

Being there

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This paper examines the use of the Internet as experienced by people with significant mobility/physical impairments who are accustomed to using computers. The study is based on interviews and focuses on computer usage in everyday action and interaction. In many cases, the possibilities that the computer and Internet offer have meant not only important improvements in quality of life, but first-time occurrences of great personal significance. The analysis is phenomenographic, resulting in main categories and subcategories, illustrated primarily through direct quotations. The three main categories are independence, communication, and learning.

Introduction

Computers and the Internet have changed and improved the functioning of many people in a variety of areas. The potential of computers and the Internet for disabled people is undisputed for the most part, even though present-day practice fails to fulfil this potential in a number of ways and for many. Still, groups of disabled people have gained relatively more than have their non-disabled counterparts who do not need to adjust their bodies to the rigid structures of an inaccessible, inflexible and rejecting physical environment. In digitalised environments, structures can be adjusted to suit the individual (Amtmann & Johnson, 1998; Anderberg, 1999; Lance, 2002), and for many disabled people there have been not only improvements, but also first-time occurrences of great significance. Examples of these are being able to do their banking and to communicate with others in private, without having to rely on family members and personal assistants.

Critics have pointed out the dangers of building a new and inaccessible environment on the Internet. Goggin and Newell argue that the Internet today is in danger of becoming a new arena for the social creation of disability. Developments ignore disabled people and assume non-disabled patterns, thereby creating a system where disability increases rather than decreases (Goggin & Newell, 2002). Disabled users of

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the Internet who have sensory impairments or learning difficulties may find themselves excluded from online information sources due to an inaccessible web format. Still, these shortcomings must be analysed keeping in mind that old information technologies, such as the printed press, 'created enormous quantities of inaccessible information' (Coombs, 2000) for people who are blind or have low vision.

Michailakis (2001) has studied the impact of Information and Communication Technologies (ICTs) on the opportunities for disabled people in the labour market. He concludes that, 'ICTs must be regarded as a variable dependent by the economic, social and cultural order. Its effects on disabled persons' employment opportunities are not independent by the power relations at a given time' (p. 477).

Technology is never just technology, the physical artifact. Technology is a manifestation of economical, political, social and cultural concepts as well as individual wishes and ideas. It can be empowering or disempowering, depending on the system in which it is introduced (Anderberg, 2005).

Bowker and Tuffin (2002) have analysed the effects of communication on online media for disabled people from the perspective of identity. They identified a 'choice to disclose' repertoire. In an online setting with text-based communication, individuals can control how others perceive them, by disclosing or not disclosing information about themselves. In addition, an individual can choose any identity they wish and thus 'assimilating into "normal" culture'. This provides disabled people access to a social context they would not normally have and 'time-off' from the disabling perceptions of others.

In another study, Seymour and Lupton (2004) examined online communication for disabled people. They identified and described how the online medium offers disabled people the opportunity to manage relationships and contacts. The importance of being able to control one's 'online image' and the choice of disclosure were also identified in this study, as were the attendant positive consequences for the individual.

The possibilities provided by an online bodiless identity and the ability to reach beyond time and space limitations do not just apply to the increased social activity that results from facilitated communications and contacts. There are several other areas and effects that can be studied. The Independent Living Movement has helped to develop the concepts of autonomy and independence for disabled people. Ratzka defines independence as having access to 'the same choices and control in our everyday lives' as everyone else has. Furthermore, exclusions from the definition of independent living are equally important. It does not mean 'to do everything by ourselves' or 'to live in isolation' (Ratzka, 2003). This is an important distinction since the more limited a person is by an impairment the more help he or she requires, which leads to a greater dependence on other individuals and society. The right to define this need and to control the functional assistance required to even out the difference is the true basis of independence (Ratzka, 1993; Oliver, 1996; Corbett, 1997).

Reindal describes a discourse where the notion of independence is examined in light of the difference between a professional's definition and one embraced by disabled people. While the professional measurement of independence concerns the

level of performance of everyday and self-care activities, disabled people's notion of independence has more to do with control and choice over the 'when and how' of obtaining assistance (Reindal, 1999). Corbett describes how the striving or necessity to do everything on your own, like 'normal' people, inhibits rather than enhances quality of life when too much time is spent on daily chores. There is a high price to pay for this 'normality' (Corbett, 1997). For some disabled people this is not even an option, since the need for personal or technical assistance is total.

If a person needs to use another person to perform a task or a function, an undesired filter can be imposed between the assistance user and the desired function. This happens even if the assistance user is in control of how and when the task is carried out. Technological solutions often have the added value of offering the user direct control. Being able to do everyday tasks on one's own is not to be underestimated. Finding a platform where one is unhindered by an uncooperative body, where body in general is less of an issue, can lead to an increased sense of independence for the individual. Grimaldi and Goette (1999, p. 272) concluded in a questionnaire study that the 'increase in the number of internet services used positively influences the perceived level of independence among individuals with physical disabilities'.

The computer and Internet usage described is dependent on at least two important access factors. The first concerns Internet and computer availability. This is referred to as the 'digital divide': the differences in Internet access that stem from social, economic and educational barriers in a discriminating society. The grim reality is that disabled people, to a great extent, are on the have-not side of the digital divide (Kaye, 2000; Goggin & Newell, 2002; Keane & Macht, 2002).

The second factor concerns user interface adaptations and the accessibility of online material. People with different impairments experience different problems; without proper technical adaptations, portions of the online arena remain inaccessible for many, even when an Internet connection is available.

Neither the digital divide nor user interfaces are addressed in this paper. The aim is to draw attention to and elaborate on what can be achieved when a wide variety of obstacles are overcome. The focus is on how people with mobility impairments experience and use the Internet as a tool for enhancing their functional abilities.

Participants

This article describes the everyday action and interaction with computers by people with significant mobility impairments. A purposeful selection of a sample of participants was required to find people already experienced in using the Internet, both at work and privately (Patton, 1990; Miles & Huberman, 1994).

Contact with the majority of the participants was established through the Swedish Internet Centre in Tenerife, Spain. The Centre provides computer workstations for work, study and leisure for Swedish citizens with disabilities who are receiving rehabilitation services. Close to 200 people with mobility impairments who visited the Centre were contacted and asked about their use of the Internet. Those who fitted the profile were asked to participate in a longer interview. Fifteen persons were

selected in this way and all of them agreed to participate. Four people whom I already knew fitted the profile were contacted, and an additional three were suggested by other participants.

A total of 22 people were interviewed, eight women and 14 men, ranging in age from 25 to 60. Pseudonyms have been used to ensure anonymity. All of the informants have mobility impairments and all are experienced in using computers and the Internet in their everyday work and for personal purposes. Nineteen of them require personal assistance (PA) from seven to 24 hours a day.

The participants do not constitute a statistical representation of Internet users with disabilities, but rather a specially selected group of users. This made it possible to collect reflections and answers based on extensive and rather specialised experience; it eliminated the effects of inexperience and poor adaptations of the user interface.

Procedures

Participants were invited to take part in a face-to-face interview or an online interview conducted via MSN (Microsoft Network) Messenger. Fifteen of the informants chose a face-to-face interview and the remaining seven the MSN Messenger option. In the latter group, four of the informants had spoken language impairments as well, and three preferred Messenger because of geographical distance. Procedures of informed consent and confidentiality were followed. Participants could withdraw from the study at any stage and were not obliged to answer any questions. All participants were informed of the aim of the study and how the results were to be used.

The interviews were what Kvale (1997) calls 'semi-structured'. This means that an interviewer follows an interview plan without prepared questions, instead using general areas of interest in which to ask questions. This allows participants to speak freely about their interests while the interviewer further pursues interesting discussion points without losing focus on other important areas. The interviewer is able to return to the core interest of the interview.

The face-to-face interviews were transcribed with the aim of keeping the content intact rather than giving an exact reproduction of the spoken language. Kvale suggests that the style and exactness of a transcription should be guided by the intentions (for whom and for what) of the transcription (Kvale, 1997). In this case, a certain amount of rephrasing and condensing has been done, without changing or corrupting the meaning of what was originally said.

For the online interviews, the original interview protocol was only changed with regard to errors of spelling, grammar and typing. Identifying information was either removed or substantially altered to protect participant anonymity. Pseudonyms were also used.

Validity

In qualitative research, content validity is based on an existing, extensive and open knowledge about the subject under study. My knowledge of the area stems from 20

years as a computer user, 15 years as a wheelchair and personal assistance user, more than 10 years as an Internet user and at least five years of higher education in the area of social model and independent living theories. The basis of these theories is that disability is situated and relative, which has greatly influenced and guided my work (Oliver, 1996; Albrecht, 2002; Barnes *et al.*, 2002; Thomas, 2002; Barnes & Mercer, 2003; Ratzka, 2003). This blend of experience and knowledge is the most important keystone of my career as a researcher in the field of rehabilitation engineering.

As to the degree to which it is possible to generalise the results presented in this study, it should be noted that the group under study is a privileged one, as all participants have full access to computers and the Internet. All of the participants are Swedish and having a disability in Sweden is in many ways different from having one in other parts of the world. Social and cultural differences affect the results of the data. But to some extent, the Internet is an international arena and people who are fairly fluent in languages can reach beyond the boundaries of their own country and access people and information resources abroad. The focus of this study is on how disabled people use computers and the Internet, and as such, its results are also valid for a larger group of people, including both current as well as future computer and Internet users with disabilities.

Categories

In the pre-coding phase, the interviews were listened to, transcribed and read several times in order to grasp the material. The systematic search for categories was guided by the research question using a 'comparative pattern analysis' (Patton, 1990). Categorising involved organising coded data units into categories identified as having similar characteristics using content coding (Miles & Huberman, 1994). An MSSQL database was used to facilitate this phase. The constant comparative coding resulted in a number of subcategories that were further grouped into three categories. The aim of the categorisation was to find the different ways in which people with mobility impairments experience their use of the Internet. This is standard procedure in phenomenographic research. Marton and Pang (1999) write that, 'In phenomenography, the object of research is variation in ways of experiencing a phenomenon'. The object here is the variation in the use of the Internet as perceived by experienced computer users who have mobility impairments.

Responses to the interview questions fell into the three main categories of independence, communication and learning. These categories represent the primary variation of ways in which disabled people experience their use of the Internet.

First category: independence

Avoiding being controlled

Adam uses personal assistance (PA) on a 24-hour basis. The online arenas available offer him the opportunity to handle many functions in his life without unwanted

control or supervision by people around him. He feels a boost in his integrity now that he can write to others in private and manage his finances without any one else knowing how much money is left in his account.:

Before I had my computer the PAs knew everything I did. I couldn't write a word without them knowing it. It was very annoying and frustrating.

Avoiding friction

Beatrice uses personal assistance on a 24-hour basis. She is totally dependent on her PAs in the physical environment, and she feels that this closeness at many times creates friction. She is also affected if a PA has a hangover or is in a bad mood for any reason. The computer provides access to online arenas and becomes a neutral place in which she can function:

I can enter that world and shut out the PAs. They can help me to the bathroom but I don't need to socialise with somebody who is in a bad mood.

Avoiding human filters

Beatrice feels that her PA gets in her way when she meets people. The computer frees her from being dependent on a PA by opening up new arenas for contact that she is able to control without the presence of a PA:

They are always with me when I am out, so even if I send them away people think we are out together. At work my colleagues freak out when the PAs have to sit in another room. But it feels good not to have them know everything I do. They come too close otherwise.

In a physical environment Beatrice needs her PA to be around and this constitutes an unwanted presence, a filter in many contacts. In chat rooms and other online contacts, Beatrice can meet and get to know other people independent of her PAs.

Avoiding negotiation

Charles uses personal assistance on a 24-hour basis. Even if the PAs normally do what Charles asks, it is the repetitive and 'serial' asking he does not like. Situations where his PAs suggest an alternative to what he wants them to do irritate him considerably. Charles feels that the direct control of functions offered by an online computer provides him with a negotiation-free zone and adds to his independence:

When you are such a high quad as I am, you are always dependent on others, on their benevolence, willingness or unwillingness. But now I don't need to negotiate about which channel I want to listen to; I can read what I want or look at or communicate with whom I want. It is a freedom I never had before.

Being independent of the physical environment

An easily recognised advantage of a digitalised environment is that moving your body around is not necessary for the performance of various functions. A person can have

a variety of arenas available to them in the comfort of their own home, where the physical environment is adapted. Dora uses personal assistance on a 24-hour basis and has a lot of trouble transporting herself, regardless of the accessibility of the environment, because she easily gets tired and cold. Dora found herself absorbed by the ease of the digital environments and for a while she was spending almost all her time there:

Everything is available to you in your own home. It's so easy. Not having to leave your home when it's winter and cold, not having to move yourself physically!

Eric works at a computer helpdesk for a big company and accesses computers remotely. Due to the physically inaccessible environment at his office, he is not able to get around in his wheelchair to do his job locally at every workstation. Being able to access all the client computers remotely, he works in the same way as his colleagues.

Another effect of independence from the physical environment is the enhanced opportunity to change an inappropriate environment. Fredric, who has rheumatoid arthritis, leaves Sweden during the winter months to live in a warmer climate. Even though he is away, he can still participate in the same online arenas, making the transition much easier.

Being independent of an external pace

The asynchronous nature of the Internet makes it possible to live certain aspects of one's life at a personally determined pace or rhythm. Gloria has multiple sclerosis and her problems vary over time. She needs to change her work pace and rhythm accordingly.

I have a computer at home where everything looks exactly the same as on my work computer and is connected to the company server. I decide myself how I organise my day, and thanks to that, I can work full-time.

Second category: learning

Accessing information about the world

A problem for people with mobility impairments is that many places in their community are inaccessible; asking for this information from people who do not have accessibility difficulties can be misleading. Dora always uses the Internet to check in advance:

When I go to a museum, new restaurant or cinema, I always check the Internet to find out if I can get in with a wheelchair and if it is otherwise accessible. If you don't find anything, you can always send an email.

For longer journeys it is even more important to get accurate information about the physical environment of the destination. Without it, some people would not dare to go. Harry used the Internet to examine a resort he wanted to visit:

I would never have gone otherwise. Talking to people on the telephone just doesn't work. And you can't trust what they say either.

Another way to experience the world is to surf on the Internet. Web cameras, pictures and printed descriptions enable you to see and learn about places that you may not be physically able to travel to.

I found one of those virtual reality things where you could travel around up in Machu Pichu. It was awesome! (Ivan)

Getting information immediately

The Internet provides an opportunity to broaden and intensify your thought processes by providing immediate access to a range of facts and opinions. Previously unavailable or difficult-to-access information is now close at hand for everyone, including people with mobility impairments. You can get immediate answers to questions and spontaneously follow the thought patterns of others.

It gives me an enormous freedom too. There are a lot of things I just couldn't do before. I've never been able to take a book off the shelf and page through it. (Charles)

Getting more information

The power relationships between disabled people and the professionals they have to deal with are seldom, if ever, on an equal basis or to the advantage of the former. Being well-informed can reduce this inequality to some extent. Current, correct and multiple sources of information can provide an advantage and ensure proper treatment.

John, who is a relatively young Parkinson's patient, was not pleased with how the healthcare system was treating him. He started to look for more information and also found people in situations similar to his own:

John: I was advised to e-mail a person who had the same problem as I had and after a while I felt an enormous confidence in him. He saw that my medication was wrong and suggested changing it.

Interviewer: Was he a doctor?

John: No, but he is very competent when it comes to medicine; he knows much more than my doctors. And he has Parkinson's as well so he knows much more about the person behind the disease. My doctor accepted his advice eventually.

Being good at something

For people with mobility impairments, it is difficult to find areas in which to excel, to test one's limits, and to experience skill improvement. Karl has muscular dystrophy, resulting in weak limbs. He plays computer and online games for recreation. He finds that this is one area where he has the satisfaction of improving at something:

Playing games offers me a lot. All these games require a certain amount of motor activity and alertness. You need to be perceptive and quick otherwise you drive off the track or if

you play hockey, you get beaten badly. There is a kind of training or practice in the midst of all the fun. You simply need to be alert. You have to make quick decisions and everything moves fast in the games. Everything else in my life is very slow.

Whenever I start with a new game, I think there must be something wrong with it because I am so bad. But then I discover that I get better and better and finally I master it.

Comparing oneself with others

Another aspect of seeking challenges in virtual arenas is being able to compare oneself with others and taking part on equal terms in games and challenges:

And it is important when you are disabled like I am to see that you can assert yourself. I have played online games against people without disabilities and we are on the same level. In real life, there are no games in which I could play against someone without getting really beaten. (Karl)

Karl describes a situation where his disability disappears when the playground is virtual. When he is playing a game it is 'for real' and no less challenging than it would be in real life. It gives him the opportunity to vent and channel feelings that otherwise would be suppressed or expressed in other forms:

Karl: When you are sitting there, it's for real; you are entirely in to it. It's as if you were sitting in a car or really playing hockey and you can tackle, which you can't do in real life. You can even tackle so you get a penalty and that is really a boost for your confidence, that you can be ...

Interviewer: ... a bit bad?

Karl: Yeah, exactly. You don't always have to be nice and apologise and be careful with your fragile body.

Creating

Karl makes a distinction between recreation (playing games) and work (creating music). He has always composed and played music. When his decreasing muscular strength made it impossible for him to play instruments, he transferred these functions to the computer. He uses something called a 'band-in-box' where he can program different styles and also download music files from the Internet. This enables him to continue his creative work:

That is what is fantastic. You do not have to stop playing or creating music just because your arms grow weaker and you lose some of your functional abilities. There are things today that enable you to play music as long as you can tell the computer what to do.

Becoming visible

The Internet provides an opportunity to present oneself and one's life to a large number of people, and by so doing, maintain full control over the image that is presented. Dora has a homepage where she introduces herself in pictures and text. She feels this lets her provide a contrasting and more accurate picture of a person with an impairment than is commonly available:

When you look in newspapers, for example, disabled people are either heroes or objects of pity. I am neither, and I want people to see that.

Third category: communication

Meeting as equals

When people first meet in a text-based, digital environment, there are no visual disability indicators available; an impairment does not become a hampering factor. Ivan uses personal assistance on a 24-hour basis. He prefers that first-time meetings take place in a text-based environment:

If I come to a meeting and must be carried up the stairs, then the others immediately have an unconscious, negative impression of me. Or at least a condescending impression. It doesn't matter what they think or what they say. And even if they really don't care, I do. On the Internet that doesn't happen. There, I'm like everybody else.

Choosing what to disclose

The choice of disclosure is a strong function in a text-based, digital environment. Beatrice has chosen not to tell the people she meets on the Internet about her disability. She utilises the fact that she can create an online identity that does not include her disability. She talks about how nice it is to be 'normal' for a while, to be 'one of the crowd' and to 'take time off' from the disabling perceptions of others.

She is not anonymous in the chat rooms she uses in the sense that nobody knows who she is, but she has reconstructed her identity leaving out certain components, that is, her impairment and its consequences. In her online identity, she has a lot of friends who only know her on the Internet, and she makes a clear distinction between her Internet identity and who she is IRL (in real life). She feels that she is revealing different aspects of her identity, but she is always herself, only without her disability. Since she has no wish to meet her Internet friends in real life, she does not feel there is a problem with having separate identities.

Interviewer: Do you ever tell anybody in your chat rooms that you have a disability?

Beatrice: No.

Interviewer: Why not?

Beatrice: Because I don't want to meet anyone in person. I only want to relax and chat for a while.

Interviewer: And not 'be disabled'?

Beatrice: Yes.

Interviewer: Do you like that?

Beatrice: Yes. It's unbelievably nice. To be normal for a while.

Interviewer: Aren't you normal otherwise?

Beatrice: No, not in the eyes of others. They only see an invalid. Most of them anyway; there are always exceptions.

Interviewer: Over the Internet nobody can see your disability?

Beatrice: No, you're just one in the crowd, just like anyone.

Defusing a disability

The bodiless environment of the Internet provides not only the choice to disclose; it also provides an arena where a person can open up and discuss disabilities. Since there is no disability present, the discussion becomes only indirectly and abstractly connected to a person.

Lars thinks it positive that people he meets in digital environments dare to ask things they would not in 'real life'. For him, it is an opportunity to refute prejudices and misconceptions. It is also easier to answer these kinds of question over the Internet. Lars feels that it does not come 'so close' when he talks about these things over the Net:

- Lars: When you tell people after a while, you almost always encounter curiosity.
 Interviewer: Yes, it's interesting. People seem to ask more when they meet you on the Internet.
 Lars: Yes, so it is. There's a big difference compared to meeting people IRL. It's easier to answer as well. It doesn't come so close.

Building a special social network

The opportunity for increasing the geographical area for making contact with other disabled people is another function the digital environment provides. It is not necessarily so that a person wants to socialise with other people who have a similar disability, but if a person wishes to do so, the selection is usually limited. Digital environments provide arenas where you can make contact with people with similar experiences, and increase the number of people available for social encounters.

For John it was important to find people who shared experiences and problems that were difficult for the uninitiated to understand:

I had no one around me to compare notes with. In January I found a webpage for people with the same illness I have, and I wrote a couple of lines about who I was and that I needed to get in contact with people in a similar situation. The same day I got an answer and within a week I had a couple of answers. I am very close to some of them now.

Ivan gives a slightly different description:

IRL I don't feel like hanging out with other disabled people. They mostly complain and whine about everything. The local disability organisation is only for seniors. On the Internet I find disabled people who are more enterprising and that can be fun. There you can choose and you don't have to be packed together with a lot of other people just because they are in wheelchairs, but with whom you have nothing in common otherwise.

Discussion

In the interviews, people told stories from different angles about how they have taken control over a number of functions, and thus (re)gained control over important areas in their lives. In many cases, it meant physical relief, and tasks that were arduous or impossible in the physical world were easily performed when moved to a digital

environment. It did not so much change the conditions for the body: a person who needed help in the bathroom still needed that help. But the more dependent a person is on others in the physical world, the more the access to uncontrolled and unsupervised areas of activity results in a sense of independence. The more activities available online, the more independence the individual is afforded.

Relative independence from the physical body also provides a certain independence regarding time and place, which can have many positive effects as described in the interviews. The same elements exist for people with and without disabilities. The essential difference is that for people with impairments, it may be the only way to perform a function single-handedly, in full control, acting on equal terms.

The direct control of functions is a prerequisite for the myriad learning, expressive and creative opportunities afforded in digital environments. Anyone who has ever tried to get another person to do something exactly the way s/he wants knows that it is hard, to say the least. A compromise would be to allow things to be done in another way, or not to do them at all. If a person wants to compose and play music, however, doing it through somebody else is hardly an option. That is why being able to create and play music on his computer is so great for Karl. If he could not do it himself, he would not do it at all. Having only secondary control of functions makes skill acquisition difficult as well. The knowledge of 'the hand' is neither established, challenged nor increased if it does not itself act, control and receive feedback directly. Technology – in this case computers and the Internet – is a neutral and impersonal tool enabling direct control of a function and removing unwanted filters.

That a person has a bodiless manifestation on the internet also makes it difficult to identify an impairment unless it is actively disclosed (Bowker & Tuffin, 2002). To the persons in this study the ability to control their online image has been a source of many new positive outcomes.

Ratzka talks about 'global incompetence' meaning that 'an environmental incompetence affects other aspects of one's personality with the result that a disability limited to one aspect of a person is associated with global incompetence in all areas' (Ratzka, n.d.). If no visual clues are available, and the asynchronous nature of the Internet makes the time spent on various tasks unimportant, ICTs thus constitute a levelling ground with no inherent inequality for people with mobility/physical impairments; they thereby enhance interaction with others.

Some argue, as Goggin and Newell (2002) do, that other inabilities or disabilities will emerge on the Internet, and this is most certainly true. However, with proper user interface adaptations none of these will be directly connected to a body's mobility or sensory impairment. The disabilities that arise are to a large extent secondary and indirect, and stem from social, economical and educational differences for disabled people in a society that discriminates. This includes under-representation in higher education, low available income, and so on. The inability of being there, on the Internet, is a much bigger problem than unadapted information sources.

For the individual, the bodiless presence on the Internet has many advantages. Why waste energy trying to convince your banking establishment to rebuild its entrance, when Internet banking is so much easier? Why risk the danger of being

dragged up the stairs to the local pub when it is so much easier to go to an online forum for company, where you do not have to worry about physical safety, accessible restrooms or deal with the attitudes of others? This ease and convenience, however, can easily lead to self-imposed restrictions, where what is experienced as choice becomes a restraint instead. The choice is understandable on the individual level, but for the political endeavours of disabled people as a group, the picture becomes somewhat more complicated. The invisibility of the body can undermine the understanding of how disability is created in society, and be used against the community of disabled people. Why should a university adapt its buildings when most classes are available as online and distance studies?

This is an important issue, and one that most of the people interviewed had reflected on. None of them, however, worried too much about it for themselves. They saw the online environment as a place to perform rather distinct functions that were otherwise unavailable or very difficult for them. The independence, learning and communication opportunities afforded online were not seen as being problematic but more as tools in a toolbox.

According to Castells (1996), one can look at the Internet as a 'culture of real virtuality', in this case meaning the existence of a diversified and hypertext based network culture. The online presence in this network is free from bodily, social and cultural constraints. The texts, games, online communities and fiction become the data of our experience and a new form of reality is created. Miller and Slater (2000), however, argue against what they see as Castells' division of the virtual and real, and suggest that the online and offline worlds are continuous and integrated, sharing the same experiential base. In the material presented in this paper, both these ways of looking at the Internet are relevant to disabled people.

There was an obvious flow of experience between the online and physical environment. Lars expressed how much easier it had become to meet new people IRL when they had met online first. Being able to 'defuse' the disability image in the other person and getting to know somebody without his body getting in the way, made him much more confident. Many of the persons interviewed gave the same picture: improved social skills and work relations, a boost in confidence, new relationships and more. Competence in the online world very obviously spilled over IRL.

For some individuals, it was also obvious that the choice had never been there, and may never be in the physical environment, regardless of adaptation. For them, the online world was the important thing. There was a sense that the world was moving in their direction, with increasingly more societal functions being moved to the Internet. An online identity is becoming a more 'normal' one for all. If everybody else finds their information or does their banking over the Internet, *being there* is most important.

It is hard to believe that the persons interviewed will let themselves be silenced or confined to the online world. Rather, their increased activity and knowledge and the ability to form social networks will be an additional tool in the political struggle for a more equal and discrimination-free society.

Conclusion

It is important that the life-changing positive effects described in this paper should not remain invisible, hidden behind prejudice and bias, initial implementation problems, lack of proper technical aids or just sweeping generalisations on the failure of computer use for disabled people. By describing the lives of people who are already there, taking full advantage of the online independence, learning and communications opportunities, an overall picture emerges of how computers and the Internet can have an even greater impact on the lives of people with mobility/physical impairments than many of the initial predictions foresaw.

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