



“The noise and the silence: making sense of accessibility and inclusivity in ICT”

Researched and written by Lesley Mackenzie-Robb

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1. Introduction

“The court case between Eversley Primary School and the parents of a blind boy will be decided today. The parents contend that the school discriminated against their son by basing Maths lessons around so-called advanced teaching aids including interactive software which the boy was unable to use. Instead he was given different lessons away from the rest of the class, with his teacher reduced to using bits of baking foil and string. His parents argue that if the school had adopted more “accessible” software, this segregation and discrimination would not have happened. As a result, they claim their son’s education has suffered. The school claims that it made “reasonable adjustment” to ensure that the method of teaching was appropriate to the child’s abilities and that the child’s development, far from suffering as a result, was in fact enriched. The parents have already stated that if the ruling goes against them, they plan to take the case to the European Court.” (Extract from the Times Educational Supplement, January 2007)

This short fictional news extract succinctly sums up the position that the education sector, including the industry which supplies it, is currently facing. The drive for accessibility and inclusivity in the commissioning, design, take-up and use of ICT in schools (and beyond) over the last five years has resulted in widespread confusion. The issue lies not so much with the legislation¹, but rather with the interpretation and application of it, as the fictional news item suggests.

“We need to ensure that new knowledge, and new technologies, are used effectively for human betterment” (Smith, Cowie & Blades, 2003).

This short paper presents the view that a literal interpretation of the law has resulted in conflicting aims within education, and that this represents a risk to the effective take up and embedded use of ICT. There are implications with respect to the aims and objectives of the DfES e-Strategy², most

¹ Disability Discrimination Act (1995), Special Educational Needs and Disability Act (2001)

² Harnessing Technology: Transforming Learning and Children’s Services, DfES (2005)

specifically to the pursuit of innovation, and the affordance of quality learning opportunities for all students.

The paper has the aim of unpicking some of the key issues surrounding digital content and placing them into a logical and rational framework. It is based on a review of the most readily available and frequently cited literature, and a number of interviews with experienced and authoritative representatives from different facets of the sector and industry. What is revealed is a real need for a universally acceptable strategy underpinned with clear guidance and definition, and clearly the achievement of this will require the close involvement of a range of stakeholders and partners. The paper concludes with a set of pragmatic recommendations based on the evidence and its interpretation.

The paper is structured in the following sections:

- **Section 2** considers definitions and the law specific to the commissioning, development, provision, take up and use of ICT in compulsory education.
- **Section 3** explores the issues and implications from the perspective of the practitioner.
- **Section 4** considers the issues from the stakeholder / commissioner perspective.
- **Section 5** examines the implications for industry.
- **Section 6** offers a detailed set of recommendations.

Section 2: Definitions and the Law

The Special Educational Needs and Disability Act 2001 has the aim of ensuring that students with disabilities are not discriminated against in education, and that they are able to enjoy a quality educational opportunity. Institutions are encouraged to take reasonable steps and make “reasonable adjustments” to meet this end, *whether or their current cohort of students includes those with disabilities*. The issue here is quite simply that the legislation contains no concrete definition of “reasonable adjustment”. Although the DfES and Disability Rights Commission are currently funding a project (“Reasonable Adjustments Project”) which has the aim of producing “a practical guide for teachers to help schools make reasonable adjustment for disabled pupils and prospective disabled pupils”³, this lack of definition is unlikely to change until a court case is brought.

As a consequence, there is a widely held literal interpretation of the meaning, resulting in ICT being treated in much the same way as a school gate or main entrance. That literal view is based on the notion that ICT – whatever its subject – must be fully accessible to all students irrespective of any disability. This raises two problems. First, it assumes that electronic content is the *only* resource available to teachers in much the same way that the e-learning industry made the almost fatal mistake during the mid-1990s of promoting e-learning as the “magic bullet”, the solution to learning that would remove the need for any other form of learning and teaching engagement. In other words, this literal interpretation of the requirements for accessibility and inclusivity ignores the

³ “Accessible Schools”, (2005). Teachernet.

battery of resources, support, techniques and practices that teachers already have available to them.

Secondly, this approach has already resulted in discriminatory practices. Ironically, in the drive to comply with the most rigid interpretation of the requirements, students are being excluded from learning resources that they might otherwise find invaluable. Indeed, is it logical to deny access to, or even to dispose of excellent learning content for the reason that it is considered to be “inaccessible” to some? Whereas the e-Strategy places its emphasis on the learner being at the heart of the learning experience, with all resources and facilities revolving around their own individual needs, abilities and capabilities, the strict interpretation of accessibility mitigates against this individualistic approach in favour of a generalisation of the student cohort.

The lack of clarity in the legislation is not necessarily a problem: the current interpretation is. As is also the universal reliance and focus on one single set of technical guidelines – developed by the World Wide Web Consortium’s (W3C) Web Accessibility Initiative (WAI) – which have been in use for more than five years and which are now widely considered to be very out of date. On the basis that these are the only available guidelines for web designing (other guidelines are available, such as those produced by the RNIB, but all invariably stem from the WAI documentation), the WAI guidelines have been systematically applied to the design, development and delivery of e-learning content. The WAI guidelines are *not* strictly speaking relevant to e-learning content. They are, in fact, solely applicable to the development of web information services. At their most extreme, the WAI guidelines imply that content is most accessible when offered in text-only format. Although a Version 2 of these guidelines has been in development since 2003, the widely held view is that even these will be out of date at the point of formal publication.

Arguably, the only available set of accessibility guidelines which accommodate for the e-learning environment are those contained in the IMS ACCLIP⁴ model. This model is based on the definition of learner preferences as opposed to disabilities, and it effectively brings an “inclusivity” dimension to the environment – which WAI guidelines and the literal interpretation of accessibility legislation do not. Although published in 2003, it is not widely used in the UK although many professionals hold the view that IMS ACCLIP is the best possible framework and model for the future of ICT in education. One of the major issues surrounding IMS ACCLIP stems from the fact that in order to be effective, both content and learning platforms need to be compliant with the model. In other words, it is the classic “chicken and egg” dilemma.

The experience of social inclusion for all students is broadly recognised as being essential to effective cognitive, physical and psychosocial development (Boyd & Bee, 2003.) Yet there are no guidelines or even widely accepted definitions in respect of “inclusivity”, and no framework for the relationship between inclusivity and accessibility. Becta commissioned a report earlier this year⁵ which attempts to draw a definition based on common currency. In this, inclusivity is defined as being the removal of barriers to presence, participation and achievement. One can draw an inference from this that,

⁴ IMS Learner Information Package Accessibility for LIP Best Practice and Implementation Guide, Ver 1.0, 2003

⁵ “Inclusive Learning with ICT”, Manchester University, May 2005 (unpublished)

with inclusivity, the barriers to learning are not solely concerned with special educational needs. According to some of the case studies elicited by Manchester University, ICT can play a significant role in aiding the development of students in many different circumstances, but who would not be classified as having “special educational needs”. The interpretations and evidence contained in this document are supportive of the aims and goals of the DfES e-Strategy. It is, however, important to give due recognition to the fact that inclusivity is concerned with a far wider agenda than ICT, and that therefore the pursuit of this agenda will necessitate the involvement of an equally wide range of partners and stakeholders.

As a result of the lack of formal guidelines or definitions for inclusivity, the remainder of this paper focuses predominantly on perceptions and experiences concerning accessibility, and their impact on inclusivity.

Section 3: The practitioner’s perspective

In this welter of confusion, the practitioners find themselves the target of conflicting advice. Anecdotal evidence relates of a college being advised to stop using the large amount of e-learning content that it had developed over a two year period as much of this was deemed to be inaccessible to visually impaired learners (both enrolled students and possible future enrolments). This included content that had been specifically created to address the needs of a significant group of students with reading difficulties. This kind of advice is clearly at variance with the drive to embed the use of ICT widely throughout teaching and learning, and, critically, creates a conflict with the aim of personalising learning opportunities for each student. In other words, access for some may well mean exclusion for others.

Many have spoken of a “climate of fear” stemming from a lack of confidence in the available advice, and a belief that offering one type of resource to some students while providing different resources to others - in effect, providing learning experiences that suit the needs of individuals – is potentially discriminatory. This climate of fear is fueled by the emphasis placed on the search for a legal test case rather than a search for solutions, and this, in particular, has been seen to be highly damaging to the effective use of ICT. The result is a tendency to dilute the learning resources to a universal baseline format. The learning experience is reduced and the potential benefits of ICT content based on its rich use of media and interactivity are removed. This dichotomy can be illustrated in the e-Strategy which refers to “stimulating the development of highly interactive software, drawing on the expertise of the games industries..” (Chapter 6, 91). Under the current interpretation of accessibility guidelines, such developments cannot be realised.

Some organisations apply a “kite-marking” practice to e-learning content based on a set of qualifying criteria. This has been criticised by some as being unhelpful in that it establishes a set of expectations which may or may not have foundation. Should such kite-marking practices be adopted by schools, there is a very real risk that they would position content generation beyond the reach of practitioners.

The role of the teacher has always been to adapt available resources, to use imagination and creativity, to provide learning experiences that suit individual needs. Too often, in the pursuit of the universally accessible e-learning resource, the role of the teacher is under-emphasised, and little consideration is given to the availability of assistive learning technologies and other support

mechanisms. In effect, the current climate mitigates against the use of different strategies for different abilities and capabilities.

It is, arguably, the skill of the practitioner married to a firm understanding of “reasonable adjustment” that is the key to moving the focus of this debate on to more productive ground. Recent initiatives such as the distribution of a staff training pack on accessibility and ICT to every post-16 educational institution throughout the four countries by TechDIS⁶ should also serve to help this process of clarification and understanding. Feedback received so far has been positive and welcoming.

Section 4: The Stakeholder – commissioner perspective

The first dilemma facing the e-learning commissioner is the e-Strategy v. accessibility requirements dichotomy. One of the largest commissioners of e-learning content is the NLN. The most recent procurement exercise (Round 4) encouraged suppliers to work within the WAI Level A guidelines (the most flexible level) but also advocated that suppliers should give “consideration” to Level AA.⁷ Ironically, there is a perception that the materials commissioned under Round 1, some five years ago, are considered today to be of better quality in terms of the learning instance afforded than the more recent materials, which evidence a far more strict adherence to accessibility guidelines. Becta has also recently published a substantial and comprehensive Web Accessibility Guide (March, 2005): it is however acknowledged that such guidelines encourage a “painting by numbers” approach to design, and that they are specific to web design as opposed to learning content design.

For the commissioner, the issues revolve around finding an acceptable balance between the need to deliver innovation and good pedagogic standards and the need to work within this rigid accessibility framework. There are also implications for budget and value for money. Designing content for the widest possible accessibility framework necessarily requires access to a broad range of professional expertise. Testing content also requires a far wider range of facilities. Both of these factors impact on cost. In this sense, a significant part of a development budget is liable to be spent on factoring in accessibility, as opposed to being spent on producing the product. With a single budget and a learning outcome to achieve, the commissioner cannot purchase e-learning content versions that cater for every variable instance, nor can he or she expect to have content that will offer the same learning experience for all learners. Again, the issue stems from confusion.

A pragmatic approach would suggest that all content development should formally address accessibility issues at the early design stage. A considered balance can be evolved based on the needs and profiles of the learners and the efficacy of a particular pedagogic approach to a subject. The fact that accessibility issues have been addressed in the design stage – and even though the resulting product is not wholly accessible to all – should be acceptable. Not addressing accessibility issues at all is what most would deem to be unacceptable.

Much debate has centred on the need for content to comply with accessibility requirements, but little has been done in addressing these requirements specific to learning platforms such as Virtual

⁶ <http://www.techdis.ac.uk/resources/sites/staffpacks/index.xml>

⁷ The Disability Rights Commission has called for WAI Level AA to be the minimum acceptable level.

Learning Environments (VLEs). It is reported that a significant number of VLEs used in mainstream education do not support the needs of disabled students. In one of its briefing papers, the JISC makes the point that “for some students with learning difficulties and/or disabilities.... these new learning environments can be exclusive rather than inclusive unless designed in ways that allow them access.”⁸ The e-Strategy has placed considerable emphasis on the introduction of personal learning spaces, and the use of e-Portfolios. There is a sense of learning platform providers being out of step with content provision, a situation which is likely to increase as the use of VLEs, for instance, continues to grow.

There is no current mandatory requirement for commissioners to reference any particular accessibility guidelines when commissioning or purchasing content. The imperative stems from the legislation itself which, as discussed earlier, is wide open to interpretation. There is, however, a general acceptance and support for the notion of mandatory standards being applied to procurement. The issue facing the commissioner is *which one?* One solution may come in the form of a new set of guidelines expected to be published by the BSI later this year. Referred to as BSI PAS 78, this new set of guidelines for best practice in addressing accessibility is specifically aimed at supporting commissioners of content. Commissioned by the Disability Rights Commission, in the wake of their report into *website* accessibility, PAS 78 is not a Standard. Nor, at the time of writing, is it expected to make any direct reference to inclusivity issues. PAS 78 may represent a step in the direction of clarity from a commissioning perspective, but it may also fall prey to the same issues as those associated with kite-marking practices.

Another dimension to the confusion lies in the commissioner’s perspective of the level of understanding on the part of their suppliers concerning accessibility. There is an opinion that, with some exceptions, many e-learning suppliers only pay “lip service” to accessibility, that few understand the real requirements, or even that suppliers establish their own interpretations. This view was somewhat contradicted in the evidence and opinions gathered from representatives of the developer community itself, and this contradiction may well be explained by the underlying confusion concerning legislation and guidelines. There is anecdotal evidence from more than one contributor to this paper that it is not unusual for developers to find themselves in the place of offering advice and recommendations to their clients concerning accessibility issues. Voluntarily.

Section 5: The developer perspective

From the developer’s perspective, the issue is clear: the current trend for adherence to rigid accessibility requirements compromises innovation. On the one hand, the developer argues that the benefits of e-learning for the majority of learners rests on the affordances of rich media, interactivity, immersive experiences, and personalisation. On the other, the developer accepts that the *basic* WAI guidelines (Level A) represent good practice, particularly in respect of technical interoperability with different systems – *if sensibly and consistently applied*. They are, however, universal in their call for a more pragmatic and realistic approach to accessibility issues, and a positive move away from the “one size fits all” paradigm. For the developer, the confusion has been generated by the insistence on treating e-learning content in the same way as website design: the concern over compromise for innovation is compounded by the attempt to apply a set of rules to a discipline for which they were not designed.

⁸ “Briefing Paper No 22: Accessibility: Disabilities, Technology and Legislation” (2005).

In this rigid application of rules, the developer considers that the lens is moving away from a focus on the needs of the learners themselves. The risk here is that the aim of the exercise becomes vested in the attainment of ticks in boxes, rather than quality learning experiences and outcomes for learners. Moreover, the current climate makes it difficult to accept the notion of different approaches for different topics. An example – often quoted – is the use of interactive 3D media in Maths. For the majority of students, e-learning in this context can be immensely beneficial and far more effective than the traditional flat book approach. But, such a resource would be wholly unsuitable for anyone with a sight impairment, and who may well have no cognition of spatial dimensions. Strict application of the current accessibility guidelines would strip the e-learning content of everything that could not be consumed by a screen reader. In this sense, the approach may have the benefit of making the content accessible, but to what extent is it *useable*? In a stroke, the value for the majority of students has been stripped away, but no value has been added for the student with a sight impairment.

The notion that content which is accessible is also useable is widely recognised to be a false one. Becta's "Website Accessibility Guide" (March, 2005) defines usability as the ease with which one is able to find the desired content on a given website, whereas accessibility is defined as being the ability to use a site and its contents to find and access what is wanted. The two concepts are not mutually exclusive, but neither does one imply the other.

From a commercial point of view, there are concerns over unrealistic expectations and the potential for financial burden. Where a supplier is operating on a fixed price contract, there are very real issues over requirement change, reversal and expansion. As one supplier has stated, one is wholly in the hands of the commissioning individual and their particular interpretation of accessibility guidelines, which may change depending on circumstances. Again, the real issue is confusion.

Finally, it could be argued that a firm move away from the "one size fits all" model will result in a lack of suitable ICT provision for students with disabilities – in effect, excluding students from ICT in their education. However, this is a relatively simplistic view when consideration is made of the availability of assistive learning technologies and other support mechanisms. It is also unrealistic to anticipate that the commercial developer sector will fill any gaps created by producing specialist niche products specifically designed for students with different impairments. The markets for such products may be too small to make them financially viable for the private sector, although there are one or two exceptions. An alternative approach would be for government agencies to work with specialist organisations such as the RNIB and the private sector to fund and develop new niche products, and through such exemplars to promote the take up of e-learning and good pedagogic practice. Equally, by encouraging practitioners to develop their own content specific to individual student group needs, without fear of being labeled as discriminatory, a progressive step would be made in achieving the personalisation agenda.

Section 6: Detailed Recommendations

Our key conclusions and recommendations fall under 4 main headings. Becta seeks the support and endorsement of CAB to ensure their realisation.

a) Coordinated Guidance for schools to aid in accessibility planning

There is a real need for practical and coordinated guidance for educational institutions to aid in the development of realistic and deliverable policies which accommodate for accessibility and inclusivity. The SENDA requires schools to have planning policies in place. However, there is evidence of high levels of variance in the interpretation and application of accessibility and inclusivity requirements in ICT, with the trend bending towards taking every possible precaution. The extent to which educational institutions and their authorities are concerned over possible future legal penalties is unclear. None-the-less, the possibility of legal suit is very real.

- For such guidance to have effect, it needs to be coordinated with all relevant stakeholders and partners, offering a single, universally approved and supported interpretation.
- Priorities amongst the different stakeholders and partners must be clearly seen to be complimentary.
- A common-ground approach, founded on coherence and consistency, would go a considerable way to providing practitioners, stakeholder commissioners and developers with a supportive and practical framework where the focus can remain on the needs of the learners, and the aim of providing the best possible supports to learning.

b) Jointly produced ICT Guidelines for content development

Whilst it would be unrealistic to attempt to provide a set of best practice guidelines on designing and using ICT within an accessible and inclusive framework, there is a pressing need for clear guidelines around the notion that ICT should not be designed as a “one size fits all”. These guidelines should be referenced both to the legislation and to the e-Strategy, and would be principally aimed at those professionals who commission and develop educational content, including practitioners. They may even take WAI Level A as their baseline, but they should contain sufficient flexibility to ensure that innovation, good pedagogic standards and quality are not compromised or stifled. There should also be an inherent understanding that e-learning content is for use in education, and is distinct from public access websites whose purpose is to provide access to information.

- A collaborative approach to the production of guidelines for content development, agreed with and supported by all relevant stakeholders and partners.
- A clear acknowledgement that the “one size fits all” paradigm is not suitable.
- ICT as distinct from web information services.

c) Best practice exemplars: the development of “niche” products

Mechanisms can be put in place to enable stakeholders to work together to fund the development of niche ICT products and services to fill gaps in the market which would otherwise be commercially unviable for the private sector to engage with. It would be unrealistic to expect the public sector to fund the development of an entire suit of curriculum based materials, with versions designed to suit every circumstance. But, in the same way that the NLN materials development aimed to stimulate the market for content, public-funded niche products could stimulate new approaches and new innovations. Commercial organisations who receive funding to support the development of these types of products should be compelled to share their experiences, their challenges and solutions. It is not inconceivable to imagine a future scenario in which an excellent e-learning product for students with sensory-motor problems could be equally effective with students who have no impairment.

- Coordinated approach to the funding of best practice exemplars to fill niche areas.
- Lessons learned from these developmental experiences would be invaluable, and should be shared.
- An exciting challenge for innovation, and the opportunity to generate new methods and approaches.

d) Greater emphasis on the role of the teacher

The role of the teacher must be given greater emphasis, and recognition given to the range of practices, techniques and resources that the teacher has available to support the use of ICT. Teacher training should address the issues of accessibility and ICT, not as separate disciplines but as a conjoined set of practices. Content providers can provide more effective support to teachers through the use of “signing”: making clear statements about the suitability of their products for different students, and providing thoughtful and practical options for alternative uses of the content. In this respect, work is already underway by Becta on the development of a pedagogy framework.

- Support for all of the recommendations contained here will make a significant contribution towards underpinning the role of the teacher in delivering on the requirements of the DDA and SENDA, as well as the e-Strategy.
- Coordination amongst partners and stakeholders in areas such as Becta’s pedagogy framework will offer firm and effective pathways for teachers, and enable them to use their own skills and creativity to build learning environments and experiences that are valuable for all learners.
- Provision of a coordinated approach to accessibility and ICT in teacher training.

END.