

Research Article

Constructing Class Boundaries: Gender, Aspirations, and Shared Computing

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Abstract

Information and Communication Technologies (ICTs) have been referred to as “the great equalizer” between men and women. Our research in India and Chile explores how gender and class identities intersect with ICTs in the context of shared computing environments with telecentres. Our study indicates that although these shared-use projects are implemented in the name of targeting poor women, an “emerging middle class” of women, such as stay-at-home mothers and young, unmarried women, are user groups in these telecentres. Women are constructing identities, trying to cross perceived class boundaries, and maintaining middle class positions through the use of ICTs and their symbolic value. This symbolic value is tied to aspirations of progress, advancement, and upward mobility.

I. Introduction

Information and Communication Technologies (ICTs), such as computers and mobile phones, have been referred to as “the great equalizer” between men and women (Drucker, 2001; Patel & Parmentier, 2005). In their various forms, they have been identified as effective tools to address many gender inequalities and to contribute to economic development for women. Greater access to information, educational training in computers, and employment opportunities are a few of the examples commonly cited as the ICT benefits for women. One of the most popular channels for the delivery of ICT services is through shared computing in telecentres or computer kiosks.¹ Telecentres are equipped with one or more Internet-enabled computers and usually provide public connectivity and a variety of communication, education, government and/or business services, many of which are subsidized or free to the public (Colle & Roman, 2001). While many telecentres start (and remain) as subsidized by the government, NGOs, or business enterprises, often they are owned and run by independent entrepreneurs. The discourse around these initiatives indicates that the spread of IT-enabled services can be immensely beneficial to both women and men, especially those who are poor and have limited skills or who lack resources to invest in education or own an individual computer (Arunachalam, 2002; Keniston, 2002). However, the same discourse also indicates that profound gender differences remain and that women must

1. Computer kiosks or telecentres differ from cybercafés because they most often have an explicit development or social component to their services. There is substantial variation in the business models, services offered, and populations targeted in shared computing projects. We use the term “telecentres” to describe the centers in the two ICT projects in India and Chile.

overcome “barriers” to gain access to ICTs. When these “barriers to access” are discussed, solutions are very often based on a simplistic, additive assumption that equipping women with technologies will result in a “gender success.”

Our preliminary research on shared computing in two very different social, economic, and political contexts in India and Chile² illustrates some interesting similarities and findings that call for further inquiry into these shared computing environments and their intersections with gender and class issues. Both cases focus on providing education services to the general population through computer training and both make concerted efforts to target the poor as users. We take a critical view of the discussions surrounding ICTs, gender, and the poor, and we explore these different cases to understand cultural practices and class formation in relationship to women and technologies. Our research asks: How do gender and class identities intersect with ICTs in the context of shared computing such as telecentres? By situating our work in gender and technology studies, we examine gendered identities and the processes and relations by which individuals can gain, control, and maintain access to ICTs and their benefits.

Our studies indicate that although these shared-use projects, particularly telecentres, are often implemented in the name of targeting poor women, an “emerging middle class”³ of women (stay-at-home mothers and young, unmarried women⁴ who are aspiring to be middle class) is one of the dominant user groups in these telecentres for education services. Our research claims that women are constructing identities, trying to cross perceived class boundaries, and maintaining middle class positions through the use of ICTs and their symbolic value. Most studies examine the impacts of ICTs on women, barriers women face in usage, empowerment, and influences on use (Arun & Arun, 2002; Arun, Heeks, & Morgan, 2004; Best & Maier, Forth-

coming). We provide a review of the debates in the literature on gender, technologies, and development. We also contribute to this literature and extend it by examining gendered processes associated with class formation in the context of these shared computing projects.

In this article, we examine the relations between gender and class identities within shared computing environments. First, we begin with our cases and briefly describe our methods. We then provide a literature review of the work on gender, technology, and development. This is followed by an examination of gender and class in the context of our cases, specifically focusing on the use of ICTs, an emerging middle class of women, and identity construction.

II. Cases and Methods

A. India

India has actively engaged in ICTD projects with more than 150 telecentre projects in the country (Toyama, 2004). Both the Government of India (GOI) and individual states have been pioneers in the field of ICTD, starting telecentre projects in the late 1990s. We focused on ICT projects in the southern Indian state of Kerala and conducted fieldwork with users and non-users of the Akshaya project. Kerala is a unique state in India and is well known for being a “model of development,” with high levels of social indicators such as high female literacy and low infant mortality as compared to the rest of the country (Heller, 1999; Rammohan, 2000; Veron, 2001).⁵

The Akshaya project is a partnership between the Kerala government’s State Information Technology (IT) Mission and private entrepreneurs who own, run, and operate the computer telecentres. The project’s goal is to develop more than 5,000 networked, multi-purpose technology centers in the entire state. It also aims to make one person from every family in the state “e-literate.” Thus the government subsidizes an e-literacy training phase in

2. We emphasize that the populations we are focusing on are not monolithic groups, but are characterized by differences in income, educational backgrounds, and political economies.

3. Defining “class” is challenging because of the many conceptions associated with it. We view class as a set of culturally lived and imagined practices, instead of predetermined outcomes. We refer to the emerging middle class as a liminal group on the boundaries of working class and middle class in India and Chile. We further discuss this in the article.

4. These women tended to range in age from early 20s to early 40s and were often mothers of school-age children.

5. The unique political and social environment of Kerala, with its highly literate female population, provides an interesting case to understand women’s use of computers. However, we recognize that generalizations may be limited in areas with less literate populations.

which it provides an almost free course over a few days to one member from each Kerala household. After completing the subsidized course, individuals must pay a full fee to use the centers for connectivity or to take continuing or more advanced classes (www.akshaya.net). The telecentres are located in urban, peri-urban, and rural areas. The urban areas are small (compared to the Chile case), with an average population of 49,000 people. The peri-urban areas, where the telecentres are implemented, have average populations of 14,000 people, and the rural areas have populations of fewer than 5,000 people. We focus our work in the Malappuram District, with an average per capita income of \$310,⁶ and where the project was first piloted (www.kerala.gov.in/knowkerala/mlpm.html).

According to Kerala State IT Mission project officials, during the e-literacy phase of the project many low and middle income women participated in learning the basics of computers. During this phase, the state selected the "decision maker" of each household to attend the computer training program. Many of the people who attended the training were women due to the large number of men working abroad as laborers in Gulf countries. Thus the officials deemed this phase to be a "gender success." In this article, we show how this conflation of gender and women limits understanding of the relations and dynamics between men and women in the context of ICTs. By understanding gender in terms of perceptions of self in relation to others, we show the relevance of understanding gender beyond just the category of women.

B. Chile

Since Chile emerged from the Pinochet dictatorship in 1989 and elected Ricardo Lagos as president in 2000, efforts to "bridge the digital divide" have been made at both the federal and local levels of government. Much of the promotion of new digital technologies has relied on the belief that technologies will help make the government more transparent to its citizens and allow for their greater participation. Hence, Chile has become reliant on an e-governance model (GovtofChile, 2005).

The field site for this study was Peñalolén (www.penalolen.cl), a part of the greater Santiago

metropolitan area, but having its own mayor and elected officials. The town's population was approximately 230,000 in 2007, and the majority of its inhabitants are lower middle class or lower working class. The area is classified as 100% urban. Currently, the town serves as type of bedroom community⁷ to other areas of Santiago, and as of 2007, Peñalolén's economy was mostly based on the service industry, except for one large vineyard at the northern municipal limits. Like Kerala, the ICT development in Peñalolén did not have an explicit gender-specific focus.

It is in this environment that the municipal government of Peñalolén has been developing a local technology network, a *comuna digital* (digital community), with the participation of public schools, subsidized neighborhood telecentres, and other NGOs and private businesses (Microsoft, Cisco) in the area. Peñalolén's telecentre movement began humbly in 1998 with the introduction of a community-based FM radio station and two computers located in a church basement. The purpose of the all-volunteer radio station and related computer center was, it was stated, to grow the community's social capital through the use of ICTs, generating more community networks and thus improving residents' quality of life through social linkages. The original project grew, eventually moving into the larger network of Chilean telecentres and community organizations. The founder of the project has just been elected to his second term as mayor of Peñalolén (in late 2008) and professes to continue his strong support for using ICTs to better the municipality. It was only in 2007 that both government-subsidized and private cybercafés truly blossomed, increasing in number from approximately three in mid-2006 to more than 20 in 2007. The original telecentre and radio station were promoted as a place where people could come and "create community," that is, strengthen Peñalolén's community identity through various public outreach projects. This same philosophy continues to permeate the other spin-off public telecentres in the town. This is not as true, however, of the newer, privately-owned cybercafés that operate on a strictly for-profit agenda, although private entrepreneurs have expressed some sense of want-

6. This figure is converted from RS at an exchange rate of \$1 to 44.5 Rs <http://www.kerala.gov.in/knowkerala/mlpm.htm>

7. Bedroom communities refer to small towns outside of a larger city where people live for proximity to jobs in the city, with a lower cost of living.

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ing to encourage social and economic betterment for the community through telecentre use.

C. Methods

We chose two countries on different continents to understand variation and similarities of telecentre projects across geographies. We selected these cases because they both contained examples of shared computing environments, with a particular focus on providing educational services to the public and targeting the poor. In both field sites, there was a phase in which the services were subsidized and the low income population was specifically approached as potential users. Additionally, both shared computing environments were used by working class and middle class women. In neither case was there a specific strategy to attract female users. The two cases are similar in terms of their social indicators, but very different in terms of their economic and national income levels (see Table 1).

We took an ethnographic approach and conducted 25 interviews in India and 24 interviews in Chile. We also conducted many informal interviews with users and non-users of the centers, as well as with telecentre entrepreneurs. The interviews took place in the homes of individuals and in the actual shared computing centers. While the interviews focused on technology use within and outside the home, we also questioned participants about their communities, homes, families, work, health practices, transportation, shopping, and consumption. Relating to technology, we asked interview questions that explored individuals' usage of kiosks, perceptions of the value of ICTs, and social constraints to using computers.

The methods and tools employed in this research were classic participant observation and ethnographic interviewing, using a semi-structured format, photography, and voice and video recorders. We interviewed both men and women to understand the different perceptions and power dynamics that influence use of ICT centers. Data analysis was conducted through June 2007.

III. Literature Review

We situate this exploration of women and technology in the vast literature on gender studies, technology, and development. The Akshaya example, in which project officials termed the project a "gender success" because many women participated in the

program, highlights the need to clarify the distinctions between gender and sex in this shared computing context.

Influential writings materialized in the 1970s and distinguished between biological sex and social gender (Edholm, Harris, & Young, 1977; Rubin, 1975). Studies in feminist anthropology examined cultural representations of the sexes and the relations between men and women. The literature examined how understandings of men and women were socially constructed, and how social environment factors reinforced these relations and defined them. Power relations were not simply biologically determined or a result of men and women's positions in modes of production. Instead, the literature maintained that these relations were socially produced (Moore, 1988).

A. Women and Technology/Gender and Technology

The literature dating back to the 1970s that examined women and technology ranges in focus from the problems created by technologies for women and their work (Cowan, 1982) to issues of male dominance in technology fields (Faulkner, 2000b) to a more dynamic understanding of the fluid nature of gender and technology (Sorenson, 2002). These various aspects were broadly categorized into two different types of narratives: one that focused on the theme of women's exclusion from technology and the other on their inclusion.

The exclusion narrative revolved around the idea of women being excluded from technology, with a focus on a lack of equal access to education and employment. It was assumed that science was an open, unbiased field. If women received the right opportunities, they could become scientists (Wajcman, 2004). This stream of feminist scholarship, concerned with "women in technology," most often focused on why so few women participated in the engineering field (Faulkner, 2000a; Faulkner, 2000b; Goyal, 2005). This literature has been critiqued for drawing on binary oppositions between feminine and masculine as ordering devices. Other literature that fell under the exclusion arguments (often referred to as "women and technology") focused on the technologies encountered by women. It encompassed analyses of workplace or reproductive technologies, and how, overall, technologies negatively impacted women in relation to men. This

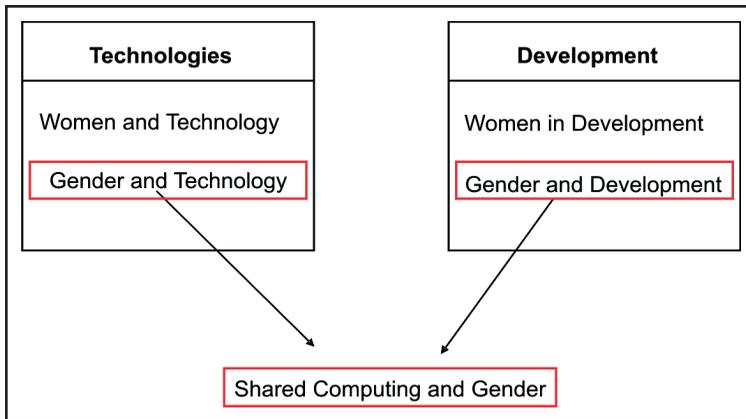


Figure 1. The debates in the literature on technologies, development, and gender.

scholarship often took a patriarchal view of technology as leading to the differential treatment of men and women or undercutting women's roles in wage labor (Sorenson, 2002).

In response to the exclusion studies, an inclusion narrative emerged, arguing that more women should be included in ICTs if the technologies were properly diffused and/or if women received the right opportunities (Goyal, 2005; Sorenson, 2002). This literature was mostly concerned with access to technologies or recruitment of women to join in and use these technologies in engineering or computer science fields with a "women-only approach." This literature was critiqued for not understanding gender; instead, it simply viewed technologies as neutral forces.

The feminist constructivist writings reframed the debate as "gender and technology," with these relations being mutually shaped (Cowan, 1982; Faulkner, 2000b; Wajcman, 2004). (See Figure 1.) They rejected technologically deterministic arguments and maintained that new technologies were necessarily "heterogeneous." Scholars argued for the need to understand technology as part of the social fabric that holds society together. Technology was defined as a socio-material product with a web of combining artifacts and people. Gender relations materialized in technology and the concepts of masculinity and femininity, in turn, acquired their meaning through their being embedded in technologies (Wajcman, 2004). These scholars argued for the need to integrate the material, discursive, and social elements of technoscientific practice. The social con-

struction of technology literature (Bijker, 1997) evolved in a post-structuralist light, with the case being made that technology and gender were co-produced. There has been a push to move beyond dualities and to talk about the plurality of genders, issues of masculinities, and the construction of gender through technology-mediated spaces (Nafus, Leach, & Krieger, 2006).

This vast gender and technology literature is a starting point for our work, because it moves beyond treatments of technologies as neutral, or in terms of ex-

clusion or inclusion, or simply as a product of male interest. We build on these debates and further them by trying to understand the multiple ways women approach technologies, the power relations involved, and how it relates to class in the context of shared computing. We now turn to the literature on women and development to further understand how the technology and gender debates interface with the gender and development debates.

B. Women in Development/Gender and Development

Boserup's work was a defining moment that brought issues of women in development to the agendas of development institutions and governments (Boserup, 1970). Since then, much has been written about how investments in women's health, education, and literacy are linked to a country's levels of social and economic development (Sen, 1999). The term "Women in Development" (WID) was coined by the development community to argue that women were being differentially impacted by modernization than were men. WID advocates portrayed women as productive members of society and pushed for their inclusion as active contributors to economic development. The WID movement targeted women as the beneficiaries of development since they had previously been excluded. Women were brought in on sex-specific terms to development with a pragmatic agenda that unified them. The movement tried to integrate women's concerns into mainstream development projects and pro-

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grams (Jackson, 1998; Kabeer, 1994; Razavi & Miller, 1995).

Similar to the various camps examining women and technology, and gender and technology, the same debates re-emerged in the development literature. Feminist scholars eventually critiqued a WID approach and shifted to Gender and Development (GAD), which called for gender analysis of social relations (see Figure 1). With GAD, there was a shift of focus from women to power relations between men and women as much as the institutions in which they were embedded (Jackson, 1998; Kabeer, 1994). These scholars critiqued the “women-only” approach to development and maintained the need to understand the multiple ways in which gender was constructed and produced, and how it intersected with socioeconomic as well as cultural factors.

C. Women and ICTs

Similar to the WID and Women in Technology literature, much of the Digital Divide literature and the gender discourse surrounding ICTs emphasized the language of “barriers,” inclusion/exclusion narratives, and the need for woman-targeted approaches as interchangeable with “gender.” We draw from the two bodies of literature “gender and technology” and “gender and development” as frameworks (emphasizing pluralities) for examining shared computing and gender.

The push to use ICTs in the developing world emerged from the Digital Divide discourse and tried to understand whether the Internet served to reinforce or erode “the gap between information rich and poor groups” (Norris, 2001). Women were specifically targeted within this discourse—the idea being that “ICTs create significant opportunities for bridging the gender divide and supporting the empowerment of women in developing countries” (UN, 2003). ICTD studies indicated that women faced barriers with large gender differences in use of ICTs around the world. The main reasons for this were attributed to lack of access, lack of training, high costs of equipment, and technologies that did not reflect the needs of women (Ahuja, 1995; Arun & Arun, 2002; Best & Maier, In review).

There is a gap in the literature and a need to take a more critical lens to understanding gendered relations and ICTs in the context of shared computing. The intersection of the Gender and Technology

constructivist approach with the Gender and Development literature draws together themes that inform this research (see Figure 1). In particular, the idea of understanding relations between men and women in development, the ways in which power relations are constructed, and how gender and technology are mutually constructed frames the way we approach the topic of gender as well as our research questions. Rather than viewing access to technologies as simply a matter of overcoming barriers or of exclusion/inclusion narratives, we approach women’s access to technology in terms of gendered relations and processes related to identity and class formation. It is important to differentiate between understandings of incorporating “women” into shared computing in comparison to “gender.” We challenge the notion that gender is an additive category to these projects. Instead, it is a lens through which these shared computing environments can be re-examined. We argue that, in women’s roles and participation in shared-use computing, access and control are socially distributed, and culturally and historically specific. This means not just understanding how many women have learned to use a computer, but also, and more importantly, understanding their cultural practices and identity formation in relation to computing.

IV. Gender and Shared Computing

A. Influences on Use of ICTs

As indicated earlier, many shared computing projects are implemented in the name of empowering the poor or marginalized groups. This inclination is based on an assumption that poor or low income populations cannot afford to own individual computers and, therefore, would represent the dominant user groups of telecentres. In many cases, some telecentre services are available for women to take computer education courses, search the Internet for information, and communicate via instant messaging services or email with relatives living or working far away. Our research finds, however, that low income women are not the ongoing users of telecentres. The fieldwork revealed that there were many processes related to whether low income women attended a subsidized literacy course or used the telecentre.

Whether or not a woman used a telecentre was predicted by various factors: her ability to negotiate

a relationship with her husband; whether other women in her locality were attending computer courses; cultural norms about what is considered appropriate public areas, how far the telecentre was located from her home; and where women were "allowed" to go. The Kerala case highlighted how some of these cultural norms influenced use of centers. Entrepreneurs recognized that women in the villages were not always allowed to go to faraway places such as towns. Therefore, sometimes they arranged the subsidized training to take place in temporary locations close to villages. However, once the training was over and the centres were permanently established in towns due to financial reasons, these same women claimed that the distance was too far from their homes to travel alone.

Low income women also indicated that time was a constraint that prevented them from using the telecentres on an ongoing, sustainable basis. Unless men or women see an immediate benefit for themselves or their family from ICTs, they perceive lack of time as a reason that constrains them from using telecentres (Huyer, 1997). Additionally, many of the women from low income backgrounds who participated in the computer literacy courses did not find relevant services for which they were willing (or able) to pay after the course ended. These women came from constrained economic backgrounds and prioritized daily needs such as providing food for their families over computer education.

The "emerging middle class" women in this study faced similar everyday constraints to computer use as their very poor counterparts, but in differing degrees. So where a very poor woman was reduced to squatting for land, an emerging middle class woman shared a home with her parents or in-laws instead of buying her own. What were considered acceptable gender roles influenced whether and to what extent women used computers. Some women in India indicated that they took computer education as part of a process of developing educational qualifications to make them more eligible for marriage. However, if they wanted to take higher level continuing courses, they met resistance from their families. Middle income women of Peñalolén indicated they faced time constraints in trying to run their households versus learning new computing skills outside the home. However, many were now learning to combine household management with computer usage that included searching for better

education opportunities for their children and better employment for their husbands, and using knowledge gained on Web sites to increase efficiency at home.

It has been suggested that women want hard data or practical information to be available online (Huyer, 1997). This fits with our observations of higher income women in India and Chile, who indicated they were looking for information to help their families or themselves, whether it was to get information for their children's homework assignment or to look up diabetes information for their mother-in-law. Nutritional information, health information, tips for better educational processes, scholarships, beauty tips, and cooking ideas were other types of content that were of interest to our middle income respondents.

V. Emerging Middle Class

There is an ongoing effort in anthropology to theorize and portray class as cultural practices or processes (Hall, 1986; Liechty, 2003; Willis, 1977). There has been renewed interest in understanding and defining class in the last decade, building on the work of Bourdieu. He offers a multi-faceted approach to understanding class in which one's position is related to economic, cultural, and social capital. Whereas many definitions of class are based purely on economic capital, class can also be seen in terms of its powerful symbolic dimensions of cultural capital (Bourdieu, 1984). This is significant for understanding how particular classes are socialized. The process of socialization takes on a specific "habitus" (Bourdieu, 1984). Bourdieu's (1984) concept of *habitus* (as discussed by Watt [2006]) is described as "the system of durable dispositions of being and acting that represent internalized embodiment of social norms and established patterns of behavior. People subjected to similar experiences share the dispositions associated with a particular habitus" (777). With this understanding of class, "Each person is a source of judgments and a subject of judgments; each individual is in the classification scheme whose discrimination he is helping to establish . . ." (Liechty, 2003).

Building on these understandings of class, our research indicates there is an intersection between the way women are imagining and constructing their class identities and ICTs. Class boundaries can be seen as fluid in this context. For this research, we

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view class as a set of cultural-lived and imagined practices, correlated with economic inequality and identity formation, instead of predetermined outcomes. Ethnography helps us to represent class boundaries and understand how individuals construct cultural meanings and, in turn, their own identities (Liechty, 2003). We claim that the use or discourse of using ICTs allows women to position themselves to cross a particular class boundary, to enter the “middle classes” or to maintain middle class positions. Many of these women are on the periphery of being working class and an established middle class and are in a liminal state of defining and delineating differences between these classes through ICTs. For this reason, we refer to the women in our study as the “emerging middle class.”⁸

There are key differences between this emerging middle class of women and poor women who are often targeted by ICT programs. These groups differ in Chile and India because of the socioeconomic differences in GNI per capita, literacy indicators, and other indicators (see Table 1). However, the same two social and economic groupings of women exist in both countries. In India, in terms of socioeconomic characteristics, the poor income group owned little or no land. Many relied on agricultural labor, and they existed below the poverty lines. Using the framework of habitus, there was a set of social norms and established patterns of behavior that these women shared. Many of these women were willing to send their children to a village school, but not to a private school. From our interviews, they indicated that their main societal concerns revolved around subsistence needs, attaining government subsidies for the poor, and basic economic constraints of housing. They shared aspirations for their childrens’ education as getting them “ahead in life.” The emerging middle class of women, in contrast, owned substantially more land, articulated desires to have their children educated in private schools, and owned durables like a motorcycle and a TV (see Kashyap and Raut for more detailed description of these different socioeconomic classifications). These women shared similar aspirations about sending their children to universities so they could attain jobs in urban centers and/or work abroad. They also

shared aspirations about the types of homes in which they would like to live.

In Chile, the key differences between low income women and the emerging middle class were in the categories of income, time, and geographic location in the community. Interestingly, women in Chile enjoyed a recent period of improvement regarding their perceived and actual social role since the ousting of Pinochet. Many of those interviewed discussed how women in general felt more free to try new things and were less hindered by the gender expectations of the past (e.g., that a woman is of *la casa*—the home—and not of *la calle*—the outside world).

We found in both India and Chile that there was a symbolic value associated with ICTs that linked to notions of progress, advancement, and upward mobility. It was based on an idea of leaving one state of being and entering another. Participating in a computer education program became part of an imagined process of gaining entry, maintaining, or redefining class boundaries. Working class women who engaged in computer literacy courses found a value in simply knowing about computers. They couldn’t necessarily articulate what the benefit of computers brings to them, but they associated it with modernity and advancement. In India, for example, a Muslim woman, who had finished 8th grade and participated in the e-literacy training course, stated, “It is a new world now and a new millennium. All important places use computers like banks and hospitals and I wanted to know how to use computers as well.”

A female school teacher in India noted:

In order to become all around developed, you need Information Technologies (IT). For rural areas, IT will help them. IT is “a must.” It is a necessary thing. I do not have a deep knowledge of IT, but without it, there is no development in rural or urban areas.

It is interesting that, despite large disparities in per capita income (see Table 1), individuals in both India and Chile find a symbolic value associated with ICTs that is linked to class construction. This indicates that becoming “middle class” is not limited to a set level of income, but is part of a process of behaving and acting according to a set of accepted social

8. *The women in these classifications have similar economic and cultural identities in India and Chile (respectively).*

Table 1. Economic and Social Indicators for Chile and India.

Characteristics	Chile	India
Area (Sq Km)	756,950	2,973,190
GNI Per Capita Income (Atlas Method)	\$8,350	\$950
Literacy Rate	96%	61%
Infant Mortality (deaths per 1,000 live births)	8	32

Sources of Data: World Bank, *Country Profiles* (www.web.worldbank.org), 2007; CIA Factbook, *Country Profiles*, 2007.

norms associated with class distinctions (in this case, use of computers).

This symbolic value associated with ICTs becomes tied to aspirations and constructions of class boundaries. There is often an opposition created between ideas of culture and notions of development. Definitions of culture are often seen in relation to the past, whereas development is often viewed in terms of the future. But Appadurai (2004) views the concept of "aspiration" as a cultural capacity. The capacity to aspire finds its roots in the "wider ethical and metaphysical ideas which derives from larger cultural norms. Aspirations are never simply individual . . . They are always formed in interaction and in the thick of social life" (Appadurai, 2004: 67). These aspirations are part of a system of ideas that is located within a larger set of beliefs and social relations about self advancement. Our respondents discussed their aspirations in relation to future goals of attaining jobs, becoming middle class, and securing a better future for their children. These aspirations were partly based on the pervasiveness of ICTs in their social lives.

Middle Class Aspirations and India

One example of this symbolic value being tied to aspiration is in India. Class construction is linked to the IT industry and aspirations for participating in it. Since 1998, the IT industry has grown tremendously, with its contribution to the Indian GDP increasing from 1.4% in 1998–1999 to 5.2% in 2006–2007 (GOI, 2004: i). The number of IT and IT-enabled services that professionals employed in India increased from 284,000 professionals in 1999–2000 to 1.29 million in 2005–06 (NASSCOM, 2006: 145). The number of IT employees was estimated at

2 million for 2007–08 (DIT, 2007: 2). Highly visible success stories were inextricably linked to class constructions (associated with the "new urban middle class") and the symbolic value that has become tied to computer education, the IT industry, and notions of upward mobility. Fernandes and Heller argued that the middle class had become the "carrier of India's modernizing aspirations" (Fernandes & Heller, 2006: 507). They stated that the new middle class was "the project of globalization, technological mastery, competitiveness and striving, and it is manifested in the rhetoric of newness" (Fernandes & Heller, 2006: 507). Highly visible public representations of prosperous, young, middle class IT professionals benefiting from high salaries paid by multinational and Indian companies supported a growing aspiration to participate in the IT industry. As a result, the IT industry and a "hegemonic urban middle-class lifestyle" (Fernandes, 2000: 619) were associated with beliefs that entry into it would lead to economic success.⁹ Radhakrishnan argued, "Indian IT workers in India and in the diaspora actively produce a unified, singular idea of India" which was rewarded with upward mobility (Radhakrishnan, 2007: 149).

The popular media reinforced the links between IT and the new middle class through advertising campaigns supporting the IT and computer education industry. Consider the advertisements for computer education courses on billboards in rural Kerala. In one such billboard, a young woman wearing western clothing sat in front of a computer. The ad copy proclaimed, "Change the way the world sees you, take a computer class." Similar advertisements noted, "Be perfect, be computer literate." Or as sign for the APTEC computer school stated, "My

9. Respondents indicated that this could be a job as an IT professional or someone in the service industries supporting the IT industry (like drivers, restaurant workers, maintenance people).

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confidence comes from my knowledge advantage." This messaging on the landscape contributed to one's sense of self worth and confidence, as well as the construction and reinforcement of class boundaries. It was linked to self-representation and perceptions of modernity. The images provided a visual embodiment of the new middle class standard of the young, affluent IT professional. By taking a computer class, one could change the way one was perceived in society, which was bound to class identity. Electronic media in its multiple forms (television, computers, telephones, and cinema) produced a space for construction of imagined selves and imagined ways of being (Appadurai, 2004). With complex images, narratives, and the dissemination of information in "mediascapes" (Appadurai, 1996: 35), ordinary people used their imaginations through "practices of the modern" (Appadurai, 1996: 4). The lines between reality and fiction became blurred and people constructed imagined worlds based on these images (Appadurai, 1996). The computer and the middle class IT professional, as depicted by the Indian mass media, became a part of this imagined world.

Women and Aspirations

Women aspiring to be middle class or trying to maintain their middle class status indicated that one reason they were participating in computer education was to augment their income. Women in Chile noted they were taking the classes not just to improve themselves, but to assist their husbands in their businesses and, hopefully, to supplement household income and status. Women in both countries believed that if they were to finish online courses or learn about computers, they would one day be able to get better jobs. When asked if they knew someone who had gotten a better job through this basic knowledge of computers, the women often could not point to an example. But there was a general consensus that if you wanted to attain a better job or improve your income, a computer education could help you to achieve that. In Chile, one woman asserted, "One cannot do anything nowadays—if one can't use a PC." Appadurai (2004) notes that most societal groups express horizons in choices made and voiced in terms of specific material and proximate outcomes, such as better jobs, higher income, and future jobs for their children. But these lists are tied up in norms and pre-

sumptions about life. Although these emerging middle class women can identify their aspirations for increased incomes and jobs associated with ICTs, they struggle with identifying the mechanisms by which to achieve those goals. They grasp for concrete examples, experiences of relations between aspirations and outcomes, and "opportunities to link material goods, and immediate opportunities to more general and generic possibilities and options (ibid)."

Participation or usage of telecentres was linked to a woman's aspirations for herself and her children, as well as maintenance of a state of middle class-ness. By participating in these programs, women imagined securing positions in a new class or advancing their positions, if not for themselves, then for their children. One woman in India stated:

Computers have benefited me since taking this course. I can now go online and chat. I can also help with the education of my child. I want my children to know about computers. One of my children studies here too.

We found that these women were using ICTs not only as an entry into this imagined construct of the middle class but as a way to uphold their middle class identities. Since these women may have grown up as working class, or may have recently acquired a new social status of middle class, maintaining this identity was seen as important for them, particularly for their children's futures. In both India and Chile, we found that investment in children's education was a driver for technology use. Women were interested in technology use to further engage with their children's advancement. They believed that, with knowledge in computers, they were equipping themselves with the tools to make informed decisions about their children's education and futures. One woman in Chile stated, "We're all going into the future, and all the schools now work on computers, so you have to learn to keep up with your children, to help them, to understand them."

It is often assumed that women are marginalized and are not using ICTs. But as noted earlier, we found, in both India and Chile, that rather than low income women, this "emerging middle class" of women was one of the user groups in these telecentres. The other dominant groups were young children of both sexes and young men in their late teens and early 20s. Interviews with telecentre operators in both India and Chile indicated that they felt

that these women were a substantial part of their user base and contributed to their income. Specifically, in Peñalolén, Chile, we found that women were driving the telecentre movement through their active pursuit of funding grants from the municipal government to establish telecentres. The government granted funding to women's groups (sometimes formed for just this purpose) to pay for the technology, support, and Internet connections for one year. After a year, the new telecentre had to become self supporting. This did not discourage women; rather, they explained, they wanted these centers in order to "improve the neighborhood and improve opportunities for our husbands and children."

There was a noticeable absence of "emerging" middle and lower class men who attended these computer education courses in Chile. Women indicated that men lacked the interest to engage in telecentre courses, because they feared the risk of looking foolish as they learned. This belief is rooted in the cultural characteristic of machismo that is pervasive throughout Latin America and in the relations between men and women. Both men and women in Chile said that men did not have the time to take classes as they were too busy working and supporting the household. Finally, some of the men we interviewed in Chile said that women had more "orderly" minds and could learn and engage in computer activities more productively than men. This went against the old debates in the United States about technologies being more masculine and suitable for men (but was in line with older views about women being more adept at typewriters and as telephone switchboard operators).

VI. Conclusion

This article intended to understand the multiple ways women approach technologies, the gender relations involved, and how it relates to class and aspirations in the context of shared computing. Our preliminary research illustrated that women's participation in shared computing environments contributed to formation of class boundaries and to aspirations to gain entry or to maintain middle classness.

We identify this area of middle class and identity construction in the context of technologies as an important area for future research. Based on these

observations, our research raises several questions: How is this emerging middle class being imagined for both men and women? How are boundaries being created? How is technology materially used? How is it imagined as a vehicle to achieve status and/or class? How are maternal investments in children linked to either maintaining or aspiring to cross class boundaries? What is it about being an emerging middle class woman that creates an entry into shared computing compared to men?

This type of analysis holds significance to ICTD implementation and practice. The understanding of class identities can influence how practitioners and kiosk entrepreneurs brand their centers, attract different segments for education classes, and possibly retain initial users. In the context of ICTD and in the absence of actual educational improvements, how do we evaluate such changes in aspirations and self-awareness? Can these changes constitute improvements in social welfare? This also raises a few questions for project implementation: If class dimensions are intersecting with gender in these ways, what might this mean for both academic and development pursuits? How might these insights be incorporated into the project and research design?

A deeper understanding of how gender intersects with the "emerging middle class," (besides the standard market research on these groups) is needed. Specifically, exploring how technologies and their symbolic value factor into the construction of class boundaries and upward mobility are strategic areas for practitioners and private companies investing in ICTD to understand in order to target new markets and women. ■

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