**Engaging and training students in the development of**

**inclusive learning materials for their peers**

**Introduction**

Over 2.5 million (11.1%) of all undergraduates in the United States (US) reported a disability in 2011/12 (U.S. Department of Education, National Center for Education Statistics, 2014). The majority of these students are guaranteed equal access to Higher Education (HE) through Section 504 of the Rehabilitation Act of 1973 or Title II and III of the Americans with Disabilities Act. In the United Kingdom (UK) 12.8% of all first degree students reported a disability in 2015/16 (Equality Challenge Unit, 2017). UK students with disabilities[[1]](#footnote-1) (SWD) are protected through the Equality Act 2010 which legally protects people from discrimination in the workplace and in wider society. However, despite this legal protection, controversial UK government decisions in 2014 to cut £30m from the Disability Student Allowance (DSA) pushed the agenda for supporting students with disabilities to the centre stage. Notably, the National Union of Students (NUS, 2016) warned, ‘The ‘rebalancing’ of responsibility might lead to the absence of support in some institutions, and will have long-term damages to SWD access and success in higher education’. This decision triggered a period of rapid deliberation within the HE sector about how it could best address the funding shortfall and fuelled a determination to deliver more inclusive approaches.

In 2012-13 the UK government provided £145.8m of DSA support for 64,500 SWD in HE (SWDHE), up 44% since 2009-10 when £101.3m supported 47,400 students. The UK government’s plan to save £30 million immediately prompted a rethink about how support would be provided to SWDHE students (Weale, 2015). The concern across the sector was palpable, as Lewthwaite (2014, 1159) summarised, ‘Cuts threaten this hard-won equality’ as ‘DSA is vital for disability equality in higher education’. The rationale behind the cuts was informed by the principle that universities should discharge their duty under the 2010 Equality Act, like any other business. The guidance was clear, ‘Disabled students should arrive at university confident that any barriers to their learning have been identified, understood and appropriate steps taken to reduce their impact. The learning environment should be as inclusive as possible, so that the need for individual interventions is the exception, not the rule’ (Student Finance England, 2016). In brief, institutions should develop inclusive practices which reduced the need for specially-funded individual interventions.

This new climate of reduced funding shone a light on the issue of disability support. Although participation in HE for SWD has risen, this has not translated to comparable completion and performance rates of SWD in the U.S (U.S. Department of Education, 2014 and 2016) or in the UK (Equality Challenge Unit (ECU), 2017). Concerns about differential student outcomes and performance have been heightened as a result of funding decisions. In 2016, ECU reported 70.4% (248,445) non-disabled students achieved a ‘good degree’ (first class/2:1) compared to 68.7% (29,275) for (self-disclosed) SWD. For the lower awards (2:2/third/pass), this equated to 31.3% SWD, and 29.6% for non-disabled students. In the US, the National Council on Disability (2015), suggested differential outcomes existed because, ‘many universities fail to consider whether or not their educational materials are accessible to students with a variety of sensory and other print disabilities, leaving students in a position of seeking access assistance after a course has already begun.’ These public realisations prompted universities to convert learning materials into accessible formats to avoid SWD falling further behind in their studies. In the UK, Morgan and Houghton (2011) were also reporting that guidance materials existed to support the design of an inclusive curriculum but there was limited advice and help to deliver it.

With equal access requirements and increasing rates of enrollment, it is necessary to find appropriate ways to create accessible materials for SWD. It is becoming no longer viable to meet the legal requirements through some type of disability services office alone. Increasingly cuts such as the DSA have meant such specialist stand-alone services are being cut (Lewthwaite, 2014). In an effort to reduce inaccessible materials and time-sensitive requests for accommodations, some universities are proactively transitioning to inclusive materials and curriculum; however, for this to be universally adopted, faculty need to understand the impact of their approaches and assess the accessibility of learning materials beyond what is legally requested on a case-by-case basis (Matthews, 2009).

Educators have the opportunity to address concerns within the classroom in a non-invasive, overarching manner that has the potential to benefit all students without creating major classroom instructional shifts due to specific accommodation requests. This is particularly helpful given that many SWD prefer not to request accommodations (or what the UK refer to as ‘reasonable adjustments’) until they have already failed which is due in part to concerns over stigma and faculty resistance (Roberts, Crittenden, and Crittenden, 2011). It is argued by Higbee (2003), amongst others, that providing an accessible curriculum which is student-centered has been found to enhance the ability of all students to participate fully in course activities leading to deeper student learning and more diverse course interactions between students of all abilities (also Higbee, 2009). This level of intervention is encompassed in the US in the concept of Universal Design in Learning (UDL), and its equivalent principle of ‘inclusive curriculum’ in the UK (Morgan and Houghton, 2011). As described by Burgstahler (2009), the UDL set of principles are designed to create equal access for students of varying learning styles and abilities and can be applied to all aspects of HE including: products, content, physical spaces, assessments, and technological tools. UDL strategies often require minimal up front time and very few adjustments during course development while providing optimal impact on student engagement and learning (Dukes, Koorland, and Scott, 2009).

Given expectations on universities to adhere to principles of an inclusive approach to learning, this paper reports on the outcomes of a trans-Atlantic project on the university-wide measures taken by both institutions to assess and mediate accessibility issues, including the cost-effective conversion of materials by students, for students. Influenced by successful projects on peer-based support (see Hockings et al. 2017; Keenan, 2014; Terrien and Leonard, 2007), we explored the impact of students being involved in delivering innovative strategies for each other by way of providing inclusive materials. In creating a structure where peers were embedded in the work we explored the attitudinal change on a ‘de-personalised’ programme which did not actually have students meeting with each other (as in most other peer-support projects), but nevertheless had a direct benefit on each other’s learning. The sense of achievement students felt from helping others in peer mentoring projects (Shrestha, May, Edirisingha, Burke and Linsey, 2009) is further explored in this dimension of student support. It was felt that a comparative case study based on different institutions located in two different countries with significant disability legislation and commitment would be appropriate. The project was developed by two institutions – one in the United Kingdom, and another similarly sized university in the United States around a number of key research objectives. In brief these were to:

* Assess and build on current knowledge and understandings of approaches to the provision of an inclusive curriculum within Higher Education.
* Undertake and assess innovative strategies for providing inclusive curriculum activities which involved students working as employees on inclusive curriculum projects to assist their peers.
* Use empirical data to theorise attitudinal change of university students for their future employment
* Evaluate the impact of engaging students in the development of inclusive learning materials for their peers on faculty, staff and the wider university community.

**Inclusive Curriculum in Higher Education**

Only in the last few years has the academy focused in any meaningful way on the issue of inclusive approaches to curriculum design in higher education, with the concept of an inclusive curriculum moving from the ‘margins to the mainstream’ (Thomas et al. 2005). Literature remains surprisingly embryonic, although it is expanding slowly with a recognition that ‘an inclusive curriculum is one where all students’ entitlement to access and participate in a course is anticipated, acknowledged and taken into account’ (Morgan and Houghton, 2011, 7), and where we ‘engage and include the needs, interests and aspirations of all students’ (Hockings 2010, 17). Croucher and Romer (2007,3) argue an inclusive approach must move away from targeting populations with specific intervention and instead pursue an approach that does ‘not place groups in opposition to each other. It respects diversity but does not imply a lack of commonality, it supports the concept of widening participation, but does not imply an externally imposed value judgment’. Rather an inclusive approach must encourage all students to feel that the curriculum relates to them personally and are not put in place to meet equality targets or address concerns over the ‘disenfranchised’.

Kluth et al.’s (2003) also make it clear that it not about SWD, but ensuring there is access for all. They argue for ‘inclusive schooling’ where there must be a shift from practice that ‘includes’ students with disabilities to engagement where all students are intellectually and academically engaged in the classroom. There is clear consensus in the research published to date that we need to be moving away from targeting ‘sub-sets’ of students with specific additional requirements (Thomas and May, 2010; Waterfield and West, 2010), and instead place emphasis on student diversity. Echoing Croucher and Romer’s (2007) plea, Morgan and Houghton (2011) argue that an accessible and inclusive curriculum should not just be about adjustments for those with disabilities where responses are highly individualised and reactive, but must reflect the changing dimensions of how students engage with their studies. This can be explained with the four-pronged typology of diversity promoted by Thomas and May (2010), who state approaches must be educational, personality based, circumstantial, and cultural. Studies have continued to emphasise that an inclusive approach to learning materials and associated assessment is ‘meaningful, relevant and accessible to all’ (Thomas and May, 2010, 9) underpinned by an understanding that students as individuals have strengths, qualities and skills that will be beneficial for their learning and for students they learn with.

Fuller, Healey, Bradley, and Hall (2005) claim to have undertaken the first survey to contrast the experience of a large sample of students with and without disabilities studying in the same institution. Through their survey, they explored the barriers to learning faced by SWDHE. It sought to address the claim by Baron et al, (1996), and later Paul (2000) that little research had examined the obstacles and challenges SWD faced in their educational environment. Fuller et al. (2005) found over half of the SWD and as many as three-quarters did not experience any physical disability-related barrier, however, up to two-thirds identified barriers with their assessments. Interestingly, they concluded that devising generic policies to support their teaching, learning and assessment may not always meet the specific needs of individuals and often benefitted the non-disabled students more than the SWD.

Further to Fuller et al. (2005) arguing that assessment was a common concern and area of differentiation, Grace and Gravestock (2009) also found that one of the most overarching barriers faced in learning has been access to materials. Such work emphasises that one of the major barriers faced by SWD is the inaccessibility of learning materials. Such work emphasises the importance of ensuring documents are compatible with assistive learning technologies. There is also further argument that documents and presentations should have a format that can be accessed easily and without software where at all possible, i.e. where documents are universally helpful and designed. Practice remains patchy although the sector is beginning to grasp its implications.

In developing six constructive principles to inclusive design or university instructional design (UID), Kerr and Baker (2013) sought to address differential outcomes. Aspects such as wholesale use of accessible documents (in terms of font size, type, margins, headings and colour contrasts) are examples of interventions which benefit all, rather than remedial interventions which help the few (Morgan and Houghton, 2011). In terms of embedding good practice within the curriculum, there needs to be a shift which places responsibility on the institution, policy and staff practices rather than on the individual student. Matthews, (2009) also calls for systemic change rather than focus on the individual, but notes this area remains under-theorised within a higher education institution (HEI) context. Studies all point to a need for universities to recognise students’ multiple identities and needs, thus avoiding compartmentalising solutions. As Morgan and Houghton (2011) conclude, this will inevitably require the wholesale adoption of a more holistic and sophisticated approach to meeting students’ entitlements.

**Employing students to advance an inclusive curriculum and create attitudinal change**

The involvement of students in advancing an inclusive curriculum to build knowledge and awareness is not new, but it remains under-researched (Porter, 2012; Wray, 2013). This situation is perhaps surprising given the focus on peer mentoring and recent ‘students as partners’ discourses. Olney and Brockelman (2003) state that peer support can be enabling for all, but the lack of it by fellow students can also be detrimentally harmful and disabling. For example, Harriet Cameron and Karl Nunkoosing (2012) include the element of ‘student-led training’ in their tentative and simplified model of how dyslexia can be supported by faculty, but remain rather silent on this specific element of their proposed model. It is this element which we have taken forward in this research - exploring how peers can assist peers in delivering a mutually beneficial learning environment for all.

Aligning with Konur (2006, 361) who highlights the importance of stakeholders and theorising non-disabled peers as the fifth stakeholder, we must advance the view that ‘it is important to develop student development programs to improve the attitudes of non-disabled students towards their peers with disabilities’. There is clearly a need to explore how contact between SWD and staff with disabilities influences attitudes, but here we argue there is a more powerful layer, i.e. how the work of students can directly contribute to improving the learning experience of their peers with disabilities. It is the use of non-disabled peers which is our focus. In drawing on peer mentoring literature and the theoretical principles employed in this work, we need to advance understandings that the development of inclusive learning environments comes from an appreciation for the benefits to SWD of non-disabled students being involved in the educational environment (May and Felsinger, 2010; Wray 2013). As other interventions and educational services improve to support SWD in attaining prerequisite skills for HE in non-segregated classrooms, the acknowledgement of working alongside non-disabled peers will only increase.

**Comparative case study context**

A trans-Atlantic comparative case study approach was adopted given the recent focus on SWD in the UK and US and the similar challenges they faced following policy changes and funding cuts. The two case study HEIs both have a significant population of students who have a declared disability and both have made significant and recent moves towards building an inclusive curriculum. The UK HEI has three campuses with campus A population of 11, 461 (11% declared disability), campus B with total population 6, 276 (10% declared disability), and its smaller campus C with 669 (7% declared disability). It set up a ‘Disability Working Group’ in 2014 to drive forward institutional change with actions including policies and guidance on learning materials, recording, classroom design and staff development. In 2015/16, over 70 students received a total of over 7,000 hours of non-specialist support, and although the disability student allowances will continue to fund students with existing arrangements, the needs of future students must now be met through a combination of inclusive practices and university-funded reasonable adjustments.

The US case study is situated in the Midwest of the country and has two campuses, with campus A with a population of 16,655 and campus B with a total population of 1,336. Recently classified as one of only five full service colleges for students with physical disabilities (Tiedemann, 2012), the US HEI has made it a high priority to extend the opportunities of higher education to people with disabilities since 1970 and has led practices in the sector given its vision of an ‘inclusive culture’. The university's Office of Disability Services (ODS) offers programs to approximately 550 students each year with a view to promoting each student's academic, personal, physical, and vocational growth so that students with physical and learning disabilities can realise their full potential.

Data from the UK case study HEI on student retention, performance and satisfaction was examined to inform the focus of intervention - data for the past three years shows significant differentiation. Also, the percentage of students who achieved a ‘good degree’ by academic year and protected characteristic highlights one of the concerns where students with declared disabilities are consistently performing worse than their peers. This difference is echoed in much of the research to date (Fuller et al., 2004). Given the reduced DSA funding framework, the UK HEI has been working in partnership to identify, monitor and address differential patterns across the protected characteristics in the recruitment, progression and achievement of staff and students. In terms of overall student satisfaction, this is measured in the UK by the National Student Survey (NSS), and results for 2016 indicate very clearly, a differential between students without a known disability and those with a specific learning disability or other declared disability (Table 1). This is not an unusual situation, and is indeed replicated in the US case study’s National Survey of Student Engagement (NSSE) - the equivalent in the United States (Table 2).

**Table 1 National Student Survey (NSS) results, UK case study [insert here]**

**Table 2 National Survey of Student Engagement (NSSE) results, US case study [insert here]**

Although there has been legislative anti-discrimination for SWD in US HE since the Rehabilitation Act of 1973, the below average graduation rates for SWD highlight the need for additional solutions to continued barriers. In the US, national disability organisations are pushing for the adoption of the Accessible Instructional Materials in Higher Education (AIM HE) Act in the US. The National Federation of the Blind (2017), reported, ‘The overwhelming majority of university websites, digital books, PDFs, learning management systems, lab software, and online research journals are inaccessible to students with print disabilities.’ In response, its ODS delivers services to meet the evolving needs of SWD. Note takers, readers, lab assistants, extended time on tests, and audio recorded lectures would all be examples of common academic accommodations. Innovate practices include: a service dog park, accessible underground tunnels, adapted recreation program, student leadership activities, and peer mentoring program and support group for students on the autism spectrum. The impact of service provision on SWD has been significant (Oswald, Bonza, and Huber 2015; Rando, Huber, and Oswald 2016), with follow up research (Huber, Oswald, Webb, and Avila-John, 2016) showing that 96% of recent graduates with disabilities reported that the university met their college expectations and 65% stated they were currently employed. Due to recent financial cutbacks in conjunction with an increase in distance education, the US HEI can no longer meet the increasing accessibility needs of SWD at the level previously offered. In line with national trends (Mole 2012; 2013), the US HEI had instituted several initiatives to educate the university community on the purpose and core accessibility concepts of UDL.

Accessibility for materials was given significant attention with the development of a Taskforce on Distance Education. Current online accessibility concerns and liabilities were assessed resulting in a recommendation for the creation of a university-wide taskforce devoted solely to accessibility compliance. Through that recommendation, a cross-institution digital accessibility group was formed in 2016. The first action was to offer accessibility training to instructional staff and support on creating accessible documents. From that training, several faculty and staff were better informed to implement immediate changes to improve accessibility in the curriculum. The resulting ‘Working with Students with Disabilities’ course was available to instructional staff, with the first installation as a podcast providing information on the student disability population, typical accommodations, accommodations process, faculty resources and consultation services available, and compliance. In addition, the group has now progressed to a full audit of the accessibility of the university/learning management systems portal.

**The study**

One of the challenges in the implementation of accessible documents is the time required to convert historic learning documents and create new learning materials (Basham et al. 2016). After a review of the literature on peer mentoring and student involvement, it was deemed appropriate that students would be best placed to support their peers and academic staff in this process (Colvin and Ashman, 2010; Fox and Stevenson, 2006; Longfellow, May, Burke, and Marks-Maran, 2008). At the UK HEI, ten student researchers were recruited for a conversion project and given training to complete the task. For this research, all ten were contacted and eight responded and were interviewed. In the US HEI, two students working on a similar project were recruited and interviewed. The interviews lasted between 20 – 30 minutes each and all were typed up verbatim into transcript data. The interview questions were the same at both sites (see Appendix 1) and covered their work to date, their understandings of accessible learning materials, what they learnt, and the challenges of undertaking such work.

The interview-based qualitative approach had initially planned to pursue a constructivist form of grounded theory as developed by Charmaz (2014) to capture the complex nature of inclusive curriculum and understandings of disability. The study wished to challenge the grounded theory approach that there is an objective truth that can be measured or captured in some way. Moreover, Charmaz’s approach values the incorporation of multiple views and experiences which appealed given our approach to the data and analysis was that it should be co-constructed in the interaction between the researcher and the participant(s). This approach aligns to the work by Cameron and Nunkoosing (2012) who used this research strategy to explore lecturer perspectives on dyslexia and students with dyslexia. In-depth examination of student learning and knowledge required a methodology that could capture the richness and diversity of the projects at both institutions. The need to be sensitive to the context in which the students were working and the nature of disability in HEIs meant that qualitative research was felt appropriate, given it can interrogate a complex and multi-layered social world (Mason, 2002). In line with the ethical research approval, pseudonyms are used for the students involved in the project (Table 3).

**Table 3 Student employees and their institution [insert here]**

For the data analysis, the principles within the constructivist grounded theory (CGT) approach of being open to the relativism of multiple social realities were adopted to enable the provision of analytic tools to facilitate a systematic approach to data collection. However, given the small final sample, the study departed from CGT and pursued a more systematic researcher-led qualitative thematic analysis approach. The software ‘NVivo’ was employed to code the data (Bazeley and Jackson, 2013). The data were firstly interrogated in phases to formulate connections which offered an appreciation of concepts in terms of their dynamic relationships. After this initial coding phrase of categories into broad ‘themes’, a second tier of reflective coding was pursued in line with what Braun and Clarke (2006) refer to as ‘refining’ and ‘defining’, thereby allowing categories with explanatory power to emerge as the central ‘storyline’ which pulled categories and grouped the verbatim words of participants. The coding procedure was intuitive and flexible, proving effective in being able to combine general themes and concepts such as accessibility, challenge, research, and peer support whilst also allowing researchers to explore links to concepts such as the identification of motivations (Beltman and Schaeben, 2012).

**Findings: partnership and attitudinal change**

Firstly, a strong sense of student partnership emerged through the data.By promoting active learning through a real-life project (as argued in Almarghani and Mijatovic, 2017; Knight and Yorke 2003), the US students acknowledged the opportunity to ‘learn through doing’ (Wenger 2000). For example, ‘I learned so much of how people with visual disabilities have a difficult time reading materials and completing school work in the same time that students without a visual impairment can. This was what got me very interested in the process of learning about accessibility’ (Rafa). This was also expressed by Carl:

‘I think I’m just so excited to have this opportunity to see things in real life and not to be a student. It’s one thing to go to classes and learn all those things. Coming from a student’s perspective, I think I’m the kind of person who went through classes aiming for good grades. I got good grades but at the end of the day, it’s not the grades that matter. You can go to each class and get straight A’s but getting into the field itself is an eye opening experience. You get different encounters where you have your education tested. .. It’s good to understand all those things in a comprehensive nature’. (Carl).

The UK students generally shared this view, ‘It was good to contribute to the full access of disabled students to learning documents. I was glad to be a part of it and help support staff provide these kinds of materials to students’ (Kris). Similarly, ‘the project was a really good idea as through these things we can make documents more accessible to students who are not able and making documents more available to all students’ (Sara). This sense of peer support came through strongly, ‘We learnt that we can make the materials we provide to students much clearer in a way that all students can understand it. We need to ensure we do not make it too complicated for students who are disabled – it was good to help other students’ (Sara). It should be noted that the US students seemed more comfortable (and confident) relaying thoughts about the power of this partnership between disabled and non-disabled proved effective and powerful:

‘The most important advice I can give is to partner with someone who is a skilled screen-reader. We cannot help unless we know what the issue, and the best way to find the issues is to get feedback from someone using this assistive technology. I wouldn’t have been able to learn what I did without help from [name]. He made great points in his feedback to me and was very happy to help with all of the formatting feedback’ (Rafa).

Secondly, coded phrases linked to ‘attitudinal change’ were prevalent in the findings. It was however noticeable in the axial stages of coding that the US-based students seemed generally more aware of the importance of an accessible curriculum than the UK group at the start of their work, ‘Accessibility was a big issue in a sense that everybody needed to have access to all materials for the learning experience. My understanding was it’s important to make it quite easy for everybody to access materials without any hassle.’ (Carl). Yet, at the start of the project, the UK students unanimously seemed unaware of its importance, **‘**To be honest, before starting I didn’t think of these things closely and consider them. I didn’t know about colour blindness, and how documents affect the disabled and didn’t really think about it. When I actually started and when we meet and we saw how we could make it accessible to all, it actually gave me a new perspective on looking at things’ (Sara). Likewise, Sheema claimed, **‘**Before the project, I didn't know people had difficulties. I had heard the words ‘colour blind’ and ‘dyslexia’ but didn't know how we could make it accessible. Due to this project, I have learnt all about this’, and Lianne echoed this, ‘My advice is it’s good to learn about how and why this is important and how it can benefit people with disabilities’ (Lianne). It is of course unclear if other UK institutions would have students expressing a similar lack of awareness and, conversely, if other US institutions would have students express a similar acknowledge of the need for accessible materials. A deeper probing of this emergent finding should be considered in any future extension of this work.

**Discussion**

In terms of insights about engagement by the wider community and sector, it was clear that the UK group did not really understand why accessible learning materials were important at first, ‘I did not have a clear understanding of the need at all and the differences for learning materials’ (Joan), and ‘I was not fully aware of some disabilities linked to documents format (font and colour). No one has really told us about the importance of these documents and it was all new to me’ (Kris), and Tim exclaimed, ‘I learnt about colour blindness and how important it is to recognise and understand. I learnt how to make documents more accessible to this.’ ‘Different people should be valued, we can't ignore them. We need to address their needs and fulfil their needs’ (Sheema). It was apparent that the US students were very aware of UDL principles, and indeed highlighted the cultural differences between the two HEIs, as well as the visibility and openness of the discussion about disability in the two different countries.

Part of this difference was illustrated by faculty attitudes and responses. In the UK, faculty seemed unsure of the project, echoing Hadjikakou and Hartas (2008) who found faculty (in Spain) often lacked training and previous experience with disability, although research from the US seem to suggest American faculty are more aware (Kluth et al. 2003). The main challenges in the UK centred around a lack of engagement and understanding of the work by faculty, but these challenges were not shared by students in the US, ‘I don’t think I found any challenging areas. Everything was kind of smooth based on the fact that we had an understanding of what is expected and what works. So conveying that to both entities: faculty or students, it was quite a smooth process. It was not any hassle’ (Carl), further adding:

‘It’s quite encouraging based on the fact that so many of the faculty are really interested in having everybody succeed. So to get to listen to faculty really open up and want to learn more about how they can make things more accessible is really gratifying and rewarding at the same time. ... It was interesting to see the response where everyone was willing to learn. So that was encouraging’ (Carl)

Rafa also noted, ‘The faculty have been extremely happy about it and have asked me to make their syllabi accessible and some of their course materials. The department has also asked me to work through the graduate manuals and make them accessible’ (Rafa). Although it was noted that despite the awareness, ‘There isn’t necessarily a ton of resources out there in how to reshape a document or do’s and don’t’s of accessibility’ (Rafa). Guidance and support is perhaps still lacking to progress this agenda.

Although students believed that faculty recognised the importance of this work, ‘I got to know the faculty also pays uttermost attention to students with disabilities. It was really encouraging for me to learn this and to be part of the project that the faculty was supporting’ (Muhammad). Several UK students felt there was some uncertainly (and sometimes unwillingness) to engage by faculty staff, ‘I don’t think academics are aware of the need to format documents in the way we were taught’ (Joan), which echoes Moriña et al.’s (2015) work which found faculty lacked understanding and training. This was expressed clearly by Sheema, ‘The problem was the academics. I had three modules including, but I could only complete half the files as the time was very short and sometimes the files were confusing as there are cross delivery documents. Academics didn't send me answers and they didn't reply but I tried my best’. These findings also support the research by Matthews (2009) who highlights issues and gaps in understanding between faculty and students.

Additional challenges included the time given to undertake the work. For example, students seemed to excuse academics due to the timing of the project. Joan explained, ‘because it was during the summer holiday, most of the academic staff were on vacation. This made the pace of work slow as we didn’t get answers to questions and no one was around to talk about the materials needed for the modules’. Sara also reported,

‘When I tried to contact the Module Leaders, many of them were on the list and the names as the leader, but I contacted them and said they were not the ML. When I tried to contact the other MLs they didn’t reply. Only about 4 replied to me. I think about 2 of them were happy with what I was doing, but about 2 unhappy with what I was doing because they were worried about me changing their work and reformatting things. Some of the things then I couldn’t do as most of the documents were in pdf format and when I asked to convert they didn’t get back to me and didn’t reply back’.

Others felt the time pressure limited the project, ‘I had a lot of modules and many were really complex and some of the language and terms I didn’t understand. There was a time pressure so time-management was an issue as I was trying to balance all the different tasks and the modules that I was assigned’ (Kris).

**Conclusions and future research**

Although the HE community is advocating and pushing inclusive curriculum and universal design as good practice and a response to cuts to disability funding, addressing the need for inclusive delivery in terms of conversion and creation of appropriate materials and resources is expensive and complex. Data indicated that the project helped students develop a better understanding of the principles of universal design, disability and inclusivity. Perhaps more powerfully, this research unearthed how students experienced a personal realisation of the challenges faced by their peers with disabilities. Associated attitudinal change also came through their responses and personal reflections. We argue this conceptual lens could provide a useful framework to further understandings about the changing motivations behind student engagement and peer to peer support.

Despite a small sample, it was noticeable that the US-based students seemed far more aware of the importance of an accessible curriculum than the UK group at the start of their work. It was also noted that the UK academic community seemed a little distant from their responsibilities and the work suggested a reluctance in some areas to be involved. Some of our data echoed the work by Hadjikakou and Hartas, (2008) and Moriña et al., (2015) on the challenges involved in engaging academic faculty and developing awareness which translates into accessible practice in their classrooms. Therefore, future research should therefore seek to investigate more deeply how legal and cultural contexts of institutions influence student awareness, and in turn the rate of adoption of inclusive principles and practices at their institutions. Although both the US and UK pride themselves on championing work on inclusive curricula, it seems the core concepts of accessibility may not be permeating the wider student body in the UK – lack of awareness despite institutional campaigns and work was noticeable. Certainly in addition to exploring student awareness of universal design principles within other countries, work should continue to examine how students can be used to support their peers beyond the well-researched area of peer mentoring schemes. In terms of the future agenda, one of our students highlighted this need explicitly, ‘I think this project should be generalised to more faculties and institutions in order to create equal chances for learning.’ (Kris).

**References**

Almarghani, E. M., & Mijatovic, I. (2017). Factors affecting student engagement in HEIs-it is all about good teaching. *Teaching in Higher Education*, 1-17. DOI:org/10.1080/13562517.2017.1319808.

Baron, S., Phillips, R. & Stalker, K. (1996). Barriers to training for disabled social work

students, *Disability and Society*, 11 (1), 361–377. DOI:org/10.1080/09687599627660.

Basham, J. D., Smith, S. J., & Satter, A. L. (2016). Universal Design for Learning: Scanning for Alignment in K–12 Blended and Fully Online Learning Materials. *Journal of Special Education Technology*, 31(3), 147-155. DOI: org/10.1177/0162643416660836.

Bazeley, P., & Jackson, K. (Eds.). (2013). *Qualitative data analysis with NVivo*. London: Sage.

Beltman, S., & Schaeben, M. (2012). Institution-wide peer mentoring: Benefits for mentors. *The International Journal of the First Year in Higher Education*, 3(2), 33-44. DOI: 10.5204/intjfyhe.v3i2.124.

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3 (2). pp. 77-101. DOI:org/10.1191/1478088706qp063oa.

Burgstahler, S. (2009). *Designing Universal design of Instruction (UDI): Definition, principles, guidelines, and examples.* Seattle: University of Washington.

Cameron, H., & Nunkoosing, K. (2012). Lecturer perspectives on dyslexia and dyslexic students within one faculty at one university in England. *Teaching in Higher Education*, 17 (3), 341-352. DOI: org/10.1080/13562517.2011.641002.

Charmaz, K. (2014). *Constructing Grounded Theory* (2nd edition). London: Sage.

Colvin, J. W., & Ashman, M. (2010). Roles, risks, and benefits of peer mentoring relationships in higher education. *Mentoring & Tutoring: Partnership in Learning*, *18*(2), 121-134. DOI:org/10.1080/13611261003678879.

Croucher, K., & Romer, W. (2007). *Inclusivity in Teaching Practice and the Curriculum*. York: Higher Education Academy.

Department on Disability Services (2017) *Guidance on People First Language.* Accessed 7 August 2017. <https://dds.dc.gov/publication/guidance-people-first-language>.

Dukes, L.L., Koorland, M.A., & Scott, S.S. (Spring, 2009). Making blended instruction better: Integrating the principles of universal design for instruction into course design and delivery. *Action in Teacher Education,* 31(1), 38-48. DOI:org/10.1080/01626620.2009.10463509.

Equality Challenge Unit (2017) *Equality in higher education: statistical report 2017*. Accessed 27 November 2017. https://www.ecu.ac.uk/publications/equality-in-higher-education-statistical-report-2017.

Fox, A., & Stevenson, L. (2006). Exploring the effectiveness of peer mentoring of accounting and finance students in higher education. *Accounting Education: an International Journal*, 15 (2), 189-202. DOI: org/10.1080/06939280600595145.

Fuller, M., Healey, M., Bradley, A., & Hall, T. (2005). *What are disabled students' experiences of learning at university.* Social Diversity and Difference Conference, Keele University. Retrieved 20 July 201. https://core.ac.uk/download/pdf/309640.pdf

Fuller, M., Healey, M., Bradley, A. & Hall, T. (2004) Barriers to learning: a systematic study of the experience of disabled students in one university, *Studies in Higher Education* 29 (3), 303-318.

Grace, S., & Gravestock, P. (2008). *Inclusion and diversity: Meeting the needs of all students*. London: Routledge.

Hadjikakou, K., & Hartas, D. (2008). Higher education provision for students with disabilities in Cyprus. *Higher Education*, 55(1), 103-119. DOI:org/10.1007/s10734-007-9070-8.

Higbee, J.L. (2003). *Curriculum Transformation and Disability: Implementing Universal Design in Higher Education.* Minneapolis: University of Minnesota.

Higbee, J.L. (2009). Implementing universal instructional design in postsecondary courses and curricula. *Journal of College Teaching & Learning* 6(8), 65-77.

Hockings, C., Thomas, L., Ottaway, J., & Jones, R. (2017). Independent learning–what we do when you’re not there. *Teaching in Higher Education*, 1-17. DOI:10.1080/13562517.2017.1332031

Hockings, C. (2010) *Inclusive learning and teaching in higher education: a synthesis of research.* York: Higher Education Academy.

Huber, M. J., Oswald, G. R., Webb, T., & Avila-John, A. (2016). Degree Completion and Employment Outcomes Among Graduates with Disabilities. *Journal of Vocational Rehabilitation,* 45(3),241-247.

Keenan, C. (2014). *Mapping Student Led Learning in the UK*. York: Higher Education Academy.

Kerr, S., & Baker, M. (2013). Six practical principles for inclusive curriculum design. In B. Tynan, J. Willems & R. James, *Outlooks and Opportunities in Blended and Distance Learning*, Hershey: IGI Global, pp. 74-88.

Kluth, P., Straut, D. M., & Biklen, D. P. (Eds.). (2003). *Access to academics for all students: Critical approaches to inclusive curriculum, instruction, and policy*. London: Routledge.

Konur, O. (2006) Teaching disabled students in higher education. *Teaching in Higher Education,* 11 (3), 351-363, DOI:10.1080/13562510600680871.

Knight, P. T., & Yorke, M. (2003). Employability and good learning in higher education. *Teaching in Higher Education*, *8* (1), 3-16. DOI:10.1080/1356251032000052294.

Lewthwaite, S. (2014) Government cuts to Disabled Students’ Allowances must be resisted, *Disability & Society*, 29 (7), 1159-1163, DOI: 10.1080/09687599.2014.931659.

Longfellow, E., May, S., Burke, L., & Marks-Maran, D. (2008). ‘They had a way of helping that actually helped’: a case study of a peer-assisted learning scheme. *Teaching in Higher Education*, *13* (1), 93-105. DOI: org/10.1080/13562510701794118.

Mason, J. (2002). *Qualitative Researching*. London: Sage.

Matthews, N. (2009) Teaching the ‘invisible’ disabled students in the classroom: disclosure, inclusion and the social model of disability, *Teaching in Higher Education*, 14 (3), 229-239, DOI: 10.1080/13562510902898809.

May, H., & Felsinger, A. (2010). *Strategic approaches to disabled student engagement.* York: Equality Challenge Unit and The Higher Education Academy.

Mole, H. (2012/2013). A US model for inclusion of disabled students in higher education settings: the social model of disability and Universal Design. *Widening Participation and Lifelong Learning,* 14(3), 62-86.

Morgan, H. and Houghton, A., (2011). *Inclusive curriculum design in Higher Education*. York: The Higher Education Academy.

Moriña, A., Cortés-Vega, M. D & Molina, V.M (2015) Faculty training: an unavoidable requirement for approaching more inclusive university classrooms. *Teaching in Higher Education,* 20 (8), 795-806, DOI: 10.1080/13562517.2015.1085855.

U.S. Department of Education, National Center for Education Statistics. (2014). *Profile of Undergraduate Students: 2011-12 (Web Tables).* Retrieved 4 April 2017. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2015167.

National Council on Disability (2015). *Briefing Paper: Reauthorization of the Higher Education Act (HEA): The Implications for Increasing the Employment of People with Disabilities. (May 19, 2015).* Accessed 29 May 2017. http://www.ncd.gov/publications/2015/05192015/#Endnote42.

National Federation of the Blind (2015). *The Accessible Instructional Materials in Higher Education (AIM-HEA) Act.* Accessed 14 March 2017. https://nfb.org/aim\_he

National Union of Students (2016) The Effects of DSA cuts on Disabled Students. Accessed 16 June 2017. https://uclu.org/sites/uclu.org/files/u84290/documents/dsa\_cuts\_briefing1.pdf

Olney, M.F., and K.F. Brockelman. 2003. Out of the disability closet: Strategic use of

perception management by select university students with disabilities. *Disability and Society*

18 (1) 35-50. DOI: org/10.1080/713662200.

Oswald, G. R., Bonza, A., & Huber, M. J. (2015). Effective job seeking preparation and employment services for college students with disabilities. *Journal of Postsecondary Education and Disability* 28(3), 375-382*.*

Paul, S. (2000) Students with disabilities in higher education: a review of the

literature, *College Student Journal*, 34 (1), 200–210.

Porter, A. (2012) *Meaningful Student Engagement*. York: Higher Education Academy.

Rando, H., Huber, M., & Oswald, G. R. (2016). An academic coaching model intervention for college students on the autism spectrum. *Journal of Postsecondary Education and Disability,* 29(3), 257-262*.*

Roberts, J. B., Crittenden, L. A., & Crittenden, J. C. (2011). Students with disabilities and online learning: A cross-institutional study of perceived satisfaction with accessibility compliance and services. *The Internet and Higher Education*, 14(4), 242-250.

Shrestha, C. H., May, S., Edirisingha, P., Burke, L., & Linsey, T. (2009). From Face-to-Face to e-Mentoring: Does the" e" Add Any Value for Mentors?. *International Journal of Teaching and Learning in Higher Education*, 20 (2), 116-124.

Student Finance England (2016). *Guidance on DSA.* Accessed 15 May 2017.

http://www.practitioners.slc.co.uk/policy-information/guidance-chapters.aspx

Thomas, L. and May, H., (2010). *Inclusive learning and teaching in higher education*. York: The Higher Education Academy.

Thomas, L., May, H., Harrop, H., Houston, M., Knox, H., Lee, M. F..& Trotman, C. (2005). *From the Margins to the Mainstream: Embedding Widening Participation in Higher Education*. London: Universities UK.

Tiedemann, C. W. (2012). *College success for students with physical disabilities.* Waco, US: Prufrock Press.

U.S. Department of Education, National Center for Education Statistics (2014). *The Condition of Education 2014*. Accessed 13 May 2017. https://nces.ed.gov/pubs2014/2014083.pdf.

U.S. Department of Education, National Center for Education Statistics. (2016). *Digest of Education Statistics 2016.* Accessed 13 May 2017. *https://nces.ed.gov/programs/digest/2016menu\_tables.asp.*

Waterfield, J. and West, B., 2010. *Inclusive Assessment: Diversity and Inclusion – the Assessment Challenge. Programme Assessment Strategies* (PASS). Accessed 17 December 2016: http://www.pass.brad.ac.uk/wp5inclusion.pdf.

Weale, S. (2015) Government to cut funding for disabled university students. The Guardian (2015) Thursday 3 December 2015 12.10 GMT. Accessed 4 June 2017. https://www.theguardian.com/education/2015/dec/02/government-to-cut-funding-disabled-university-students-jo-johnson.

Wenger, E. (2000). Communities of Practice and Social Learning Systems.” *Organization* 7 (2): 225–246. DOI.org/10.1177/135050840072002.

Wray, M. (2013). *Developing an inclusive culture in higher education: final report*. York: Higher Education Academy*.*

**Appendix 1: Interview schedule**

1. Prior to working on accessible curriculum conversion of learning materials, what did you do as a student intern? What other work have you been involved in as a student/intern?
2. What was your understanding of the need for accessible learning materials for students/people with disabilities prior to this project?
3. What did you learn about the curriculum and course learning materials through this project?
4. What were the challenges of completing the task?
5. What has been the response by academic staff to this work? After working on this project, what are your thoughts on inclusive curriculum and accessibility for students with disabilities?
6. What advice and feedback based on your experience might you give to students (and the project team) involved with this work in the future?

**Table 1 National Student Survey results (UK HEI case study)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NSS 2016 results and overall main categories  | Overall Satisfaction | The teaching on my course | Assessment and feedback | Academic support | Organisation and management | Learning resources | Personal development |
| All UK university average | 86 | 87 | 73 | 82 | 79 | 87 | 83 |
| UK case study overall | 86 | 89 | 79 | 82 | 79 | 87 | 84 |
| No known disability (2554) | 86 | 89 | 79 | 83 | 80 | 87 | 85 |
| A specific learning disability (e.g. dyslexia, dyspraxia, ADHD) (231) | 84 | 88 | 80 | 81 | 75 | 84 | 84 |
| Other disability (Excluding Dyslexia, dyspraxia, ADHD) (160) | 81 | 88 | 73 | 81 | 76 | 86 | 78 |

**Table 2 National Survey of Student Engagement results (US HEI case study)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NSSE 2015 results and overall main categories  | Overall Satisfaction (question 18) | Instruction (question 5a-c) | Instruction (question 5d-e) | Academic support (question 13b and 14b) | Organization and Management (question 5b) | Learning resources (question 14c) | Personal development |
| Comparable US University Average for Seniors | 85 | 78 | 65 | 69.5 | 78 | 68 | N/A |
| US case study overall | 82 | 77.5 | 55 | 55 | 75 | 69 | N/A |
| No known disability (523) | 83 | 78.5 | 55.5 | 54 | 76 | 69 | N/A |
| All disability categories (81) | 78 | 71.5 | 52 | 55 | 69 | 68 | N/A |

**Table 3 Student employees and institution**

|  |  |  |
| --- | --- | --- |
| **Student pseudonym** | **Gender** | **University location** |
| Rafa | M | US |
| Carl | M | US |
| Kris  | M | UK |
| Sheema | F | UK |
| Sara | M | UK |
| Joan | F | UK |
| Lianne | F | UK |
| Edgar | M | UK |
| Tim | M | UK |
| Muhammad | M | UK |

1. We have purposely chosen to use the terminology commonly used in the US to reflect ‘person first’ language, i.e. ‘students with disabilities’ (SWD) (Department on Disability Services 2017) in line with the People First Respectful Language Modernization Amendment Act of 2012 (People First Act, 26 September 2012), as opposed to the UK preference to use the terminology ‘disabled students’. Both seek to reflect the social model of disability. [↑](#footnote-ref-1)