

Human Rights and Technology Discussion Paper

Submission by Andrew Normand

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Human Rights and Technology Discussion Paper	1
Submission by Andrew Normand	1
About Andrew Normand	2
Proposal 20 – Government Procurement	3
1. Benefits of Government procurement policies	3
2. Flow on effects of accessible Government procurement	3
Proposal 21 – Government Inquiry into Compliance	4
1. Organisational motivators for complying with standards	4
Proposal 29 - Digital Communication Technology Standard.....	5
1. Measuring accessibility	5
2. Accessibility Standards.....	6
3. Accessibility innovation don't always follow existing Standards.....	6
4. Procurement	6
5. Risk assessment matrices.....	7
5.1 Education	7
5.2 Banking	8
5.3 Airlines.....	8
6. Penalties for vendors that provide misleading accessibility statements	9
7. Contracts.....	9
8. AS EN 301 549:2016 needs to be accompanied by tangible measures	10
9. Relationship with other Standards.....	10
10. DCT Standards must address all user groups, not just the public	10
11. Ex ante and ex nunc duties.....	10
11.1 Ex ante duties	10
11.2 Ex nunc duties.....	12
12. Other models of disability that can are relevant to accessibility	12
12.1 Digital Capital.....	13
13. Relative capacities of big and small organisations	13
14. Format of the DCT Standard.....	14

About Andrew Normand

Andrew is the Web Accessibility Lead at the University of Melbourne. He assesses the broader impact of new IT initiatives on prospective customers, current students and staff. He also provides training for students and staff on assistive technologies. Andrew has established an industry leading user testing program which has employed over 40 students with hearing, vision, mobility and cognitive impairments. Together, they ensure that learning management systems, research management platforms, CRM, authentication, web apps and physical infrastructure (e.g. hearing loops) can be accessed by as many users as possible. As both a lawyer and software developer, Andrew enjoys working with project teams regarding international best practice on procurement, legal responsibilities, vendor management, design, branding and defect management.

Proposal 20 – Government Procurement

Federal, state, territory and local governments should commit to using Digital Technology that complies with recognised accessibility standards, currently WCAG 2.1 and Australian Standard EN 301 549, and successor standards. To this end, all Australian governments should:

(a) Adopt an accessible procurement policy, promoting the procurement of goods, services and facilities that use Digital Technology in a way that meets the above accessibility standards. Such a policy would also favour government procurement from entities that implement such accessibility standards in their own activities.

(b) Develop policies that increase the availability of accessible communication services such as Easy English versions and human customer supports.

1. Benefits of Government procurement policies

In general, US software products are much more accessibility compliant than Australian products.

US software vendors are more likely to:

- a) Have considered accessibility requirements when developing their product
- b) Have information available about the accessibility status of their product (via the VPAT system)

It is not uncommon for overseas software companies to respond to Request for Proposal accessibility questions by saying, 'Yes we know all about that because we sell to the US Government and so we have to be compliant.'

Most Australian software companies seem to have either:

- Have not heard of accessibility; or
- Don't see the need to be complaint, because they are only selling locally.

The establishment of a VPAT style system would be welcomed but vendors need to be encouraged to make honest declarations by:

- a) Dropping that requirement that procured software be completely WCAG 2.1 AA compliant in favour of a tolerance for minimal defects model. It is unrealistic to expect vendors to openly acknowledge know accessibility defects when complete WCAG compliance is mandatory; and
- b) Introducing penalties for misleading statements. Vendors often make elaborate claims during the procurement phase in the knowledge that there is little that purchasers can do once they have the system in place.

2. Flow on effects of accessible Government procurement

One or two project staff with accessibility experience, makes a huge difference.

One of the unrecognized successes of the National Transition Strategy was that it forced a whole lot of project managers, BA's and developers, who were working on government related IT projects, to become conversant with accessibility standards. As these workers have moved on from government projects and onto projects in areas such as education, they have brought with them their accessibility experiences.

Proposal 21 – Government Inquiry into Compliance

The Australian Government should conduct an inquiry into compliance by industry with accessibility standards such as WCAG 2.1 and Australian Standard EN 301 549. Incentives for compliance with standards could include changes relating to taxation, grants and procurement, research and design, and the promotion of good practices by industry.

1. Organisational motivators for complying with standards

Section 24 of the Disability Discrimination Act applies to all persons making available goods, services or facilities. Despite this, many individuals and organisations have the mistaken notion that accessibility is only a Government responsibility.

According to a WebAIM survey of accessibility practitioners¹, the main organisational motivators for complying with accessibility standards are:

- 26% compliance with guidelines and/or best practices
- 25% moral motivation (the right thing to do)
- 23% legal or contractual requirements (it's the law)
- 11% business/competitive advantage
- 8% fear of lawsuit

The same practitioners thought that the main reason for sites not being accessible were:

- 41% lack of web accessibility skills or knowledge
- 38% lack of awareness of web accessibility
- 23% lack of budget resources to make it accessible
- 8% fear that accessibility will hinder the look, feel or functionality of the site

¹ WebAIM, [Survey of Web Accessibility Practitioners #2 Results](#), 2018

Proposal 29 - Digital Communication Technology Standard

The Attorney-General of Australia should develop a Digital Communication Technology Standard under section 31 of the Disability Discrimination Act 1992 (Cth). In developing this new Standard, the Attorney-General should consult widely, especially with people with disability and the technology sector. The proposed Standard should apply to the provision of publicly available goods, services and facilities that are primarily used for communication, including those that employ Digital Technologies such as information communication technology, virtual reality and augmented reality.

1. Measuring accessibility

The proposal for a Digital Communication Technology Standard is a great idea, but in order to be effective, it will need to use a wide range of indicators to measure accessibility.

WCAG 2.1 AA is an excellent technical standard, but not a great standard for measuring compliance. Virtual no websites comply fully with WCAG 2.1 AA. If a site uses JavaScript, it probably won't be WCAG compliant; if a site uses web forms, it probably won't be fully WCAG compliant; if a site has many content contributors, it probably be WCAG complaint.

Measuring WCAG compliance is also an inexact science. It is estimated that automated accessibility tools only pick up about 30% of WCAG success criteria failures. Each automated tool runs different tests of accessibility criteria, so the results aren't consistent.

The majority of WCAG success criteria need manual examination and views of what constitutes success can vary, even amongst users of assistive technologies and accessibility professionals.

That is not to say that WCAG isn't extremely useful. W3C standards are the only internationally recognized standards when it comes to the web. Despite the wording being overly verbose, the WCAG success criteria and sufficient techniques have been well thought out. When coupled with other documents, such as the WAI-ARIA Authoring Practices 1.1, they provide a great technical standard for web content. But they shouldn't be relied upon as the only measure of accessibility.

Lack of access to digital communication is a systemic problem that needs systemic solutions. As such, a more holistic view of accessibility compliance would use a range of indicators, such as:

- Adherence with the Web Content Accessibility Guidelines 2.1 AA (WCAG)
- Adherence with the Authoring Tool Accessibility Guidelines 2.0 (ATAG)
- Including accessibility requirements in some procurement documentation
- Adopting accessibility requirements in IT contracts
- Creating accessibility risk assessment matrices
- Nominating an organisational contact point for accessibility issues
- Employing users with disabilities to test web sites and identify systemic barriers to access
- Ensuring that accessibility defects are addressed are given the same priority as other defects
- Ensuring that accessibility defects are logged in the same bug tracking software as other defects
- Ensuring that accessibility defects are addressed prior to going live
- Providing accessibility training programs to staff
- Providing online resources and training materials about accessibility
- Including accessibility scenarios in anti-discrimination training materials for staff
- Inclusion of accessibility selection criteria in position descriptions
- Completing regular audits of systems

2. Accessibility Standards

Whilst the Web Content Accessibility Guidelines (WCAG) are most frequently connected with the concept of web accessibility, other standards, such as the Authoring Tool Accessibility Guidelines (ATAG) are just as important.

Almost all web content today is generated using some type of CMS. Whilst WCAG helps identify accessibility defects, ATAG helps avoid them in the first place. ATAG has two parts: Part A, which specifies what needs to be done to make authoring tools accessible and Part B, which is about helping publishers to author accessible content.

ATAG Part B outlines how CMSs can support the production of accessible content via:

1. Ensuring that automatically specified content is accessible and that accessibility information is preserved when the content is saved.
2. Guide publishers in presenting accessible content.
3. Support publishers in checking and repairing accessibility problems.
4. Making sure that features that support the production of accessible content are easy to access.

The useful standards include the Game Accessibility Guidelines.²

3. Accessibility innovation don't always follow existing Standards

Some of the best accessibility innovations don't follow existing accessibility standards or practices. Before Apple released the first iPhone, in 2007, Nokia was the preferred mobile device for many screen reader users, because of the keyboard. The introduction of a flat screen interface controlled by gestures was at first baffling for many users and certainly didn't fall within the boundaries of existing standards. Today, the use of gestures on mobile phones has been widely adopted by screen reader users, resulting in vastly improved access to technology.

4. Procurement

The most effective for addressing accessibility is during the procurement stage. At this point there is still the option of selecting a more accessible product and vendors are willing to commit to fixing accessibility defects identified during the evaluation process.

The initial assessment of service access risk should be carried out by procurement officers by considering a [risk matrix](#). If a service is classified as low risk, then accessibility can be verified via:

- Inclusion of accessibility requirements in Request for Proposal (RFP)
- Satisfactory written response from vendor that gives procurement staff confidence
- Inclusion of accessibility requirements in contract

If procurement officers classify a service access risk as high, then verification will be accompanied by validation, including:

- Testing vendor claims of conformity against a demonstration version of the product. Manual testing by an accessibility expert is preferred, as is user testing. If no accessibility expertise is available, automated testing tools (such as Siteimprove, WAVE, Axecore or SortSite) can help provide a rough guide
- Compiling a list of accessibility defects
- Supplying the list of defects to the vendor and obtaining an assurance and date regarding remediation

² Game Accessibility Guidelines, <http://gameaccessibilityguidelines.com/>

In reality, it is unlikely that any product is going to be completely defect free. Most of the time, accessible procurement involves selecting a least bad product. Where a product with known defects is chosen, a means of alternative access to services will need to be established.

5. Risk assessment matrices

The proposed DCT Standards should include risk assessment matrices to assist organisations in prioritising accessibility risk.

All services delivered via the web have a risk that some users won't be able to access them, unless accessibility is ensured. But not all services carry the same risk. An online complaints system, intended for all customers, is almost certain to deny access to some users if accessibility isn't considered. Whereas an internal system for processing complaints, which is only accessed by 10 people on a daily basis, would have less risk. That is not to say that there is no risk, because one of the 10 might not be able to access the system. But there is certainly less risk.

Engagement with industry groups regarding the establishment of accessibility risk matrices would be a great way of getting the conversation started regarding accessibility. Most organisations, with the exception of the major banks, do not have a lot of inhouse accessibility expertise, but they are expert at identifying core activities. This would help focus attention on the user impact of inaccessible services.

Some example risk matrices are included below.

5.1 Education

Some universities are now adopting a risk matrix when it comes to IT procurement. Such a matrix can be useful in evaluating the appropriateness of learning technologies.

Education Risk Indicators	Low Risk	High Risk
Number of students who will access service	None	All students
Number of staff who will access service	< 100 staff	> 1000 staff
Project budget	< \$400,000	> \$400,000
Frequency of access	Yearly	Daily
Degree of educational benefits	Low	High
Affects student ability to seek admission or enrol	No	Yes
Affects student ability to participate in courses or programs	No	Yes
Affects student use of facilities and services	No	Yes
Affects student participation in learning experiences	No	Yes
Affects student support services	No	Yes

5.2 Banking

The Australian Banking Association has developed Accessibility Principles for Banking Services.³ These principles could form the basis of a risk matrix when it comes to IT procurement.

Banking Risk Indicators	Low Risk	High Risk
Number of customers who will access product, channel or service	None	All customers
Number of staff who will access service	< 100 staff	> 1000 staff
Project budget	< \$400,000	> \$400,000
Frequency of access	Yearly	Daily
Withdrawal of service results in inaccessibility of other services	No	Yes

5.3 Airlines

The US Air Carrier Access Act prohibits disability discrimination in relation to air travel. The US Department of Transportation has issued a rule⁴ defining the rights of passengers. The rule could form the basis of a risk matrix when it comes to IT procurement.

Airline Risk Indicators	Low Risk	High Risk
Carrier operates at least one aircraft that has a seating capacity of more than 60 passengers	No	Yes
Website involves booking or amending fares	No	Yes
Website involves core travel information	No	Yes
Website allows passengers with disabilities to request services in relation to wheelchair assistance, seating accommodation, escort assistance for a visually impaired passenger or stowage of an assistive device	No	Yes
Air carrier offers automated airport kiosks at airports with 10,000 or more annual enplanements	No	Yes
Equivalent service available to passengers with a disability who cannot readily use their automated airport kiosk	Yes	No

³ Australian Banking Association, Every customer counts, Accessibility Principles for Banking Services, November 2018

⁴ Department of Transportation, [Nondiscrimination on the Basis of Disability in Air Travel: Accessibility of Web Sites and Automated Kiosks at U.S. Airports](#), Federal Register Vol. 78 No. 218, 2013

6. Penalties for vendors that provide misleading accessibility statements

Most vendors either lie or are wilfully ignorant about the accessibility of their products. Some IT sales staff will say almost anything to get potential clients. In a way it is understandable because clients put compliance with WCAG as a mandatory requirement in their procurement documentation.

Experienced accessibility professionals, aware of the difficulty of fully complying with WCAG 2.1 AA, treat claims of conformance with caution. In actual fact, acknowledgement of existing accessibility defects is often a positive, because it shows that the vendor has at least tested their product.

A good accessibility statement from a vendor includes:

- Acknowledgement of existing accessibility defects
- Information on what testing they do internally, i.e. do they test with NVDA or JAWS?
- The name of an external accessibility consultant that has tested their product
- Details of the person responsible for accessibility defects
- A version history which identifies what defects have been addressed in each release, including accessibility defects

After entering into a contract for services, clients often have very little recourse when it comes to accessibility. Defects are typically added to a long list of post implementation defects, with business-critical defects taking priority. On occasion, vendors will simply refer to the contract of services, where accessibility requirements normally haven't been transferred from the original requirements document.

7. Contracts

Contract clauses are a great way to flush out the true accessibility status of products. Often vendors will spruik the accessibility features of their product, only to start backtracking when accessibility appears in the contract of services.

At present every purchaser comes up with their own contract wording regarding accessibility. It would be very useful if Digital Communication Technology Standard included sample wording for IT contracts.

An example accessibility clause, in use at the University of Melbourne, is as follows:

Accessibility

- a. *Where Deliverables comprise or incorporate:*
 - i. *an Internet or intranet application, or*
 - ii. *content, interfaces (both for administrators and end-users), or documents that will be available on the Internet or an intranet, the Supplier must ensure that that component of the Deliverables conforms to at least "Level AA" of the WCAG 2.1.*
- b. *Where a Deliverable does not comply with "Level AA" of the WCAG 2.1, the Purchaser may, acting in its discretion:*
 - i. *require the Supplier to promptly respond to and remedy any non-compliance; and*
 - ii. *withhold 5% of the Fees that relate to that Deliverable until the Deliverable is compliant with "Level AA" of the WCAG 2.1.*
- c. *Without limitation, if the Supplier fails to comply with clause [Insert number of clause dealing with notification of non-compliance], the Purchaser may, after the requisite remedy period (if any), exercise its right of termination pursuant to clause [Insert number of clause dealing with termination].*

WCAG 2.1 means the "Web Content Accessibility Guidelines 2.1", as amended from time to time. WCAG 2.1 can be accessed at <https://www.w3.org/TR/WCAG21/>

8. AS EN 301 549:2016 needs to be accompanied by tangible measures

The Accessibility requirements suitable for public procurement of ICT products and services in Europe (EN 301 549) are an excellent starting point for accessible procurement because they:

- a) adopt a standard (WCAG),
- b) identify the key stages of procurement: writing tenders, evaluating tenders, evaluating deliverables and managing contracts, and
- c) Have a good statement for evaluating suppliers accessibility capacity.

But EN 301 549 does not include either the ATAG or UAAG standards and don't include a rubric for rating tenders. That said, the feeling amongst accessibility professionals is that the Standard is a step in the right direction and is likely to be improved over time.

9. Relationship with other Standards

The proposed DCT Standards may have overlap with existing standards. Education providers may argue that they are not covered by the DCT Standard because they have their own standard. It would be worthwhile making it explicit that DCT Standard applies in addition to the provisions of the DDA and other Standards.

Section 3.8 of the Disability Standards for Education state that they do not override the Premises Standards.

The Disability Standards for Education (2005) don't mention the internet or online education. This lack of guidance makes it difficult for education providers to accurately determine their accessibility obligations. This difficulty is amplified when delivering wholly online courses to a global marketplace, where expectations of users can vary from country to country.

The DCT Standards will need to state to what extent the override the Disability Standards for Education.

10. DCT Standards must address all user groups, not just the public

The draft proposal states that the new DCT Standard will apply to the 'provision of publicly available goods, services and facilities. The problem with the term 'public' is that many organisations see the public as being external to their operations. As such, they may believe that the Standard does not apply to their customers or staff.

The Recommendation would be better worded to include the 'provision of goods, services and facilities. A risk matrix can then be used to determine which goods, services and facilities are most at risk.

11. *Ex ante* and *ex nunc* duties

The proposed DCT Standards both the need to address systemic and structural issues affecting people with a disability as a group (*ex ante*) and as individuals (*ex nunc*).

11.1 *Ex ante* duties

The right to equal access is a group right which exists before an individual attempt to access services online (*ex ante*). In the world of IT this is often referred to as 'out-of-the box' or 'default' functionality. According to the equal access model, online services are inherently accessible, it is just the way that they delivered that creates barriers.

The Disability Standards for Education 2005 contains a number of equal access provisions. It states that prospective students with disabilities must be able to enrol, participate in courses or programs and use services and facilities on the same basis as other students. The Standards also state that courses or programs must be designed in such a way that students with disabilities are able to participate in the learning experiences on the same basis as other students.

Equal access is sometimes referred to as an *ex ante* duty. ‘*Ex ante*’ is a neolatin term that means ‘before the event’.

The draft UNCRPD General comment No.6 on Equality and non-discrimination states that:

“The duty to provide accessibility is an *ex ante* duty, which means that it has to be provided before a person with a disability wants to use exercise his or her right, for example to enjoy access to a building, service or product, on an equal basis with others. States parties need to set accessibility standards that must be developed and adopted in consultation with organizations of persons with disabilities.”

Examples of equal access: Online education

- Reading materials are made available in a format that can be automatically accessed using assistive technology, without the need to create a separate accessible format version.
- Accessibility is considered during the procurement of a learning management system to ensure that it can be accessed via assistive technology, without the need for individual configuration.
- All videos lectures are captioned by default and so can be accessed by students with hearing impairments.

Some education institutions are often reluctant to recognize *ex ante* duties because they perceive that there is greater cost associated with making educational content accessible. In March 2017, UC Berkley decided to remove 20,000 public access podcasts and iTunesU content, in response to complaints that it wasn’t captioned.

In a [letter to the University community](#), the UC Berkley VC for undergraduate students explained, “As part of the campus’s ongoing effort to improve the accessibility of online content, we have determined that instead of focusing on legacy content that is 3-10 years old, much of which sees very limited use, we will work to create new public content that includes accessible features. Our public legacy libraries on YouTube and iTunesU include over 20,000 publications. This move will also partially address recent findings by the Department of Justice which suggests that the YouTube and iTunesU content meet higher accessibility standards as a condition of remaining publicly available.”

One of the benefits of fulfilling *ex ante* duties is that it helps avoid the overvaluing of online content. For example, UC Berkley would have thought that they had a high value repository of iTunesU materials. But much of that value disappeared overnight when they were forced to take it down.

But cost isn’t the sole factor preventing organisations from making online services accessible. A lot of web services are inaccessible solely because accessibility was not considered during the procurement process. As such, proper procurement procedures are key to fulfilling *ex ante* duties.

Practical measures that organisations can adopt to help fulfil *ex ante* accessibility obligations are:

- Including accessibility requirements in some procurement documentation
- Adopting accessibility requirements in IT contracts
- Creating accessibility risk assessment matrices
- Nominating a central contact point for accessibility issues
- Employing users with disabilities to test web sites and identify systemic barriers to access
- Ensuring that accessibility defects are addressed are given the same priority as other defects
- Ensuring that accessibility defects are logged in the same bug tracking software as other defects
- Providing accessibility training programs to staff
- Providing online resources and training materials about accessibility
- Completing regular audits of systems

11.2 *Ex nunc* duties

The right to reasonable accommodation involves adjusting the provision of online education to meet the needs of individuals. In determining the needs of individuals, The Disability Standards for Education creates an obligation to consult the student about whether their disability affects their ability to participate in learning experiences of the course. For example, online learning materials might be provided in an accessible format, but a student's assistive technology software might not support that format. There is an obligation to consult with the student and provide the materials in a format that the student can access, unless it would be unreasonable to do so.

Reasonable accommodation is sometimes referred to as an *ex nunc* duty. '*Ex nunc*' is a Latin term that means 'from now'. The draft UNCRPD General comment No.6 on Equality and non-discrimination states that:

The duty to provide reasonable accommodation is an *ex nunc* duty. It applies in a particular situation and in a particular context, often, but not necessarily, upon request by the person with a disability. Reasonable accommodation needs to be negotiated with the individual person with a disability concerned. Reasonable accommodation seeks to achieve individual justice in the sense that non-discrimination is ensured, taking the human dignity, autonomy, and choices of the individual into account."

Examples of reasonable accommodation: Online education

- A student with dyslexia contacts the course convenor and states that they are having trouble reading PDF handouts which have black text against a white background. The convenor agrees to provide the handout in MS Word format so that the student can choose their own background.
- A student with a mobility impairment has difficulty completing a time-based activity because they have difficulty using a mouse. The course convenor arranges to have the time limit extended for the activity.

The reasonable accommodation model offers a number of challenges when it comes to online education.

Consultation with new students typically takes place prior to the commencement of their course. Some undergraduate students have little experience with online course delivery. As a result, may not yet know what aspects are likely to be problematic. A study by Roberts et al. (2011) found that 27% of students with a disability that had never taken an online course thought that their disability would negatively impact on their ability to succeed in online courses⁵. On the other hand, 46% of students with a disability that had participated in an online course stated that their disability had a negative impact on their ability to succeed in an online course. The study also found that only 24% of students with a documented disability disclosed the disability to their online instructor. Almost all students who made disclosures also sought accommodations for their online course.

12. Other models of disability that can be relevant to accessibility

Bel et al. (2008) argue that technical approaches to accessibility are not well supported by learning theory and are mainly based on interactions between learners and resources, and the development of accessible resources, rather than inclusive learning. They found that whilst teacher awareness of learners with a disability was high, teachers found it difficult to implement WCAG guidelines into their own educational practices. It is argued that when designing online educational materials, the focus should be the learners' individual needs and learning resources should be considered as part of a wider pedagogical framework.⁶

⁵ Roberts, Jodi B., Laura A. Crittenden, and Jason C. Crittenden. "Students with disabilities and online learning: A cross-institutional study of perceived satisfaction with accessibility compliance and services." *The Internet and Higher Education* 14.4 (2011): 242-250.

⁶ Bel, E., and Emma Bradburn. "Pedagogical perspective on Inclusive Design of online learning." *Proceedings of the Advanced Learning Technologies for Disabled and Non-Disabled People* 345 (2008): 25-29.

Pedagogical accessibility looks at how effective learning can be achieved by integrating students with disabilities into a virtual learning community and ensuring that they participate fully in debates, problem solving, laboratory groups, discussions and project works.⁷

12.1 Digital Capital

An interesting view of the relationship between students with disabilities and online education is the concept of digital capital. Seale et al. (2015) argue that the concept of digital capital questions traditional notions of how students relate to technology:

“One common response to the identified ‘digital divide’ for disabled students in HE is to use the ‘lens of accessibility’ to identify and advocate for changes in individual and institutional practices. Disabled students are presented as oppressed victims of their universities, who are deprived of equitable access to important learning resources as a result of institutional non-compliance with legal requirements, professional codes of practice or technical standards and guidelines (Steyaert, 2005). Faculty and e-learning professionals are urged to improve their practices and senior managers and student support services are urged to improve their provision of and support for the use of AT (Asuncion, Draffan, Guinane, & Thompson, 2009; Fichten, Ferraro, et al., 2009).

Seale (2013a) argues that one problem with relying on an accessibility lens is that it oversimplifies the relationship between disabled students and their technologies by assuming that ‘access’ is the only factor that has a direct causal relationship with ‘use’. There is growing evidence to suggest that this is not the case. For example, although there is evidence that disabled students receive support and encouragement to use technologies from peers and family (Ari & Inan, 2010; Sharpe, Johnson, Izzo, & Murray, 2005) and are competent and confident users of technologies (Asuncion et al., 2012; Seale, Draffan, & Wald, 2010); there is also evidence that shows that disabled students can on occasions reject or abandon AT (Roberts & Stodden, 2005; Seale et al., 2010). Additionally, there is conflicting evidence that shows that disabled students rate technology provision and support positively (Roberts, Crittenden, & Crittenden, 2011; Sharpe et al., 2005) and yet can also resist engaging with AT training (Draffan, Evans, & Blenkhorn, 2007; Seale et al., 2010).”⁸

Digital capital borrows from the notion of social capital, where the acquisition of social and cultural competencies allows individuals to be effective cultural consumers. It is argued that digital cultural capital is “exemplified by individuals investing time in improving their technology knowledge and competencies through informal or formal learning opportunities as well as a socialization into technology use and ‘techo-culture through family, peers and media”.

Whilst pedagogical accessibility points out the limitations of technical accessibility, it fails to identify concrete measures that can address the gaps.

13. Relative capacities of big and small organisations

Not every organisation has the same capacity to assess or implement accessibility. Large organisations have more resources available when procuring or developing software and more leverage with vendors. It would be reasonable to assign a higher level of *ex ante* duty to larger organisations, because they often have dedicated roles for project managers, visual designers, UX designers, developers and content editors. All organisations must retain some duty of care but organisations that have more than \$100 million in revenue should have similar responsibilities as government departments.

In contrast, *ex nunc* duties are less affected by organisational size. In fact, smaller organisations are often more agile when it comes to accommodating the needs of individuals.

⁷ Guglielman, Eleonora. "E-learning and Disability: Accessibility as a Contribute to Inclusion." EC-TEL Doctoral Consortium. 2010.

⁸ Seale, Jane, et al. "Not the right kind of 'digital capital'? An examination of the complex relationship between disabled students, their technologies and higher education institutions." *Computers & Education* 82 (2015): p.119.

14. Format of the DCT Standard

One of the problems with the Standards for Education 2005 is that the wording is quite general, requiring guidance notes for effective interpretation. There have been two reviews of the standards since they were released, but no changes have been made.

By contrast, the Disability Standards for Accessible Public Transport 2002 are a lot more detailed and appear to be easier to update because they have a number of independent parts. This type of format would suit the Digital Communication Technology Standard.