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Disabled students with additional support needs agreed by Disability Services should tick the appropriate box

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Pushing the Right Buttons: disabled students in higher education & their use of assistive technology.

Kathryn Fisher

A dissertation submitted in partial fulfilment of the requirements for the Degree of Masters of Arts in Disability Studies at the School of Sociology and Social Policy, University of Leeds

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Author's Acknowledgments

Abstract

This study considers the experiences of disabled students at a Scottish university in 2009/10 with particular reference to their use of assistive technology. It explores the proposition that use of assistive technology promotes independence of study and a decreased reliance on personal human support.

The project examines the higher education environment for disabled students in 2010, nine years after the education sector was fully included in the Disability Discrimination Act. It considers the challenges disabled students face in the university setting, which was virtually inaccessible thirty years ago but which now is more experienced at making "reasonable adjustments", moving towards a more inclusive ethos and wider participation from previously under-represented groups. This study also considers the possible impact of the current global economic difficulties and the resultant funding cuts that are looming for most higher education institutions in the UK.

This project uses students' first hand accounts in order to give a voice to disabled students' views on their actual experiences in higher education. Despite the requirement for consultation with disabled people about new

policies such as the Disability Equality Scheme, many views of disabled students are not heard by institutions and funding bodies. As a relatively new "minority" group to the university setting, many disabled students do not wish to be too vocal in any criticism of their institution which may leave some vulnerable to unequal access. Adjustments may be imposed and technology may be recommended by "experts" without full consideration of the student's views.

The pace of change in assistive technology has brought many more opportunities to ease access to teaching materials and help students more readily acquire the necessary academic skills they need to succeed in higher education. A range of assistive technology used by students is considered and their thoughts of a number of them on the usefulness of it are recorded, including their thoughts on whether it has enabled them to become more independent in their studies.

Contents

Glossary and Abbreviations Used

DDA   Disability Discrimination Act

DES   Disability Equality Scheme

DSA   Disabled Students' Allowance

HEI   Higher Education Institution

HESA   Higher Education Statistical Agency

NMPH   Non Medical Personal Helper

SAAS   Student Award Agency for Scotland

UCAS   University and College Admissions Service

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Chapter 1

Education: Being able to differentiate between what you do know and what you don't. It's knowing where to go to find out what you need to know; and it's knowing how to use the information once you get it.

William A. Feather (1889-1981) American publisher and author (finestquotes.com, 2010)

"If I can't access it, I can't learn it" (Scottish undergraduate, 2009)

Introduction

This dissertation is about the use of technology by disabled students in higher education. This is a small-scale research project and as such, must limit itself to looking at just one aspect of access to technology and education. It considers the experiences of disabled students at a Scottish university in 2009/10. It focuses on how access to technology influences the way in which they study and considers if the technology available aids their independence in following their course. It considers the recent history of disabled students in higher education including participation rates, funding and academic outcomes. It looks at the

current situation for disabled students and includes directly reported accounts of this group of students currently studying at a Scottish university. It considers the major opportunities and challenges facing disabled students in higher education today and the role of technology in reducing some of the barriers they encounter.

Disabled students have benefited from the Widening Participation agenda over recent years (Fuller, 2009) but this may be threatened by the recession and potential cuts to university funding. Already, applications are up but places have not increased in line: those who narrowly miss out on their grades are now less likely to gain a place (Woolcock & Sugden, 2010). Universities may reduce their budgets so that they just meet their legal requirements under the DDA or forthcoming Equality Act. In 2009, 66% of higher education institutions (HEIs) in England supplemented their mainstream disability funding from the HEFCE with additional funds to meet the needs of "disabled" students (Harrison et al, 2009). It seems likely that funding cuts might add pressure to these resources.

Terminology Used and the Social Model of Disability

This dissertation is written from a social model approach to disability and uses the terminology consistent with this model (Oliver, 1990). It makes the distinction between **impairment** (physiological conditions of the

body) and **disability** which is a social construction caused by barriers which may be physical but more often includes discriminatory and prejudicial behaviour, low expectations and inequality of opportunity. What people can or cannot do does not depend on the type of impairment they are born with or acquire.

The social model was born out of the disabled people's movement (Oliver,1990) and its approach has helped to redress the balance between the "expert" views and power on one side and the experience and knowledge and conviction of disabled people on the other. Traditionally, research about disability was only in the medical or psychological fields. These fields viewed disability as a problem for the individual, a medical matter which was often a tragedy for the person. Allowances need to be made for these individuals or support must be provided which is best decided by professionals. This approach led to disabled people in the UK feeling that their rights as a minority group were being ignored.

The social model of disability was an attempt to move away from the focus on the individual and look at the barriers in society. Disability theory argues that people with accredited (or perceived) impairments are disabled by "society's blatant failure to accommodate their needs" (Barnes, 1991). The social model does not ignore the implications of an

impairment in people's lives but it looks at the social barriers which are constructed in addition to impairment. Disability is therefore regarded as a social construct: society is the problem. Disability varies according to the social and economic structure and culture of society. Dyslexia would not be viewed as a disability in societies where literacy is not a requirement for day to day life.

Some publications in the education environment use the term "disabilities" to describe impairments: the medical model approach. Where it has been necessary to use this term, I have put it in quotes to distinguish it from the social model terminology I have used throughout the rest of the research. The term "disabled students" is one which is most commonly used both within the education sector and within disability research within the UK.

I felt it was important that the social model was the starting point for this dissertation although I accept that this could be problematic. As a non-disabled person working within a disability service, I could be viewed as someone in a "disabling profession" (Illich, 1977). The legislation that has helped develop university disability services such as the Disability Discrimination Act (DfEE, 1995) uses definitions stemming from the medical model. The process for applying to university includes questions based on impairment categories. Much social research on disability has

been criticised for just reflecting social oppression and not making any difference to the real lives of those it uses as subjects:

> *Disabled people have come to see research as a violation of their experience, as irrelevant to their needs and as failing to improve their material circumstances and quality of life. (Oliver, 1992: 105)*

Whilst I might have the aim that my research will improve the lives of disabled students, I need to be realistic that my influence, is very limited. However, research can still be useful even if it does not change policies or bring about practical changes in another's life: it may have wider effects beyond those who have participated in it directly. Some disability research, including this project I hope, will enhance understanding of, and give voice to, a small group of people. Whilst I cannot undertake pure emancipatory research for this project, I can use the emancipatory approach to ensure disabled students who participate are equal partners.

My interest in this area

I am interested in the use of technology amongst disabled students in higher education. As a disability adviser at a university, I am part of the process that aims to support disabled students by removing or lessening some of the barriers they face in higher education. In order to maintain

confidentiality, I have not used the name of the university where I work but have used a fictitious name "Saltire University" in place of its actual name.

Support includes the use of assistive technology, both in assisting in its recommendation and purchase, with training to facilitate effective use. Assistive technology sits alongside the recommendations of reasonable adjustments and work to promote a more inclusive and accessible curriculum. I have been involved particularly in the development of a service that provides accessible electronic materials to disabled students that impact on timely access to written texts. My role includes advice to academic and other university staff about recommendations for disabled students but does not currently involve advice to disabled staff. I am aware that this is a greatly under-reported and under-resourced area but is outside my experience and remit. I would be unable to obtain the relevant data to include disabled staff in my research and have therefore decided to limit my project to disabled students. However, I have obtained the views of some staff on the use of technology by disabled students to give a more triangulated viewpoint.

My interest in the use of technology to promote independence amongst disabled students stems from the anecdotal and observed evidence from students I have worked with or advised. Research material available, as

detailed in Chapter 2, is often either specific to an institution or region or of a more general nature about inclusion in education. There seems to be a relatively small amount of research done within the UK HE environment and very little about technology in this context. From my investigations, there seems to be a gap in research that looks both at technology in education and independent study within the higher education environment and I hope my research may lessen this gap.

The research objectives

My objectives based on the research area are detailed below:

1. Establish the demography of disabled students at the university as at a specified date in early 2010 and compare this with that of disabled students in UK universities to provide a contextual comparison.

2. Establish the types of technology available to disabled students. This will include on-campus provision, individual technology provided via the Disabled Student Allowance scheme and web based learning initiatives being pioneered by the university.

3. Gather data about the decision making process for access to technology for disabled students. This is predominately, but not exclusively, through the needs assessment process. This will include identifying any student groups whose access to appropriate technology may be restricted e.g. self-funded and international students and explain why.

4. Gather data about the provision of support other than technology e.g. non medical personal helpers, reasonable adjustments recommended to departments.

5. Gather information directly from students via email about their use of technology in their studies. This will include a number of semi-structured interviews considering their thoughts on how technology may have increased their independence.

6. Gather information from academic and support staff on their views of the use of technology by disabled students and independent study.

7. To compare and contrast collected data with previous research findings.

8. Provide recommendations for further research.

Organisation of the project

The next chapter looks at the legislative background of disabled students in higher education and the available research literature. The third chapter outlines the methods used in researching student experiences and how the data collection was managed. I then report on the current situation for disabled students at the university where this research was conducted and look at the statistics available regarding disabled students and their use of assistive technology. The fifth chapter is about recording student voices: information and views gained from disabled students through email and face to face semi structured interviews. The final chapter offers an analysis of how assistive technology has enabled disabled students to gain further independence in study. It concludes that there is still some way to go before higher education offers a system that is truly inclusive and welcoming to "disabled" students. The proposed forthcoming cuts to higher education

(www.guardian.co.uk, 2010) pose a particular threat to proactive

widening participation programmes.

Chapter 2: Disabled students, higher education and assistive technology

Introduction

University can be a disabling environment with its emphasis on reading and acquiring information within a history of convention and high achievement. Until relatively recently, the numbers of disabled students in higher education were small, mainly because most universities were virtually inaccessible to disabled students and staff (Barnes, 1991). Those disabled students who did attend were at the mercy of goodwill from staff and other students (Hurst, 1993).

Until the 1990's, access to higher education was privilege of the elite, for those from conventional academic backgrounds and mainly for those of a certain class. The whole structure was based on a "normal" student: "a narrow group of socially advantaged students in the richest parts of the world" (Riddell et al, 2004). The structures for admission created and perpetuated inequalities (Archer, 2003): higher education was not seen as a place for disabled students or for those from untraditional academic backgrounds.

The Legislative Background

Widening participation in higher education became part of government policy in the early 1990s and following the formation of the funding councils in 1992/3, funding specifically for the purpose of supporting "disabled" students was made available to institutions for the first time (Tinklin, Riddell and Wilson, 2004).

Early initiatives from the funding councils regarding disabled students were outlined in two reports: Access to Higher Education: students with special needs (1995) and Access to Higher Education: students with learning difficulties and disabilities (1996). These gave guidance to Higher Education Institutions (HEIs) about the funding councils' expectations. Senior managers were expected to take an interest in disabled students, recruit experienced specialists in the field, be clear about the responsibilities of management, include disabled students within everyday policies and procedures and ensure appropriate funding. Strong links between local, regional, national and international networks and flexibility of planning to accommodate changing needs were other areas identified as important (Hurst, 1999)

The Disability Discrimination Act in 1995 (DfEE, 1995) marked an important stage in the gradual development of equal rights for disabled people. For the first time, disabled people were protected from discrimination in the areas of employment, goods, facilities and services.

The intention of the legislation was to prohibit discrimination and harassment against disabled people, ensure that 'reasonable adjustments' are put in place for disabled people and to ensure full and equal participation in learning and public life.

However, education was not included in this legislation. The exclusion of education from this legislation was remedied by the addition of Part IV – access to post 16 education - in 2001 and the subsequent Special Needs and Disability Discrimination Act *(SENDA), also in 2001. Several key influential reports showed a shift from the idea of disability as an individual, medical problem with the focus on impairments. The Tomlinson Report (FEFC, 1996); the Kennedy Report (FEFC, 1997) and the Dearing Report (cited in Hurst, 1999) all looked at the developments needed to make the learning environment more inclusive to accommodate all students in post 16 education.

The HEFCE report "Guidance on Base-Level Provision for Disabled Students in Higher Education institutions" gave a benchmark for provision and influenced funding levels. These base-line provisions included policies and procedures that addressed disability issues and suitably qualified staff amongst others (HEFCE/W, 1999). Reviews undertaken in 2004 and 2008 showed many HEIs either met or partially

met some of these base-line provisions. Most institutions had developed policy and provision for disabled students, including within admissions, estates and some strategic plans (Tinklin et al, 2004, Harrison et al, 2009). Both reviews found that although progress had been made in these areas, there were significant gaps between policy and practice with students "encountering barriers to choice of institution and subject, access to the physical environment and to the curriculum" (Tinklin et al, 2004). The social composition of the student population has not changed very substantially (Lewis, 2002). Disability discrimination in education was only outlawed by SENDA (2001) so limited progress by 2004 was not surprising. Institutions now have an additional duty to meet the needs of all disabled students by making anticipatory reasonable adjustments (ECU, 2010).

Subsequent legislation such as the Disability Equality Duty, (Part V of the DDA, DRC, undated) is more proactive. The "general duty" is to promote equality of opportunity between disabled people and other people, eliminate discrimination and harassment, promote positive attitudes towards disabled people, encourage participation by disabled people in public life and take steps to meet disabled people's needs, even if this requires more favourable treatment (ECU, 2007). The monitoring mechanism is through the Disability Equality Scheme which

is required to *involve* disabled people, not just consult with them. The scheme should include arrangements for assessing the impact of the activities of the authority on disability equality and improving these where necessary (DRC, 2005). However, DRC research in 2006 found that only 38% of HEIs were compliant (Harrison et al, 2009). The Department for Innovation, Universities and Skills is consulting on a single equality scheme to include disability (DIUS, 2008) but guidance is sketchy.

It has already been shown that disabled children are more likely to come from families with lower levels of income and higher levels of unemployment (Smith et al, 2004). It is likely that they will come into education at a disadvantage from the start and this is often perpetuated. The likelihood of a disabled school leaver going into higher education is less than their non disabled counterparts. About one in twenty disabled people are at a college of FE or in Higher Education compared to one in ten of the rest of the population; 8% of disabled people have a degree level qualification compared to 17% of non-disabled people (Labour Force Survey, Winter 2001/2, ONS, cited in diseed.org.uk). An 18 year old with an impairment or health problem is "40 per cent as likely to enter higher education as an 18 year old without an impairment or health problem" (NAO, 2002).

Data about disabled people in higher education has been poor until relatively recently: statistical data was made available by the Higher Education Statistical Agency only from 1998 onwards. The Higher Education Funding Council for England (HEFCE) published participation rates of disabled people in higher education for the first time in 2002. It showed 4% of students had disclosed a disability, compared to 15% of the working age population who had a long term disability using the DDA definition (Riddell & Banks 2001). Younger people are less likely to have an impairment and there will be some who have more severe learning difficulties that would not benefit from higher education. However, it should also be noted that many of the disabled students in higher education have an unseen disability – the majority have dyslexia – and there are still a very small number of students in higher education (less than 10%) who have significant physical or sensory impairments. For this group of students, the financial, physical and cultural barriers seem to be too high to overcome (Riddell et al, 2002)

The full participation in education whilst at school is more likely to lead to entry to higher education but again the outlook is not very optimistic for disabled young people. There has been some move in recent years towards a more inclusive rather than integrated school system. Inclusive schools adopt the social model of disability and recognise the barriers

within the school environment, teaching and learning attitudes and organisation prevent the full participation of disabled children and are part of the social oppression of disabled people. Integration is a state; inclusion is a process (diseed.org.uk, 2009). Unfortunately, a large minority of disabled pupils attend special schools. Most of these, according to the Rowntree Foundation (Hendley & Pascall, 2001 cited in GLA report, 2007)) have low expectations and achievement. The National Audit Office found in 2001 that even taking into account learning difficulties, the main reason for 18 year old disabled people not participating in HE was having lower qualifications. Disabled people are twice as likely as non-disabled people to have no qualifications at all (Labour Force Survey Winter 2001/2, ONS). A more recent report (DIUS, 2009) found that disabled people still tend to have lower GCSE grades than their non-disabled peers, and were less likely to be studying for A levels or similar level qualifications.

Information and Disclosure

The number of disabled students in higher education is hard to quantify because of substantial under-disclosure. Disabled applicants' decision about disclosure will be influenced by several factors, including if the applicant thinks the institution will use it in the selection procedure. If the options and the available support are effectively communicated together

with the benefits of disclosure, this will encourage learners to disclose (Rose, 2006). How the information is communicated via the prospectus etc is important in communicating the institution's ethos. If the information is at the beginning, has clear contact points and points the way to further details, disclosing may be a positive step. If the information is tucked away, focuses on narrow impairments e.g. visual impairment, dyslexia etc, those with for instance, mental health difficulties may not identify with the information (Rose, 2006).

The fact that some students are reluctant to disclose is significant and can partly at least be because of the range of attitudes in HEIs. Some students have found their information has been inappropriately shared, not been kept confidential and they have not had control over when and where they gave information about their impairment. There may be additional pressure on students who chose to disclose only when experiencing problems. Borland & James (1999) found examples of these disclosures attracting suspicion from staff, putting students in a difficult situation.

In higher education, the UCAS application form asks students to self-classify under impairment headings. Hurst (1998, cited in Brown & Simpson, 2004) argues that "there is a danger that using the categories based on disability (impairment), the focus is shifted away from a social

model of disability towards an individual/medical one" (p. 129). These individual , medical definitions are at odds with the social model interpretation favoured by the disabled people's movement and increasingly acknowledged within public discussion and official commentaries, and have been widely criticised by disabled activists and their organisations (Oliver and Barnes, 1998).

The purpose of the disclosure is to help the institution ensure that support is in place in order that the student might fully access their course. It could be seen as "exploiting medical categorisation for the purpose of progressing the social model goal of creating an enabling HE environment through the dismantling of disabling barriers" (Brown & Simpson, 2004). But the label of "disabled" is not a label many students are comfortable with. Many want to "pass" as non-disabled or consider another part of their identity more important e.g. being a mature student (Tinklin et al, 2004). This may be particularly true of students with a specific learning difficulty such as dyslexia and with students with mental health difficulties. They may associate the term "disabled" with a sensory impairment or being a wheelchair user. For the same reason, they may not contact the disability service at all or not until later into their course (Rose, 2006). Careful phrasing of the question about additional support

needs can be encouraging to disclosure and the above report gives examples of "good" questions to ask (Rose, 2006). It is difficult to quantify the amount of non-disclosure but Healey et al in 2001 estimated that the actual proportion of disabled students nationally could be "closer to 10% than 5%" (quoted in Fuller et al, 2004).

The self-classification under impairment headings could be seen as a means to a useful end but unfortunately, the information on its own is very limited. Knowing whether a student is hearing impaired tells the institution very little: they could be a sign language user and need interpreters for all their classes or they may simply need to use induction loops during lectures. Without knowing more detail, we cannot effectively meet the student's needs. In addition we also need to know the context: what are the academic, social and physical environments they will be in and what do they need to access for their course (Brown & Simpson, 2004). It would be just as effective to ask a more general question such as "would you like us to contact you about your support needs?" The university where I am employed uses the UCAS disclosure to invite all those who have disclosed to provide further information about their support needs (giving examples of support available). This then leads to confidential discussions about adjustments and often a needs assessment and an application for Disabled Students Allowance (DSA).

The paperwork sent to applicants focuses on support needs rather than impairment to alleviate the potential barrier of the term "disability service".

In order to maximise the chances of students disclosing, there should also be other opportunities for students to be comfortable in communicating their additional needs. If there are examples of the types of support available advertised around buildings, students' awareness will be greater than if it is confined to leaflets and forms. They need to have "a cultural presence in the students' environment" (Rose, 2006 p. 8). Students also need to have further opportunities to disclose during their course: at enrolment, induction, in tutorials, before exams or before participation in work placements or field trips. This is particularly important for part time students who may have less contact time with staff. What happens to information that a student discloses will also influence the rate of disclosure. Confidentiality and data protection considerations need to be borne in mind as well as communicating effectively so that adjustments can be made.

There is evidence to suggest that at least part of the increase in disabled students is because of increased disclosure. This is true particularly of dyslexia which is now much more recognised and diagnosed at school level. For many institutions at least half their disabled students have

dyslexia (Riddell et al 2004; Tinklin et al, 2004). This is also one of the reasons that there are a higher proportion of male disabled students aged 19-24: a large number of dyslexic students are white, male and middle class (Tinklin et al, 2004).

Research into Disabled Students in Higher Education

As Bryman (2001) indicates, reviewing the literature within the research area is important to understand what the concepts and theories are, to see what is already known about the topic, to understand what research methods and strategies have been used, identify any significant controversies, acknowledge any inconsistency in findings and see what research questions are left unanswered.

Because traditionally there have been few disabled students in higher education, the number of studies that looked at their experiences is fairly small. Research has often done at institution level.

Hurst (1993) conducted some early research at various higher education institutions prior to the introduction of the DDA. He considered the procedures for admissions and also looked at students' early experiences in higher education. It is obvious from the responses to students during the admissions process that at this stage, institutions were struggling to understand how to respond to students with a variety

of additional needs. Most students investigated by Hurst were faced with considerable physical barriers in attending university or polytechnic and many buildings were inaccessible. This report is an important starting point to consider the environment that existed before the introduction of the DDA. Whilst the legislation is much criticised for its medical model approach, it did introduce the concept of reasonable adjustments and provide a framework for organisations to work within.

Hurst (1998) also considered the situation after the introduction of UK disability discrimination legislation, although education was initially excluded from the provisions. He also considers the situation in other countries including those such as Australia, who were early adopters of anti discrimination legislation, to Greece where access to higher education for disabled students was in its very early stages. The situation in the UK at this time is discussed although Hurst notes that

Making progress for disabled students has been hindered by the lack of information both quantitative (about the number of students).....and qualitative (about the experience of disabled students – see Hurst 1993).

More recent studies have looked at the experiences of disabled students in particular regions such as the paper on policy and provision for disabled students in HE in Scotland and England (Tinklin et al, 2004);

Beauchamp-Pryor (2004) who considers the barriers in higher education in Wales; Borland and James (1999) who look at the learning experiences of disabled students and Brown and Simpson (2004) who consider the application on the social model in higher education. The SQW guidance on base line provision for disabled students in HEIs has useful data and is available on line (SQW, 1999). Sheldon (2001) looks more generally at communication systems and disabled people. Thomas (2003) is concerned with an analysis of the experiences of students at a university in Scotland and therefore has much relevance to this study.

Access to the Disability Archive at the Centre for Disability Studies has allowed easy access to some key research about disabled students in the UK higher education system that I will be using as background to my research. This includes the Snowdon survey (2006) report and the recently published report by Harrison et al (2009) which gives an excellent overview of the current situation regarding provision for disabled students.

Richardson (2009) has looked at the academic attainment of disabled students. Although published last year, it did look at student data for degrees awarded in 2004/5. Richardson found no significant difference in academic attainment of disabled students although he did not look at completion rates. His conclusions show that there is a small amount of

difference for those with unseen impairments and dyslexia but overall, disability explained only 0.1% of the variation in attainment.

Fuller et al (2009) is perhaps the most up to date research into the experiences of disabled students in the UK higher education system, where the students have entered HE after the introduction of anti discrimination legislation. They reported extensively on the experience of disabled students in HE, looking particularly at how they experienced reasonable adjustments. They found students' perceptions of support varied by course, institution and also perhaps their sense of entitlement (Fuller et al, 2009, p.168). There were problems identified with staff attitudes (though these were in a minority of cases and poor experiences on work placements. Assistive technology is mentioned with "many examples of equipment taking too long to arrive, of failure to provide the student with sufficient training in its use and numerous experiences of the DSA process being too slow", (Fuller et al, 2009, p169).

Fuller found that disabled students were more likely to complete their course than non disabled students and found some evidence that degree class classifications were lower for disabled students, though this was not the case in all institutions. Information about retention and outcomes is still disappointingly low with little information e.g. by impairment grouping.

Attitudes of senior managers varied again by institution with a significant number of staff still having some difficulties reconciling reasonable adjustments and academic standards. Newer HEIs tended to have more established learning support provision but some were resistant. Disabled students were more prominent in institutions but were still very much associated with the need for support: a reactive, individual approach to disability still seems to prevail rather than the social model approach. They found limited progress in making the curriculum fully inclusive and resistance to offering a range of assessment methods. The support offered to disabled students "is still framed within deficit models" (Fuller 2009, p 176).

Fuller identified a number of areas of concern for disabled students. Needing to identify as "disabled" was problematic for some, particularly those with unseen impairments. Students were concerned about being seen as "different" and therefore being stigmatised. This led some not to seek support (Fuller, 2009). Transition periods were a particular source of stress, especially for those students with a mental health difficulty. They also felt they carried an extra burden of "emotional work" such as having to plan and organise themselves more related to their impairment, manage support and think about disclosure.

Another more recent addition to the research on disabled students is the Department for Innovation, Universities & Skills (which now comes under the Department for Business, Innovation & Skills) report in May 2009 which attempted to give a comprehensive picture of disabled students in higher education. It provided a new analysis of information on the participation rates of disabled people in higher education. The main findings from this report were:

- Disabled people tended to have lower GCSE grades than their non-disabled peers, and were less likely to be studying for A levels or similar level qualifications

- The number of applicants and students applying to HE who disclose a disability or are in receipt of DSA has increased over time but it is unclear as to whether this is because of increased disclosure or to an actual increase in applicants or students.

- Participation rates for disabled people in HE are lower than their non disabled peers but are in line with the lower qualification levels gained.

- Disabled people are more likely to enter HE through a non traditional route e.g. via college and tend to have a lower level of entry qualifications

- The disabled student is likely to be slightly older than their non disabled peers when entering HE. They are also more likely to be male, undergraduate (rather than post graduate) and be full time.

- Disabled students are slightly less likely to attain a good degree (first or upper second class) than those who do not report a disability, and there is evidence to suggest that this persists even after controlling for a range of other factors.

- Students who are in receipt of DSA are less likely to drop out.

- Disabled students are slightly less positive about the quality of their course, even after other factors have been taken into account.

- The career outcomes for disabled students in HE are not as good as their non disabled peers but there are substantial differences between disclosed impairment categories (DIUS, 2009).

None of the recent research has looked at assistive technology and I am keen to see if using it may lessen some of the "emotional work" for disabled students that Fuller et al (2009) identified. I hope to be able to add to this more recent research and give a voice to a small group of disabled students and their experiences in 2009-10.

Conclusion

The current research shows that until relatively recently, universities were virtually inaccessible to disabled students. Government policy and legislation has helped and funded increased accessibility for those with impairments and has attempted to become more proactive in promoting equality of opportunity e.g. through the Disability Equality Schemes. Despite this, disabled students are still at a disadvantage, still more likely to come from a lower-income family and still have a lower level of qualifications (DIUS, 2009). There is still substantial under disclosure of impairments as people do not necessarily wish to acquire the label of "disabled". The current system of support is based on a medical model of disability and a need to adopt this label to access funded support. Even when this support is provided, it can still be inadequate and poorly timed (Fuller et al, 2009).

In this research, I hope to examine whether the assistive technology and other support provided to a group of current students has helped them to become more independent in their studies. By recording their own experiences, I hope to give practical examples of the implementation of government and university policies and see whether the reality for students with impairments is now more equal to their peers without impairments.

Chapter 3 – Researching Student Experiences

Introduction

This study will look at the role of technology in promoting independence amongst disabled students, using the experience of students at a large university in Scotland as an illustration. There is a body of research about inclusion (or exclusion) of disabled students in HE although a relatively small amount seems to be UK based. The available literature on technology and independent living is by its nature often out of date shortly after publication. From my literature review, there is a gap in research looking at technology and independent study within the higher education environment.

Research Approach

Social research projects involve an interaction between concepts and theories and evidence. Traditional research on disability came under the positivist banner (Parsons, 1951; Goffman, 1968; Miller & Gwynne 1972). It adhered to the traditional view that impairments lead themselves to disability and disadvantage. With the development of the social model of disability as the preferred definition, a new approach was needed for disability research to reflect that environmental and social barriers, both physical and attitudinal, disable people with impairments

(Oliver, 1998; Barnes, 1991). "The emancipatory research agenda is about nothing less than the transformation of the material and social relations of research production" (Barnes, 2004: 48). Disabled people and their organisations should be in control of the agenda of research and is funding.

As stated in Chapter 1, the starting point of this project will be the social model of disability although I fully accept my limitations as a non disabled researcher in the field of disability studies.

Robson (1993) identified three general purposes of research: exploration, description and explanation. Although my project is in an under-researched area, it is perhaps more descriptive:

> *"where the researcher tries to construct a clearer and more comprehensive picture of something….build on existing bodies of knowledge and fill in further details in order to arrive at a rounded picture of the extent or significance of something"(Fulcher & Scott, 1999:73)*

My research has an element of documentary research using written publications from a variety of national and public bodies such as funding councils, Skill and government departments. In addition, I have included data from the university where I have based this project, some of which

has come from internal databases and unpublished departmental reports. This so- called "grey information" enabled me to provide the context for the disabled students who have participated in this research.

I chose an email semi structured interview of students and some staff as my main method of data collection. Although this approach has positivist connotations, it is an efficient way to gain information from a larger sample than would otherwise be possible from more interactionist approaches.

Data Collection

My objectives for data collection were as detailed in chapter 1 above. I wanted to gain data to understand the demography of disabled students at the university compared to the UK overall and establish their use of assistive technology and how this was decided upon. I wanted to gather data about support available other than technology and then gather evidence directly from students about their use of technology and other support with particular reference to how it might promote more independent study. I aimed to gather additional views from academic and support staff on the use of technology by "disabled" students and to compare and contrast the collected data with previous research findings.

A mixture of quantitative and qualitative data was needed. I used the quantitative data to establish the availability of technology amongst disabled students, give demographic information about the students themselves and provide information about technology available on the university campus and as part of the university's online learning provision. The disability service maintains a database of all its users including key information about their needs, recommended adjustments, reports which support applications for Disabled Students' Allowance, including technology recommendations and purchases. This is linked to a wider university database which includes personal information such as addresses and academic progress information. Information about the number of applicants to university who disclose a disability, as opposed to those who are users of the disability service, can be obtained from UCAS and is fed into another linked database within the disability service. The disability service databases are accessible to me as an adviser and can be interrogated to produce reports based on a variety of criteria.

In order to set my research in context, I have obtained data about the overall numbers of (disclosed) disabled students in higher education in the UK. This was acquired through the use of statistics from the Higher Education Statistical Agency, documents from the funding councils and

from large scale research projects. Information about the Disabled Students' Allowance (DSA) and its role in the provision of technology is available from the administering bodies: the Student Awards Agency for Scotland (SAAS) and the Student Loans Company (SLC) in England and Wales. Changes in administration may make comparisons and data collection more difficult.

The qualitative data focused on the *actual* use of technology by disabled students and was gathered by semi structured email interview. As this project was concerned with technology, I used email as my preferred method of communication with students. Email is the first option of communication between academic staff and students and indeed for much of the university's day to day business. I ensured that my communications regarding this project were clearly identified as separate from communications I may have with students and staff in my day to day role as a disability adviser.

Collecting student experience data

I had first considered an email questionnaire to a large number of students to ask about their use of technology. However, large scale questionnaires to all disabled students known to the disability service are regularly sent in order to provide feedback on our services. These result in a low response rate – typically 30% (Saltire University internal

documents, 2010). The questionnaire is available on the university intranet system and students are invited to complete it when they log in.

The poor response to this questionnaire resulted in an additional monitoring method: all students who had been recommended technology in the academic year were emailed directly and asked how they were getting on and to highlight any particular issues or problems they had. The response rate for these emails was approximately 80% which was very pleasing.

I therefore used the responses from those emails as a starting point and then supplemented this with a smaller number of email semi-structured interviews with a follow up telephone call where clarification was necessary. This method allowed me to select a target group of students which adequately reflects the range of impairment groups, courses of study, gender and age. I had already developed good working relationships with many of these students so hoped that this would produce a good return rate.

The timing of this research in the academic year was problematic as it was likely to clash with examinations. To leave correspondence until after exams was risking students being absent from campus and therefore less likely to be checking their university email. I decided to take this risk and emailed 20 students at the beginning of June 2010,

just after the end of examinations. In addition to current students, I also contacted one former student who graduated in 2009. This student had influenced my choice of research project as she had made substantial use of technology and had achieved a high degree of independence in her studies. We had developed an excellent working relationship over previous years and had kept in touch. She indicted her willingness to assist with this research so I felt it was important to include her contributions to this project.

The design of the email semi structured interview was vital in order to identify patterns of cause and effect and the general relationship between variables (Marsh, 1982). It is necessary to establish the variables and decide how these should be measured. Much of the measurement in social research, and in this project, will be either of nominal variables i.e. mutually exclusive categories with distinctive labels e.g. male/female, course of study or ordinal variables which can be ranked into sub-categories e.g. use of technology. In order to plan an interview that links my research question to measurable variables, it was necessary to first draft a set of questions and test them on the target audience. I produced a list of questions with a mixture of closed and open questions. I piloted this trial version on one student whose feedback was generally very positive but recommended I include further

scope for comments generally about technology. I amended the questions to reflect this and then emailed the interview to twenty students (appendix B).

An email questionnaire is relatively cheap to produce and administer to a large number of students who could remain anonymous which may be helpful in eliciting more honest and detailed responses. They can complete it in their own time, without bias from the researcher at a time that suits them. It would be accessible to D/deaf students, or those with a visual impairment through the use of text to speech software. However, the ability to probe further if answers are unclear is lost.

In wording my questions, I bore in mind that "questioning people is more like trying to catch a particularly elusive fish" (Oppenheim, 1973: 49) and endeavoured to make the questions understandable and jargon free, concise and specific. Questions should not use assumptions or be prejudicial or lead the respondent to a "correct" answer and I attempted to keep the questions as neutral as possible.

Kvale (1996: Box 2.1) has identified key characteristics of qualitative interviews including the interpretation of the meaning of central themes in the life world of the subject, specific but descriptive qualitative information being obtained through an open, interpersonal focused interaction that can be a positive experience for the interviewee.

As well as the interview questions, I also sent students a participant information sheet with consent form and this is discussed below under "Ethics". In addition, I had spoken informally to a number of the students before the questions were emailed and they had indicated they would be willing to take part in this research.

Sampling Procedures

I needed to decide on an appropriate sample for my interviews. The population of students that was my starting point, i.e. those known to the disability service, was already be uneven in terms of characteristics such as gender, age or course of study. I hoped to gain a sample that included males and females of a range of ages, undergraduate and postgraduates from various faculties.

The variable of impairment "category" is a problematic one. The use of technology amongst students varied because of the impact of their impairments on various aspects of study. For instance, a larger proportion of visually impaired students used technology as without it, much of the curriculum would be inaccessible. I wanted to ensure that specific impairment groups were represented and one way was to use a stratified random sample (De Vaus, 1996). This is where the population is stratified by a key variable(s) such as gender, age, or type of school attended, and a random sample is then drawn from each of these

categories. In this case, the category was impairment. I was a little uncomfortable in using this medical model of disability approach but there were limited alternatives.

The main sampling method that I used in this research was quota sampling (Patton, 1990) where the proportion of people in each group is known in advance and a sample is drawn to reflect this pattern. In addition, I have to reluctantly agree that there was some additional bias added to my sampling techniques in that some of the students I contacted were ones whom I had considered more likely to participate or be willing to share their views. This could be identified as "opportunity sampling" (Patton, 1990) where people are chosen because they are readily available. This is common in market research and is a convenient method but does introduce some bias to the sample.

The sample group

I contacted twenty students aiming to have a balanced group in terms of gender, undergraduate/postgraduate, age, year of study and across all the faculties of the university. 60% were female, 80% were undergraduates with a mix of years of study with just under half being first years. There were nine students from the faculty of Law, Arts & Social Science (which is by far the largest in the university) with three students each from the faculties of Science, Engineering and Education

and two from the Business School. Most impairment groupings were represented: dyslexia, sensory impairments, mobility impairment, mental health, unseen "disabilities", multiple "disabilities" and Asperger's syndrome.

The Response

I was pleased with the response to my request for information. I received twelve completed interviews from the twenty sent out. All students and certainly disabled students, have significant demands on their time and I appreciated the time and effort they put into their responses. Eight responded to my first request with a further four responding to a reminder email.

Table 1: Respondent characteristics

	Student A	Student B	Student C	Student D
Gender	Male	Female	Female	Male
Age	44	46	42	19
Course	LLB Graduate Entry	Post Grad Diploma in Law	BA Arts & Social Science	BA Business
Year	1st	1st	1st	2nd
Impairment group	Dyslexia	Visual impairment	Mental Health	Visual impairment
	Student E	**Graduate F**	**Student G**	**Student H**
Gender	Female	Female	Male	Female
Age	21	31	23	24
Course	BA Community Education	MSc Educational Psychology	Architecture	Childhood Studies
Year of course	3rd	Graduated 2009	1st	2nd
Impairment group	Dyslexia	Visual impairment	Deaf & dyslexia	Deaf
	Student J	**Student K**	**Student L**	**Student M**
Gender	Female	Female	Male	Male
Age	21	44	22	18
Course	Law	Bioscience	Sports Engineering	Bioscience
Year	2nd	2nd	3rd	2nd
Impairment group	Deaf	Visual & Hearing impairments	Mobility	Dyslexia

The respondent's subset gave a good range of age and impairment grouping but a slightly less representative balance of gender (7 females, 3 males) and more uneven mix of faculties with a higher proportion coming from the Faculty of Law, Arts & Social Sciences than the original sample. However, I think that the respondents give a valid sample of students for the purposes of this study.

Results of the interviews

When I received the completed email responses, I conducted a content analysis. I first considered what common themes could be extrapolated from the responses and then considered in more detail the specific responses looking for more detailed answers to the research question: does technology promote increased independence in study for disabled students? I processed the interview data from the twelve email responses using the approach summarised by Lofland (1971) and Miles & Huberman (1994) although I did not adopt a "code" method because of the relatively small amount of data. I sorted through the responses to identify similar phrases, patterns, themes, sequences and differences to establish any pattern and to give some generalised themes. These generalisations could then be tested against constructs and theories.

The themes that emerged from the responses included the use of assistive technology for three major areas of studying:

- Reading

- Preparation of written assignments

- Note taking in lectures or tutorials

Other areas of student life were less influenced by assistive technology and relied more heavily on adjustments e.g. locations of examinations and personal human support for mobility assistance around campus. Thus another theme was the use of adjustments either as the main source of support or in addition to other support.

It was clear that for a small number of students, especially those with visual impairments, assistive technology was essential to access their course. Two students, student B and graduate F, reported in their email interviews that they had been told in the past that they could not follow their chosen courses or careers because of their impairments: only the advent of certain assistive technology (together with a large amount of determination and talent) had allowed them to prove this assumption was incorrect (interview transcripts, 2010).

However, assistive technology and other support were only fully effective if the environment was also inclusive in ethos. There were still reports of individual lecturers being less than welcoming to students with impairments, seeing them as "extra work" or students who "belonged" to

the Disability Service. This was particularly evident around the provision of alternative examination arrangements which are recommended by the Disability Service after discussion with the student, but which are implemented by the academic departments. Stress and anxiety for both parties was evident in some narratives of problematic situations. This led to another theme being the implementation of adjustments within the academic department, including exam arrangements.

Another theme was the needs assessment process and applications for funding. There was some evidence of delays in getting appropriate support for a variety of reasons discussed below, but any delay could result in unequal access for a disabled student. Delays in receiving support was another area identified.

Disadvantages of my approach

The disadvantage of using one university as a case study is that it may be seen as too narrow an approach and it may be difficult to extrapolate generalisations that can be applied to other universities or the higher education sector in general. However, it would be difficult to gain sufficient, detailed and valid information about another organisation in the timescales involved in order to make a robust comparison. So I have accepted that my research may have limited opportunities for applying

its results to other institutions and is unlikely in isolation to result in major insights for policy development.

My sampling procedures, as outlined above, were practical but did introduce some bias into the respondent sample group. Although I ensured a spread of participants so that most variables were represented such as age, gender, faculty etc., this was an artificial sample group.

By using the email interview format, I attempted to gain the advantages of the interview method of data collection combined with the efficiency of the questionnaire format. This format is useful when participants cannot be observed directly and all informants can be asked the same questions. It allows the researcher control over the possible responses. But the information gathered is "indirect" and is filtered through the views of the respondents and given in an artificial rather than natural setting. The design of the questionnaire may bias the responses and not everyone will be equally willing and able to clearly articulate their responses in writing (Cresswell (1994), May (1997), Punch (1998)).

I have only been able to gain the views of a small number of students and all the students who responded to the interview questions are students with whom I have worked with in the Disability Service. Because of this working relationship, I also need to consider the fact that

there are therefore less likely to be critical of the support they have received via the Disability Service. Any student who believes they have had a very unsatisfactory level of support is unlikely to respond to a call to participate in research. I need to be aware that my findings may produce an "airbrushed" view of the current situation at Saltire university.

Ethics

I needed to ensure that my project met the appropriate ethical guidelines set down by the University of Leeds as the body to which my project will be submitted. I was advised that my work should meet also meet the requirements of the British Sociological Association Statement of Ethical Practice (1993). Having considered this, I identified that the student information I gained, particularly that from the email interviews, needed to be anonymised and confidential. Any participants should freely give their consent and be able to withdraw at any time.

The university where the students and I are based has its own ethical guidelines which are very stringent. If my research fell within its remit, I would have needed to gain approval from the ethics committee. However, there were a number of factors that led me to conclude that ethics committee approval was not required:

- The research was not conducted in the name of the university and the university would not be identified

- Participants would not be paid for their involvement

- All participants would sign a consent form after having received an information sheet

- Personal information e.g. details of someone's impairment, would not be included as it was not "relevant to the subject of the investigation"

- The information I intended to gather could be considered "work which is part of routine practices in professional contexts or service evaluation" which is excluded from needing ethics committee approval.

I also consulted with other researchers basing their studies in a university and found they were taking a similar approach.

It was very important that any student participants in my project who were also disability service users were clear that their individual information was confidential and would not be used in ways that they did not consent to. There was a clear separation of my role as an adviser and as a researcher. Students who agreed to participate were aware that their answers would not in any way effect their use of the disability

service and no action would be taken as result of information they provided unless they specifically requested this (none did).

All participants were sent a participation information sheet (Appendix A) and signed the consent form. All respondents returned the forms with their completed interviews. Results of the interviews were anonymous but because of the small numbers involved, individual students may be able to identify their individual contributions. Participants consented to their views being published and they were reminded of this fact both during and after contributing. All students were given the chance to review the research project and amend or delete any of the information that related to them.

Report writing and dissemination

I have identified a number of parties that may be interested in my research:

- Disability service at Saltire colleagues/manager

- Disabled students at Saltire

- Disabled students at other HE institutions

- Other Disability services at UK universities

- Centre for Disability research

There may also be the chance to present my findings at the regional workshops of disability advisers in Scotland which are organised by the Scottish Government periodically. I aimed to ensure that my research outcomes were accessible to all and plan to disseminate in a variety of formats e.g. electronic forms readable by text to speech software, large print copies.

Conclusion

I recognise that my research design had both opportunities and constraints with compromises being necessary in order to balance the strengths and weaknesses of the different methods used. My project is somewhat smaller than I had hoped because of time constraints. However, I feel that the recording of student experiences with assistive technology and a discussion of how this has aided a higher degree of independence for some students has meant this research project is valid and useful.

Chapter 4 – Disabled students and the university context

Introduction

In this chapter, I seek to set the experiences of disabled students in context. I look at the numbers of disabled students in higher education in the UK, at the university where this research is based and across a number of variables such as age, gender, course of study and impairment grouping. I take a broad view of the support available to disabled students at Saltire University, including non medical personal help, "reasonable adjustments" and assistive technology available both on campus and to individuals. I consider how my sample group of students have used the various methods of support and consider some of the advantages and disadvantages of that support. I examine the assessment process that is necessary to access support from the university and students' views on this process. I also reflect on recent initiatives that have been piloted for disabled students and their impact. This general setting of the context then leads into more consideration of disabled students' views in Chapter 5 via their directly reported experiences in the email interviews.

Disabled Students in the UK

In 2005/06, there were 137,945 disabled UK domiciled HE students, based on their own self-assessment (representing 6.9% of the overall student population). 119,010 of these were studying at undergraduate level, 18,935 at postgraduate level. In the same year, 47,940 undergraduates were in receipt of DSA, 3.6% of the undergraduate student population in that year.

The number of disabled students is now recorded by HESA but it should be remembered that these statistics only include those students who have chosen to disclose a "disability". The latest figures available are for 2008/2009 and show just over 7% of the total HE student population disclosed a disability, representing almost 67,885 disabled students across the UK.

Table 2 - First year UK domiciled HE students by disability 2008/10

Level of study	Total students	Total disclosing a "disability"	%
Total postgraduate	194,190	12,640	6.50%
Total undergraduate	744,845	55,245	7.40%

Total all levels	939,035	67,885	7.20%

(HESA, 2010)

Although analysis by impairment group is perhaps a more medical model approach to disability, the figures are interesting to note, particularly the high proportion of disabled students who fall within the "dyslexia/specific learning difficulty" bracket. A summary of the findings is below :

Table 3

Impairment Grouping	% of disabled students
Dyslexia	45
Blind/Partially Sighted	2
Deaf/Hearing Impairment	5
Wheelchair user/mobility difficulties	4
Need Personal Care Support	0.1

Mental Health Difficulties	6
Unseen (Diabetes, Epilepsy, Asthma)	16
Multiple "Disabilities"	9
Not List in UCAS: 0-8	11

* note: total does not =100% because of rounding.

(adapted from HESA, 2010)

Disabled Students at Saltire University

The university where this research is based has a slightly different profile of disabled students than the overall UK picture detailed above. The statistics are complicated by Asperger's Syndrome being reported to the university as a separate category, whereas in the statistics above, this group of students is included within "unseen disabilities". The numbers of disabled students at Saltire university over the past three academic years are detailed below:

Table 4   Saltire Disabled Students

Code	UCAS "Disability" Description	Numbers of students & (%)		
		2007/8	2008/9	2009/10
0	Disability not known	23 (3%)	20 (2%)	5 (1%)
1	Dyslexia	302 (35%)	357 (38%)	312 (32%)
2	Blind/Partially Sighted	32 (4%)	36 (4%)	34 (3%)
3	Deaf/Hearing Impairment	48 (6%)	41 (4%)	45 (5%)
4	Wheelchair user/mobility difficulties	40 (5%)	28 (3%)	30 (3%)
5	Need Personal Care Support	2 (<1%)	3 (<1%)	7 (1%)
6	Mental Health Difficulties	57 (7%)	72 (8%)	75 (8%)
7	Unseen (Diabetes, Epilepsy, Asthma)	195 (22%)	192 (20%)	186 (19%)
8	Multiple "Disabilities"	31 (4%)	55 (6%)	92 (9%)
9	Not List in UCAS: 0-8	131 (15%)	121 (13%)	111 (11%)
10	Aspergers	11 (1%)	21 (2%)	34 (3%)
11	A specific learning difficulty e.g. dyslexia	*	*	57 (6%)

Total	**872**	**946**	**988**

Saltire University seems to have a higher proportion of disabled students with a visual impairment, mental health difficulty and unseen impairments than the UK average. There are a lower proportion of students with mobility difficulties or who are wheelchair users. This is not surprising as the campus is on a very steep hill with resultant challenges for these students. The lower proportion of students with dyslexia may be because of the strong learning support provided by another (post 1992) university nearby in the same city. The higher incidence of students with unseen impairments may reflect the higher level of certain conditions such as multiple sclerosis in Scotland (Multiple Sclerosis Trust, 2010).

Support Available at Saltire University

The Disability Service

Saltire has a well established Disability Service. In 1996, a disability advisor was recruited and based within the Counselling & Advisory Service for students (interview with assistive technology manager, 2010). The provision was expanded by the additional of an administrator and an assistive technology expert and the Special Needs Service was set up in approximately 2001 (internal Saltire document, 2002). It was

renamed the Disability Service in 2005 and now exists to provide information, advice and additional services for disabled students, disabled applicants, and for University staff working with and for disabled students and applicants. It

> *"supports the University in achieving its strategic goals in an advisory capacity and provides guidance on how the University can ensure it meets its legal obligations under relevant legislation including determining the 'reasonableness' of adjustments for disabled students and applicants, and the Public Sector Duty to Promote Disability Equality" (Saltire university website, 2010).*

The Disability Service now consists of disability advisers (2.5 FTE), a head of service and a small administration team. Unusually, also based within the Disability Service is a team of four assistive technology staff who are seconded on a permanent basis from the Learning Services directorate. Whilst other universities have access to technology staff, Saltire is the only one with technology staff based within the disability office (Saltire University revalidation application document, 2009).

The Disability Service was recognised by the Scottish government as being well resourced and was one of the first to be validated to undertake its own needs assessments of students following the Toolkit

of Quality Indicators. The Toolkit of Quality Indicators was designed by the Disabled Students Stakeholder Group in 2004-05 in response to Scottish students in higher education having to wait unduly long to be assessed for the Disabled Students' Allowance (DSA). The Toolkit and the validation policy were created to offer Scottish universities and colleges a route by which to become validated to assess their students for DSA (Scottish Government, 2010).

All the students who participated in this research had received a needs assessment at Saltire. In three cases, students had previously been assessed under the same process either at a previous university e.g. for post graduate students when they were following their undergraduate course; or at college. The needs assessment process followed at Saltire considers a number of outcomes:

- Recommended adjustments to be communicated to academic departments such as provision of lecture notes or alternative exam arrangements

- Consideration of assistive technology appropriate to the needs of the student including the use of on campus provision

- Recommendations for training e.g. IT training for assistive software packages which is provided in-house, or for the Effective Learning Programme

- Consideration of the use of non medical personal helpers, most employed by the university as sessional workers

- Report to accompany an application for Disabled Students Allowance or consideration of funding from other budgets within the university (Saltire university internal document D, 2009).

As well as the students who responded to the email interview/questionnaire, a larger number of students provided feedback on the support provided by the Disability Service. The request for feedback each semester goes to all students who have used the service and although the response rate is only about 30%, some interesting comments have been made over the past two years. In 2009/10, in response to the question "If your needs were assessed by staff in the disability service, were you satisfied with the conduct of the assessment?", 93% said yes (54 students), 25 (1 student) said no, and 5% (3 students) said "not always". 90% were happy with the outcome of the assessment with 5 students being unhappy or not totally happy with the outcome (internal document , 2010).

The responses to the feedback questionnaire can be anonymous and therefore it can be difficult to understand reasons for student dissatisfaction. However, in interviews with disability service staff, all

mentioned the fact that sometimes the expectation of students is that if they have a needs assessment, they will automatically get a laptop through the Disabled Students Allowance. A small number of students tell the assistive technology advisers that they have been told either by college or by school staff that they will be "entitled" to a laptop. Recommendations made under the Disabled Students Allowance must be robustly argued on grounds that they are essential for a student because of their disclosed impairment. This can cause conflict if a student is recommended to use on-campus software rather than a recommendation for their own copy.

Assistive Software

The university has invested in on-campus provision of two pieces of commonly recommended assistive software: Read & Write Gold and MindGenius. This software is now available in all centrally managed computer labs such as those in the library. Of the students who responded to my email interview, ten of the twelve used at least one of these pieces of software. Read & Write Gold is a text-to-speech tool which gives a computer a voice. Students can use this tool to read any text such as an essay they are writing in Word, an email, an electronic journal or a webpage. Read&Write also has a built in dictionary to allow

students to check on definitions as they read and the spell check facility includes a homophone checker.

For students with dyslexia, both the read aloud options and proof reading tools can be useful. In addition, students who have identified difficulties with maintaining concentration, for example as a symptom of a mental health difficulty or as a reaction to medication, have also reported that the read aloud facility helps to maintain focus when reading. The disadvantage is that material to be read needs to be in an electronic format.

MindGenius is the other most commonly recommended assistive software (internal document E, 2010). This is an organisational tool which allows a student to create mind maps (spider diagrams) easily, for essay planning and preparation. This could be for many study tasks including exam revision, to do lists, note-taking and group-work. Mind maps can be exported to a variety of applications including Word and PowerPoint, so the effort put into MindGenius not only creates a mind map but also can give a starting point for an essay or presentation. Six of the twelve sample students mentioned using this software as an aid to planning.

Other assistive software that is used by students who were part of this research included screen reading software which is more specifically developed for visually impaired students, including JAWS and Kurzweil 1000 and 3000. In addition, some students have used Braille note takers and embossers, CCTVs, magnification software such as Zoomtext and alternative keyboards and mice. Most often, this type of equipment is funded through DSA and the student has their own copy or equipment although communal facilities are also available in an assistive technology resource room in the library.

Using the Disability Service database, I was able to extract information about which type of assistive technology had been recommended to students over a three year period and a summary is shown in the table below:

Table 5: assistive technology recommended 2007-10

Academic Year	Number recommended	Academic Year	Number recommended	Academic Year	Number recommended
2009/10		**2008/9**		**2007/8**	
Laptop	318	Laptop	289	Laptop	259
Dragon	16	Dragon	32	Dragon	20
Spellchecker	4	Spellchecker	2	Spellchecker	10
PDA	3	PDA	4	PDA	10
Kurzweil	5	Kurzweil	5	Kurzweil	8
MindGenius	56	MindGenius	81	MindGenius	82
Dictaphone	77	Dictaphone	94	Dictaphone	103
Posturite	5	Posturite	4	Posturite	2

Read and Write	72	Read and Write	76	Read and Write	64
Alt mouse	15	Alt mouse	13	Alt mouse	11
Zoomtext	4	Zoomtext	2	Zoomtext	2
Jaws	1	Jaws	2	Jaws	4

(extracted from Saltire Disability Service database, 2010)

Support from academic departments

Each academic department has a Departmental Disability Contact
(DDC). The role of the DDC is to discuss with students, or potential
students, with a disability, any aspect of the courses and classes offered
by the Department that might relate to their additional needs. The DDC
acts as a two-way channel for communication between the Disability
Service and academic and other staff with regards to the needs of
disabled students, taking into account the legal obligations and the
students' rights to confidentiality. The DDC also acts as a source of
information and advice for academic and other colleagues on matters
related to disabled students and receives guidance, support and
information from advisers in the Disability Service (DDC Handbook,
2009).

Only three of the students who participated in the research mentioned
the role of their DDC in their support (interview transcripts, students A, E
and H).

Central Scanning Service

As a result of the difficulties experienced by student B and in acknowledgement that her academic progress was being affected by accessible materials not being provided quickly enough, the university sought to develop a more efficient way of dealing with making reading list materials more accessible. The central scanning service was established and a large high quality scanning machine was purchased and funding for a full time person to scan materials was approved initially for one year. This has recently been approved for a further year.

Academic departments, the library and the disability service work together to ensure that accessible materials are made available to visually impaired students. The disability service identifies students who would benefit from the scanning service via the needs assessment process.

For the scanning service system to work, it is important that academic departments identify essential reading and make requests made in advance and are able to provide information so that scanning can be prioritised and made available to students at the appropriate time. Textbooks are scanned under the Copyright for Visually Impaired Persons Act (CVIP) licence and the Disability Service have a small team (under the guidance of a disability adviser) who ensure that the files are

proof read, named appropriately and are able to be read by screen reading software.

Students B, Graduate F and student K had all been recommended the use of the central scanning service. Student B had commented after the service was made available "for the first time ever, this semester I have the reading materials that I need. It's such an improvement" (Saltire university website, 2010). Both student B and graduate F were following courses that were "material rich" with long reading lists: timely access to these were vital to academic success. However, student K had experienced some problems with her academic department not providing reading lists early enough: "the scanning service material was great but I could have done with it earlier in the semester – I was playing "catch up" right until Christmas" (Student K interview, 2010).

Student K compared her experience of using the scanning service with her previous support at college:

"I always had to get someone to read the textbooks to me. I really didn't like it, it was never when I felt able to concentrate, some were OK at it but some voices just sent me to sleep. I didn't like to ask them to repeat things too much. It's so much better when you just have it on the PC and you can play is as much as you like"

Records from the Disability Service show that only one student has been recommended to have a reader in the past two years. Records of specific help such as readers is not available for previous years but in interviews with colleagues who have worked in the Disability Service for ten years or more, they recalled that visually impaired students often used a reader (interview with assistive technology manager transcript, 2010).

Live Remote Captioning

A new provision had been introduced in 2009/10 for those students who use lip reading as they main method of receiving information in lectures. Students reported difficulties in hearing lecturers in large lecture theatres, even when using radio aids, microphones or induction loops as background noise can cause problems. Such students are usually allocated a note taker so that they can focus on the lecturer's face. Although lecturers are advised on maintaining a good environment for lip reading, inevitably, some are easier to lip read than others because of facial hair, accents etc.

A provider was found who was willing to pilot a programme. Several other universities were also interested and funding for the pilot was approved from the Scottish government for one year initially.

The LRC service provides deaf students full access to lectures by converting live speech directly into displayed text in real time with minimal delay. The aim is to improve the support for hearing impaired students by providing wider access to a more flexible and consistent service. Audio from the lecture is captured by a radio microphone worn by the lecturer and then transmitted using a mobile phone connection to a captioning studio. The captioner will then use voice recognition software to turn the speech into text, by re-speaking everything that is said, which is then returned to the student's laptop within a matter of seconds via a secure internet link. Each student views the text on their own laptop which allows for individual customising of display settings and font sizes. Text can also be displayed on a second screen which allows the lecturer to monitor the returning text although this option was not used in the pilot. The student is provided with a full transcription of the lecture, which they can save for future reference.

A non medical personal helper brings the required equipment prior to the start of the lecture in order to allow them to set-up, test it and establish a connection via mobile phone. The student then uses their laptop to log in to the secure live captions website in order to follow the returning text. The helper is present throughout the lecture to ensure that the mobile

connection is maintained and to deal with any issues that may arise with the equipment.

The LRC is an alternative to the current services such as electronic note taking, Speedtext or manual note takers with the aim of improving reliability, flexibility and scalability. There is less reliance on service providers who have to travel to/from the institution as the respeaker can be located in a studio anywhere in the world.

One of the twelve students in this research had used the LRC and in addition, another student who used the LRC had been interviewed by another member of the Disability Service to provide more detailed feedback on the pilot programme. Both students reported more freedom of choice and feelings of independence and control over the information they were receiving. Their more detailed responses are found in chapter 5.

Conclusion

The disabled student population at Saltire has a similar profile to that found in UK universities overall but with some minor differences that reflect the particular provisions available (such as facilities for students

disclosing Asperger's) or the physical environment (fewer wheelchair users because of the geography of the campus).

The range of support available to disabled students is wide and includes adjustments made by academic departments; assistive technology; the needs assessment process; non medical personal help organised by the Disability Service; the central scanning service and Live Remote Captioning projects. Students who responded to this research have used support in all of these categories and have been able to comment on how this support has aided their studies. The detailed responses and analysis of their comments is found in the next chapter.

Chapter 5 – Recording Student Voices

Introduction

At the start of this project, I felt it was important to record the experiences of current students to more accurately reflect the reality of life for disabled students in the UK today. Their voice is rarely heard in any great detail. Although the Disability Equality Schemes now require consultation with disabled people (direct.gov.uk, 2010), a survey of university schemes showed that at least 8 % did not adequately consult with disabled students (Harrison et al, 2009). And even if they are consulted, do disabled students have a say in the policies and procedures that impact on their life? The recent *Pathways report* (OIA, 2010) found that students bringing complaints are much more likely to describe themselves as having a disability (23 per cent compared with six per cent nationally) which does suggest that there is still much progress to be made.

As detailed before, there is relatively little research into disabled students in higher education (Fuller, 2009). Much of the research is about participation rates and entry in to higher education, rather than the experience of disabled students once they are engaged in their studies (Fuller, 2009). I felt it was important that the experience of current

students was directly reported, giving a forum for their views both positive and negative.

Information available

I have been fortunate that I have had access to information about the disabled students within my institution, made much easier by the excellent database that has been developed in-house by the assistive technology manager. This allows all disability service staff to record student details, links with other university systems such as Registry to prevent duplication and errors. The database provides a venue for recording notes of meetings with students, assists in the preparation of needs assessment reports for DSA, tracks progress of DSA applications and provides an efficient and "low-key" approach to communicating recommended adjustments to academic departments. The information available included details of all students who have applied for DSA and the recommendations including technology and NMPH. This information gave me an excellent start in analysing the range of students who could usefully provide feedback on their use of technology.

I was also able to gain access to feedback sought from students who had used the Disability Service. The feedback is gathered each semester via a self-completed questionnaire. The responses can be anonymous and most students choose to retain this anonymity. Although

some interesting comments have been gathered from this data source, the overall response rates are low (a maximum of 30%) and so it was important to also gather information via my own research methods. The questions on the standard feedback questionnaire are very general about the service received and do not focus particularly on assistive technology or other types of support.

The Student Voice

The range of students who responded to my research request gave me a reasonable sample of ages, courses, gender and impairment categories. In addition to the twelve detailed responses, I have also recorded some of the comments made in the general Disability Service feedback questionnaires sent out each semester. In addition, I have also included comments made by students to colleagues conducting reviews of the Live Remote Captioning initiative and the Summer Transition Programme for students with Asperger's syndrome.

In answer to the question "Do you think that using technology has allowed you to be more or less independent in study?" all twelve students consistently thought that the assistive technology they used did provide them with greater independence in study.

Some considered that they were almost completely independent, requiring no human support over and above the recommended adjustments being carried out by their academic department and their own use of software etc. For some departments, the adjustments were already in place for all students, thus negating the need for specific adjustments for individual disabled students. This is perhaps a measure of true independence: a curriculum made accessible for many students as a starting point, with additional technology to further level the playing field for those students whose impairments make some aspects of studying more challenging. Student E commented

> *"the kit I got has been so good I haven't really needed to use much else. I had to have loads of help from the learning support tutors at college but now I can just use the ReadyWrite thing (sic) to do my proof reading. I never used to plan my essays much but it's easy with a mind map – and this year I've started to add my lecture notes onto it, the links make it easier to organise all my material"* (Student E interview transcript, 2010).

Increased independence was particularly true of students with dyslexia but less so for students with mental health difficulties or Deaf students. Some of the support for Deaf students such as BSL interpreters etc could not be replicated by technology: only human support was really

effective. But even for these students, technology was an important element of their support. For students with mental health difficulties, planning and organising can be a challenging area and Student C demonstrated how technology had helped her in this area:

"I'm really not too good at the organising side of my course and keeping up with what I've got to do and when. I used to write lots of lists but it's much better to have them in one place on that mind map programme – it's all there, I add to it, save it and print it out when I need to, I'm really glad you recommended it" (Student C interview transcript, 2010).

Figures from the student database (Table 4) show that there were 75 students who disclosed mental health difficulties in 2009/10. Of these, 66 had been recommended and were using a Dictaphone to record lectures (internal documents, extract from database, 2010). These students mainly identified concentration difficulties during their needs assessments: either as part of their mental health condition or as a resultant side effect of medication they were taking for their condition. Many also reported feelings of stress as they struggled to keep their concentration for long enough to produce adequate notes during an hour long lecture. Having the ability to go back over an audio recording of a lecture to fill in gaps in their notes was an important facility. A number

reported during follow up meetings that their concentration actually improved because they were more relaxed: they knew it was not disastrous if they missed a part of the lecture as they could supplement their notes later at their own pace. This observation was made by a student in this study:

"The most useful thing is the Dictaphone, I find it so much less stressful knowing I can go back and fill in a gap in my notes if I need to. I think I concentrate more because I'm not worrying about what I might have missed" (Student E interview transcript, 2010).

However, comments from one student demonstrated how the use of technology in a lecture environment can lead to difficulties. In answer to the question "Has your use of technology led to any conflict with other students or members of staff? E.g. if you record lectures, has this ever been questioned or challenged?" student A gave this response:

"On several occasions I have been left justifying publicly to Lecturers why I am recording Lectures and Tutorials……One particular case affected me particularly badly. The Lecturer publicly demanded to know why I was recording the lecture. I was left with no alternative other than to publicly declare my disability in front of complete strangers….. They must ensure that they are aware that there could be students who have disabilities in their class and are

required to use such technology as Dictaphone's" (Student A interview transcript, 2010).

A smaller number of students with mental health difficulties were also recommended text to speech software (Read & Write Gold). The facility to have text read aloud and follow the text on the screen has, according to feedback received from students in follow up meetings, helped with concentration when reading. Students have found they are less distracted and tend to have to re-read text fewer times is they are both hearing it and seeing it on the screen. A number commented that this was particularly helpful for "drier" academic texts! The downside is that texts need to be in an electronic format in the first place. For some, the time needed to scan hard copies of chapters outweighed the benefits of the software.

Deaf students are a particularly interesting group when considering assistive technology. Saltire has 45 students who have disclosed a hearing impairment in the UCAS category for 2009/10. Only three of these students have BSL as their first language and therefore have interpreters for each teaching session. Two of these students were among the students who were interviewed for this project. Student G is Deaf and also has dyslexia. His comments about the use of assistive technology where mainly restricted to his use of software to aid proof

reading. This enables him both to identify spelling errors that are caused by his dyslexic difficulties and also to assist with the correct grammatical structure of English as opposed to the structure of BSL. He found however, that he still needed to work with an interpreter who could aid him further than the software. The other Deaf student (Student H) made use of technology for similar reasons but also had an electronic note taker in all sessions. One development that links human BSL support with technology is the development of remote BSL interpreting where the interpreter is available via a web link rather than in person (Deaf Connections, 2010). This has been used successfully for short meetings at a local council and was demonstrated to student G and the Disability Service in 2010 as a possible service for short tutorial meetings. A trial is planned for 2010/11 to evaluate its use in the higher education setting.

One of the students who responded to the research was part of the pilot Live Remote Captioning programme which is described in the chapter above. She had made several useful comments when interviewed as part of the monitoring of this project which she gave permission for me to use in this project. A selection of her comments show how important this has been to her, how it reduced her reliance on note takers and made her feel in more control.

"I've use the Live remote Captioning since September so that's about three or four months now. It's been incredibly positive, something that I've never had the benefits of experiencing before. At first, a few hiccups of course, as there is with any…. if you're using a technological thing for the first time….but it's amazing how much more information I actually get by having the lectures subtitled.

…I was getting the email saying here are all your notes so when I got home, I had all my notes and I could start studying rather than waiting three or four days for the note taker to get me the notes so it was a lot better than I thought it was going to be.

…. there was just no stress with it and it's something I can deal with on my own rather than have to rely on other people quite so much.

…. And I can control the font and the speed it come up at and I can do it myself rather than expecting someone to do it for me.
(from Live Remote Captioning feedback video, Saltire University, 2010)

Student D was one of three visually impaired students who responded. He is atypical in that he had acquired his impairment very recently and

was therefore well placed to compare his independence in study with and without a disability. Student D had completed his first year of study but had lost almost all his useful vision just prior to his second academic year.

When asked in his interview, how he though the assistive technology would help with his studies, D said:

> *Well without it I couldn't come back on the course. I hope it's going to be Ok in lectures and stuff; I should be able to follow some stuff on my laptop, get the notes in advance and stuff. Then record the lecture so I can hear it again if I need to. I think it's going to take longer though to do essays and stuff. I'll have to see how it goes but I think it'll be alright. I don't really want to have to rely on someone to take notes for me, I know you said that could be arranged but I think I prefer to do it myself. I borrowed some of friends notes last year when I missed some stuff and it was ok but it's not the same as your own notes, everyone has different shortcuts…..*

When asked if he thought the technology helped him to be a more independent student, his response was:

Yes, definitely, I don't think I would want to come back if I didn't have it. I don't see how I would be able to do my course at all.

Student D is currently on a break from his studies and has recently started back at his regular holiday job with an accountancy firm.

....and I have been using the stuff [screen reading software] at my job... I was slow to start with but now I think I'm nearly at the same speed as I was before. But I do have to be more organised now. I used to have stuff all over my desk....now I have to put it all in neat piles so I know where stuff is. But it's good that I can go back to my job at the same place, they wanted me to go back but they didn't know how I could do it without being able to see much. I think they have been impressed at what I can do

Conclusion

Although the amount of data I collected from students has been from a small sample, the richness of responses has allowed me to illustrate the direct experiences of a group of disabled students. It has demonstrated how independence in studying can be enhanced by assistive technology but only in an environment that is itself supportive. For some of the students, the technology support was the key to their learning; for others

it played a part but could not replicate the support they also required

from people on a one to one basis.

Chapter 6 Conclusion

For many years up until the 1990's, university was virtually inaccessible to disabled students (Barnes, 1991). Any students who disclosed an impairment did so in the knowledge that they were likely to be dependent on the goodwill of individual staff for adjustments. The legislative and government policy shifts from the late 1990s and beyond have opened up the higher education sector to disabled students but the picture is still far from the ideal of a fully inclusive, accessible curriculum.

Support for disabled students now includes assistive technology which has enabled the shift away from personal human support such as readers or proof readers towards tools that can be used by disabled students (and indeed many other students) in their own time and with a heightened degree of independence.

My research has demonstrated that for some disabled students, assistive technology has been able to replicate support that was previously only available by relying on others. However, the use of this technology is not sufficient for students to succeed if the overall environment is still hostile to students who disclose an impairment. From the experiences of the students recorded in this project, effective support for their studies needs to encompass a supportive learning environment with access to approachable and informed academic staff; flexible and

adaptable processes; timely access to assistive technology and appropriate funding.

My central research question was whether assistive technology promoted increased independence in study amongst disabled students in higher education. My conclusion is that it **can** promote greater independence but it is only one of a number of factors that support independent study. Assistive software has reduced the need for many students to rely on personal human assistance for reading or for proof reading. This allows them to manage their time more efficiently, be less reliant on others on a day to day basis and is more in keeping with the social model of disability.

However, for a small number of students, assistive technology cannot replicate the support that can be provided from one to one human support. Students with mental health difficulties and students with Asperger's were two groups of students that make effective use of human support, often supplemented by technology, in order to meet their particular needs. Technology can aid the organisation of this support but cannot replicate the benefit of having a mentor for example.

It is therefore important that assistive technology continues to be made available to disabled students and is appropriately funded. For a growing proportion of students, the use of assistive technology can mean their

dependence on services provided by a Disability Service is greatly reduced. However, the role of human support is still vital for some disabled students and their needs can only be effectively met by the provision of one to one support.

This project shows that although technology has broken down many of the barriers experienced by disabled students and aided more independent study, especially for visually impaired students, the context of that technology is important. Technology alone will not be enough: attitudes and good planning for an accessible curriculum are equally vital if disabled students are to benefit fully from higher education. Any support can only be fully effective in an environment that is welcoming to disabled students, is fully committed to equality of opportunity and allows disabled students to fulfil their full academic potential. There is still much work to do.......

Appendix A

Participant Information Sheet

Name of researcher: **Kathryn Fisher**

Title of the study: the use of technology amongst disabled students and its role in independent study

Introduction

This is a research project undertaken as part of a part time distance learning MA in Disability Studies at the University of Leeds. This project is informed by, but is totally separate from, my role as a Disability Adviser at the Saltire University. I am conducting this research as a student, not as a member of staff. I can be contacted by phone on 0141 548 3402 or by email at Kathryn.fisher@*****.ac.uk My supervisor for this project is Professor Colin Barnes at the University of Leeds who can be contacted on c.barnes@leeds.ac.uk

What is the purpose of this investigation?

The aim of the project is to consider the role of technology in promoting independent study amongst disabled students in the higher education environment.

Do you have to take part?

Participation is totally voluntary and deciding not to participate will not affect any other aspects of the way a person is treated. You have the right to withdraw at any time.

What will you do in the project?

I am asking you to complete a questionnaire. This can be done via email or by post if preferred. I would like to have completed questionnaires returned by Monday 12th July.

Why have you been invited to take part?

I have contacted a number of students who have used the Disability Service and have used technology. I have tried to ensure a balanced sample with regard to age, gender, course of study and impairment category.

What are the potential risks to you in taking part?

I have not identified any risks to you in taking part in this project.

What happens to the information in the project?

All information provided will be confidential and used only for this dissertation or related academic articles. Your email address will not be published in any way or passed onto anyone else. Any completed questionnaires will be analysed and stored securely for the duration of the project. The originals destroyed after the completion of this dissertation. No names or personal identifying details will be included in the dissertation and the name of the university will not be used. After the dissertation has been completed, all data files related to the information you provide will be deleted. No information provided will be passed onto anyone at Saltire University unless you expressly state you would like this to be done.

The University of Leeds is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

What happens next?

If you are happy to be involved in the project, please sign the consent form below (electronic signature accepted).

If you do not wish to be involved, just email to let me know so I don't email you again about this.

You are welcome to see the final dissertation report – if you would like a copy via email, please let me know. The dissertation deadline is 1st September 2010.

Consent Form

Name of researcher: **Kathryn Fisher**

Title of the study: **the use of technology amongst disabled students a
role in independent study**

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.

- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to give a reason and without any consequences.

- I understand that I can withdraw my data from the study at any time.

- I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.

- I consent to being a participant in the project

I (PRINT NAME)	Hereby agree to take part in the above project
Signature of Participant:	 Date

Appendix B

Semi structured email questionnaire sent to 20 disabled students:

Technology and Disabled Students

Thank you for agreeing to be part of this small research project. I would be grateful if you could answer the questions below to the best of your ability and/or memory! If there are any questions you do not feel comfortable answering, please leave blank. If a question does not apply to you please answer N/A.

All answers will be anonymous and no personal details will be published. The information will be used solely for the purposes of a dissertation and this questionnaire is not directly related to my role as a disability adviser. If you wish to discuss any issues raised from the information you provide which you would like me to take forward within the Disability Service, please indicate this separately in an email.

After you have completed your answers, please save and attach this form to an email to Kathryn.fisher@strath.ac.uk. My timescale

is short so I would appreciate any completed questionnaires by Monday 12th July 2010 or as soon as possible.

Thank you again!

Kathryn Fisher

1. Please outline some background information:

a) What did you do prior to coming to Saltire University? Please give brief details

- Previous study

- Employment

- Other activities

b) What is your current course of study (if applicable)?

c) If you are not currently studying, what activity are you now undertaking? E.g. employment, seeking employment, voluntary work, travelling etc.

2. I'd now like to ask you about your use of technology. By technology, I mean equipment hardware such as a Dictaphone, PC, laptop or Brailling equipment as well as assistive software such as mind mapping software or text to speech software. I am interested in what you used BEFORE coming to university as well as what you used/are using now.

a) What technology did you use **BEFORE** you came to university? This might have been at school or college or in employment. Please give brief details:

b) Did someone else make recommendations to you or on your behalf about what technology was appropriate? Did you have a say in what technology you used? Please explain the process used to decide on any technology used **BEFORE** university.

c) What training or orientation did you receive on the technology you used prior to university? Was it useful?

3. Thinking about when you were planning to come to start university, did you have an idea before you started of what technology might be useful for you? If so, where did you get this information from?

4. Did you have a needs assessment at university which included a discussion about technology before or shortly after you started your course?

5. If no, why was this?

6. Did you agree with the recommendations made following your needs assessment?

7. How long did you need to wait to get your technology?

8. Did you use your technology straight away when you got it? If not, why not?

9. What part of studying did your technology help with?

10.   What arrangements would you have needed if the technology had not been in place?

11.   Has your technology broken down? If so, how long were you without it?

12.   Were alternative arrangements put in place?

13.   Do you/did you use human support (NMPH) as well as technology? If yes, please indicate what type of support and how many hours per week.

14.   Are you/were happy with your level of NMPH support?

15.   Have you had/did you have problems with the NMPH arrangements? Please give brief details. (NB remember all information will be anonymous and will not identify individuals)

16.   Do you think that using technology has allowed you to be more or less independent in study?

17.   Has your use of technology led to any conflict with other students or members of staff? E.g. if you record lectures, has this ever been questioned or challenged? Please give brief details.

18.   If you have any other comments about your use of technology in studying that you think are relevant, please detail below.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.

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