Towards Another Kind of Borderlessness: Online Students with Disabilities

Abstract

Online learning is crucial to success for higher education institutions. Whilst the existing literature predominantly focused on its economic advantages, we focused on its inclusivity. At an online learning unit of a UK university, the number of students with disabilities (SWD) is three times higher than the national average. Having a degree makes significant financial and psychological differences in the lives of SWD. Though recent literature focused on inclusivity of online learning, an appraisal of first-hand experience of SWD studying online is a missing perspective. Accordingly, we aimed to explore their experience, using thematic analysis of semi-structured interviews involving ten SWD. Three themes emerged: i) having control over studies as an advantage of online learning, ii) personal touch helps SWD's online learning, and iii) challenges SWD experience with the social element of online learning. Our findings will help to develop the inclusivity of online learning to a new level.

Keywords: online learning, disabilities, sense of control, personal touch, social learning

Introduction

Online learning has become a primary focus in higher education (HE), attracting an increasing number of students. A survey response by 2500 American colleges and universities reported that about 70% of public institutions, and half of private non- and for-profit institutions agreed that online education was pivotal to their long-term strategies. That same survey showed 70% of HE institutions provided online programmes, including more than 11,000 completely online programmes (Allen & Seaman, 2008). Further, during the fall of the 2009 semester, about six million students undertook at least one online programme - a 21% increase from the previous year -, whilst the enrolment of the entire HE only grew 2% in America (Allen & Seaman, 2010). Three years later, the number had risen to seven million students in US HE, who were enrolled in an online course (Allen & Seaman, 2013). American institutions primarily attributed this increase to economic factors such as heightened fuel costs and unemployment rates, highlighting the way online learning has widened participation in higher education (Allen & Seaman, 2008).

Another notable group of people gaining access to education, through the advent of online education, is learners with disabilities (i.e., a mental or physical impairment [Equality Act, 2010]). This study aimed to explore online learning experience of this student population.

Literature Review

Online education can support people with disabilities (PWD) worldwide (Roberts, Crittenden & Crittenden, 2011) and although not a large number, the number of students with disabilities (SWD) in online learning has been increasing as a consequence of greater accessibility (Burdette, Greer & Woods, 2013; Thompson, Ferdig & Black, 2012). Particularly for PWD, earning a degree makes a significant difference in their lives, improving employment opportunities and working conditions. For example, among PWD,

degree holders make 50% more lifetime income than non-degree holders. Additionally, PWD with degrees feel more secure about their job than those without degrees (Thind, Stevens & Waters, 2016). PWD can enhance their job prospects radically by getting a higher degree, thus making a critical difference in their lives (Association of Graduate Careers Advisory Services, 2016). Despite this impact, participation of PWD in HE has been generally low. For instance, while 41% of non-disabled 19-year-olds in England and Wales enrolled on HE programmes (predominantly face-to-face programmes), this compared with only 28% of PWD in the same age group (Riddell, Edward, Weedon & Ahlgren, 2010). In Australia, though the number of SWD had increased 98% from 2007 to 2015, the proportion of SWD is still low at 6% of the overall student population (Australian Government Department of Education & Training, 2016). Likewise, 13% of all the students in HE in the UK, and 10% in the USA had disabilities (Higher Education Statistics Agency, 2016; United States Department of Education [USDE], 2009). Despite the greater benefits SWD could enjoy, their participation to higher education is lower than non-disabled students (McManus, Dryer & Henning, 2017).

In our university in the UK, the rate of students with disabilities is similar to the nation-wide rate, accounting for 12% of the entire student population. However, in our departmental entity for online learning, 40% of the online students have declared disabilities (University of Derby, 2017). This is more than three times the national figure and figures for the whole university. Previous survey-based studies reported that this difference may be explained by the greater accessibility of online learning (Burdette et al., 2013; Thompson et al., 2012), however research into the first-hand experience of SWD in online learning has been scarce. Lastly, given that approximately 600 million people worldwide have some type of disability (8% of the world population; United Nations Educational Scientific & Cultural

Organization, 2009), and online learning attracts learners worldwide (Shonfeld & Ronen, 2015), it is essential to investigate the experiences of online learners who have a disability.

HE aims to foster inclusion, increase the involvement of SWD, and broaden the participation of socially marginalised groups (Shevlin, Kenny & Mcneela, 2004). Despite the recent emphasis on market-driven attributes in HE (Riddell, 2009), awareness of SWD in HE has been increasing (e.g., the Disability Discrimination Act in Australia [1992]; the Equality Act in the UK [2010]), and more support for SWD in HE is urgently needed (Lombardi et al., 2018). SWD commonly spend more time and effort than students without disabilities, causing higher levels of stress and anxiety, and reduced self-esteem (i.e., feeling they are not academic enough; Mullins & Preyde, 2013; Ryan, 2007). Managing their own learning disabilities can negatively impact i) their emotional wellbeing (Davis, Nida, Zlomke & Nebel-Schwalm, 2009) - an increasing category of disabilities (i.e., mental impairments) (American College Health Association, 2008) - and ii) academic performance (Richardson, 2009). Additionally, many SWD are reluctant to disclose their disabilities (Shevlin et al., 2004; Zeng, Ju & Hord, 2018) being afraid of institutionalised discrimination, and unfamiliarity with the process of disclosure (Fuller, Bradley & Healey, 2004; Lambert & Dryer 2018; Shepherd, 2018). Further, delayed disclosure can be perceived as asking for unfair advantages in some cases (Gibson, 2012). SWD in Greek HE noted the feeling of embarrassment to disclose their disabilities, ambiguous satisfaction with the university's support services, and a greater need for career guidance (Vlachou & Papananou, 2018). Moreover, lecturers are often unaware of, or lacking in confidence with, SWD and related issues (Collins, Azmat & Rentschler, 2018; Roth, Pure, Rabinowitz & Kaufman-Scarborough, 2018; Shepherd 2018), and particularly so in online learning (Massengale & Vasquez, 2016). These experiential issues (instead of the policy level issues) may highlight that while advocacy for SWD has been advanced, the delivery of support for this group

remains challenging, creating a barrier to HE (Gibson, 2012). In the increasing complexities of HE (e.g., commercialisation), achieving broad inclusion is a serious concern for academics, administrators, students, and their families (Bessant, 2012).

While research has progressed in SWD in face-to-face learning, an investigation into the experience of SWD in online learning is relatively new. A survey (Roberts et al., 2011) reported that 27% of PWD (i.e., those who had never undertaken online learning) were worried if their disabilities might have a negative impact on their potential to succeed in online learning. The ratio increased to 46% among SWD (i.e., those who had undertaken or were undertaking online learning) who responded saying their disabilities had a negative impact. Unsurprisingly the ratio of SWD who declared their disabilities was low (24%), despite the relatively high rate of satisfaction with the institutional support (45% satisfied; Roberts et al., 2011). A thematic analysis in a study of eight Australian dyslexic students undertaking online learning illustrated: i) their stress and anxiety caused by increased study time needed to catch up with the curriculum, ii) more family time as a result of family support in their learning, and iii) enhanced self-esteem and improved quality of life, derived from their achievements despite their challenges (Lambert & Dryer, 2018). Considering the high accessibility of online learning and experiential issues SWD face in HE, investigation into the experience of more diverse SWD (e.g., various types of disabilities) in online learning is needed.

This study, therefore, will explore:

Research Question (RQ) 1: *Why have our students chosen online learning over face-to-face learning?*

RQ2: *What helps and challenges their experience of online learning?* and

RQ3: *How can online learning better support them in the future?*,

through focused interviews and qualitative analysis.

Methods

Research Design

This study employed thematic analysis of in-depth qualitative semi-structured interviews attended by ten online students who had declared their disabilities and had at least one year of prior experience learning online (five women and men; RNG_{age}=22-63, M_{age}=43.9, SD_{age}=12.7 years; five psychology, four healthcare, and one business students; six postgraduate and four undergraduate students). All of them presented the medical evidence of their disabilities; nine were receiving the university's disability support plan. On average, the participants had 2.6 years of prior experience learning online. Eight UK students, and one from another European country and North America. Their declared disabilities were dyslexia (*n*=3), dyspraxia (*n*=3), epilepsy, attention deficit hyperactivity disorder (ADHD), social anxiety, cerebral palsy, visual disturbances, and Irlen syndrome (all *n*=1). Dyslexia is a learning difficulty, causing problems with reading, writing and spelling (National Health Services [NHS], 2018). Dyspraxia causes difficulties in one's coordination skills, relating to writing (i.e., typing in the online context), remembering, and managing time and emotions (NHS, 2018). Likewise, epilepsy, causing frequent seizures, hinders one's coordination skills (NHS, 2018). ADHD is a behavioural disorder characterised by inattentiveness and hyperactivity, which can bother one's concentration on academic work (Wolf & Wasserstein, 2001). Social anxiety is characterised by an intense and consistent fear in social situations, causing poor engagement in academic work (Bernstein, Bernat, Davis & Layne, 2008). Cerebral palsy is a prolonged movement condition, relating to visual disturbances, making studying difficult (NHS, 2018). Lastly, Irlen syndrome is a perceptual processing disorder, causing various academic problems including writing and reading (Irlen Institute, 2017). All participants had full time jobs. The demographic information was summarised in Table 1.

[Please insert Table 1]

Participants

Programme leaders distributed the research information in the announcement page for their programmes. Students who were interested in participating in the study were asked to contact the first researcher. Of 19 students who had contacted the first researcher, ten students were chosen for an hour-long Skype interview, maintaining the representativeness of the sample: programme, type of disability, residence, gender, and age (Table 1). The rest of nine students were excluded as they could cause imbalance of the representativeness. All co-researchers were based in the UK, and assigned to interview students who were not in their programmes, in order to limit biased responses. The ten interviews reached a point of saturation, ensuring that the data obtained were adequate and of high quality to support the study: the co-researchers agreed that interviewing more participants would not add anything to the overall story (Strauss & Corbin, 1998).

Procedure and Analysis

Ethical approval of this study was granted by the university's research ethics committee. The Helpful Aspects of Therapy Questionnaire (HAT: Llewelyn, 1988) was employed to establish interview questions to capture the experience of learning (e.g., Kotera, 2018). The questions in the HAT were suitable for this study because they were clear and not intrusive to the interviewees, thus helping them to focus on the helpful factors in their learning experience (Elliott, 2012). We did not employ the Students with Disabilities and Online Learning (SDOL) survey (Roberts et al., 2011), because we intended to explore our students' experience in-depth, rather than the descriptive and categorical information.

The interviews were conducted via Skype or Blackboard Collaborate, and audio-recorded for transcription. Online interviews are inexpensive, geographically flexible, and user-friendly (Saumure & Given, 2010), thus especially helpful for SWD to focus on their interviews (e.g., no need to visit an interview site; Choi et al., 2014). Each interview explored

topics such as reasons why they decided to study in online settings; what the advantages/disadvantages of online learning were, in comparison with face-to-face learning; what helped/hindered their online learning; and what they hoped for the future of online learning (Annex 1). During the interviews, active-listening skills and open-ended questions were utilised, in order to elicit the full experience of the students (Michael & Hoppe, 2006). All co-researchers were teaching in helping subjects (education, nursing, psychotherapy and social work), and proficient in these skills.

Thematic analysis was used to analyse the data for its high applicability: our analysis was not restricted to any existent philosophical framework, hence this form of analysis was deemed to be appropriate for investigating this nascent area (Braun & Clarke, 2006). Thematic analysis i) segments, ii) categorises, iii) summarises, and iv) reconstructs the data, to identify the salient concepts and patterns of experience within the data, which contributes to delineating the common themes (Givens, 2008). In addition to Braun and Clarke's procedure (2006), an investigator triangle (Hales, 2010) was established for transparency and coherency: an education researcher who was familiar with online learning, and another who was not familiar with online learning, reviewed the data extracts of each theme identified by the co-researchers, to reach an agreement on all themes. The following steps were taken (Braun & Clarke, 2006):

1. Familiarisation

The interview transcriptions were read repeatedly, enabling initial interpretation (Bird, 2005), in order to find patterns (Braun & Clarke, 2006).

2. Generating Initial Codes

To organise the data into meaningful groups, coding was conducted (Tuckett, 2005) and codes were created at this point (Braun & Clarke, 2006). The 24 codes were accessibility, flexibility, practicality, organisation, time management, interaction, control, insecurity, mental health issues, social pressure, digital skills, authentic materials, career change, psychological distance, flexibility, perception towards online learning, stigma, other duties in life, senior learners, motivation, multimodality, collaboration, isolation and self-pace.

3. Searching for Themes

The codes were categorised into potential themes. We employed the mind-map method in order to view all the codes synchronously, and move and connect them freely (Braun & Clarke, 2006). The 24 codes were categorised into three themes: control over their studies, personal touch and social element of learning. No codes were identified as an outlier.

4. Reviewing Themes

All the coded data extracts and themes were reviewed for coherency and accuracy (Braun & Clarke, 2006). The data were organised into three types: the advantages of online learning, what helps online learning of SWD, and the areas of improvement, required of the university, for SWD in online learning. The theme 'control over their studies' corresponded to the advantages of online learning, the theme 'personal touch' addressed what helps online learning of SWD, and lastly the theme 'social element of learning' was linked with the areas of improvement for SWD in online learning.

5. Defining and Naming Themes

The essence and the scope of data apprehended by each theme were defined (Braun & Clarke, 2006).

Results

The data extracts of 'control over their studies' revealed that SWD found accessibility, flexibility, and self-paced nature of online learning particularly helpful to their studies, fitting their study times in their professional and family lives. The data extracts of 'personal touch' revealed multimodal and organised contents and authentic materials helped SWD manage their mental health issues and affects (e.g., motivation) to study. Lastly, the data extracts of 'social element of learning' illustrated that SWD experienced difficulty interacting with peers and faculty in online learning. Each theme responds to each research question (i.e., Theme 1 to RQ1, Theme 2 to RQ2, and Theme 3 to RQ3).

Theme 1: Having Control Over Studies as an Advantage of Online Learning

All participants reported that having control over their studies was a notable advantage of online learning, referring to the accessibility and flexibility of online learning (e.g., no geographical restriction with internet; study anytime with any pace they want; can be studied on various devices), while managing other duties in their lives. This was particularly important to SWD, as they manage their disabilities in their daily life, which are often out of their control. The accessibility and flexibility of online learning allow them to study while managing their symptoms and other life commitments (Owusu-Ansah, Agyei-Baffour & Edusei, 2012; Walker, 1989).

> Participant 1: The main reason [why I chose online learning] is that I wouldn't be able to live in another country because I already have my career here. … I can arrange the time [to study] that is flexible.

Participant 7: I didn't want to be tied down to lecturers. … It's been a while since my undergraduate, so I wanted to have control over my studies. … Being a full-time worker, going to lecturers would be difficult.

Despite being a full-time worker, the accessibility and flexibility of online learning enabled them to study for a degree in order to change or advance their career, instead of starting to build it (as commonly seen in younger students in the face-to-face). This may be related to their preference for the practical study contents.

Participant 9: The course I am taking offers learning materials that can be used on the job, applied in the workplace and support continuous professional development.

SWD reported that practical contents of online learning were especially useful to them, because online learning is a helpful medium enabling them to access such contents (Shonfeld & Ronen, 2015). Another salient advantage of online learning SWD noted was less social pressure. Being able to access the learning materials remotely, and not needing to be at a certain location allows them to avoid social pressure that could be present in the face-to-face setting.

Participant 7: In the face-to-face setting, I feel pressure to respond to lecturers' questions immediately. Because of my dyslexia, I have short-term memory on spoken words. … When I feel pressured, my dyslexia gets worse. My mind goes blank.

Participant 8: I have no worries about feeling or looking different in terms of my older age group. I feel included, and able to live up to my potential with online learning.

These comments highlight SWD's anxiety about how they would be perceived in the face-to-face setting and stigma about their disabilities, demonstrating how significant this concern is for SWD.

Participant 7: If you want something more for your disabilities, you will be singled out [in the face-to-face],… while [in online learning] I can interact with my tutor considering my individual symptom, I don't feel singled out.

Participant 9: No worries about feeling or looking different, or being made fun of, then feeling [that I am] not good enough.

Lastly, some students reported that being able to develop their digital skills was an advantage of online learning and that feature played an important role in their decision to study online. Proficient digital skills can give them a sense of control (Badge, Dawson, Cann & Scott, 2008).

Participant 5: I'm not computer-literate and, thought that one of the problems about learning about computer[s] is that you have to do it: it is not until you do it over and over again that you become fluent in it.

Participant 9: Learning how to do research online opened up a new world. … It helps to seek out scholarly articles online.

These comments implied that being able to control their studies (e.g., time and location) was a key determinant for them to study online, enabling them to manage their other life commitments.

Theme 2: Personal Touch Helps SWD's Online Learning

SWD noted that a sense of *personal touch* would help manage their emotions in learning (e.g., anxiety, frustration, motivation), which can be a notable barrier for their academic success (Lambert & Dryer, 2018).

Participant 2: I really need the opportunity to chat to people … I have several online learning relationships where we chat.

Participant 7: Lecture videos specifically made for the programme makes you feel … more value to the programme. … more specific and tailored.

Key emotions or emotive words reported in relation to their learning experience were: anxiety, depression, anger, frustration, stress, insecurity, isolation, psychological distance, and motivation. In order to manage their emotions, authentic materials created by the tutors and multimodal contents were suggested by SWD.

Participant 3: I would hope for a much more personalised experience … More of social [emphasis] would be terrific… more social networking and face-to-face opportunities, particularly different regions.

Participant 8: More variety of media would improve online learning, for example, video and lecture capture. … Media specifically made for the module, made by the lecturer would … feel more personal to the programme.

These data extracts suggest that a sense of personal touch can help SWD overcome emotional challenges in online learning.

Theme 3: Challenges SWD Experience with the Social Element of Online Learning

While SWD were overall satisfied with their learning experience, some areas for improvement have been identified. They can be summarised as difficulty with interactions with others (including collaboration and informal conversations), which can be easier in the face-to-face setting.

Participant 4: There is a lot of difficulty with social loafing; some people were easy to contact, others weren't.

Participant 6: A challenge is that it can be very difficult and time-consuming to collaborate with people, whereas if you are in the same office, that's very easy. … you have to be a lot more proactive to connect with people. … struggles with the interactions.

Participant 10: There is something about sitting down … with someone, … [that] would give you that extra support, which doesn't really happen in the same way online, because people come from different countries and backgrounds, and access the content at different times.

While SWD appreciate that a sense of personal touch was useful to their online learning (Theme 2), difficulty in the social element of learning was a challenge for them. This can be observed not only at the logistical level, but also at the interpersonal level.

Participant 2: I have mentioned it (his disability) to my group and I think it made them feel uncomfortable, which made me feel uncomfortable in a way. They are very nice people, and in no way rude or discriminatory but it's just a weird thing to get your head around … it's the mismatch of intimacy and disclosure that is hard to get right in a digital context.

The social element of learning is crucial to their learning experience (Elcicek, Erdemci & Karal, 2018; Song, Kim & Park, 2018). Comments from SWD suggest how the university, including educators and learning designers, can support their social learning experience would be one area to be improved.

Discussion

This study qualitatively analysed semi-structured interviews attended by ten SWD who were learning in the online platform. Three themes emerged from the dataset: having control over studies as an advantage of online learning (Theme 1), personal touch helps SWD's online learning (Theme 2), and challenges SWD experience with the social element of online learning (Theme 3).

SWD reported that having control over their studies was a notable advantage of online learning. They can organise their study time around their professional and family duties, referring to the flexibility and self-paced nature of online learning. This is consistent with the experience of online students without disabilities, noting the spatiotemporal flexibility (Cole, 2000) and the autonomous access to the learning materials/activities (Anderson, 2008).

However, these advantages may be accentuated in the experience of SWD. Indeed, a sense of control was associated with SWD's wellbeing (Owusu-Ansah et al., 2012). Because SWD need to deal with difficulties associated with their disabilities, which are often out of their control, having a sense of control may be especially important for their wellness (Owusu-Ansah et al., 2012; Walker, 1989). Further research is needed to distinguish how these advantages are experienced in students with and without disabilities.

SWD found the job-related contents of online learning useful, and similar feedback has been received from online students in general, who tend to be working adults, as well (Friedman, 2014). Today many HE institutions focus on recruiting working adults, who prefer learning something practical to their current and future work (Amira Baharudin, Murad & Hj Mat, 2013). Online learning provides such contents than face-to-face learning (Clinefelter & Aslanian, 2016), which is less accessible for working adults (McKay & Gatta, 2009). Our findings revealed that online learning can overcome that challenge, providing access to education for this population of learners, which conforms to the Commission of European Communities' lifelong learning strategy (Laal & Laal, 2012).

Less social pressure and stigma on disability was reported as another advantage of online learning. Inclusivity has been emphasised in education, and the social model of disability, recognising all types of disabilities (Shakespeare & Watson, 2001), has been increasingly applied in the traditional educational settings (Kruse & Oswal, 2018). However, the application of this model in online learning was not successful partly because of its individualised methods of learning (e.g., asynchronous learning) (Woolgar, Coopmans & Neyland, 2009), thus models such as Universal Design for Learning (UDL; USDE, 2010) - a model that reduces barriers for participation and provides appropriate support embedded in the learning structure - have been widely employed in online learning (U.S. Department of

Education, 2010). Indeed, in the face-to-face setting, SWD had more favourable attitudes towards PWD than students without disabilities (Bogart, Logan, Hospodar & Woekel, 2018).

Further, SWD were more sensitive to social pressure than students without disabilities (Bryan, Pearl & Fallon, 1989). PWD recorded more stress from a social pressure task, perceptually and physically, than people without disabilities (Bishop-Fitzpatrick, Minshew, Mazefsky & Eack, 2017), suggesting that stress management of SWD in higher education is crucial for their academic success. Thus, it is understandable that our sample of SWD noted less social pressure was a pronounced advantage of online learning. Future research should explore these social aspects of online learning. For example, how much impact these features have in SWD's decision-making process for enrolling to online learning, would be worthy of further investigation. Lastly, SWD noted the development of digital skills as an advantage of online learning and this may explain previous findings reporting SWD's active engagement with various digital tools (Badge et al., 2008). Developing digital skills was in line with the learners' need in the 21st century (Adams Becker et al., 2017), suggesting that online learning can respond to this emerging educational need today.

SWD reported various emotions they have experienced in online learning (e.g, anxiety, frustration, stress, insecurity, and isolation), and personal touch and authentic materials were deemed to play a crucial role in their management of emotions. This was consistent with the recent findings about online education (Elcicek et al., 2018; Song et al., 2018), which highlighted the importance of social presence in online learning, commonly regarded as the individual's perception as a real person co-existing with others in the online learning environment (Biocca, Harms & Burgoon, 2003; Gunawardena, 1995; Picciano, 2002), reducing transactional distance – a key predictor of online student engagement (Bolliger & Halupa, 2018). Wang's (2014) survey study with 361 online students reported the importance of trust among disabled students and students without disabilities; however, the

sample size of SWD was too small (n = 15) to be considered important. While these previous studies focused on learners without disabilities, our findings of SWD can make original contributions. Authentic materials were also reported as effective tools for SWD's online learning. As reported in the Horizon Report (Adams Becker et al., 2017), personalised materials of online learning can be a solution for the achievement gap and retention problem in higher education. Our sample of SWD noted that these types of materials gave them a sense of personal touch, which was conducive to their emotional management in learning. This may provide a new insight about the mechanism of how personalised materials help SWD's learning experience, namely, emotional management. Future research should explore this aspect of online learning for SWD further. For example, an intervention study to explore the effects of webinars delivered by their tutor, on SWD's emotions and academic performance would be worthwhile.

Lastly, facilitation of their social learning was consistently highlighted by the participating SWD, as an area of improvement for SWD's online learning that the university needs to be aware of. This was highlighted among online students in general too (Cohen, 2003). Numerous studies have reported that both formal and informal collaborative work, which encourages student engagement and constructive discussions, is vital to online learning as such work contributes to deep learning (Ku, Hung & Akarasriworn, 2013; Stegmann et al., 2011). However, implementation is difficult because online collaborative work takes place in a virtual and often asynchronous setting, causing students' insecurity and apprehension, particularly in a cohort comprised of students from diverse backgrounds (Hernández-Sellés et al., 2015). SWD reported difficulties connecting with their culturally-diverse learning communities, due to a lack of perceived shared disability and cultural experiences (Burke & Goldman, 2018). However, by nurturing their self-learning ability, SWD may be able to counter these difficulties (Shonfeld & Ronen, 2015). While previous research reported the

logistical challenges of online collaboration (e.g., difference of digital proficiency; Curtis & Lawson, 2001), our study, focused on SWD, identified interpersonal issues, as noted by Participant 2 ('the mismatch of intimacy and disclosure'). To facilitate the social element of online programmes, recent studies reported promising results. Harker-Schuch et al. (2016) found that online courses that centred around collaborative learning activities (Savery & Duffy, 1995), resulted in improved student satisfaction: students were particularly satisfied with the practical knowledge they developed through online collaboration. Likewise, use of social media (e.g., Facebook) in online education had positive impacts on students' learning experience (Akcaoglu & Lee, 2018), however privacy and safety of students still need to be ensured (McCarthy, 2012). These types of studies need to be conducted focusing on SWD to enhance their online collaboration and socialisation.

There are several limitations to this study. Our findings are specific to the current modest sample of SWD, who were older than the general online student population (M_{age}=32 years old; Oanca, 2018), hence may not be generalisable to the general online SWD's experience. Additionally, an institutional bias may be present, as all the participants were recruited from one institution. Subject bias may also be present, as our participants were predominantly in psychology or healthcare. Indeed, due to the entry requirements, some subjects are less likely to have SWD, however, in the future, research with students in more comprehensive disciplines would be helpful.

Conclusion

This study explored first-hand experiences of SWD in online learning through a thematic analysis of semi-structured interviews involving ten SWD studying in our online programmes. SWD reported that having a sense of control over their studies was a determining factor in their enrolment. Learning components that made them feel a sense of personal touch were particularly useful to their academic emotional management. While

SDW were overall satisfied with their learning experience, the social element of online learning was challenging to them, suggesting an area of improvement for the future.

Greater inclusion has been receiving increased attention as a goal for online learning. This study explored experiences of SWD in online learning and provides unique contributions to educators, educational researchers, and students. Our findings contribute towards the development of inclusive practice in online learning, progressing towards another level of borderlessness in education, by understanding the experiences of SWD.

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	GN	Age	Programme	OLE	Residence	Disability	Support Plan
						Table 1. Participant list	
Participant 1	M	37	PG Psychology	3	Other Europe	ADHD	Receiving
Participant 2	M	43	PG Psychology	1	UK	Visual disturbances	Receiving
Participant 3	F	57	UG Healthcare	3	UK	Dyslexia	Receiving
Participant 4	M	39	UG Psychology	4	UK	Social Anxiety	Receiving
Participant 5	F	61	PG Healthcare	2	UK	Dyslexia	Receiving
Participant 6	M	22	PG Psychology	3	UK	Cerebral palsy, Epilepsy	Receiving
Participant 7	F	37	PG Business	2	UK	Dyslexia, Irlen syndrome, Dyspraxia	Receiving
Participant 8	F	40	PG Psychology	4	UK	Dyspraxia	Receiving
Participant 9	F	63	UG Healthcare	3	North America	Dyspraxia	Not Receiving
Participant 10	M	40	UG Healthcare	2	UK	Dyslexia	Receiving

GN=Gender; UG=Undergraduate; PG=Postgraduate; OLE=Online Learning Experience (years). All had a full-time job at the time of the study.

Annex 1. Interview questions

The aim of this interview is to explore your experience of why you have decided to study online, what the advantages and disadvantages are of online learning, and what you hope for online learning in the future. Below are guide questions to stimulate this explorative discussion.

Why did you decide to study online? What you thought would be advantages and disadvantages of online learning? Since you started to study, have those advantages and disadvantages been true to you?

What is your perception toward students with disabilities studying in a face-to-face programme? What is your prior experience as a disabled student in a face-to-face environment?

What has been the best part of online learning for you so far?

Is there anything you want changed in your online learning experience?

What do you hope for online learning in the future?

Is there anything else that you feel I should have asked, or that you would like to add?