and methodological insights in the field. This research also throws light on how the theory of CoP can offer concepts to address the informal learning happening in ICT4D projects and open up new ways of making the training more effective from the designer's point of view and learning to use Internet or other ICT-based tools in a developmental context more effective from the participant's perspective. CoP has not been explored in the literature on empowerment. By combining the theoretical underpinning of the learning theory of CoP and empowerment, the research provides new perspectives on the application of theories for scholars in their studies of empowerment as a developmental goal. Another major area to which the research contributes is the application of action research methodology to a developing context. The facilitation of change through an intervention in action research is uncommon in the ICT4D literature. The research further demonstrates the need for a greater focus on the second order divide in the field of ICT4D. Unless the second order divide is addressed, women especially will remain deprived and will not be able to reap the benefits of the information age in spite of ample access.