

Barriers to the Creation and Use of an Accessible Web Portal for People with Learning Disabilities

Peter Williams

Department of Information Studies, University College London

Gower Street, London, WC1E 6BT, UK

Tel: 44-(0)20-76797690 E-mail: Peter.williams@ucl.ac.uk

Received: August 9, 2011 Accepted: October 19, 2011 Published: December 31, 2011

doi:10.5296/ije.v3i2.1283 URL: <http://dx.doi.org/10.5296/ije.v3i2.1283>

Abstract

This paper describes a research project which developed a Web Portal around ‘transition’ (the move from school to ‘adult’ life) for people with Learning Disabilities (LD), their families and ‘supporters’ (a general term used in this paper to signify formal or informal carers, tutors and family). Unusually, the people with LD themselves created much of the information used in the Portal development. The paper concentrates specifically on the phase of the research in which supporters, and those with LD themselves were trained in the creation of information and its uploading onto an accessible template. It discusses, in particular, the barriers to successful exploitation of the Internet, and information technology in general, that present themselves for this cohort of users.

First, a framework to examine barriers from within existing literature is discussed. A detailed look is then given at those emerging during this phase of the project. Despite obvious enthusiasm and goodwill towards the project, a patchwork of barriers inhibiting its execution was elicited, including extrinsic (‘first-order’) barriers such as technical and logistical problems and difficulties related to obtaining informed consent, and intrinsic (‘second-order’) barriers such as non-inclusive practices; activities that are too socially or intellectually challenging. The paper concludes by suggesting possible solutions, centring on the extent and content of training offered to people with LD and their supporters.

Keywords: Internet, Web, Accessible content, Learning disabilities, Barriers

1. Introduction and background

This paper reports on a research project, part-funded by the Social Care Institute for Excellence (SCIE) and by the local council of the London Borough of Newham, in which the learning disability charity ‘The Rix Centre’, based at the University of East London, developed a Web Portal with people with Learning Disabilities (LD) and their families and supporters around ‘transition’. The term ‘transition’ in this context is the phase in the lives of young people with disabilities where they make the difficult move from school or other educational base to life in the community and the support of various adult service agencies. The present author was charged with interviewing participants and undertaking usability studies of the resulting Portal (the latter reported in Williams and Hanson-Baldauf, 2010).

The objective of the project was to use learning disability and transition as a focus for the involvement of ‘service users’ (a recognised term in the UK for disabled people for whom services are specifically tailored) in knowledge production and management via consultation, trialling and evaluation of a Web ‘Portal’. Such involvement reflects sentiments of inclusivity expressed in e.g. the ‘white paper’(Note 1) ‘Valuing People’ (Department of Health 2001a) and, less directly, in the Disability Discrimination Act of 2005 (Her Majesty’s Government, 2005). The latter makes the provision of accessible information a legal requirement in terms of goods and services and the Equality Act of 2010 (Her Majesty’s Government, 2010) which strengthened previous legislation by adding, for example, the right to challenge workplace rules if they appear to disadvantage disabled people. In sum, the project takes as its mantra the phrase ‘Nothing about us without us’ (Department of Health, 2001b)(Note 2), which the Service Users Advisory Group working with the UK Department of Health on a strategy for learning disability, helped popularise.

The Portal was developed and piloted in the field to evaluate the use of the Internet as a means of service user contribution to the creation and dissemination of information. Content was provided by support staff and others working in the field, as well as by people with learning disabilities themselves. The Portal, therefore was developed to provide for the ‘symmetrical’ provision of knowledge both *to and from* and, indeed, *between* service users and supporters. The home page of the Portal can be seen in Figure 1, 下方.

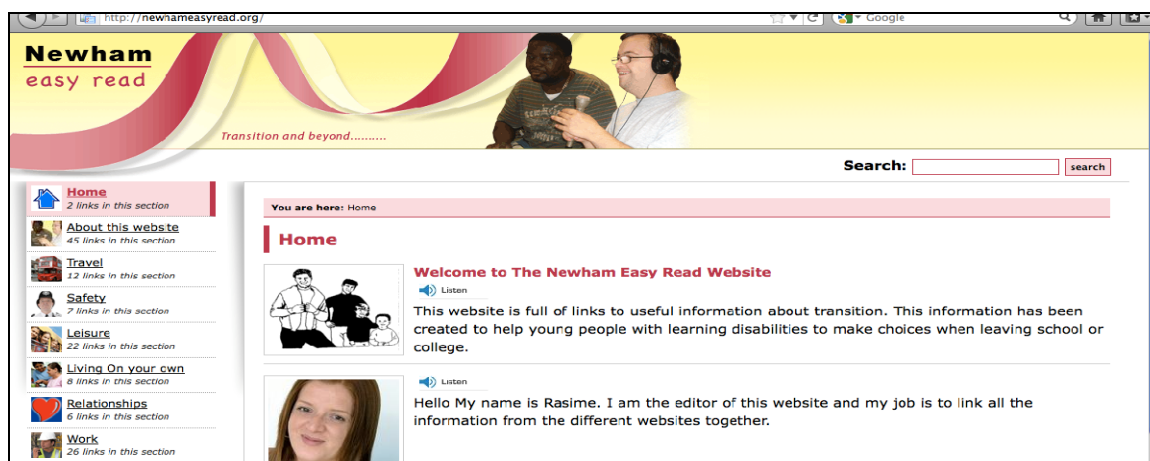


Figure 1: The Portal ‘Home’ page

The chronological development of the Portal consisted of:

- Accruing participant organisations through invitation, Rix Centre promotional ‘roadshows’ and professional contacts;
- Training workshops for recruited groups, at which supporters and service users themselves set-up their own Websites on various themes around transition, to be part of the Portal;
- Interrogation of Portal content by ‘end users’ – those at transition, aided by their supporters;
- The continuing development of constituent Websites by service users and supporters at the participating institutions.

The Portal is now ‘live’ and the formal funding to set it up is finished. It is hoped, however, that it will grow organically, increasing in the number of Websites and generating new content from the stimulation of what is already on offer. Reflecting topics identified in the ‘The Road Ahead’ (Townsend, 2004; Tarleton, 2004), the only major study to date to examine specifically the topic of the information needs around transition of people with learning disabilities, the pages accrued on the Portal currently (November 2011) concern: Travel, Safety, Leisure, Living independently (termed ‘Living on your own’), Relationships, Employment (termed ‘Work’), Money, Support, Day Services and Education.

Figure 2 shows a detail from an example content page – in this case, from the section on Money. For this, a small group of service users practiced using a cash machine, photographed each other doing so, and uploaded the pictures onto a Web page with a short explanatory commentary.

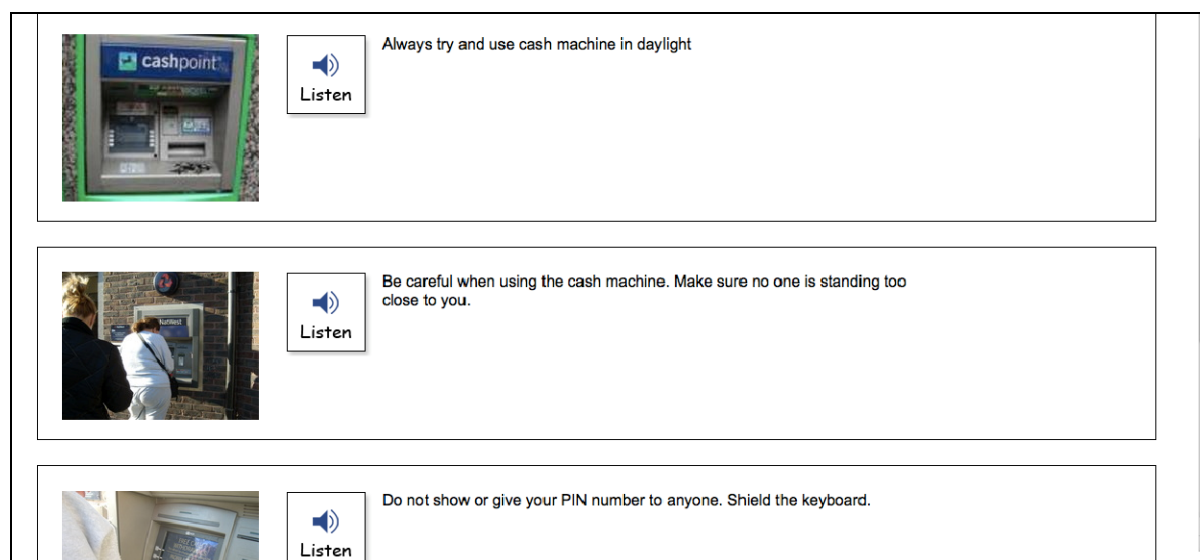


Figure 2: Portal content page (detail): How to use a cash machine

This paper discusses the issues that arose in the Portal development, with particular emphasis on the barriers encountered that inhibited its growth and, therefore, the successful exploitation of ICT (Information and Communications Technology) by this user group. It

first discusses a framework in which to examine barriers from within existing literature, then looks in detail at the different types of barriers that have emerged during this phase of the project, and concludes by suggesting possible solutions.

2. The framework: first and second order barriers

A useful framework examining constraints to system usage is ‘first order’ and ‘second order’ barriers’ (Ertmer, 1999; Brickner, 1995). These are, respectively, extrinsic and intrinsic factors that affect exploitation of ICT. Although they apply, specifically, to the use of information technology in an educative role, they are useful factors in the context of the present study both because the activity involved in the project can be viewed in this way, and because the supporters are faced with the same kinds of constraints – institutional, social and personal. Extrinsic (or ‘first order’) factors, which are those essentially outside an individual practitioner’s control, include:

- Lack of access to computers and software;
- Time constraints;
- Poor or no technical help;
- Poor or no support by managers or policy makers.

Intrinsic or second order factors, over which practitioners have some control include:

- Personal beliefs about teaching or otherwise supporting service users; service provision, or computers;
- Established professional practices;
- Unwillingness to change (Ertmer et al 1999).

As Ertmer (1999: p48) points out, ‘while many first-order barriers may be eliminated by securing additional resources and providing computer skills training, confronting second-order barriers requires challenging one’s belief systems and the institutionalized routines of one’s practice’. Thus, ‘even if every first-order barrier were removed, teachers [or supporters] would not automatically use technology to achieve ... meaningful outcomes’. There are also issues concerning potential users’ perceptions of the importance, or ‘criticality’ (Ibid p51-52), of barriers. Thus, different individuals with limited training in using a particular software application may react in different ways to employing it in their practice. Those who feel confident enough to experiment, or motivated enough to self-teach, may not find any great impediment to use, whilst others may judge their lack of expertise as precluding them from doing so. Clearly, this suggests, as Ertmer (1999: p52) points out ‘relative weights assigned to first order barriers may be related ... [to] underlying second-order barriers’.

3. Methodology

3.1 Sample

3.1.1.Organisations

Thirty nine organisations participated in the project. The number of participants from each ranged from one to ten, including people with learning disabilities and their supporters. The organisations were as follows.

- *Day Services (15 participating groups)*: These are small groups (up to about 20) who tend to meet together for a group session and then split into smaller groups to do activities such as going out (e.g. to the cinema); lifeskills such as cooking, or health related pursuits such as physiotherapy;
- *Community Colleges (4 participating groups)*: These are colleges that are open to all, and have classes that are especially for people with learning disabilities;
- *Information providers (12 participating groups)*: The majority of these work in various local government departments that provide services such as housing or employment. Others are privately run or voluntary organisations that work closely with Newham Borough Council.

Other participants came from day and residential centres (similar to day services, described above) and an advocacy group consisting of people with mild learning disabilities who worked out of an office and campaigned activity for better representation.

3.1.2 Individuals

The people involved in the groups detailed above included principally young adults (although a minority were in their 30s or older) with various degrees and types of learning disabilities. Levels of disability ranged from that severe enough to prevent them from going to work or college, to milder disabilities allowing them not only to ‘self-advocate’, but also to understand the difficulties faced by their peers. Their supporters were also project participants. Many of these had no qualifications – a situation that does not appear to have changed since a government report on the subject back in 2001 (Department of Health 2001a) - and only limited ICT skills. Although members of the training team described the formal support workers as ‘absolutely great’, ‘dedicated’ and ‘committed’, their general lack of computer literacy presented various barriers, as outlined later in this paper.

3.2 Context

Tolmie (2001: p237) notes that a full examination of educational or supported information technology use ‘should ideally be collected from actual use in real contexts’. The methodology for this study follows this recommendation by placing the researcher in situ, at training workshops organised by the Portal site developers. It is, therefore, worth outlining the activities comprising these sessions.

Workshops took place either at the Rix Centre or on the premises of participating organisations. Prior to the workshop, participants were given a preparation task, as follows:

- ‘Broadly discuss issues around transition ... [a list is provided];
- ‘Choose ... topics which interest the group ... brainstorm ideas around these ... e.g. employment;

- '[Then] ... focus on the details of smaller sections for example: 'Dress for work' – think of relevant steps / stages / information / instructions;
- 'Now you are ready to take pictures. Think about words and audio that would describe the topic ...' (Singh *et al*, 2007: pp.1-2).

The workshops themselves, involving supporters/staff and service users, consisted of two sessions. The first introduced the project and explained how service users could become involved in the Website creation. The second involved engaging in the hands-on activity of creating the Website, entailing the production (or finding) of images for each topic (some participants come with these, having continued from the pre-workshop task to actually take the photos – often going to locations of interest to do so); uploading these and writing brief accompanying information.

3.3 *Methods used*

Methods included:

3.3.1 Participant observation

The researcher attended four workshop sessions. During these he made notes on participants' performance, and their opinions and queries; and on the functionality and usability of the software. For the first two sessions he also followed instructions along with the other workshop attendees, making notes of his experience, later adopting a more supervisory role, which better facilitated an exploration into issues related to usability and into the particular conceptions users had about the system (a study of the use of the Portal is reported in Williams and Hanson-Baldauf, 2010).

3.3.2 Document perusal

Project team members giving training made field notes after each session, which documented various issues arising. These formed an invaluable source of data, particularly regarding those sessions that, for logistical or other reasons, the researcher was not able to attend. Even the workshops he did observe were documented by the trainers too, adding a further dimension.

3.3.3 Informal interviews and meetings

During the course of workshops staff and service users were interviewed, the former about their impressions of the system and how it might be used in their organisation, and the latter on the ease of use and whether the experience was enjoyable and interesting. The training team was also interviewed and asked about their experiences of interacting with staff and service users.

4. Results

Results from the project are categorised by 'first' and 'second-order' barriers, with the caveat that, as outlined above, the 'levels' are not discrete, but inter-related and mutually influential.

4.1 *First order barriers*

4.1.1 Technical problems

The main problems here arose due to the disabling of certain facilities - a recurrent theme which may be considered not only as a 'technical' problem, but an organisational one. The training includes installation of an open source audio application entitled 'Audacity'. At some institutions restrictions did not permit its downloading from the Internet, and at one of these the expedient of bringing the software on a USB stick also failed, as the reading of external devices was disabled. By contrast, there was an encouraging lack of accessibility problems in terms of the adequacy of the equipment or software - although this might have been due to the fact that the participants had only moderate learning disabilities.

4.1.2 Time constraints

Many instances occurred whereby constraints on staff time presented considerable barriers to effective training and the development of the Portal. At a minority of workshops, there were disappointingly low numbers of participants, due to work commitments. There was also the issue of how much time staff were able to work with their service users on the Portal post-training, one staff member claiming this to be prohibitive. At another site, 'the group do other things [rather than use ICT] and so it is quite hard to get them together'. External activities included working at the local supermarket; undertaking a catering course and peer advocacy. Ironically, the experience of undertaking these pursuits would have made useful information to upload onto a Website.

4.1.3 Logistical / organisational problems

Although these problems fall within the category of 'first-order' barriers, in some cases they were indicative of a possible lack of dedication to the project and/or to ICT usage generally, and therefore may be classed as 'second order'. For example, at one location, the service users had set times for tea/coffee, with the computer rooms being locked during break time. Similarly, there were also rules about times people could use the equipment. Of course, it is generally acknowledged that people with learning difficulties feel more comfortable following set routines (see, e.g. Mencap, undated), but, as detailed later in this paper, precautions could have been taken to obviate any such problems. The Rix Centre workshop approach of encouraging service users to take a break whenever they feel tired, rather than to a pre-set routine, proved successful, according to both the participants and observing researcher.

4.1.4 Consent

It is important, before discussing the constraints imposed by ethical consideration, to clarify the extent to which ethical concerns may be considered as 'barriers'. After all, as the UK National Health Service ethics body, the National Research Ethics Service (2007: unpaginated) puts it, ethical considerations are to 'protect the safety, dignity and well being of research participants'. A better expression than 'barriers' may, therefore, be 'justifiable constraints'. These can be considered 'first-order' because the ethical organisation and arrangement is extraneous to the individuals involved in the project, being imposed at local government level for staff and supporters, and at institutional level for the researchers, who were required to submit their proposal to an internal university ethics committee.

Two ethical considerations constrained the project. The first concerned consent to show information or photos of service users. At one workshop, a staff member felt that the borough was very strict in what could be added to the Internet and was not sure if it would agree for the Website to go ahead. Specific problems cited were using photographs of service users and staff and using the centre logo. The particular organisation was not within the London borough whose Local Authority part-funded the initiative, and support for the project, therefore, could not be taken for granted. The issue of mis-use of photographs came up, specifically the possibility of people capturing images and either defacing them or grafting their faces onto pornographic images and circulating them on other Websites. A different problem arose when one group went to the local employment centre to obtain information and images appropriate for their transition topic of finding work. The staff would not allow them to take any photographs without prior permission from a 'head office'.

These scenarios clearly illustrate the scope of ethical considerations that need to be made. Whilst it would be questionable to assert that ethical issues present barriers to the activities inherent in working with people with learning disabilities to create or use Websites and other ICT applications, they nevertheless do require much thought, time and planning.

4.2 *Second-order barriers*

These barriers relate to attitudes, practices and other factors that are directly under the control of the individual. The following were elicited:

4.2.1 *Non-inclusive practices*

Despite the excellent intentions of the workshop participants, there were occasions when what might be interpreted as 'non-inclusive' practices were in evidence. For example, questions were asked of the service users, such as regarding which images might be appropriate to illustrate a potential topic, followed by supporters' own suggested answers. The latter yielded unquestioning acquiescence. This kind of behaviour was also observed during previous work by the research team. Kennedy (2008: p318) talks about supporters: 'taking photographs on behalf of students in order to finish a task and produce evidence of task completion (that is, the photo as an end itself), as getting students to take photos ... which reflect their choices and preferences is a much more time-consuming activity'. Kennedy considers that these practices are a result of the pressures put on staff by the current 'accountability culture' – in that case, manifesting itself in the form of Ofsted (Office for Standards in Education, Children's Services and Skills, a UK Government regulatory body) inspections. It was claimed that for the inspection body, evidence of good practice is more easily demonstrated in *results* (a nice Website) rather than the ongoing, less tangible and – importantly – less measurable *process* of fostering independent thinking. The value accrued in actually undertaking the activity, both in terms of empowering people to make choices and in their self-esteem at seeing their creation on a Website and linked to a wider resource is thus lost in the need for an end result.

Although the interviewees felt confident in creating information for the target group, there were some concerns expressed about how much information was expected and how it needed to look. One commented that the work undertaken 'is a reflection of our jobs' and that a

supposedly sparse or unprofessional Website, such as might be produced by the service users themselves, would reflect badly on the staff. There was also mention of the reach of the Internet and, thus, of the extent to which their group's work would be exposed.

These examples illustrate the need for a 'radical shift' (Kerr, 1996: p24) in which the exploitation of ICT should facilitate independent learning in which the supporter is merely the 'guide on the side' (as opposed to 'the sage on the stage' - King, 1993). There was, of course, no intention to deny or minimise the voices of the service users in these exchanges. However, as Ainscow (2007: p5) says 'becoming more inclusive is a matter of thinking and talking, reviewing and refining practice'. Later in this paper the need for a more comprehensive training programme is discussed, which should go some way towards surmounting these problems.

4.2.2 Attitudes towards ICT

There is an abundance of literature highlighting the possible benefits of using ICT with people with learning disabilities. For example, Banes and Walter (2002) maintain that ICT is exciting to use and a positive challenge to such learners. Johnson and Hegarty (2003) discuss Websites as educational motivators for adults with LD, and other writers have similarly found ICT to enhance education for children or adults in this group (see, e.g. Florian, 2004, Bohman, 2010; and Parsons et al, 2004, 2006).

Reflecting this literature, staff at sites visited were generally very positive about using ICT with their charges, although this might be expected from a population whose institutions chose to be part of the project. Only one workshop attendee openly questioned the value of the project. In addition to raising doubts about the Portal, the individual claimed that his centre manager would be happier to know the service users were 'looked after and kept safe' rather than going out and taking digital photographs for a Website.

4.2.3 Inappropriate activities demanded of users

Before discussing this problem, it is worth noting that in this case, the individual user may not control this situation. This is because when one is *asked* or *required* to undertake a particular activity, the control is removed. However, the issue of activities being offered for others to undertake does reflect the attitudes and practices of key supporters – teachers, carers and parents and, at a more removed level, the attitudes, assumptions and activities of those educators and pedagogues who produce learning materials, and thus can be said to constitute a second order issue.

Two problems arose. First, it was felt by staff at one centre that the activity might be inappropriate because participants who had autistic tendencies might find it difficult to build a Website as it required engagement in a structured way over a period of time. Autism Independent UK, a society whose main goal is to improve the quality of life for people with autism, lists as two characteristics of that condition 'distractibility' and 'lack of organisational skills'. (Autism Independent UK, 2010: unpaginated). Clearly, the construction of a Website – even an 'easy build' one and with appropriate support – may represent a great challenge for this group. It should be said, however, that there are individuals without learning disabilities who might also not enjoy working in groups, and that

there are ways in which sensitive organisation of people and resources and tasks might easily obviate this problem.

Second, there is the issue of the intellectual demands of the activity – again, one may suggest that the barrier is not with the individual system user, but with those charged with selecting and supervising the activities. One of the main issues of the project overall is to determine the extent to which the service users are able to think about and crystallise their thoughts of transition into meaningful information, and not simply talk about their own needs and preferences. Supporters, and, of course, the project team, emphasised this, but much of the material mentioned in the workshop notes, however, appeared to show that this only had a limited effect. At one centre, for example, learners wanted to create Web pages on the following topics: Ebay, horses and horse events, Manchester United (the famous UK soccer club), magic, and going to the pub. Whilst it could be argued that some of these topics represent leisure activities that only become available on or after ‘transition’ (the most obvious one being ‘going to the pub’), others (such as ‘magic’) appear to indicate some personal interest which, whilst of possible interest to others, has little or no connection with the idea of transition. One could argue that even this barrier is not with the individual user, but with those setting and overseeing the task. Work by the present writer and colleagues (e.g. Minnion et al, 2007, 2008; Williams, 2008) showed the intrinsic value of creating a Website and of service users being offered the opportunity to express their personal preferences and likes. As argued in the work cited above, the exercise could be made valuable for others by additional input from supporters. This idea is discussed in more detail in a section on overcoming barriers, below.

4.2.4 Contextual or situational problems

Clearly, the ability and interest with which one performs the activities outlined above depends on a number of factors external to the ICT system and to the attendant tasks. In the case of the Transition Portal, much of the time working on the Website constituted group work, consisting of discussion about themes and specific content. Clearly, this requires certain social as well as communication skills. Expert mediation and guidance from staff obviated many of the potential problems, but nevertheless, there were instances where this created a barrier. One organisation, for example, had a photography club, but the project team were told that the young people found it really difficult to interact with each other and that building a Website as a group activity within the club would not be possible.

Another issue relates back to the first-order barriers described above of time and organisational constraints. These can impact on the learners. For example, time constraints on staff meant that service users were not briefed about changing their routine or being introduced to new people and activities. At one site, there was clearly distress at the unexpected arrival of the project team, who were greeted with suspicion. One person actually hid her face, and others claimed tiredness when asked if they would like to participate.

This issue is critical in Learning Disability, because service users demand extraordinary levels of patience. How a supporter paces an activity directly relates to their inclusion and participation, and may require heavy time as well as other commitments.

5. Overcoming the barriers

5.1 First order barriers

Considering, first, technical barriers, all of these could possibly be lessened or overcome by pointing out the technical requirements well in advance. These include the need to install software, access the Internet and play audio. Unfortunately, it is often the case that some ICT settings are not in control of individual institutions, who may need to approach local authorities for permission, for example, to breach firewalls (systems that block network access for security reasons). An important issue here is that of the inflexibility of IT systems and the rules that govern their use. The greater the participatory nature of the activities, in terms of ‘Web 2.0 social networking’, the more flexible organisations need to be in allowing access and usage. Clearly, this demands different levels of security. The question is raised as to whether providers and managers are prepared to respond to a required change in ICT culture.

Logistical or organisational problems might also be solved with a more comprehensive brief by the team, whereby the implications of running and participating in the workshop could be emphasised in some detail. With regard to the availability of hardware, the workshops functioned well when there was one computer terminal per two participants. Where this ratio was not possible the project team supplied laptops, although there was often a problem in this situation of connecting to the Internet, as outlined in more detail below. Rix Centre premises were also used for training, where space or facilities were prohibitive *in situ*. It is worth saying that hardware constraints need not hamper the longer term participation of organisations, as not all service users or staff would be expected to work on the Portal at the same time, unlike during group training sessions.

In addition to the above, an emphasis on educational, peer advocacy and transition training processes are, of course, as important as the mechanistic and technical tasks required in using ICT. Indeed, there is an abundance of literature on ‘blended learning’ or the mix of technology and traditionally based learning activities (for a recent discussion see Hoic-Bozic et al 2009). One could profitably use drawings, ‘mind-maps’ and other diagrams in the preparation for Website design, or plan excursions to take digital photography without recourse to technology.

By adopting this strategy, far fewer computers are needed, and the emphasis would be more on the ‘soft’ skills of the project, such as communication, team-working and the ‘critical thinking’ mentioned earlier. Thus, the sites produced may be better thought out and the information more articulately expressed. This raises the question as to the way computer laboratories are designed. Currently, they may not be conducive to the kind of offline and holistic working which might make for good practice.

The issue of time constraints may be harder to resolve, however. Care staff at the various participating centres are, of course, extremely busy and under considerable pressure. On declining an invitation to participate in the project, one centre manager indicated that, quite apart from the hours spent training, time expended in developing and maintaining the site with service users would be prohibitive to undertake. Whilst this might, indeed, be the case,

time constraints may not present quite the barrier assumed by some staff. This is because as the Website can be built by exploiting activities individuals already undertake. For example, one aspect of transition is the move towards independent shopping, and it is common for groups to visit a local supermarket as part of their life-skills training. It would be relatively simple matter to take a few digital photographs whilst there and then sit with a staff member to talk about their experiences, thus providing the content for a Portal page. The staff need to be trained, of course, to consider how to integrate the project into their normal routine. Indeed, later in this paper an argument is made for offering more training, but this could be considered as a 'one-off' time-investment.

Interestingly, in their account of the use of ICT in residential care homes, Parsons et al (2006) found that time constraints were invoked by those who had little interest anyway in the subject – a clear example of apparently extrinsic (first-order) barriers being subservient to more underlying and deeper intrinsic factors - although this is not to suggest at all that there are not real and difficult problems for care work staff in managing their time. Nevertheless, it may be that now the Portal is live and growing, the benefits might become more tangible, stimulating staff to feel that the time is worth investing.

The consent issue is one that will always require a lot of attention. Again, part of a pre-workshop or participation brief might be to include ethics documentation – including permission gained from local authorities and, indeed, to take the initiative by going through the ethical implications and processes pro-actively with the staff.

5.2 Second-order barriers

Resolving second-order barriers may present even more problems than first-order ones. This is because, as alluded to above, 'they are less tangible (and) more deeply ingrained' (Ertmer, 1999: p51). Grainger et al (2002: p485) conclude from a study of ICT use in Canadian high schools, that 'resistance to ICT ... constitutes a complex set of connections between individuals, technology, and the social, political and material environments'. Despite this complexity, a few general guidelines emerge from the literature and from the experiences and research of the project team. These include demonstrating the benefits of ICT usage for service users (Grainger et. Al. 2002; Parsons et al 2004). Parsons et al (2004: p67) found that 'explicit guidance about [the wider purpose of ICT] may have helped staff members to see the relevance of ICT to their work and understand what the tools could help to achieve'. It would also help to have a clear, organisation/institution-wide focused strategy (Seale, 1998; Aspinal and Hegarty, 2001). Aspinal and Hegarty point out that such a centralised approach might help with issues such as staff training and emotional support, as well as what Ertmer (1999) and Bricker (1995) term 'first-order' barriers such as staff availability.

Both of these guidelines are encompassed in Ertmer's (1999: p54) view that 'one of the most important steps in achieving meaningful technology use is the vision of how to use technology to achieve important educational goals'. Ertmer recommends three main strategies for developing a vision: modelling, reflection and collaboration. The first consists of 'demonstrations by peers, mentors or seasoned practitioners ... [and] staff development activities' – in other words, comprehensive training opportunities. Reflection consists of

teachers sharing their ICT practices and ideas, through the usual channels of discussion fora (face-to-face or online; conferences, and professional developmental activities). Finally, collaboration relates to ‘ongoing conversations with colleagues and experts, engagement in cross-site technology projects ... [and] access to a supportive network’.

The Rix Centre is currently providing these strategies, through training and examples of good practice, and a current project ‘Click Start’(Note 3) is creating a linked Website for participants. This acts as a conduit for reflection and collaboration through the generation and sharing of knowledge and the provision of accessible information from the perspectives of service users, used as learning objects of value for social care professionals and trainees as well as peers.

As noted above, there are second order barriers that directly prevent people with learning disabilities from effectively using and benefiting from ICT, which are in the control of others. Such barriers include that of inappropriate software or activities, and contextual or situational problems. Regarding the first of these, it is hoped that as the research evolves, the training material will be refined such that a wider constituency of user may be able to use systems such as the Portal – including, for example, those on the autistic spectrum who find organisation difficult. As users’ experiences are disseminated and discussion fora take-off, second-order barriers may be suitably addressed.

One reason why the activities may not have been appropriate for some of the participants is that the supporters may not have seen the project in the same way as the project team. Informal talks with them strongly suggested that the people supporters brought to workshops at the Rix Centre were often those who do not participate enthusiastically whilst in their care, and who – it was considered - might benefit from a ‘day out’, almost regardless of the activity. It would be easy to say that participants should be chosen on the basis that they might be genuinely interested, able to carry out the tasks required (albeit with support) and have a good idea as to the purpose of the activity. However, this would violate the ‘inclusive’ nature of the project. Instead, a possible solution would be to ensure that the tasks assigned to individuals do not exceed their capabilities, and that the pace of project progress is not too fast.

Regarding the first of these, it was necessary to recognise that not all activities would be suitable for all participants. For example, those who are not literate took digital photographs of items of interest (a cash machine, for example, or cinema), and had the pleasure of seeing it on a Website. In some cases, those who were not able to do this were pleased to have someone take a photograph of them holding an object of interest – such as the CD of their favourite singer. Other participants, either people with LD or their supporters, added explanatory information. This led to the realisation that there was no need for all the participants to understand or be involved in all the actions required for full and meaningful participation.

It is worth noting here that in an analysis of contributions to the Portal, (Williams, 2008) the majority of entries were written in the first person, and spoke of individual experiences. Workshop observations indicated that staff were so pleased that their charges had been empowered enough to create a simple Website that they did not appear concerned that the

content should be targeted specifically at transition. Indeed, in apparent recognition of the intrinsic value of the exercise, learners were not necessarily encouraged to talk or write about the knowledge they had acquired which might be useful to others. For example, one participant wrote, 'I feel shy on the telephone', when contributing to a page on finding a job. Such phrases could have been used to provide encouragement for information-seekers by, in this case, a supporter writing as an addendum, 'If you feel shy on the telephone, make sure this will not be part of any job you want'. Similarly, some simple notes could have been added by a supporter on how to overcome this fear. Thus, a major challenge in working with service user-generated information is to take the path from the subjective and anecdotal to the general and objective. This, of course, requires some critical reflection, particularly on the part of the supporter, for the Portal content to contain objective learning material and be a source of relevant transition-related information. It should be stressed, however, that in addition to enjoying writing about themselves, the project showed that service users also enjoy reading about their peers. Non-transition-related input is not necessarily of interest to the creator only. It is, of course, the ethos of Web 2.0 to emphasise and encourage 'user generated content' and conceptualise 'social networking' as 'the participatory Web'. On the other hand, for those seeking specifically transition information, the Portal search facility needs to be sophisticated enough to be the filter that enables this option.

6. Conclusion

This paper has described an innovative project being undertaken by the Rix Centre in the University of East London, in which people with learning disabilities were involved in creating information in electronic form about transition, for the use and benefit of their peers. A number of barriers were elicited that arose during this process, ranging from 'first-order' barriers such as lack of equipment or ICT infrastructure to 'second-order' ones related to attitude and the practices and activities demanded of users.

Many of the barriers outlined in this paper may be overcome by recourse to:

- Greater liaison between the project team and the sites involved before the development of individual Websites; such as warning of and tackling logistical issues;
- Ensuring adequate preparation also in more comprehensive staff training, particularly with regard to integrating the Web-building with other, regular activities undertaken by the service users. This would include explaining and modelling the ethos of self-advocacy; explaining how Website planning and development resonates with other activities such as communication and interpersonal skills, and can be seen as a valuable learning exercise;
- Offering a vision of what the project hopes to achieve. This was to be a dynamic hub for the sharing of knowledge and experience around transition for all the parties involved in tackling this challenge.

In conclusion it can be said that the barriers are far from insurmountable. A follow-up project, 'Click-start' has addressed the problems by offering greater training opportunities and liaising with local government departments to obviate firewall and other technical barriers. It is worth noting to end this paper, that feedback to the Portal was overwhelmingly positive, and much evidence was accrued (see Minnion et al, 2008) to suggest that, despite the

problems documented here, people with learning disabilities and their supporters benefitted greatly, particularly by the creation and uploading of information. Later work will examine the value of the resource as a repository of accessible information.

Acknowledgements

The project from which this paper derives was generously funded by the Social Care Institute of Excellence, BP, The Jack Petchey Foundation, and Newham Borough Council. The views expressed herein, however, do not necessarily reflect those of either of those two bodies, nor of the Rix Centre itself, but are solely those of the author. Many thanks to Mr Andy Minnion, Director of the Rix Centre, for his helpful comments and advice, to other colleagues at the Rix Centre who have worked extremely hard on various aspects of the Portal and have been instrumental in its development and success in providing a platform and a means by which people with learning disabilities may be empowered both by creating and consulting information about transition.

References

Ainscow, M. (2007). Taking an inclusive turn. *Journal of Research in Special Educational Needs*, 7(1), pp3-7

Aspinall, A. & Hegarty, J.R. (2001). ICT for adults with learning disabilities: an organisation-wide audit. *British Journal of Educational Technology*, 32, pp365-372. <http://dx.doi.org/10.1111%2F1467-8535.00205><http://dx.doi.org/10.1111/1467-8535.00205>

Autism Independent UK (2010). *What is Autism?* [Online] Available: http://www.autismuk.com/?page_id=61 (Accessed 17.11.11)

Banes, D. & Walter, R. (2002). *Internet for All*, 2nd ed., David Fulton, London.

Bohman, U. (2010). The need for Easy-to-Read information on Websites *in* K.J Miesenberger, W. Zagler & A. Karthmer (Eds.), *Computers Helping People with Special Needs, Part I:12th International Conference :ICCHP 2010, Vienna, Austria*: Berlin: Springer-Verlag pp634-640

Bricker, D. (1995). *The effects of first and second order barriers to change on the degree and nature of computer usage of secondary mathematics teachers: A case study*. Unpublished doctoral dissertation, Purdue University, West Lafayette.

Disability Awareness in Action (2008). *Equalise It! A Manifesto for Disability Equality in Development Co-operation* [Online] Available: <http://www.daa.org.uk/uploads/word%20docs/Manifesto%20June%2008.doc> (accessed 17.09.11)

Department of Health (2001a). *Valuing People: A New Strategy for Learning Disability for the 21st Century* London: The Stationary Office. [Online] Available: <http://www.archive.official-documents.co.uk/document/cm50/5086/5086.htm> (accessed 14.08.09)

Department of Health (2001b). *Nothing about us without us: report of the National User Group*. [Online] Available: www.doh.gov.uk/learningdisabilities/access/nothingabout (01.11.10)

Ertmer, P. A., Addison, P., Lane, M., Ross, E., & Woods, D. (1999). Examining teachers' beliefs about the role of technology in the elementary classroom. *Journal of Research on Computing in Education*, 32(1), 54-72.

Florian, L. (2004). Uses of technology that support pupils with special educational needs, In L. Florian, & J. Hegarty (Eds.), *ICT and Special Educational Needs: a Tool for Inclusion*, Open University Press, Berkshire, pp. 7-20.

Granger, C.A., Morbey, M.L., Lotherington, H., Owston, R.D. & Wideman, H.H. (2002). Factors contributing to teachers' successful implementation of IT. *Journal of Computer Assisted Learning*, 18 pp480-488. <http://dx.doi.org/10.1046/j.0266-4909.2002.00259.doc.x>

Her Majesty's Government (2005). *Disability Discrimination Act 2005*. London: HMSO

Her Majesty's Government (2010). *The Equality Act, 2010* London: HMSO

Hoic-Bozic, N., Mornar, V., & Boticki, I. (2009). A Blended Learning Approach to Course Design and Implementation *IEEE Transactions on Education* 52(1), pp19-30

Johnson, R. & Hegarty, J. (2003). 'Websites as educational motivators for adults with learning disability. *British Journal of Educational Technology*, 34 (4), pp. 479-86. <http://dx.doi.org/10.1111%2F1467-8535.00344><http://dx.doi.org/10.1111/1467-8535.00344>

Kennedy, H. (2008). New media's potential for personalization, *Information Communication and Society* 11(3), pp307-325

Kerr, S. (1996). Visions of Sugarplums: The Future of Technology, Education, and the Schools. S. Kerr (Ed.), (1996). *Technology and the Future of Schooling. 95th Yearbook of the National Society for the Study of Education, Part II*. Chicago: University of Chicago Press pp1-27

King, A. (1993). From Sage on the Stage to Guide on the Side *College Teaching*, 41(1), pp30-35. <http://dx.doi.org/10.1080/87567555.1993.9926781>

Mencap (undated). About learning disability *Mencap Website* <http://www.mencap.org.uk/all-about-learning-disability> (17.11.11)

Minnion, A., Staples, P., Singh, R., & Williams, P. (2008). *Beyond the Road Ahead* London: University of East London Report submitted to the Social Care Institute of Excellence

Minnion, A., Williams, P., Kennedy, H., & Bunning, K. (2007). *Project @pple: e-learning and the World Wide Web* Report submitted to the ESRC PACCIT Programme

National Research Ethics Service (2007). *National Patient Safety Agency: National Research Ethics Service* [Online] Available: <http://www.nres.npsa.nhs.uk/> (12.09.11)

Parsons, S., Daniels, H., Porter, J., & Robertson, C. (2004). *Developing the use of ICT to enhance community participation with people with learning disabilities* Birmingham: University of Birmingham

Parsons, S., Daniels, H., Porter, J., & Robertson, C. (2006). The use of ICT by adults with learning disabilities in day and residential services *British Journal of Educational Technology* 37 (1), pp31–44. <http://dx.doi.org/10.1111/j.1467-8535.2005.00516.x>

Seale, J. (1998). Management issues surrounding the use of microcomputers in adult special education. *Innovations in Education and Training International*, 35(1), pp29-35. <http://dx.doi.org/10.1080/1355800980350105>

Singh, R., Staples, P., Nowicka G, & Williams P (2007). *Pre-workshop task*. London: The Rix Centre (unpublished document)

Tarleton, B. (2004). *The Road Ahead? Information for Young People with Learning Difficulties, Their Families and Supporters at Transition*, Bristol: Norah Fry Research Centre, University of Bristol.

Tolmie, A. (2001). Examining learning in relation to the contexts of use of ICT. *Journal of Computer Assisted Learning*, 17(3), pp.235-241. <http://dx.doi.org/10.1046/j.0266-4909.2001.00178.x>

Townsley, R. (2004). *The Road Ahead? Literature Review: What Does the Literature Tell us About the Information Needs of Young People with Learning Difficulties and Their Families at Transition?* Bristol: Norah Fry Research Centre, University of Bristol.

Williams, P. (2008). Transition and people with learning disabilities: reflections on the quality of content that emerges from the process of involving service users in information provision *Aslib Proceedings*, 60(5), pp474-492. <http://dx.doi.org/10.1108/00012530810908201>

Williams, P., & Minnion, A. (2007). Exploring the challenges of developing digital literacy in the context of special educational needs In S. Andretta (Ed). *Change and challenge: information literacy for the 21st Century*, Adelaide, Auslib Press ISBN 978 0 9803301 1 3

Williams, P., & Hanson-Baldauf, D. (2010). Testing a Web information Portal for people with learning disabilities. *Journal of Research in Special Educational Needs*, 10(1), pp42-51. <http://dx.doi.org/10.1111/j.1471-3802.2009.01142.x>

Notes

Note 1. White papers are documents produced by the Government setting out details of future policy on a particular subject. A White Paper will often be the basis for a Bill to be put before Parliament. The White Paper allows the Government an opportunity to gather feedback before it formally presents the policies as a Bill (See: <http://www.parliament.uk/site-information/glossary/white-paper/>)

Note 2. The phrase 'nothing about us without us' was not, however, coined in this publication.

It was used, for example, as the slogan adopted by Disabled Peoples' International (DPI) at its founding in 1981 (Disability Awareness in Action, 2008)

Note 3. www.clickstart.org.uk

Copyright Disclaimer

Copyright reserved by the author(s).

This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).