A question of visibility: A rights-based look at ICT centers for persons with disabilities in Latin America

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Abstract—In this paper, we examine the deployment of a group of technology centers serving people with disabilities in five Latin American countries: Colombia, Ecuador, Guatemala, Mexico, and Venezuela. We explore the impacts of such training courses on the employability, socio-economic inclusion, and visibility of persons with disabilities in civil society. We find an important tension between the short-term objective of job creation for centers focused on individual capacity building, and the long-term goals of rights-based organizations to affect the visibility of people with disabilities in the public sphere. In particular, we examine the public library as a neutral, safe space in our comparison between programs in various countries. We come to the preliminary conclusion that a rights-based organization focused on community building, rather than individual capacity building, has the potential to be more effective in increasing the visibility of people with disability in the public sphere. We argue that the public image of disability and stigma associated with it cannot be extracted from technology training or individual capacity building. Therefore, centers serving people with disabilities must take into account the complex reality of employability for people with disabilities, particularly in the developing world.

Index Terms—Disability, ICTD, Latin America, Visibility

I. INTRODUCTION

Disabilities prevent roughly 10 percent of the world's population from fully participating in the labor force, public sphere, and civil society. According to the World Bank, approximately 50 million people in Latin America and the Caribbean are disabled, and it is estimated that between 80 and 90 percent are unemployed or outside the workforce. Well over the majority, 82 percent are living in poverty and less than one percent will reach higher education. However, with limited statistics on disability, and far less information on the availability of services for people with disabilities, there is a dearth of information on the full extent and functional reality of living with disabilities. This is especially true for the developing world, where the problem is typically twofold – first, there is a general lack of data on disability, and second, information on the nature of education and services available for people with disabilities is either incomplete or entirely missing.

In recent years, various factors including disability-related legislation, international conventions, academic departments of disability studies, and the work of thousands of community organizing groups and activists, have raised mainstream recognition of issues of disability in terms of accessibility. These movements have also coincided with tremendous developments in electronic technology that have impacted issues of disability in two important ways. First, there has been much work on access to technologies that can increase the ability of people with disabilities to participate both socially and economically. Second, there has been much work in accessibility concerning daily living situations in order to expand the social participation of people with disabilities. While accessibility refers to physical and communicative needs, in addition to virtual environments, the increasing ubiquity of personal technology has raised awareness on issues of accessibility of personal computers, mobile phones, and the Internet.

An important trend, particularly in Latin America, has been the increase in Information Technology (IT) centers created to train persons with disabilities for the specific goal of preparing them to enter the formal labor market. In part, this trend is attributable to job quotas for persons with disabilities in a number of countries where we conducted fieldwork, including Venezuela and Ecuador. Such IT centers are typically computer training centers with a shared machine used for guiding participating users through basic computation courses. In a few cases, users were provided with limited assistive technology including screen readers, screen magnifiers, adaptive mice, etc.

In this paper, we seek to examine the work of several technology centers housed under two agencies in the region. The first, POETA[1], is a large, multi-country project, funded by the Organization of American States, which provide computer training for people with disabilities in 18 countries throughout Latin America and the Caribbean. Our research throughout all countries, except Colombia, is primarily in conjunction with POETA-affiliated centers. In Colombia however, we examine the work of innovative programs under the Colombian public libraries, particularly in Bogotá and Medellín. Public libraries in both cities were awarded the Bill & Melinda Gates Foundation's Global Libraries initiative "Access to Learning Award", recognizing innovative efforts of public libraries. By juxtaposing users' experiences in the two environments, we aim to begin initial analysis of the differences between centers focused primarily on individual capacity building, in this case POETA-affiliated centers, and those with the primary intention of building community and allowing people with disabilities to be more visible in public spaces, such as the public library.

II. RELATED WORK

Mainstream disability studies has grown out of a medical model of disability, which views disability as something to be cured, compared to the social and rights-based models of disability which perceive disability as an outcome of the architectural and social contexts that restrict the equitable

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[1] POETA: Partnership and Opportunities for Employment through Technology in the Americas

access of all people in society (Crow, 1996; Shakespeare and Watson, 2002). This view has been important not just in intellectual and academic work on disability (Yeo and Moore, 2003), but is also reflected in the UN Convention on the Rights of Persons with Disabilities which specifically places the onus of equity on the state.

There is rich and extremely active work regarding disability and technology in disability studies, rehabilitation engineering, and assistive technology research. Our work here is less relevant to the technical side of assistive technology research, though of relevance here is the important progress in web accessibility (Paciello, 2000), which deals with the availability of online materials in accessible formats for print impaired populations. Also relevant are important works that impact the overall cost reduction of assistive technology, which in turn has much meaning for the developing world given the prohibitively high cost of most assistive technology. It is useful to mention that a growing number of technologists have been interested in issues that impact this goal, including those working with interface design for accessible devices (Bigham et al., 2007), on low-cost assistive listening systems (Israsena and Pan-ngum, 2007), on low-cost prosthetics technology (Wu, 2009)[2] low-cost screen readers (Bigham et al., 2008), and low-cost Braille writers (Kalra et al., 2007).

Of more direct relevance to this paper is work in the social sciences around technology and disability which generally more actively engage the rights-based model. Given our interest in the use of public spaces in the provision of technology access to persons with disabilities, we take forth the work on accessibility services in public libraries (Schmetzke, 2001). In general, the ICTD community has not conventionally had a very significant interest in issues of disability. However, the related field of community informatics, a field that in general is interested in broad access issues, has some past interest in disability (Lazar, 2002).

III. METHODOLOGY

In this paper, we draw from extensive field research in Colombia, Ecuador, Guatemala, Mexico and Venezuela to examine the use and perceived value of training at IT centers for people with disabilities. Our field work was mainly conducted at computer centers managed by the POETA program of the OAS (Organization of American States) and the Trust for the Americas. In addition, we visited what could loosely be termed a "control group" – the Bogotá public libraries, which offer the same technical services – i.e. IT training for people with disabilities, but physically housed in public libraries throughout Colombia. On the other hand, the POETA program provides IT training and access services through existing NGOs or by setting up small IT centers. POETA projects were active in all countries visited while

Colombia was the only country in which we observed services for people with disabilities in public libraries.

We use a qualitative interview-based methodology, with open-ended semi-structured interviews conducted over four months of field work. We chose to discuss visibility within the framework of a rights-based perspective on disability and society since it became clear early in our field work that the issue of visibility was an extremely important and recurrent theme emerging from our discussions with users of the technology centers and activists alike. Issues of social and economic exclusion due to disability are related to prevailing cultural issues. Both rights-based groups working on policy issues, as well as people with disabilities themselves felt that greater visibility of people with disabilities in public spaces was the key first step towards greater inclusion—socially, economically, and politically.

Based on our fieldwork, we seek to demonstrate our preliminary finding presented in this paper: A disconnect exists between the goals of individuals and their self-perception of employability in relation to ICT training, and the broader mission of social movements led by people with disabilities to emphasize the importance of visibility in the public sphere. The transcribed data from the field work is over 800 pages long. We conducted a total of 64, disability-related interviews in Spanish.

A. Instrument Design

We conducted semi-structured, qualitative interviews, held primarily at the technology centers, offices, homes, libraries or in public places. The interview instrument was first developed in Seattle among a team of field researchers and iterated on the ground for the first week of interviewing to maintain a relatively consistent set of core questions across sites. In Colombia, in addition to one-on-one interviews we also conducted semi-structured focus groups with library users and followed a similar set of questions to explore, although questions varied due to time constraints. The entire interview process, including briefing the respondent, took between 45 and 120 minutes per interview.

B. Sampling

Our selection of POETA centers and the Bogotá public libraries was based on two main criteria. First, we were interested in the role of Corporate Social Responsibility (CSR) in funding services for people with disabilities, thus both groups were selected from within beneficiaries of the Microsoft Community Affairs program. In this paper, we do not discuss issues around CSR and services for people with disabilities as a result, but these issues are important to recognize in explaining why we chose to select these two specific organizations.

Our second reason for selecting these two groups in our analysis was due to the unique focus of Bogotá libraries on working within the pre-existing state and institutional systems. The libraries' primary goal of supporting the desires of the

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[2] The tragedy of land-mines in several parts of South East Asia and Sub-Saharan Africa have been important drivers of the interest in low-cost prosthetics

disabled community itself, is contrasted by the POETA approach of establishing new technology centers for training of people with disabilities in which few centers link with government institutions. Although many POETA centers conducted outreach with local groups of people with disabilities, we observed few centers led by people with disabilities and often times each center catered to a specific disability, such as a center specifically designed to train people with visual impairments. In the case of the Colombian libraries visited, people with visual, auditory, and physical disabilities, in addition to a combination of impairments, were benefiting from access to technology.

We used a snowball sampling method for respondents in all field sites. In each site we started with three to five respondents recruited through the training center followed by the remaining respondents recruited through the networks of the first set of respondents. We conducted research with primarily people with motor, auditory, and visual disabilities. In addition, we also interviewed program administrators, policy makers, and activists working in this space. The sampling varies from five to twenty interviewees at each location. The coding and analysis of the transcripts was completed utilizing Atlas Ti. We conducted a total of 64 interviews, of which 49 were conducted in a first phase in Guatemala, Mexico, Ecuador, and Venezuela, followed by 15 more interviews during a second phase in Colombia with a different sample, which we discuss ahead.

C. Site selection

We visited seven POETA supported ICT training centers in Ecuador, Guatemala, Mexico, and Venezuela. POETA partners with local grantees in each country for up to two years as a part of its organizational model. POETA grantees researched in our study included both public and private vocational training centers, universities, rehabilitation facilities, and NGOs primarily serving people with disabilities. POETA provides hardware and software, at times including JAWS (screen reading software), and screen magnifiers for people with visual impairments as well as some adaptive hardware. Program administrators often adapt curriculum from Microsoft's Unlimited Potential Program, which is required to be taught at each POETA center. Their courses seek to teach users the very basic functions of the Microsoft operating system (nearly solely Windows XP) and the Microsoft Office Suite of programs. Users were also introduced to the Internet and e-mail programs. Some POETA partners teach modules in self-esteem, job-seeking strategies, resume workshops, and socially acceptable, formal behavior in an office environment, although this was typically offered by the NGO partner and is not typically built into POETA programs.

In Bogotá, Medellín and Villavicencio, Colombia we visited four public libraries and three vocational and ICT training centers serving people with disabilities. Both the Bogotá and Medellín network of libraries are winners of the Bill & Melinda Gates "Access to Learning Award", in 2002 and 2009 respectively, for offering free access to ICTs in some of the country's poorest neighborhoods. Computer training courses for users with visual and auditory impairments focus primarily on training users in various assistive technologies, including scanners, JAWS, screen magnifiers, OCR (Optical Character Recognition) programs, as well as Braille. Programs at the libraries serving the disabled also include "invisible theater" courses, open meeting spaces, workshops educating users on how to pursue further education, in addition to advanced accessible hardware and software. We observed the most advanced degree of assistive technology in Colombian libraries.

D. Limitations

Most of the people we were able to contact in the first sample of Ecuador, Guatemala, Mexico, and Venezuela had already completed the IT program. This meant they typically were actively in the job search process or had been placed in jobs.
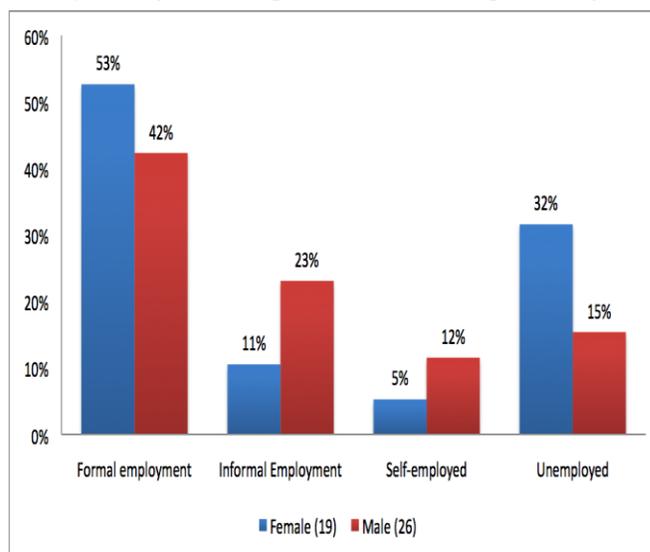

Figure 1: Employment statistics of the sampled population: As one can see, many of the people with disabilities interviewed in this study were formally employed. However, as noted above, many of these interviewees had completed the IT training course at the time of the interview.

As a result, our sample is not representative of the disabled population in these countries, and at no point do we claim to speak for the population as a whole. Furthermore, an extremely important factor about the IT centers studied (and arguably for similar ICTD projects working with persons with disabilities throughout the world) is that the majority of users tend to have lower body mobility disabilities. The Deaf population, for instance, was almost entirely missing from our study, despite the fact that one of the IT centers was formerly a Deaf citizen's group office. Few centers provided technology or information material for people with print impairments. Most populations with multiple motor impairments, especially upper body, are absent from our sample, and in general among the most marginalized within the disabled community. Our research is also not representative of the Deaf-blind community. Although we did attempt to interview Deaf-blind

users in Colombia, communication restraints impeded our ability to utilize these interviews. The same should be noted for the misrepresentation of Deaf users in our sample population which was primarily due to an extreme lack of sign language translators, in our research sites and Latin America in general, and a lack of centers designed for users with auditory impairments.

IV. POLICY ISSUES AROUND DISABILITY

In order to connect the emphasis on employability in relation to IT training, we discuss briefly some of the policy issues around disability in the countries sampled.

A. Legal measures

Mexico has approached the employment of people with disabilities through voluntary hiring and tax incentives, with employers benefitting from a 100 percent reduction of income taxes for employees with disabilities, according to Article 222 of the *Ley del Impuesto Sobre la Renta* (Income Tax Law). In Guatemala, no binding legislation exists to incentivize or mandate the hiring of people with disabilities, although the right of people with disabilities to accessible employment and non-discriminatory hiring is formally recognized by the *Ley de Atención a las Personas con Discapacidad, Decreto 135-96* (Law for Attention to People with Disabilities, Decree 135-96).

In 2006, both Ecuador and Venezuela implemented new policies which are notable for placing positive requirements on employers to hire people with disabilities, in addition to requiring labor inspections and substantial economic sanctions for non-compliance. Ecuador's reformed *Codigo de Trabajo* (Labor Code) establishes a percentage quota mandating the hiring of people with disabilities by all public and private employers with more than 25 employees, starting with one percent by the end of 2007 and reaching a maximum requirement of four percent by the end of 2010. The law is enforced by the Disabilities Unit of the Ecuadorean Ministry of Labor (headed by an employee with a visual impairment). Employers who fail to hire the required number of employees with disabilities are fined each month until they have met the requirement, at a rate equivalent to ten minimum salaries (the monthly minimum wage was set at $218 in 2009).

"What we need is a source of employment…there is a new law that says that every company must have at least three percent of their workforce be people with disabilities but no one actually follows through with this. They are hiring people with disabilities in public companies but not in private companies because private businesspeople are not interested in collaborating with this kind of requirement or to support the handicapped population, or the disabled."

– Felipe, Quito, Ecuador
He has a visual impairment

Venezuela's *Ley para las Personas con Discapacidad* (Law for People with Disabilities) establishes that five percent of jobs with all public and private employers be filled by people with disabilities. The law updates the earlier *Ley para la Integración Social de las Personas Incapacitadas* (Law for the Social Integration of Incapacitated People), which set a two percent hiring requirement for employers with more than 50 employees. With enforcement set to begin in 2009, the updated Venezuelan legislation contemplates a variable fine of 100 to 1000 Tax Units (*Unidades Tributarias*, one Tax Unit is equivalent to 55 Bolivares Fuertes in 2009) or $2,568 to $25,645.[3] The law does not make clear how the amount of the fine is to be decided.

"The Law for People with Disability is an advance. Before it was very segregated, very discriminatory towards people with disabilities. …[T]he problem is that it be followed. …Yes, there have been advancements, but there needs to be more work. …You see many more people with disabilities, in jobs, in the street. People who have come out of their houses, most likely. …People see that there is a change, they are looked upon a bit better, and you have to take advantage of that."

– Gregorio, Caracas, Venezuela
He is 27-years old and has a motor impairment

Both Ecuador and Venezuela require individuals to be registered with their respective national disability councils in order to qualify under the legislation. Registration also carries various other benefits, such as subsidized public transportation and reduced fees in some vocational training programs for people with disabilities. In Mexico, disability accreditation is the responsibility of the National Institute for Social Security. While Ecuador, Guatemala and Mexico have ratified the UN Convention and Optional Protocol on the Rights of Persons with Disabilities, Venezuela has yet to do so.

B. Respondents' perceptions of the laws

Respondents' opinions of the impact of state policies are conditioned by perceptions of political will and visibility as well as individual experience. In Ecuador and Venezuela, individuals interviewed were generally aware of the laws requiring the hiring of people with disabilities. Many saw these laws as steps towards social and economic inclusion-- as signs of a (possibly fleeting) opening towards people with disabilities.

In Ecuador, perceptions of positive impact regarding the legislation were linked to the advocacy of Vice President Lenin Moreno Garcés, a champion for disability rights who is himself a person with paraplegia and a wheelchair user. The high visibility of a person with a disability in national office, paired with disability initiatives[4] through the office of the Vice President, are associated with positive perceptions of political will in the area of disability policy in Ecuador.

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[3] All dollar figures are U.S. dollars.

[4] An example is *Ecuador Sin Barreras* (Ecuador Without Barriers), aimed at promoting accessibility in education, transportation, and the labor market.

However, the assumption of Moreno's association with the cause is a problem of "institutional champions", which is not new to the ICTD field. The flip side to his involvement in the disability rights movement was the perception of a lack of services for people with visual impairments, as evidenced from this statement at a technology center we visited.

> *"…[P]eople with disabilities should take advantage of this time because there are more job opportunities and opportunities like this free computer course and one never knows when the program Ecuador Sin Barreras' (Ecuador without Barriers) funding will be cut, by the next government for example, and these opportunities won't exist. … But the truth is since the Vice President has a motor disability he has neglected people like me, someone with a visual impairment."*
>
> – Cristobal, Quito, Ecuador
> He is blind, and is a JAWS course instructor

The combination of updated legislation and awareness campaigns also contributed to positive perceptions of policy in Venezuela. Public visibility of people with disabilities in the streets and on public transportation was noted by respondents as signs of increasing social inclusion. The government has carried out awareness campaigns and initiatives such as the *Misión San Gregorio Hernandez*, which was intended to distribute basic technical aids and to carry out a census of people with disabilities in Venezuela's poorest neighborhoods. Closed captioning and sign-language interpretation of television news, on both state and privately owned channels, is mandated by law. However, the prevailing atmosphere of political polarization in the country was also reflected in individual responses, such as one respondent's prefacing a positive comment with the following statement: "I have to say something, even though many don't like to hear it… the law that the president approved is really good… Other presidents before haven't taken the trouble. I have to be sincere, right?"

> *"…[R]ecently there was the Misión San Gregorio Hernandez (a disability services initiative) that President Chavez did, which more than anything was for the [poor] neighborhoods. In my neighborhood they did a census of all the people with disabilities in the sector. They called them, and in many cases they gave them some kind of help: cushions, clinical beds, a chair for bathing, cushions like this one, but that's the only kind of help that I have gotten. … I know that they give employment and stuff, but it's pretty difficult, it's complicated. I don't know if it's the demand or the slowness of the process, but I have many friends who are still waiting to be called, and I haven't gone to the trouble to go to an institution (employment office), just to lose time."*
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> – Edison, Caracas, Venezuela,
> He is 26-years old and has a motor-impairment

However, in both Ecuador and Venezuela, for each positive perception of policy, there is a counter-point from a citizen who has been through technology training and is either unable to get placed, or has been placed in a menial position compared to what they have been trained to do. With the relatively recent implementation of policies mandating the employment of people with disabilities in Latin America, further comparative policy analysis is needed to assess their overall impacts. Underlying assumptions about disability, as well as the efficacy of both voluntary and enforced employment quotas (such as those discussed above), have been criticized by scholars analyzing such policies in the European context (Waddington, 2000).

Perhaps the most overarching concern regarding disability policy in the countries surveyed, is a lack of effectively enforced anti-discrimination laws and requirements for employers to provide reasonable accommodation for employees with disabilities. An issue of much concern is that IT centers provide people with training-- often with some of the latest technology tools which are typically donated-- and once graduates leave the institute, they no longer have access to those tools. In fact, a number of IT centers we visited had locked away adaptive hardware, rather than utilizing them with users, since they saw no sense in accustoming pupils to technologies that they would not have access to once they moved to the workplace.

V. DISCUSSION

It is useful to discuss briefly our choice of grounding this discussion through the frame of visibility. For many people with disabilities, as is true for other excluded populations, the issue of public visibility is a critical part of what it means to participate in society. For several parts of the world, including some of the locations sampled, the dominant image of people with disabilities is associated with charity, and our research respondents were well aware of the consequences of this in their work life. There is significant work within disability studies on visibility (DePauw, 1997; Frank, 1988; Taleporos and McCabe, 2002), largely from the perspective of stigmatization.

In essence, what we seek to ask here is whether the perception of "what disabled people do" in society impacts the practical potential of a person with a disability to work in an office environment, or obtain a job outside of the conventional image of people with disabilities. Much work has focused on the menial nature of work given to people with disabilities in office scenarios, irrespective of the skill sets they bring, which is typically a serious risk in those places where mandatory laws for hiring persons with disabilities are in place (Hanye, 1998; Malakpa, 2007). These issues are deeply relevant to the questions of technology training, since the disabled job seekers have a high probability of being in their first organized sector positions. Conversely, we also find that their co-workers are new to sharing their workplaces with people with disabilities. To this extent, our work touches upon important themes of visibility for populations that face some form of exclusion from the public sphere in general (Berkman, 2007; Katz, 1997).

A. Visibility

Before we even get to the functional issues of whether technology centers play a role in increasing visibility in the workspace, the question of even basic visibility in the public sphere merits discussion. Through much of the 20th century, the disability rights movement throughout developed countries, has moved away from the philanthropic and charity-based discourses towards those based on promoting disability rights and access. This transition has been relatively slower in the developing world, but the UN Human Rights Commissioner has called for a move away from charity (Quinn et al., 2002). In fact, the specific terminology of rights in the United Nations Convention of the Rights of Persons with Disabilities has set the tone for greater recognition of equity in access in the international discussion on disability[5]. As Harlan Hahn argues,

"Features of architectural design, job requirements and daily life that have a discriminatory impact on disabled citizens…support a hierarchy of dominance and subordination between non-disabled and disabled segments of the population that is fundamentally incompatible with legal principles of freedom and equality…" (Hahn, 1993)

Access to public space is a freedom or right which many non-disabled citizens may take for granted. However, it is highly valued among the disabled community due to structural barriers, such as inaccessible transportation, and profound stigma and discrimination towards people with disabilities in society. The following quote highlights one interviewee's opinion of the public visibility of people with disabilities in Venezuela.

"You see many more people with disabilities, in jobs, in the street. People who have come out of their houses, most likely. It seems like the population of people with disabilities has grown, but I think it's not that it has elevated, but that they are leaving their homes. People see that there is a change, they are looked upon a bit better, and you have to take advantage of that."

– Juan, Caracas, Venezuela
He has quadriplegia

His opinion is optimistic and can be contrasted with that of another interviewee who uses a wheelchair in Ecuador.

"Yes, even the building where I work, where we are right now is not that accessible. For example, there is an elevator but when you need to leave the building there are steps so I always have to ask for help when I need to go up or down the steps. There is no ramp. There are many places where I always have to ask someone for help, or where there are steps or the entrance is very narrow."

– Adán,Quito, Ecuador
He has paraplegia

In many of our interviews, there were respondents discussing a sort of tokenism in the implementation of the initiatives. On one hand, IT training centers are relatively well-funded, and frequently inaugurated by political personalities covered in the media. Yet the functional aspects of being able to use the technology centers at all were questionable – over 50% of the respondents cited times of over 30 minutes getting to the technology center, and several (including instructors) noted much difficulty in getting to the training centers.

Within this visibility framework, we look at programs, particularly Colombian libraries, which have implemented ICT training in order to not only give access to services, but primarily to foster community building and respond to the need for computer training by the community of the disabled itself.

At this moment, *Biblioteca El Tunal* is one of few libraries in Bogotá, Colombia (and arguably Latin America) that is fully accessible to people with disabilities, particularly the visually impaired and the deaf or hard of hearing. However, the community of people with disabilities has called upon policy makers and library administrators to make all libraries in the Bogotá system accessible. By reconfiguring pre-existing institutional services in order to reach people with disabilities, the Bogotá library system represents a shift in not only public policy, but society in general, to allow people with disabilities an opportunity to be visible in a public space—the public library.

Although libraries may be typically considered neutral "safe spaces" where all community members are welcome, many library services are not accessible for people with disabilities, particularly technology services for people with visual impairments.

"They shut the doors in our faces at companies and refuse us employment so we wanted to convene here in the library as the National Association for the Blind in order to inform those companies that we are useful, productive people and just because we have a disability, that doesn't mean we are invalid… in order to do this we have to continue training and studying and so we that's why we come here to the library in order to stay up to date on systems and informatics training with the use of a program called Jaws."

– Martin, Bogotá, Colombia
He has a visual impairment

JAWS, the leading screen reader software from the U.S. publisher Freedom Scientific, is one of few tools which enables people with visual impairments to utilize a computer. It is also a significant barrier for people with disabilities,

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[5] United Nations. (2006) Convention on the Rights of Persons with Disabilities and Optional Protocol. <http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf>

particularly those living in Latin America, due to a cost between US$1,000 and US$2,000. Very few technology training centers where our team conducted research had purchased original Jaws licenses, while most had acquired a licensed copy from ONCE-FOAL[6], utilized a download demo version which required users to reboot every 45 minutes, or downloaded a pirated copy of the software. However, as demonstrated by the following quote, many users of the Colombian libraries benefited from the network of disabled users that was formed as a result of the computer training course offered.

"What has made things much easier is that through coming to the computer center in the library, I was able to burn a copy of a portable, more compressed version of Jaws, onto a CD and then I can go to a cyber café if I need to and I can work independently. But to be honest, I do not go to the cyber café though because I have the ease of being able to come to the library and use the services here…I practically live here."

– Claudia, Bogotá, Colombia
She has a visual impairment

Various beneficiaries of the computer training center in the Bogotá Library referenced the sense of community they gained through attending courses and using the technical services offered. Despite the fact that some computer center users had access to a computer with JAWS at home, they still felt that coming to the library provided them with a community that was important. This sense of community was important not only for the advancement of their own personal technical skills, but also for the grassroots, rights-based movement itself-- led by people with disabilities. Visually impaired users travel from all around the urban area of Bogotá to use the accessible technical services offered at the library. However, the library has come to represent much more than simply a public access point. It has come to represent a place for people of all disabilities to convene, unify as a movement, and leverage the communal strength to reclaim human rights which were historically not granted to people with disabilities.

"Unfortunately, here in Bogotá and Colombia in general, the disabled community is invisible in public policy and government priorities…people [with disabilities] stay invisible. They don't go out on protest. They stay silent…but alone as a community of the blind, we cannot do it…so what the library does for us is give us the ability to unify as a movement and it opens up opportunities and services to us. It is a great advancement to have access to services here. To be able to use the computer, the internet, all those services for free. It is a success that those here at Biblioteca el Tunal, weren't conformists."

– Micaela, Bogotá Colombia
She has a visual impairment

[6] The Spanish National Organization for the Blind's Foundation for Latin America

Overall, the sense of being visible within a larger community by appropriating a public space is what emerged in responses as the single most important distinction between the stand alone technology centers (specifically for people with disabilities) and the public libraries in Colombia.

B. Capacity-building

One of the important impacts we saw in this research, referred in the past by other ICTD research as an important outcome of technology implementations, is the issue of aspiration. (Pal et al., 2009). In response to the question of what people would like to do in the future, a large number of respondents stated they would like to work with technology. While this may indeed hold the biases of the context of questioning, it is nonetheless an important finding given that respondents discussed this organically rather than selecting from multiple choice answers (see Figure 2).
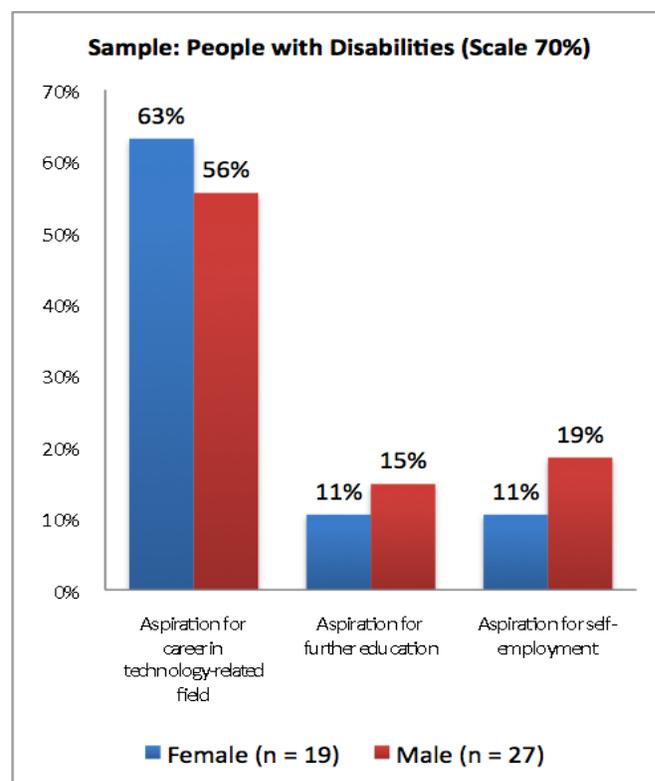

Figure 2: Differences in aspirations among respondents

The overwhelming statistics of unemployment and poverty among people with disabilities not only in Latin America, but throughout the world, has led to an increase in both public and private training centers which metric success based on employment rates of computer center graduates. This is also known as ones' *employability*, or

"The ability to secure a job; the ability to keep an existing job or to improve that position in quality or income; the ability of beneficiaries to use elements of the training program as platforms to gain job experience if new to the labor market; and the ability to contribute to the overall

productivity of business, government, and social labor.” (Garrido et al., 2009).

We conducted research with several centers with similarly stated goals and carried out interviews with program beneficiaries, center administrators, and potential employers. By contrasting such centers with the case study above of the Colombian libraries, we came to a preliminary conclusion that there is a disconnect between the goals of individuals and their self-perception of employability in relation to ICT training, and the broader mission of social movements led by people with disabilities to emphasize the importance of visibility in the public sphere.

Our use of capacity building, alongside visibility as the second construct of interest, is to differentiate between the impacts that programs have on an individual level (i.e. training a user in a specific software or job seeking skills), or working at a broader level building capacity of the groups working in this space as well as increasing social awareness.
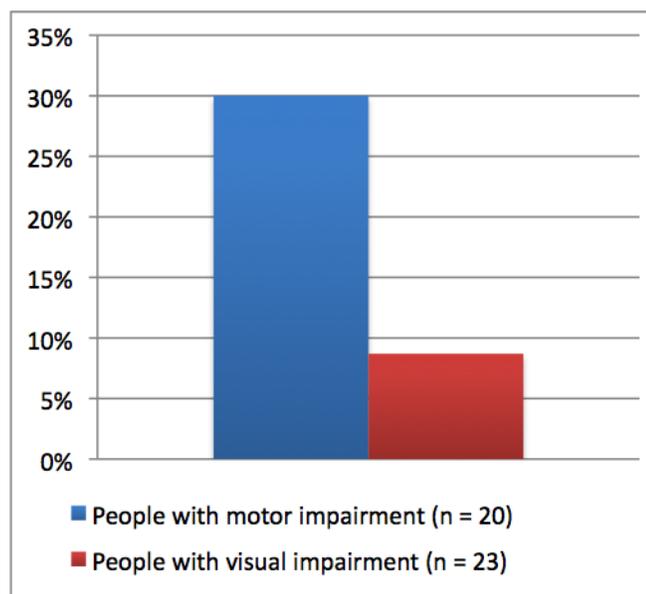

Figure 3: Differences between perceived increases in employability

As one can see in Figure 3 above, the highest gains in confidence regarding one's “employability” came from people with motor impairments, since their ability to use basic computing required a lot less structural support than blind users, who needed not only the training but also the assurance that their “employers” would provide the requisite software, such as screen readers. Finally, for blind respondents, there was also a much more significant acceptance gap in new job scenarios.

Typically, at computer training centers with a primary focus on ICT training and as a result, employability, individual capacity building is prioritized. The broader goals of including people with disabilities into the public sphere, building community, and the sharing of knowledge, become secondary goals. Many

beneficiaries began attending the computer course in order to improve their individual skills and later seek employment. Basic computer competence was viewed by many users of centers focused on employability as an entry point into formal employment and a necessary tool in order to prove to employers and co-workers that a person with a disability was capable.

“I am not using Jaws there [at the post office] yet because I want to finish the course here first. Once I have finished the course here I will ask Agora to assist me in purchasing the license for Jaws so that I can install it on the computer at work...But I do not want to use it at my job yet because I want to learn a bit more, finish this course and I also want to prove to everyone at my job that I can do the job without it and once they trust me a bit more then I will install it. It is much easier for me to use the computer with Jaws and when my co-workers see me using it they are going to go crazy!”
– Felipe, Quito, Ecuador
He has a visual impairment

A theme among users interviewed in such centers was a self-perception of being more employable after acquiring ICT skills, but a feeling of disappointment once they attempted to actually enter the labor market. Few centers employed institutional champions, technical accompaniment services, or staff whose primary objective was to seek out potential employers, or build a reputation of the center in order to bring in opportunities for program graduates.

“So we go, we explain to the company about our programs, we actually show them how they work because that's quite an important part because they always wonder how a blind person is actually able to use a computer because we are all accustomed to using a computer by sight.”
– Jose, Guatemala City, Guatemala
Computer teacher for the visually impaired

Clearly, the existence of such institutional champions is very problematic: in a sense it implies the condescension of the user needing an umpire to confirm their competence. But this precisely is the problem that ties both the issues of visibility and capacity building – because of the lack of visibility of blind people in office jobs, IT centers actually feel it necessary to have an “assurance service” whereby potential job candidates are accompanied by sighted trainers who confirm their ability to complete a certain task. Ironically, these institutional champions were anecdotally very effective in helping graduates land jobs. Such institutional champions were not commonly found.

Many users had an expectation that once they had completed the course, they would be presented with opportunities of employment, but were unfortunately faced with further discrimination.

“When I was doing the course, there were various companies for which one could submit their resume, and

they would offer you employment. ...That's what I was hoping for, to finish the course, and to enter a company a short time later, but that didn't happen."

– Andres, Caracas,Venezuela
He has a paraplegic condition

"I also think that Mexicans are lacking a culture, not just Mexicans, but sometimes they see you have a disability and they think that you can't do things, or they believe you will give the business a bad image, or I don't know, that's what they imagine, that's what I have seen."

– Consuela, Mexico
She has a motor impairment due to rheumatoid arthritis

VI. Conclusion

Perhaps the most disconcerting outcomes of the research was finding respondents who had been through IT training and yet worked by day selling lottery tickets. One respondent stated that he sold lottery tickets since that was the only thing he was "accepted" doing. The importance of working within a rights-based framework to radically impact visibility for any project working directly with populations with disabilities, cannot be overstated.

The contrast between the Colombian libraries (public spaces) and POETA's training centers (specialized spaces for people with disabilities), highlights an important area of contestation on issues of visibility and merits further research. While both served very specific purposes, and it could easily be argued that the POETA centers were the best possible space for the services they provided, for respondents with disabilities themselves, the division between employability and visibility was in itself a spurious one. In support of a rights-based approach where greater awareness of social exclusion is an essential part of the movement for employability, the two are thus intricately tied and impossible to separate from one another. Although POETA centers are at times able to address short term goals of simply acquiring basic technical skills, IT training programs focused on individual capacity building are not designed to address the prevalent stigma and discrimination against people with disabilities.

It is, for instance, impossible to discuss employability in the context of Latin America without referring to the fact that most work places are not employing people with disabilities to perform the same functions as "normal" people. Thus, the use of public libraries in providing services for people with disabilities plays a larger and critical part in creating greater institutional awareness that necessarily comes with increasing employability. Groups built of people with disabilities, to serve the interests of people with disabilities, argue that it is greater participation in public policy and education that allows people with disabilities to become more socially and financially involved in the public sphere. Utilizing the Colombian example, we come to the preliminary conclusion in this paper that public libraries can represent a safe and neutral space which could ultimately lead to greater inclusion of people with disabilities in the broader community.

Often, it was found that the employability metric was a goal imposed onto the institution by an outside funder. Previous work on ICTD and participatory design of computer training centers argues that in such development initiatives "the 'insiders' learn what the 'outsiders' want to hear...the needs become socially constructed and the dominant interests becomes community interests," (Bailur, 2007). It is not to be said that many of such training centers also represented places of community, just as the library. However, the distinguishing factor is rather the primary purpose of creating the center. On one hand, the Bogotá libraries system saw a warranted need by the disabled community to incorporate assistive technology into the libraries. A perception in society already exists that libraries are neutral, "safe spaces", open to all members of the community, which makes it an easier transition for the non-disabled library users to acknowledge. In any discussion of the provision of training and technology access for people with disabilities, public libraries have to be a critical part of the discussion.

In an environment of heightened expectations from media and scholarly attention to technology, it may be tempting to think that computers can play an important part in rectifying the exclusion of people with disabilities, but the takeaway of this paper is that work in this space is deeply tied to the ground realities of disability in the Latin America. Indeed, groups like POETA may not invest in IT services with the end goal of becoming disability rights activists, but the reality of employability for people with disabilities in Latin America is such that the two cannot be extracted from each other. Employability is not just about the technology training – that, if anything, is a trivial part of the equation compared to the larger issues of visibility and capacity building.

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