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Accessibility and Mobile Learning

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The Disability Discrimination Act (DDA)1995

The Act became law in November 1995 and was introduced in 4 key stages:

- Definitions and Exemptions
- Employment
- Goods, Facilities and Services
- Education – SENDA 2001
 - Augmented – 2002,2003,2004,2005



SENDA (2001)

Problems with the Act / SENDA:

- Lags behind other legislation: sex and race
- Evidence that disabled people continue to be disadvantaged
- DDA 1995 concerned with reactive duties to avoid discrimination



Return to SENDA?

Are the needs of disabled people already catered for?

- Accessibility for disabled people is often overlooked.
- VLE's as an example
 - Dunn (2003)
 - Papadopoulos and Pearson (2007)



Return to SENDA? Part II

Experience of VLE's demonstrates the need for accessible learning environments in order to ensure equality, good practice and reduce the risk of possible litigation.

It is therefore vital that we examine accessibility when implementing mobile devices as learning tools.



Mobile Enabled Disabled Students



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Background

ALPS CETL



- Students from 16 Health and Social Care professions
- 5 Yorkshire HEIs (Bradford, Leeds, Leeds Metropolitan, Huddersfield, York St. John)
- ALPS aims to ensure that students graduating from courses in health and social care are fully equipped to perform confidently and competently at the start of their professional careers
- MEDS is funded by ALPS CETL





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MEDS: The Approach



MEDS Research Design

- AIM: To inform the ongoing work and development of ALPS in relation to the specific needs of disabled students when using mobile technologies for learning and assessment in practice settings
- MEDS established a range of exploratory methodologies as a detailed project proposal was developed.
- Action Research (AR) (Collaborative)

Research questions

- **How can mobile devices be used effectively to assist learning and assessment in practice settings among disabled students?**

Objectives

- What works well for disabled students?
- Identify the challenges that mobile technologies present
- Trial the use of new assessment methods
- Test the accessibility of the learning objects
- Work with T Mobile to explore current and future devices.



Methods of collecting data:

- **Focus group** of 10 disabled participants to explore general experiences of mobile devices.
 - Participants encouraged to handle and ‘play’ with devices, before being invited to provide feedback
 - Software developers present and gained immediate feedback

And...

- **Case Studies:** invited 8 participants to use the electronic device and the ALPS assessment tool to record experiences
 - These are then uploaded to an e-portfolio blog
- **Video interviews:** 3-4 participants



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Outcomes



Laptops are OK but ...

- Most of the participants used laptops
- Reported benefits included:
 - Easy to use them around the house
 - Ability to change position and place
- Reported problems:
 - weight
 - cumbersome
 - slow 'boot' up time i.e.: not immediate



Laptops are OK but ...problems

- *“I’ve got [a medical condition] and so I’m not supposed to carry heavy things like a laptop”*
- *“I’ve been on and off crutches nearly the whole of the summer and trying to carry a backpack with a laptop in ... it’s crippling me it’s got to the point where I just don’t bring the laptop in I’m just shoving everything on data sticks”*



Benefits for learning and living

- PDAs seemed a very attractive solution
- Many participants were using them to support memory difficulties
- Broad range of functions used e.g.:
 - diary
 - reminder system
 - spell check
 - audio
 - camera functions



Thoughts on mobile devices:

- *“If somebody took my laptop and my mobile phone my life would be over [laughter]”*
- *“If you took my laptop and my mobile phone I couldn’t even ring my mother”*
- *“if I haven’t got my brain with me, I have a really hard shift”*



Information from MEDs (so far)

- Mobile devices offer a potential emancipatory technology for disabled people
- Mobile devices offer new opportunities for researchers to collect data in real time (Dearnley & Walker 2009)
- Access for disabled people increases usability and flexibility for **all** users
- **BUT** without forethought and support a useful tool can be rendered ineffective or create barriers for the user.

Mobile Devices: opportunities for innovation?

The JISC guide to Effective Practice with e-Learning - 6 benefits

- Connectivity – information is available on a global scale.
- Flexibility – learning can take place any time, any place.
- Interactivity – assessment of can be immediate and autonomous.
- Collaboration – tools can support collaborative learning beyond the classroom.
- Extended opportunities – e-content can reinforce and extend classroom-based learning.
- Motivation – multimedia resources can make learning fun.

But how can these aid disabled users?



W3C?

Useful

- Web Accessibility Guidelines
- Guidelines for Mobile Access

Problems

- Rapid of technological change
- Not pedagogical guidelines
- Does not yet take into account convergence of technologies.



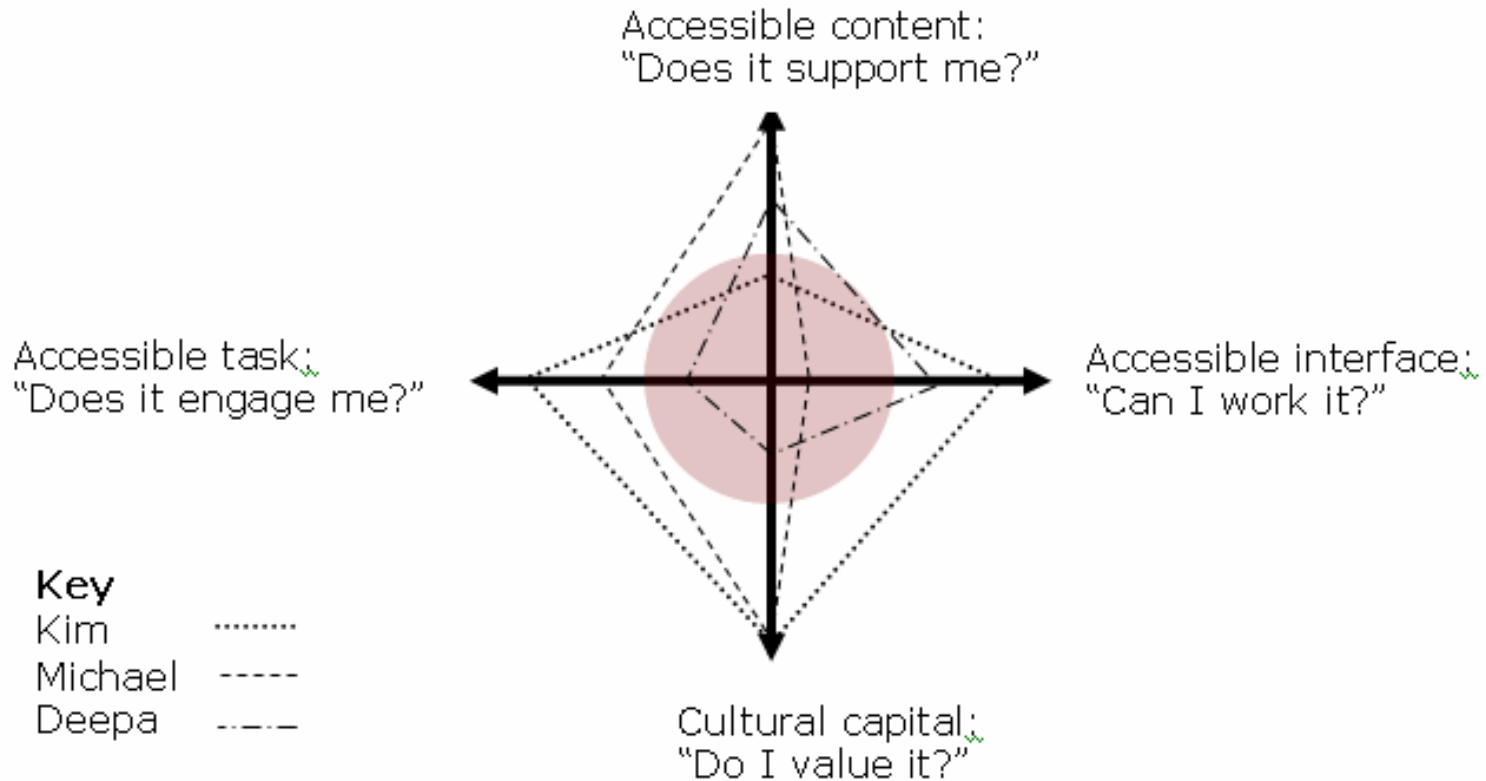
Accessibility Passport (Techdis UK, 2006)

Four main elements:

- Evaluation
- Commissioning
- Design.
- Delivery.



What is Accessibility anyway?



A model of accessible m-learning Techdis UK, 2008 (http://www.techdis.ac.uk/index.php?p=9_5_32_3)



Summary: Accessibility and mobile devices:

Useful tools / advice

- W3C
- Techdis
- Essential
 - Understand the legislation and its demands
 - Ensure accessibility is built in at the design stage.
 - Make Disabled people a central part of consultation



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Where Next?



September 2008 – TECHDIS HEAT 3 bid:

“A pilot study investigation into the benefits & barriers of Ultra Mobile Personal Computers (UMPC’s) used for learning purposes with disabled students”

MAIN RESEARCH QUESTION

- How can UMPC's be used effectively to assist learning and assessment among disabled students?

Project aim

- This study aims to establish how useable Ultra Mobile PCs are for Disabled people.
- Evaluation methodology will incorporate insights from previous work on the user experience of IT in HE from across the sector and here at Bradford (e.g. JISC-funded ELP1 and ELP2 projects; HEA-supported Inclusivity project; HEAT-2 project on speech recognition).



Objectives

- We hope to gain the following feedback on UMPCs:
- Capability of hardware e.g.: are they powerful enough for regular student use?
- Whether the size, weight and speed of Boot-up, make UMPCs feasible and attractive learning devices?
- How far do UMPCs offer true mobility / portability?
- With the almost ubiquitous use of Windows as an operating system (O/S) we hope to examine if users could accept an open source O/S such as Linux and how useable / accessible they found it.
- We will also examine how useable MS windows XP is on a UMPC.



References

- Dearnley C.A. Walker S.A. (2009) Mobile Enabled Research. In Vavoula, G. (Ed) Researching Mobile Learning: Frameworks, Methods and Research Designs. Peter Lang Publishing Group. Oxford (*in press*)