Exploring disabled learners' experiences of e-learning

LEXDIS Executive Summary

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Executive Summary

I feel much more conscientious and an able student – and that I'm on par with everyone else. This is since I got my equipment. Before, I have always had a negative experience. (Lottie, LEXDIS Participant)

1. The LEXDIS Project was funded under phase two of the JISC e-learning pedagogy programme. The overarching aim of the study was to explore the e-learning experiences of disabled learners within the University of Southampton in order to increase understanding of the many complex issues and interactions introduced by disabled learners' requirements for accessible e-learning, compatible assistive technologies and effective learning support.

2. Linked to the overarching aim of exploring the e-learning experiences of disabled learners, the LEXDIS Project had a related objective which is to develop user-centred methodologies for eliciting the e-learning experiences of disabled students and to disseminate these widely in order to promote a participatory approach to designing and evaluating e-learning.

3. The underlying principles for involving learners in the LEXDIS project have their origins in two related fields: Participatory Design and Participatory Research.

4. Drawing from the fields of participatory design and participatory research, for the purposes of this project, we have defined learner participation as:

   Involving disabled learners as consultants and partners and not just as research subjects. Where disabled learners help to identify and (re)frame the research questions; work with the researchers to achieve a collective analysis of the research issues and bring the results to the attention of each of the constituencies that they represent.

5. With regards to the participation of learners in the LEXDIS project, there were three key phases of participation:

   - Phase One: Consultation regarding proposed research questions and research methods;
   - Phase Two: Opportunity to contribute own experiences of using e-learning;
   - Phase Three: Opportunity to validate and interpret the results of the study and to contribute to the design, content and dissemination of project deliverables and outcomes.

6. The data collection tools that were used in this project consisted of an online survey; interview plus and focus groups. These data collection tools have been used in both participatory design and learning disability related participatory research.

7. The LEXDIS project recruited 30 participants from the University of Southampton who participated in all three phases of the project. In addition, LEXDIS were given access to the interview transcripts of one participant from a related JISC project (E4L).

8. The results from the project were analysed in order to further understanding of both the individual and collective experience of using technology as a disabled learner.

9. The key findings of the LEXDIS project are:

Use of Technologies to Support Study:

- The majority of participants own a mobile phone and a laptop; use instant messaging; participate in discussion forums; use social networking sites such as FaceBook and upload videos or photos onto the Internet. All the participants use search engines such as Google, access online learning materials of some kind, use word-processors and spreadsheets and contact tutors using email.
- Many of the LEXDIS participants customise their computers to suit their preferences, swap and change from a range of technologies; are well-informed about the strengths and weaknesses of particular technologies in relation to design, usability, accessibility and impact on learning and have developed a range of sophisticated and tailored strategies for using technology to support their learning.
- Many LEXDIS participants find they have to make sophisticated and complex decisions about how they use technologies to support their learning. Several factors influence this decision-making, most notably the affordances and properties of technologies. In making these decisions, disabled learners frequently find themselves conducting a cost-benefit analysis, and sometimes have to negotiate unenviable "catch-22's".
- Some LEXDIS participants make explicit and conscious decisions not to use assistive technologies.
- Many LEXDIS participants use technology with confidence. They feel comfortable with it and it holds no fears for them. Despite this confidence, some disabled learners identify "room for improvement" in terms of skill level and type of use.

Use of Social Networking Tools to Support Learning:

- Many LEXDIS participants are familiar with social networking tools such as FaceBook. Some have used these tools for learning. Many have used these tools for personal or social reasons, but have given them up because they were too distracting or time consuming. Disabled learners have to make decisions about what they can afford spending their time using and social networking tools are frequently discounted as "not for learning".

Influence and Impact of Assistive Technologies on Learning:

- Assistive technologies can improve learning outcomes.
- Assistive technologies can increase efficiency (although not all the time).
- Assistive technologies use can reduce stress.
- Assistive technologies can be time-consuming to learn how to use, which means that sometimes disabled learners find themselves having to make

difficult decisions about whether they can afford to invest the time to learn how to use them.

Disabled Learners' Feelings about Technology:

- Technology is just a tool, albeit a useful one.
- Technology (general and specific) can benefit disabled and non-disabled learners but it is unhelpful to adopt a one-size fits all approach.
- Categorising technologies is less helpful than understanding different learning and support needs.
- LEXDIS participants, for the most part, feel they would survive without technologies, but the value that they place on technologies in terms of having a positive influence on learning, means that they would rather not have to cope without technologies.

Influence of Pre-university Education on Technology Use:

- Some LEXDIS participants were extremely familiar with technology prior to entering HE, others experienced limited availability and use of computers.
- For some LEXDIS participants technology use was positively encouraged prior to HE, for others technology use was discouraged or unsupported.
- For some, but not all LEXDIS participants, past experiences of technology prior to HE had a negative impact on their use of or response to technologies.
- Sometimes LEXDIS participants choose not to access support because they prefer to learn by trial or error or because they feel they do not have the time to undertake training.

The Role and Nature of Technology related Support:

- LEXDIS participants generally know what support and training is available to them.
- There are a significant number of occasions where LEXDIS participants find the support available to access general e-learning unhelpful.
- Lecturers need to be more aware of how they can support use of and access to e-learning.
- Assistive technology training needs to be tailored to specific needs.
- The DSA system for assessing technology needs is frustrating at times.
- LEXDIS participants dislike being recommended assistive technologies based on "labels" rather than actual needs or preferences.
- Support from individual staff can make a real difference.
- LEXDIS participants value the support they receive from peers.
- Support needs to be timely.

Significant Factors that Influence Technology use:

- Significant accessibility barriers still exist for disabled learners, particularly in relation to Blackboard.

- Moments or incidents of technology breakdown and failure, particularly related to saving or printing work, have had a real impact on disabled learners, leading to some negative feelings about the value and role of technology.
- Some LEXDIS participants feel occasionally stigmatised by their use of assistive technologies, others feel the differences between disabled and non-disabled learners' use of technologies are getting less and less.

10. **Six key recommendations** can be drawn out from the results from the LEXDIS that can inform the practice of lecturers, support staff and learning technologists within Higher Education Institutions. The majority of these recommendations are based around recognition of where difficulties lie for disabled students:

1. *Improve and increase the availability of desktop personalisation across institutional networks*: so that students can log in with their own colour, font and accessibility options.

2. *Increase the level of provision for online materials:* Despite the fact that many students comment on issues of accessibility and ease of use of some of the materials online, this method of sharing resources is vital for those who cannot handle paper based materials easily. Scanning and using optical character recognition to cope with paper based materials takes time and the results are not always sufficiently accurate for easy reading with text to speech or Braille translation.

3. *Raise awareness and understanding for all those staff concerned with implementing and using Virtual Learning Environments regarding accessibility issues caused by cross- course differences and inconsistencies:* Offering teaching staff the ability to adapt the virtual learning environment (in this case usually Blackboard) to their own personal specifications may be causing navigational concerns for students who have to spend longer on task to find items and work within the various different VLE courses they are required to use, due to differences and inconsistencies in structure and organisation across courses.

4. *Increase the level of awareness for the use of alternative formats:* There remains a lack of awareness regarding the impact that inaccessible teaching and learning resources can have on disabled students. This does not mean that innovative teaching materials using interactive online applications should be avoided but rather that alternatives may need to be on offer that can provide a similar learning outcome. Even the most basic PDFs and PowerPoint's can also cause problems if they cannot be read on the screen with speech output or accessed via the keyboard. RSI is a growing difficulty for many members of the educational community and reliance on mouse only input is unhelpful.

5. *Be prepared to recognise the digital literacy skills that many disabled students have*: and build on these by providing more opportunities for improved learning outcomes through an increased choice of multimedia tools and resources.

6. *Design and develop learning opportunities and support systems that recognise the significant factors that influence disabled students use of*

technology, notably time: All disables learners cite 'TIME' as a real issue that influences their decisions about whether to use technology and whether to seek support to use technology. 'Just-in-time' learning seems to be the most appreciated type of training. When students have a problem, is when they want to learn the solution. This needs to be taken into account when thinking about library training, Blackboard and other technology training sessions.