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# Issues of stakeholder engagement: Who are the stakeholders of disability and ICT related practice in post-secondary education and how can they be effectively engaged?

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## INTRODUCTION

The purpose of this paper is to two-fold. Firstly to orientate readers to the main aims of the Leverhulme funded International Network on ICT, disability, post-secondary education<sup>1</sup> and employment (Ed-ICT) and secondly to provide an underpinning critical framework for the second symposium of this network in which we examine issues of stakeholder engagement, and address two broad questions:

1. Who are the stakeholders of disability and ICT related practice in post-secondary education?
2. How can these stakeholders be effectively engaged in the improvement of practice?

The Ed-ICT International Network define disability broadly to include physical, sensory, mobility, social and cognitive disabilities, but also acknowledge that disability does not define a single homogeneous group; students with different disabilities and within disability groups show substantial variation in terms of their experiences and attainment. Within this paper I will use the term 'disabled students' but in using this terms, I am aware that there are differences of opinion regarding which term or label is the most appropriate to use. My justification for preferring the term 'disabled student' to the term 'people with disabilities' is that the latter implies that the person's impairment or condition causes them to be 'disabled' (and consequently that it is their responsibility to overcome it), whereas 'disabled person' implies that the person is disabled not necessarily by their condition or impairment, but by society and its inability or reluctance to cater effectively for that person (and consequently that society must effect change to remove that disability). (Phipps, Sutherland and Seale 2002, iii). This reflects a social model of disability<sup>2</sup> which is well understood in the UK and Europe, but less so in other parts of the world. The focus of the Ed-ICT International Network is on those disabled students who meet the regular admissions requirements of post-secondary institutions; these encompass further education (e.g. colleges), technical schools (that offer certificated programs) and higher education institutions (e.g., universities). We also define ICT broadly to include online learning (both distance and blended learning); assistive technologies such as screen-readers; general use technologies such as tablets; social and networking applications such as Facebook as well as specific application technologies such as statistics packages.

### Overarching aim of the Ed-ICT International Network

The overarching aim of the Leverhulme funded International Network on ICT, post-secondary education and employment is to seek ways in which research can inform practice (and vice versa) in the field so that the disadvantage that disabled learners experience can be reduced or better still eliminated. We know that disabled students are less likely than

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<sup>1</sup> Alternatively known as higher education, post-compulsory education or tertiary education.

<sup>2</sup> <http://disability-studies.leeds.ac.uk/files/library/UPIAS-fundamental-principles.pdf>

non-disabled students to stay enrolled, earn higher degrees and secure employment (See Seale, 2014 for a review of the evidence and research). We also know that disabled learners can experience discrimination when institutions expect them to use inaccessible ICTs as part of their studies or fail to utilise potentially supportive ICTs (Asuncion et al. 2009; Fichten et al. 2014). This is despite the fact that accessibility standards exist and many countries have disability discrimination legislation in place that directly or indirectly requires educational institutions to address how their use of technologies mediates disadvantage for their disabled learners (Seale, 2006; 2014).

## **Specific focus of the Montreal Symposium: Stakeholder perspectives**

Broadly speaking, in the ICT, disability and post-secondary education research literature the most commonly identified key stakeholders in the development of accessible e-learning within a higher education institution are considered to be:

- Disabled students,
- Lecturers,
- Learning technologists,
- Student support services,
- Staff developers,
- Senior managers (Seale 2006, 2014).

It is important to acknowledge however that there are variations in how these labels are applied or understood in the field of ICT and disability and post-secondary education. For example, for the stakeholder group labelled as 'student support service', Fichten et al. (2009b) and Douce and Porch (2009) talk of disability/advisors or support services, whilst Unterfrauner and Weiermair-Marki (2008) refer only to librarians. Power, Petrie, Swallow and Sannia (2008) on the other hand refer to both. For the stakeholder group labelled 'learning technologist', Fichten et al. (2009b) talk generically of e-learning professionals, while others subdivide the role even further. Power *et al.* (2008) for example, identify roles such as content producers and technical support. Douce and Porch (2009) identify the roles of system developer and system administrator as being separate from that of learning technologists. Seale (2014) has defined senior managers to include administrators, middle management (deans, head of department) and upper management (Principles and Vice Chancellors). Power et al. (2008) however, use the all-encompassing term 'administrative personnel' whilst Douce and Porch (2009) distinguish between system administrators and academic line managers.

For the purposes of the ED-ICT International Network symposium lecturers (faculty) will be understood to be anyone who designs teaching materials (e.g. instructional designer); teaches or tutors students (including graduate teaching assistants and laboratory technicians) and assesses student work. Learning technologists (e-learning professionals) will be defined as anyone who has formal responsibility for the development and maintenance of a university or departmental web site (e.g. web masters); the development or maintenance of university or department-wide courseware systems (e.g. Virtual Learning

Environments, Learning Management Systems); the development and maintenance of electronic information systems (e.g. online library databases); the development, production and maintenance of learning objects (e.g. Java applets, Flash animation); the development, production and maintenance of portal and repositories; or the development and maintenance of support resources (e.g. study skills websites). Learning technologists may be located within Computing Services or Information Services departments or they may be located in centralised learning and teaching support or development units. Student support services are understood to include disability support officers; specialist assessors; librarians and access or assistive technologists. Staff developers are defined as anyone who has a role in training and professional development within a higher education institution. They may be located within human resources or personnel departments, or they may reside in centralised learning and teaching or educational development units. Finally, senior managers will be defined as anyone who has a responsibility for managing the provision of learning and teaching (e.g. Deans, Pro Vice Chancellors), support services (e.g. libraries, disability offices) or Information Technology and Computing Services.

### **Why the need to consider stakeholder perspectives?**

Seale (2006) argued that there had been a tendency for some stakeholders to rely on others to take responsibility for leading change in accessibility and digital inclusion practices. For example, in a survey of disability service providers, faculty and e-learning professionals, Asuncion et al. (2010) found that campus disability service providers were most likely to believe that problems related to the accessibility of e-learning go to them and e-learning professionals were least likely to believe this. In attempting to interpret this finding they conclude:

The finding that problems associated with e-learning accessibility are typically not brought to the attention of e-learning professionals who, after all, support and deal with e-learning on campus was puzzling. Is it that there is little communication between campus-based disability service providers and e-learning professionals? Or is it that e-learning professionals do not see themselves as being responsible for addressing the requirements of the subset of students with disabilities, leaving this to the domain of disability service providers? (p.197)

JISC (2006a) and Mariger (2011) both note that there has been a tendency to rely on disability officers and support services to take the main responsibility for accessibility. JISC (2000a, b) suggest that this is unhelpful because it fails to recognise the significant contribution that well-informed staff such as tutors, librarians and technicians can make. JISC (2006a, p.2) therefore conclude that: 'Accessibility needs to be owned by all staff as a part of the mainstream culture'. Fisseler and Schaten (2010, p.4046) draw on their own experiences of trying to improve accessibility as a sole stakeholder ( learning technologists) to conclude that it is not possible to achieve fully accessible learning experiences without the 'concerted effort of all stakeholders at universities working together'. Bohman (2007) advocates a distributed model of expertise, where not all the stakeholders need to have technical expertise, but:

key people in each area must know enough of the right kinds of information 'within their spheres of accountability and opportunity' to prevent inaccessible practices from creeping into the system. They also must know how and where to receive additional accessibility assistance when needed (para.7)

Many of the current models of accessibility in post-secondary education reflect this drive towards distribution of stakeholder expertise and responsibility. For example Seale (2006, 2014) proposed a model of accessible e-learning practice that takes into account: the stakeholders; the context in which stakeholders work (drivers and mediators) and how the relationship between the stakeholders and the context influences the responses they make and the accessible e-learning practices that develop (see Figure 1.)

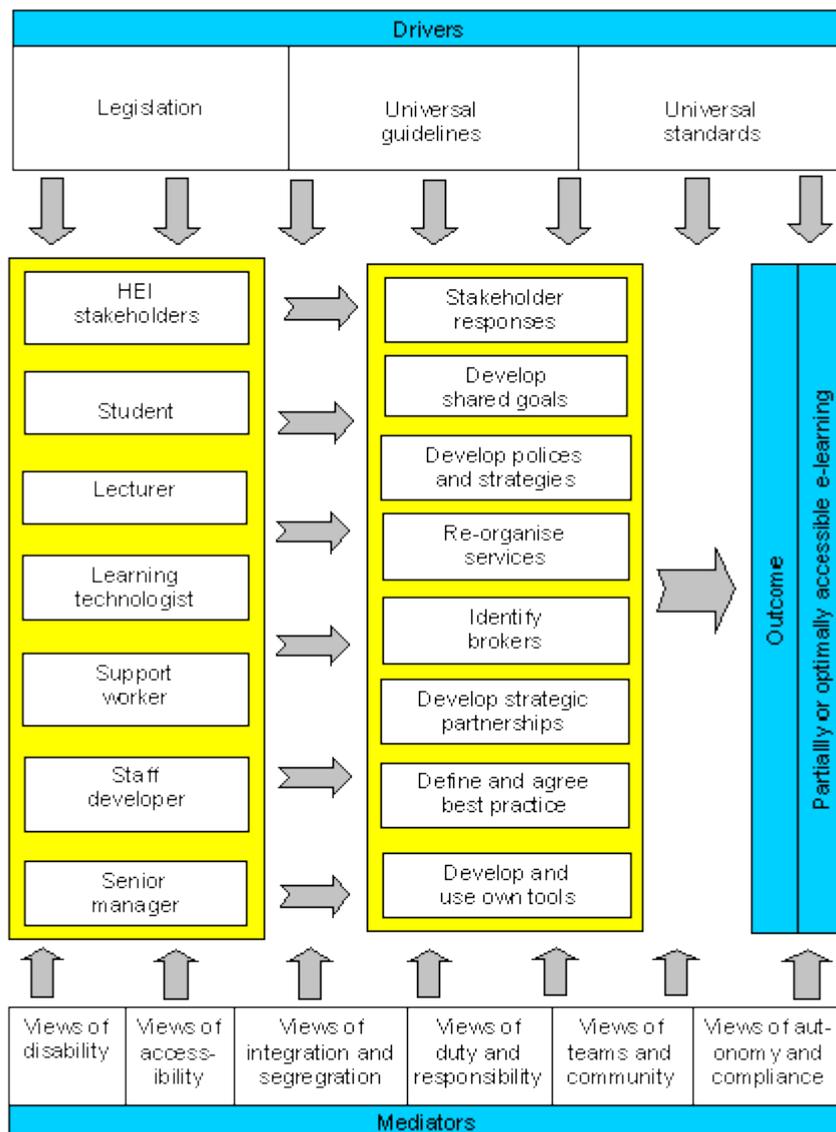


Figure 1: The contextualised model of accessibility

In justifying the value of this model, Seale argued that the extent to which e-learning material and resources is accessible will be influenced by how all the stakeholders within a post-secondary institution respond to external drivers for accessibility such as legislation, guidelines and standards. This response will be mediated by stakeholders views and understandings of disability, accessibility and inclusion; duty and responsibility; autonomy and freedom; teamwork and community. The accessible e-learning practices that develop out of these responses will vary depending on the stakeholders and the context in which they are operating but essentially centres on taking ownership and control as well as developing personal meaning from externally imposed impersonal mandates. Legislation would not on its own change accessible e-learning practice within a higher education institution because the stakeholders have to translate legislation into policies and strategies that are meaningful to them in the context in which they are working. Universal accessibility guidelines on their own would not change accessible e-learning practice within a higher education institution because the stakeholders have to adapt and develop the guidelines into guidelines (and tools) that are meaningful to them in the context in which they are working. Universal accessibility standards on their own would not change accessible e-learning practice within a higher education institution because the stakeholders have to define and agree what the benchmarks of best practice might be in the context in which they are working. What the contextualised model of accessibility stressed was the existence of a 'gap' between the drivers for accessible e-learning and their desired outcome (accessible e-learning material). The gap between drivers and outcome needed to be 'bridged' by accessible e-learning practices and the stakeholders within a higher education institution each had a role in helping to bridge that gap.

Another example of a model that reflects a distribution of stakeholder expertise and responsibility is the EU4ALL framework which emerged from a four year European project that developed a general framework to address the needs of accessible lifelong learning at a post-secondary level and consisted of several standards-based interoperable components integrated into an open web service architecture aimed at supporting adapted interaction to guarantee students' accessibility needs (Boticario et al. 2012). One of the areas that the framework aimed to address was the provision of a wide range of services that an institution can adopt to ensure that the needs of learners who have disabilities are most appropriately supported. The project studied different organisations and conducted interviews with key stakeholder groups such as students, disability, officers, lecturers, transformation officers, librarians and senior managers across Europe. It is interesting to note that transformation officers are defined as those who work with lecturers and librarians to adapt materials, i.e akin to a learning technologist. From these interviews the EU4ALL project produced a broad ontology of services which they suggest is a conceptual map of ideal institutional processes (and the responsible stakeholders) which have the potential to inform the creation of new services (Douce et al. 2010). See Figure 2.

The EU4ALL model was extended to include a model of professionalism in accessibility which is argued can help reflection on organisational direction and offers a way for an institution to benchmark the quality of its approach to accessibility (Montandon, Arjona, and Weiermair 2010). McAndrew et al. (2012) outline the indicators for low and high level

accessibility practice which are influenced by the extent to which senior managers are engaged and aware of accessibility issues and the extent to the responsibility and roles of all stakeholders are clear (See Table 1).

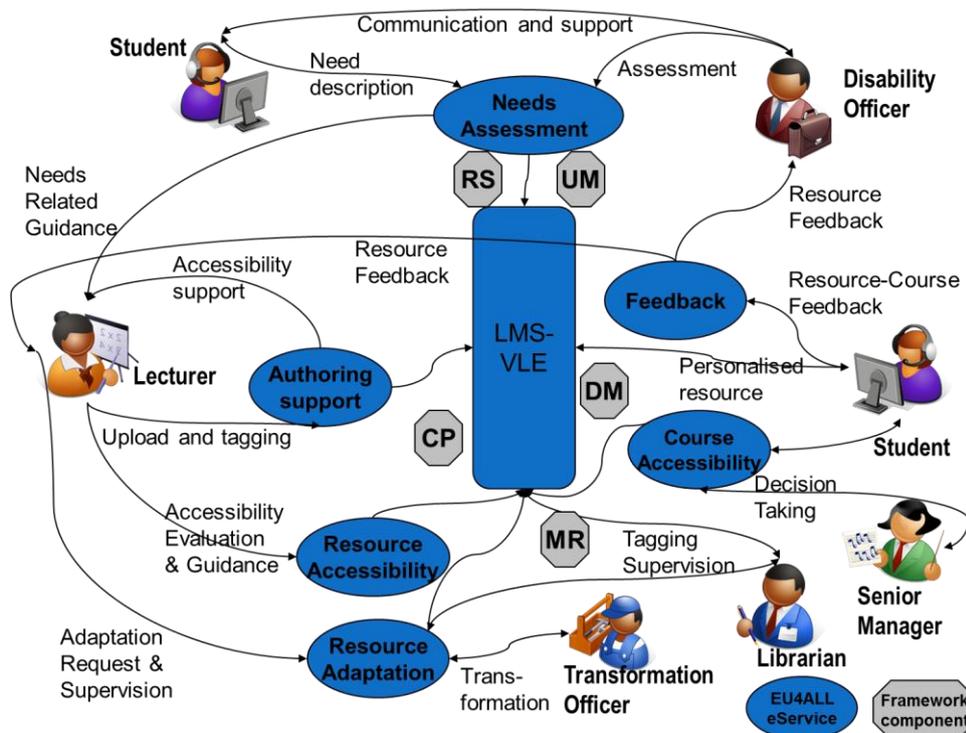


Figure 2: The EU4All Framework

If responsibility and expertise is to be distributed across all the identified stakeholders then the community needs to be clear of the answers to the following questions:

- What are the roles and responsibilities of each stakeholder?
- Which stakeholders are unheard?
- What factors contribute to the silencing of stakeholder voices?
- What can be done to promote the amplification of stakeholder voices?

In this paper I will review the research and practice literature in order to identify potential answers to these questions.

<b>Intervention</b>	<b>Intervention/ institutionalisation</b>	<b>Institutionalisation/ professionalism</b>	<b>Professionalism</b>
<b>Low level of accessibility practice (T1)</b>	<b>Medium level of accessibility practice (T2)</b>	<b>Substantial level of accessibility practice (T3)</b>	<b>Outstanding level of accessibility practice (T4)</b>
<ul style="list-style-type: none"> <li>• Responsibility and roles unclear, ambivalent</li> <li>• Low awareness by senior management</li> <li>• Low level of accessibility practice</li> <li>• Weak legal frameworks</li> </ul>	<ul style="list-style-type: none"> <li>• Low awareness and responsibility of management, accessibility no priority</li> <li>• Considerable activity for students with disabilities by single persons</li> <li>• Existing practice not institutionalised</li> <li>• Ad hoc solutions to ad hoc problems</li> <li>• Weak legal frameworks</li> </ul>	<ul style="list-style-type: none"> <li>• Responsibility of senior management clear, accessibility a priority</li> <li>• Community of Practice with high level of institutionalised processes</li> <li>• Strong legal requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Responsibility clear</li> <li>• High priority of accessibility</li> <li>• Institutional processes and stakeholder involvement</li> <li>• Development of policies</li> <li>• Evaluation of implementation</li> <li>• Legal framework strong driver</li> </ul>

*Table 1: A model of professionalism in accessibility*

## **WHAT ARE THE ROLES AND RESPONSIBILITIES OF THE DIFFERENT STAKEHOLDERS?**

In reviewing the literature that discusses the actual or potential contribution of different stakeholders. I have identified a wide range roles and responsibilities (Seale 2006, 2014). Some of these roles are stakeholder specific, for example awareness of assistive technology (student support) or knowledge of technical specifications (learning technologist). For other roles there is an assumption of joint responsibility; for example, awareness of disabled students skills, needs and barriers and supporting others. I will now discuss the roles and responsibilities of each stakeholder in turn.

### **Disabled students**

Irrespective of whether there is a legal requirement to declare a disability, the assumption of many non-disabled stakeholders in post-secondary education is that it is the disabled students' responsibility to disclose their accessibility needs and to make a case for accommodations. Whilst there is some evidence to show that disclosing accessibility needs can have a positive impact (see for example Hammer et al. 2009); there is more evidence to show that the responsibility for disclosure can have a range of negative effects on disabled students. For example, disabled students report struggles in the provision of accessible or adapted learning materials (Reed et al. 2006; Bishop & Rhind, 2011; Claiborne, Cornforth,

Gibson & Smith, 2011) and in particular in the provision of lecture notes (Hannafin et al. 2007, Brandt, 2011). These struggles are sometimes due to communication problems, with central services failing to inform local department of student's needs following self-declarations on admissions forms. They are also linked to a lack of understanding and respect:

The people in the School are less helpful in the respect that when you were trying to explain to them what's wrong they don't understand even with the letters and stuff I handed in. I had to go see the professor again because he's obviously read it, but doesn't understand what it is and he, I don't know, it's strange, they just seem to ... they understand that you've got a problem but they take it more as a hassle for them that they've got to try and accommodate you. (Bishop & Rhind, 2011, p. 191)

This intolerance and lack of understanding can result in a mixture of feelings for disabled students. Frustration at having to constantly explain and provide evidence for their needs or embarrassment and guilt in asking for accommodations.

The most common 'battleground' where such feelings emerge for disabled students is that of assessment accommodations (Hammer et al. 2009; Vickerman & Blundell, 2010; Bessant, 2012; Martiniello et al. 2012) Students are frequently unable to negotiate alternative forms of assessment because academics perceive accommodations as a 'kind of cheating' (Martiniello et al. 2012, p.15) which gives them an unfair advantage over non-disabled students. Furthermore, some students are unwilling to negotiate accommodations for fear that their work will be devalued (Denhart, 2008). Bessant (2012) argues that the claim that alternative forms of assessment run the risk of compromising academic standards is based on prejudicial assumptions that reveal distrustful attitudes. Given such distrust and stigma surrounding negotiating accommodations it is not surprising that for many disabled students the issue of whether or not to disclose their disability to their institution, tutors and peers is a real dilemma.

## **Senior managers**

Bohman (2007, para. 10) argues 'anyone with a clear vision and purpose can pave the way for change', but if we examine the kinds of things that are required to bring about systematic and permanent change, it would seem impossible for anyone but a senior manager to achieve. Seale (2006;2014) argues that bringing about changes in accessibility implementation and ICT related services for disabled students is likely to involve the following: ensuring the accessibility of e-learning material and resources is monitored and audited; ensuring 'joined up' thinking between the different specialist and mainstream learning support services within an institution; ensuring that staff development opportunities are strategically targeted to raise awareness and ensuring staff are able to respond to accessibility requirements; developing and implementing procurement procedures to ensure accessibility of future technology purchases and developing and implementing institutional accessibility policies.

Addressing all of these roles and responsibilities is likely to require 'leadership at the top from 'those with the power to mandate change' (McAndrew et al. 2012; Mariger, 2011, p.46). For example, Ball (2009a) and Edyburn (2011) set out a requirement for the leadership and development of policy and strategy that is underpinned by principles and models such as inclusion or Universal Design for Learning. Other requirements in leading the development of strategy include: involving technical support teams (JISC, 2006a); ensuring that accessibility and inclusion strategy is implemented so that it becomes a reality rather than existing solely on paper (Asuncion et al. 2010); ensuring that institutional training and staff development is aligned to accessibility and inclusion strategies (Burgstahler, 2007); allowing sufficient time and resources for the strategy to be implemented (Bisonette, 2006); ensuring that staff have the expertise, training and support to implement and respond to strategy (Waller, Hanson & Sloan, 2009; JISC, 2007a, Ball 2009a; JISC, 2006c). Perhaps the most important role for senior managers is to manage the inherent tensions in meeting accessibility needs (JISC, 2006a) in order to avoid what Unterfrauner and Weiermair-Marki (2008. p.7) describe as 'daily battles' between different stakeholders. One way to manage tensions is to ensure that strategy and policy documents are clear and focused so that different stakeholder interpretations do not cause confusion.

## **Staff developers**

In my review of research and practice literature, I identified three key responsibilities that staff developers are considered to have: the development of strategic partnerships with key stakeholders; embedding accessibility in all e-learning related staff development programmes and targeting a wide range of staff groups (Seale 2006; 2014). Seale (2003) identified that staff developers have a responsibility to interact with key stakeholders and working to integrate the individual practices of these stakeholders into the practice of their institution as a whole. The key stakeholders that are commonly identified are disability services (support staff) and lecturers. In developing strategic partnerships with key stakeholders, staff developers may be in a prime position to be agents of change. For example, Phipps (2002, p.6) argues:

In order to engage with the process of systemic change, developers must act in a brokerage role with all the staff providing perspectives that can inform strategic policy and decisions. Staff and educational developers must be the catalysts that get technical, disability and lecturing staff into a dialogue and then act as a rapporteur to the senior management teams, providing contextualized input to all policies in their institution.

In a UK briefing paper, The Higher Education Academy and the Equality Challenge Unit (2006) argued that embedding inclusive practice in the provision of staff development can help to ensure that those who are developing, implementing and evaluating e-learning and distance learning design accessible programmes from the start. In a survey of accessibility practices across a number of US higher education institutions, Rowland (2007) reported that just two institutions claimed to embed accessibility in their training. Anderson (2007) reports that the advantages of incorporating accessibility issues and techniques into all training rather than having separate accessibility training are that it is context specific or

applies to each specific software or training area; the learner is exposed to these concepts often and it is considered part of a skill set, rather than separate or an add-on. Thornton and (2007) report how their institution adopted a mixed approach involving a combination of integrating accessibility information into other types of training as well as having separate workshops that are designed to raise awareness of the need for Web accessibility.

O'Connor (2000, para.38) argues that if ICT is going to benefit disabled students 'it is crucial that disability expertise is shared and embedded throughout the institution'. Staff developers therefore have a role in designing and delivering programmes that provide a wide range of institutional staff with the opportunity to raise their awareness and develop their skills in the area of e-learning and accessibility. Petri and Mukherjee (2007) describe how the Web Accessibility Centre in their institution targets a range of different groups. Workshops on content creation tend to be attended by teaching assistants, lecturers and those responsible for populating web pages or uploading documents to the web. More technical workshops such as video and audio captioning might attract instructional designers as well as lecturers. Morningstar (2007) describes how UNC-Chapel Hill offers a continuing series of one-hour classes on accessibility topics. It is interesting to note however, that although all training is open to the entire University community, the primary audience has proven to be technical staff.

## **Lecturers**

In the research and practice literature there are two responses to thinking about the roles and responsibilities of lecturers. Firstly, that lecturers have a responsibility to transform how they teach and secondly to transform what they teach. It is generally agreed that the role for academics is not in addressing accessibility from a technical perspective, but from a pedagogical perspective. Tandy and Meacham (2009) for example, argue that a fully accessible course must be based on sound pedagogical principles, which in turn will determine the appropriate technology, and will result in accessible materials and activities. They argue that most of the typical teaching strategies used to deliver content in a face-to-face classroom can also be used in an online, virtual classroom including lectures, handouts, group activities, outside readings, projects, guest speakers, class discussions, individual or group presentations, and exams. According to Tandy and Meacham (2009) the choice of any of these elements should therefore be determined by: (a) its pedagogical value; (b) its accessibility of design; (c) its attractiveness and usability; and (d) its basis in research. This argument is not dissimilar to that made by Kelly et al. (2004) when they make the case that accessible learning is a more important goal than accessible e-learning. They propose that the learner's needs should guide instructors toward a design that considers accessibility, usability, local factors, infrastructure, and learning outcome.

As well as addressing how lecturers teach, there is a growing agreement that there is a need to address accessibility in terms of what lecturers teach. Bohman (2007) argues that this responsibility could be met in any degree programme, irrespective of subject or discipline. Most commentators however focus on specific programmes, most notably computing and design related courses and information and library science course. Computing and design

courses that potentially could include accessibility issues in their curricula include Information and Communication Technologies (Nicolle & Darzentas, 2003); Computer Science or Information systems (Keller, Owens & Parker, 2000); Web design and development (Ludi, 2002; Lazar, 2003; Ortner, Batusic & Miesenberger, 2004); Art and design (Gheerawo, Lebbon & Donahue, 2004); Human Computer Interaction (McEwan, Cairncross & MacLean, 2003); Engineering design (Piket-May & Avery, 2001) and Business and information systems (Bohman, 2007). Oravec (2002) argues that the professional training of students often focuses on narrow technical considerations that exclude accessibility concerns and can make them ill-equipped to understand the importance of accessibility approaches once qualified and in employment. In a call for leadership on accessibility issues in the library and information science community Schmetkze (2007) identifies a role for university schools of library and information science in training the new generation of librarians. In a survey conducted by Walling (2004), that looked at how library and information science (LIS) programs provide education related to ADA; services for disabled people and adaptive technologies, 66% of responding schools reported that they assure that all graduates know about the law. Fewer assured that all graduates were informed about services and adaptive technology. Walling (2004) chose to interpret these results as disappointing. In a later survey of the 12 highest ranked Schools of LIS Green and Huprich (2009, p.134) found that 75% offered instruction about the ADA, services for disabilities, and accessible design.

## **Learning technologists**

Some commentators argue that e-learning professionals are more responsible than others, such as lecturers. For example, Johnson and Ruppert (2002, p. 442) write that the 'ability of the instructor to create an accessible Web site is limited by the accessibility provided by the LMS engineers.' One consequence of this is that there is a long history of learning technologists being implored to increase their awareness of accessibility guidelines such as the Web Accessibility Content Guidelines produced by the Web Accessibility Initiative (Seale, 2006; 2014). Some higher education institutions have gone so far as to include responsibility for accessibility in the job specification of web developers. Despite such moves, there is still evidence that suggests the accessibility of university websites have not significantly improved over time (See Seale 2014 for an overview and comparison of web accessibility studies). One reason for this may be that learning technologists find it difficult to meaningfully apply accessibility guidelines until they fully understand the experiences of disabled students and their accessibility needs. Asuncion et al. (2010) therefore argues that e-learning professionals (like lecturers) have a responsibility to be aware of disabled students access needs and related institutional policies and strategies. This view is supported by Burgstahler (2007) in relation to distance learning course designers.

## **Student support services**

Student support staff are generally considered to play a central role in the provision of accessible learning materials for disabled students. Largely, it has to be said because other stakeholders have a track-record of delegating responsibility to them (Asuncion, Fichten,

Barile, Fossey & Robillard, 2004; Asuncion et al. 2010). In order to counteract the complete abdication of responsibility by other stakeholders, Asuncion et al. (2004. p. 135) argue that those responsible for providing services to disabled students should seek to identify and work with 'institution-wide committees and the key players who are driving campus-wide instructional and informational technology-related decisions.'

A unique aspect of the role of student support staff is that they often support both students and academic staff, as well as act as an intermediary between the two (Hepler & Green, 2007). The role of supporting academic staff is considered to involve: supporting staff to respond to and implement the requirements of legislation and anticipate and respond to students' needs (Corey, 2011; Kerr, Burrell & Sait, 2006a); raising staff awareness of the importance of investing time in making learning accessible (Wakimoto & Soules, 2011); identifying and evaluating best practice models for the provision of alternative formats (Duffy, 2007) and co-ordinating the provision of technology related support including the transition from secondary to post-secondary (Wibberley, n.d; Houchins, 2001). The role of supporting students is considered to involve advising students of their rights or advocating on their behalf (Wibberley n.d; McCleary-Jones, 2007); assessing students technology requirements (Leung, Owens, Lamb, Smith, Shaw & Hauff, 1999); providing students with technology related training (Asuncion et al. 2004; Wibberley n.d) and providing customised educational materials (Kerr et al. 2006a).

It is important to note that this review of stakeholder roles and responsibilities has been largely drawn from community perceptions of what the roles and responsibilities of each of the stakeholders are and do not necessarily represent the views of the stakeholders themselves. I will come back to this issue later on in the paper.

## **WHICH STAKEHOLDERS VOICES ARE UNHEARD?**

So far in this paper, all the identified stakeholders that have been identified and discussed are internal to a post-secondary institution. There is little to no acknowledgement that there are a host of stakeholders outside the institution that have an important role to play in ensuring disabled students can access ICT and benefit from using ICT to support their studies. It is my contention that significant external stakeholders that are frequently excluded from discussion are:

- Commercial technology companies,
- Commercial assistive technology assessment, provision and training companies,
- Education publishers,
- Legal experts,
- Professionals that support disabled students pre-transition to post-secondary education, such as school teachers and support workers,
- Professionals that support disabled students will post-transition from post-secondary education, such as careers advisors and employers.

It is in recognition of the omission of such stakeholders from practice discourses that the ED-ICT International Network has sought to ensure representatives from these groups are invited to each of the five planned symposia. However, for the purposes of this paper I wish to remain focused on those stakeholders within a post-secondary institution who are excluded due to a lack of voice.

## **The silenced and the silent**

In my 2014 book I argued that a number of stakeholders within a post-secondary institution were silenced in the field of ICT and disability. There is much literature that sets out the community's perspective on what the roles and responsibilities of each stakeholder should be (as outlined in an earlier section of this paper) but little of that literature is written by the stakeholders themselves (particularly lecturers, senior managers and staff developers): assumptions are made about their perspective, but little is drawn directly from personal narratives and experiences of the stakeholders themselves. I argued therefore that the dominant voices in the literature are those of accessibility researchers and campaigners and that key stakeholders in the field of disability, ICT and post-secondary education have been silenced. In drawing my conclusion I shared that I was influenced by a keynote speech that Stephen Ball gave at the 2012 Annual conference of the British Educational Studies Association which was entitled: 'Researching the black middle class: a view from whiteness'. Using the work of Livia (1996) to illustrate his point, he argued that a key role he could play as a white researcher was to question the silences in research on race; the absence of certain questions. Livia (1996) reflects on the need to be accountable for silences in her feminist writings:

When I started writing I was aware of the feminist tenet that the writer is accountable for what she creates, but it did not occur to me that I might also be accountable for what I left out (Livia, 1996, p. 35).

Applying these arguments to the field of ICT and disability in post-secondary education, we need to question the silences in two regards. Firstly, we need to question the silences that occur when those who voice their perspectives are not heard (the silenced). It is impossible for accessibility advocates and researchers (like participants of the Ed-ICT International Network Symposium in Montreal) to have meaningful dialogue with key stakeholders about how to evaluate and develop their practice, as long as their voices are missing from the research and practice literature (Seale, 2014). This position resonates with the ideas of Salvador, Rojas and Susinos (2010, p. 142) who argued that social justice cannot be reduced just to democratic access to ICT (redistribution of wealth) but 'instead needs to be oriented to the idea of opening spaces where all social groups may have the opportunity to discuss the issues of the day'. In a stagnating field, we need to open up spaces for all accessibility stakeholders to discuss the issues that they identify as important and meaningful to them. But as Gilligan (1993) points out, speaking depends on listening *and* being heard. We therefore need to engage in a relationship with stakeholders, where we not only commit to 'giving' them voice, we also commit to acting on what we hear.

Secondly, it is my contention that we also need to question the silences that occur when those who have a voice, do not voice their perspectives (the silent). For the purposes of this paper I will focus on this issue in more detail as it has received less attention in the research and practice literature. I have identified two important stakeholder groups that I argue are particularly silent: disabled students who do not disclose their needs and disabled staff.

### **Disabled students who do not disclose**

There is evidence to suggest that disabled students experience a lack of understanding and acceptance of their needs from both students (Quick, Lehman and Deniston 2003; Kowalsky and Fresko 2002) and academic and support staff (Ryan 2007; Denhart 2008). This lack of understanding can manifest itself in failure to provide accommodations in teaching (Bishop and Rhind 2011; Claiborne et al. 2011) and in assessments (Hammer, Worth and Dunn 2009; Vickerman and Blundell 2010). Furthermore, such lack of understanding is attributed to negative attitudes towards disability and has been documented in a range of academic spaces including placements and vocational training (Cunnah 2015).

The experience of negative attitudes and lack of understanding can lead disabled students to feel stigmatised (Stein 2013; Nolan et al. 2015) which can lead them to avoid disclosing their disability and therefore miss out on the opportunity to obtain the legal right to support and accommodations (Evans 2014; Nolan et al. 2015). For disabled students, disclosure can be viewed as risky for a number of reasons: because they do not know how faculty will respond (Quinlan et al. 2012); they don't want faculty to think differently of them or misunderstand their difficulties (Baker et al. 2012; Stein 2013); they are concerned that faculty will not believe they have a real disability (Olney and Brockelman 2003); they don't want to be perceived as not trying hard enough to succeed without support (Hammer et al. 2009); they are afraid that disclosure might impact on their ability to gain employment (Venville, Street and Fossey 2014); they have a desire to forge an identity free of disability (Lightner et al. 2012) or they do not wish information about their private identity to become public property (Borland and James 1999; Claiborne et al. 2011).

It is important to acknowledge that there are other reasons (not necessarily linked to stigma) why disabled students choose not to disclose their disability. For example wanting to be treated like other students (Hall and Tinklin 1998) or training for professions where tensions between professional standards and equality exist (see for example Hargreaves et al. 2014). Furthermore, even in a climate that is 'positive', where no obvious prejudice exists, disabled students may still choose not to disclose (Baker, Boland and Newik 2012). Nevertheless, the literature on disclosure reveals that many disabled students feel unable or reluctant to voice their rights and advocate for their support needs which has implications for their access to ICT which could potentially support and enhance their studies.

## Disabled staff

In recognition that the experiences and needs of disabled students have been ignored, there has been an increase in the number of studies seeking to illuminate the disabled student's perspective through surveys, focus group and interviews (see for example Fichten et al. 2010; Asuncion et al. 2012; Heiman & Sheiman, 2012) The same cannot be true for other stakeholders. As Diez, Lopez and Molina (2015, 148) point out: 'only on rare occasion are other members of the HE community given a voice'. Seale (2017) argued that two particular stake-holder groups that are ignored are disabled staff and disabled students who do not disclose their disability to institutions.

Writing in the context of post-secondary education generally (rather than specifically focusing on ICT in post-secondary education) Seale (2017) argued that there is very little research devoted to understanding the experiences of disabled staff (including graduate students). What stories that are told, tell of difficulties in preserving jobs and in having to manage without accommodations (Abram 2003; Damiani and Harbour 2015). Seale (2017) therefore argued that there is a real need therefore, for more privileging of the voices of disabled staff, particularly with regards to whether or not they feel able to disclose their disability. It would seem logical that creating inclusive environments for disabled students would involve the need to recognize and support disabled staff. It is argued, for example, that disabled staff can act as important role models: modelling to disabled students how it is possible to succeed in a postsecondary environment and modelling best teaching practices to fellow and future educators (Anderson 2006; Higbee and Mitchel 2009). Such an argument can also be applied with respect to ICT. Disabled students might indeed be inspired and informed if they witnessed more disabled staff in their institutions, but more than that, if they witnessed disabled staff successfully using assistive technology to support their teaching and research activities.

Seale (2017) also highlighted the argument that through their interactions with non-disabled students, disabled staff can raise disability-awareness amongst the students population as a whole and therefore open them up to the acceptability of disability, difference and 'otherness'. For example, Sheridan and Kotevski (2014, 1170) state:

Disabled teachers embody pedagogies of justice, interdependence, and respect for differences. Teaching (with) disability reveals spaces in education that often get silenced.

The revelation of such spaces might serve to address the barriers that I identify in the next section.

## **WHAT FACTORS CONTRIBUTE TO THE SILENCING OF STAKEHOLDER VOICES?**

In this paper I have developed two arguments. Firstly, that disability and ICT related practice in post-secondary education will not improve unless all stakeholders are engaged. Secondly that there are key stakeholders who are not engaged in improving practice because they are either silenced or silent. If these two arguments are accepted by the community, this raises one major question: Why are certain stakeholders silenced or silent? My review of the literature suggests that three key psycho-social barriers to stakeholder engagement exist: 1) Shifting or denial of responsibility 2) Lack of status or power and 3) Negative attitudes to disability and lack of disability awareness. For the purposes of this paper I will focus on negative attitudes to disability and lack of disability awareness in order to try to understand why disabled staff are silent and invisible in the workplace and why disabled students choose not to disclose their accessibility needs.

### **Negative attitudes to disability and lack of awareness**

Most of the research regarding the attitudes and awareness of university staff focus on two specific stakeholder groups in particular: lecturers and learning technologists. With regards to lecturers, there is evidence to show that lecturers/faculty have negative attitudes towards and limited knowledge about disabled students. Surveys that have been conducted to find out more specific information about faculty attitudes and knowledge regarding accessibility and students with accessibility needs paint a more complex picture. For example, surveys conducted in the US reveal both positive and negative aspects to lecturer attitudes and knowledge. On the positive side, surveys reveal increased knowledge reduces negative attitudes (Perlow, 2007); lecturers are interested in positive interaction with disabled students and learning more about accessibility, universal design and assistive technology (Perlow, 2007; Power et al. 2008; Asuncion et al. 2010); lecturers have high expectations of success for all students (Cook et al. 2009) and lecturers work to ensure the learning environment enables all students access to course materials (Cook et al. 2009). On the less positive side, surveys reveal: lecturers have limited confidence in disabled students academic and future career success (Perlow, 2007); Only a minority of lecturers feel that accessibility is a valid criterion for selecting new types of e-learning (Asuncion et al. 2010); the majority of lecturers do not take the needs of disabled students into account (Bisonette, 2006); the minority of faculty are familiar with assistive technologies that can facilitate learning (Cook et al. 2009) and a minority of faculty provide lecture and course material in a wide variety of formats and media (Cook et al. 2009).

Similar results have been revealed in surveys conducted in Europe. Unterfrauner and Weiermair-Marki (2008) and Swallow et al. (2010) found gaps in knowledge and attitudes of educational professionals regarding how to appropriately support disabled students. In addition, Unterfrauner and Weiermair-Marki (2008) found a lack of awareness of the accessibility issues and difficulties disabled students encounter when using specific technologies. While Swallow et al. (2010) revealed dissatisfaction with knowledge of assistive technologies and enhancements. Results like these usually prompt calls for two

things to happen. Firstly for lecturers to be more proactive in anticipating the accessibility needs of disabled students (Perlow, 2007; Ball, 2009) The second more common call is for increased awareness of disabled students needs and accessibility challenges (e.g. Burgstahler, 2007).

With regards to learning technologists, there is evidence to suggest that levels of accessibility awareness and knowledge are low amongst learning technologists. For example, in a survey of the perspectives of e-learning professionals in Austria, Unterfrauner and Weiermair-Marki (2008) reported a lack of awareness of institutional accessibility related strategies or plans. Sloan and Stratford (2004) and Sloan, Stratford and Gregor (2006) suggest that when confronted with the issue of accessibility and legal implications, developers may experience a number of emotions: fear, embarrassment, defensiveness and helplessness. Sloan and Stratford (2004) also suggest that some developers see accessibility as a procedural or bureaucratic exercise invented by people without knowledge of media production or web development, and apparently with nothing better to do than constrain creativity and innovation. They argue that there are two negative outcomes of this way of thinking: de-motivation amongst some developers and an increase in anodyne (accessible but diluted) e-learning resources. Unterfrauner and Weiermair-Marki (2008) found that some technical support staff consider that following all the WCAG guidelines to be unattractive due to a perception that their programming creativity would be limited.

## **WHAT CAN BE DONE TO AMPLIFY STAKEHOLDER VOICES?**

In my review of who the stakeholders in the field of disability, ICT and post-secondary education are and what the barriers to their engagement are I have identified four potential approaches to increasing stakeholder engagement. Education and training is an approach that is frequently discussed in relation to addressing negative attitudes to disability and a lack of awareness of disabled students accessibility needs. Advocacy, self-advocacy and inclusive research are less frequently discussed in the research and practice literature, but I will argue that they have particular relevance in relation to giving voice to the silenced and the silent.

1. Education and Training
2. Advocacy
3. Self-advocacy
4. Participatory and Inclusive research

### **Education and training**

When practitioner communities appear to be resistant to change, particularly if it means taking on more responsibility, it is not uncommon for change agents to seek to influence the future generation of practitioners- typically students. Such a strategy of engaging the seek stakeholders of the future rather than the present has also been advocated in the field of

disability, ICT and post-secondary education. For example, Oravec (2002) believes that the grass-roots support of the youngest members of technical professionals (e.g. students) is required if accessibility initiatives are going to be successful. He sees students therefore as potential agents of change. In his PhD thesis, Bohman (2012) conducted three case studies of university teaching of accessibility and Design for All in the ICT curriculum. As part of his rationale for why it was important to conduct such case studies he wrote:

The failure to include accessibility and design-for-all in the ICT curriculum perpetuates the cycle of ignorance among ICT developers and maintains the status quo of exclusion and marginalisation of people with disabilities who cannot use the inaccessible products created by the ignorant developers. At some point, this cycle needs to end, and the ICT curriculum is one way to start. (p5).

Arguments like these resonate strongly with Freire's notion of critical pedagogy where students are provided with the skills and knowledge necessary for them to challenge and alter disempowering practices (Giroux, 2010).

Strategies for engaging the current generation of practitioners are two-fold: producing guidance and information through for example web sites, briefing papers and information leaflets; and delivering training and staff development opportunities. Most guidance and information that is produced tends to be generic, but some has attempted to target specific stakeholders. For example, the UK National advice and guidance organisation, JISC, has targeted senior managers in a much more focused and strategic way and produced briefings which include: e-learning as an accessibility investment (JISC, 2006b); Accessibility in the Mainstream- Roles and Responsibilities (JISC, 2006a) and Alternative Approaches to Accessibility- Making the Disability Equality Duty Work for your learners (JISC, 2007).

A much more common strategy for engaging the unaware and improving accessibility practices is to call for more training (e.g. Dona & Edmister, 2001; Houchins, 2001; Zaparyniuk & Montgomerie, 2002; Wall & Sarver, 2003; Wisdom, White, Goldsmith, Bielavitz, Davis & Drum, 2006; Lewis, Yoder, Riley, So & Yusufali, 2007; Krach, 2007). Although the call for more training is loud and frequent, there is evidence to suggest that it is not automatically the panacea that people expect it to be. For example, staff developers can struggle to get people to attend staff development events, leading some to consider how to incentivise engagement in training. In addition, there is little evidence to prove that training actually works.

### **Incentivising engagement in training**

In the UK, The Disability Rights Commission (2003) suggested a range of strategies for disability related staff development, some of which may be interpreted as quite coercive, for example: making it clear in contracts what standard of behaviour or practice is expected; making certain aspects of training compulsory; involving the vice chancellor, principal or director in inviting people to attend, or charging training to departmental budgets to encourage their attendance. Wray (2002) warns of the dangers of adopting an overly

coercive or behaviourist approach to staff development. He argues that legislation could lead to some universities introducing a staff development methodology, which focuses on deficits in the skills of the workforce and on 'training' rather than the 'learning'. Resulting policies may lead to compulsory attendance at staff development events in order to avoid the institution being held responsible for individual staff behaviour but Wray suggests that such an approach will not encourage understanding and meaningful learning. Other less-coercive strategies suggested by the Disability Rights Commission might offer staff more of an incentive to attend. For example, providing encouragement and recognition of development in this area through review and/or appraisal processes; providing a free lunch and ask staff what training they would like.

One way to recognise development in this area might be to accredit training. For example, Neuber (2007) describes a graduate level three-credit course that combines instruction on HTML coding, web accessibility standards and DreamWeaver. Rowland (2007) noted that when responding to the question of incentives, few campuses in her survey reported using incentives although some mentioned that lunches were often included during training days. Two responses to the survey however do illustrate the different approaches to incentivisation that can be taken. One professional development unit offers highly regarded certificates and even lunches for participants (Sutton-Andrews, 2007). Another offers opportunities to obtain free software or other materials to assist in accessible course or web design (Thornton, 2007).

### **Where is the evidence that disability awareness training actually works?**

I have argued that despite the call for more training and the conviction within the research and practice literature that it will improve accessibility awareness and therefore practice, there is little to no evidence that actually proves that training has the desired effect (Seale (2014). Few training providers evaluate their training beyond the simplistic satisfaction survey at the end of a course. One rare intervention study that bears some relation to the effectiveness of accessibility training in higher education is that of Thompson et al. (2007) who studied the impact of training on university web developers; where training (outreach) consisted of face-to-face training from external accessibility experts and follow-up email support. Web developers at 19 institutions were offered varying degrees of outreach support and the effect of this support was assessed by measuring the accessibility of the developer's websites both before and at different intervals after the training. Results revealed that overall; changes to web accessibility over time did not appear to be associated with the institutions' assigned outreach group. The websites of institutions that received moderate or extensive support showed positive change over time on just three out of fourteen accessibility checkpoints and negative change over time on three checkpoints. I used my review of accessibility training to conclude:

In the accessibility field there is much talk about best or effective accessibility practice, even though there is little agreement about what constitutes best practice. In comparison, there is little talk about best or effective practice in accessibility training and no evidence that training is effective. (Seale, 2014: page?)

I went on to suggest that staff developers needed to have a louder voice and had a key responsibility in contributing to research and development regarding the most effective way to develop accessibility practice within higher education institutions. One example of such work is the production of a staff development framework by Papadopolous, Pearson and Green (2012) which is based on several years of experience designing, running and evaluating staff development activities (See Figure 3). What I like about this model is that it addresses some of the psychosocial barriers to engagement that were identified earlier in this paper. For example, Papadopoulos et al. (2102) argue that sustaining motivation and experiencing and empathising with the disabled student's experience are essential in order to develop self confidence in teaching students with disabilities, embrace inclusive online practices and seek support in designing accessible learning materials. Therefore, the motivational aspect of disability simulations are employed to raise accessibility awareness and provide a deep understanding of the impact of specific impairments on the learning experience of disabled students, through a process of experiencing and empathising with the student experience.

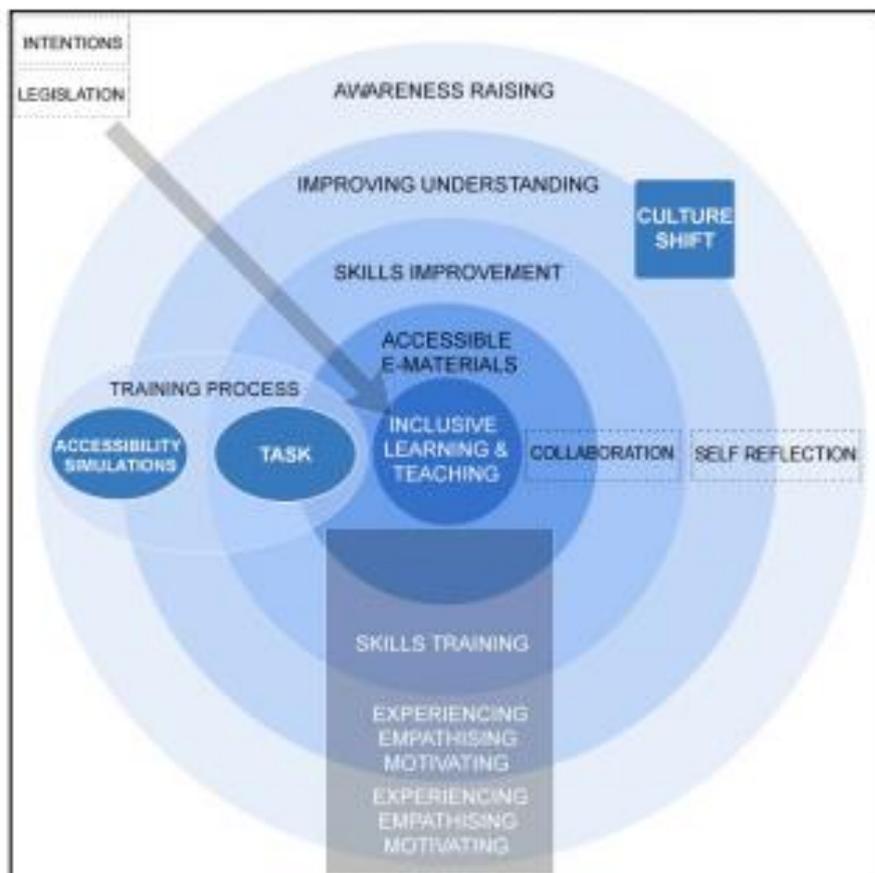


Figure 3: A staff development framework for inclusive learning design

## **Advocacy**

Addressing a lack of disability awareness and negative attitudes to training through education and training is one method of trying to change the practices of those stakeholders who are silencing other stakeholders. Another method is that of advocacy. In environments and communities where the powerless find it difficult to speak for themselves it is not unusual for others to advocate on their behalf. In the context of disability and ICT in post-secondary education, we have already discussed how advocating for disabled students is viewed as a key role of student support staff (Wibberley n.d; McCleary-Jones, 2007). For advocacy to be effective however, the advocate's voice needs to be heard and respected- they need to have power and status in their own right. I would argue however, that student support staff experience a lack of power and status which means that when they advocate for disabled students they may not be listened to. There may be two reasons for this, one is that their role is poorly understood, the second is that they may be stigmatised by their association with disabled students. The role of student support staff is particularly challenging, largely because of the unique role they occupy but also because some support staff, such as assistive or access technologists occupy niches within higher education that are poorly understood and have low visibility (Thompson, 2009; Johnson, 2009). For example in a survey of access technology specialists, Thompson (2009) found that 61.5% of institutions have only one access technology professional on campus- who have roles including student training on AT; providing technical support for AT software and hardware. They reside in a variety of services: 65% in disability services; 27% in IT and 4% in library services.

I have noted that there are a lot of surveys that ask disability support staff about the experiences of disabled students (see for example Reed and Curtis 2012) as well their views regarding the knowledge and attitudes of academic staff (see for example Harrison and Holmes 2012). However, I have also argued that there is little research that seeks to document the experiences of disability support staff and the impact that trying to advocate for disabled students and change practices across an institution has on them (Seale, 2017) This is despite the acknowledgement that they face significant challenges in their work. One particular area that I argued needs further investigation is whether disability support staff are stigmatised by their association with disabled students. Such 'courtesy stigma' has been documented in other fields. For example Broomhead (2016) documented how teachers employed by schools for pupils with behavioural, emotional and social difficulties felt stigmatised and treated as if they were not as clever as other teachers.

## **Self-advocacy**

Education, training and advocacy are all indirect methods of enabling the silenced and the silent to have a voice and be heard. A more direct method is that of promoting self-advocacy. Writing in the context of disabled students, I have identified the development of self-advocacy support as an important strategy for enabling disabled students to have a voice and in encouraging them to speak-up and disclose their disability (Seale, 2017). In doing so, I observed that researchers viewed self-advocacy as a political rights issue,

drawing parallels with gay and black civil rights movements (Anderson 2009; Stodden 2015). The drawing of such parallels bring with them a call for disabled students organisations or 'collectives'. In addition to promoting self-advocacy such collectives are argued to encourage interaction and networking that might serve to counter-act isolation and stigma (Anderson 2009; Argawal, Cavlo and Kumar 2014). Anderson (2009, 1), a blind student, recounts his experiences of an approach towards collectivism called 'The Salon;' at the University of British Columbia (UBC):

UBC does not provide the infrastructure or environment necessary to encourage the interaction and networking of students with disabilities aside from the odd, start of the year mixer. My fellow disabled students have been cast as passive receivers of services, not active agents of change....During the three months of the Salon Series, I have felt like an active agent of dialogue, inquiry, and engagement with a large, unruly and dynamic community that has not often come together on campus in such a powerful and all-inclusive manner.

More research is needed into the kind of student organisations and collectives that are needed in order to promote self-advocacy skills of disabled students in the context of ICT and access needs. More research is also needed to collect the evidence that such initiatives do actually bring about a change in the nature and frequency of disclosure behaviours. I acknowledged that promoting disclosure behaviour however, does not challenge the policies and systems in post-secondary education that require disabled students to disclose before their needs will be taken seriously and addressed through accommodation (Seale, 2017). For some, it is the disclosure system that needs changing, not students behaviour. Therefore, a second priority for research and practice is the need to design, develop and evaluate student voice initiatives specifically aimed at engaging disabled students in ICT and accessibility policy transformation (Redpath et al. 2013).

Given that disabled staff have also been identified as invisible stakeholders in the field, it would also seem appropriate to investigate the extent to which they can be supported to advocate for their technology related rights and needs.

## **Participatory and inclusive research**

In my work with disabled students I have argued that participatory methods are an effective way to give voice to their experiences of stigma, discrimination and disadvantage and how this impacts on their access to and use of ICT. The methods I have employed have been influenced by participatory design and participatory/inclusive research methods (Seale, 2014, 2010).

Participatory design is commonly used in the fields of Human Computer Interaction, computer science and engineering design. One example relevant to disability is the design of assistive technologies (Moffatt, McGrenere, Purves & Klawe, 2004; Wu, Baecker & Richards, 2005). Participatory design incorporates the related fields of inclusive design (Dewsbury, Clarke, Rouncefield & Sommerville, 2004); co-design (Druin, 2007) and user-centred design (Newell, Carmichael & Morgan, 2007). Participatory design can be defined as active involvement of users throughout the entire research and development process (Hanson,

Magnusson, Arvidson, Claeson, Keedy & Nolan, 2007) and is generally understood to involve: working directly with users; early and continual participation of users; engaging with real users in their real contexts; iterative cycles of development and evaluation until an agreed solution is reached and collaborative partnerships between users and designers. Participatory design methods are varied but have a strong ethnographic tradition with regards to conducting intensive observations of the user and how they use technologies in their everyday lives (Davies, Marcella, McGrenere & Purves, 2004).

Participatory research methods are commonly used in disability studies research, particularly learning disability research. At the heart of participatory research is the principle that it is research *with* rather than *on* people (Reason & Heron, 1986; French & Swain, 2004). Participants are encouraged to own the outcome of the research by setting the goals and sharing in decisions about processes (Everitt, Hardiker, Littlewood & Mullender, 1992). Like participatory design, participatory research attempts to engage participants in the whole research process from design through to evaluation. There is a particular emphasis on disabled people, as participants, identifying the research problems and questions to ensure that disabled people consider the research 'worthy of investigation' (Chappell, 2000). Just like participatory design, participatory research emphasises collaborative partnerships, but it goes beyond this to emphasise non-hierarchical relationships (Cornwall & Jewkes, 1995; Zarb, 1992) where researcher and participant have equal status and power. Cocks and Cockram (1995: 32) however, stress that any alliances between researcher and participant must be 'under the control and primarily in the interests' of disabled people.

It is my contention that the strong narrative and in-depth insights offered by methods informed by participatory design and participatory/inclusive research would be highly applicable to research that is focusing on hearing the voice of hitherto invisible, powerless or voiceless stakeholders in the field of disability, ICT and post-secondary education, including disabled staff and disabled students who do not disclose. We need research where there is active involvement of **all** the stakeholders in the field throughout the entire process. We need research that is based on in-depth understanding of the working lives of all the stakeholders and the factors that influence their everyday practice. We need research where all the stakeholders are involved in deciding on the problems to be investigated, the questions to be asked and the relevance to stakeholder practice. Finally, we need collaborative research where all the stakeholders have equal status and power to control the focus and direction.

## CONCLUSION

One of the major aims of this paper has been to provide an underpinning critical framework for the second symposium of the International Network on ICT, disability, post-secondary education and employment. In my examination of stakeholder engagement I have drawn on concepts of voice and silence to argue that:

- Disability and ICT related practice in post-secondary education will not improve unless all stakeholders are engaged;
- There are key stakeholders who are not engaged in improving practice because they are either silenced or silent;
- One key factor contributing to the silencing of certain stakeholders is lack of disability awareness and negative attitudes to disability;
- Education and training on its own cannot prevent the silencing of stakeholders, we need a range of strategies including advocacy, self-advocacy and participatory/inclusive research and development methods.

It is my hope that the symposium will expand on my ideas and in doing so question those things that are 'taken-for granted' as truth or fact in the field in order to give voice to new possibilities and future directions in both our research and our practice.

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