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Abstract

Belonging at university is a complex and important issue which relates to student attainment but is more challenging for nontraditional students, including those with disability. This study, part of a larger project, explored differences in academic selfconfidence and engagement, belonging, peer belonging and institutional acceptance in those with and without disability in two academic institutions. Quantitative data, collected using a series of statements in online questionnaires, indicated that academic self-confidence was significantly lower in those with disability, as were aspects of peer belonging. By contrast, academic engagement and institutional acceptance did not differ for most statements by disability status. Possible reasons for this. and the implications of the findings, are discussed.

Introduction

Sense of belonging, a feeling of fitting in and being a valued part of a community, is generally recognised as essential for our psychological wellbeing (Baumeister & Leary, 1995; Allen and Kern, 2017). In a higher education context, students feeling a sense of belonging is important both for individuals and for institutions, due to its impact upon engagement and attainment (Thomas, 2012; Strayhorn, 2012; Thomas et al, 2017; Tinto, 2017). Belonging has been proposed to include four dimensions: social & academic engagement, surroundings, and personal space (Ahn & Davis, 2019). Social aspects of academic belonging relate to both peers (Meehan & Howells, 2019) and staff (Dwyer, 2017).

Belonging interacts with two other important factors for student success: engagement and self-confidence. A strong sense of belonging increases learners' commitment to their education, increasing resilience (Tinto, 1993), and engagement with their studies (Wilson, academic 2015). In turn, engagement correlates with high levels of student attainment (Pace, 1982; Newman-Ford et al 2008). Similarly, academic self-confidence increases effort in difficult situations (Bandura 1997), and overall achievement (Zumbrunn et al, 2014), and correlates with sense of belonging (Goodenow, 2003).

Cultivating a strong sense of belonging is especially important for "non-traditional" students, who now make up a substantial proportion of the UK undergraduate student population. Non-traditional students include those who have a disability (Wong, 2018), are the first in their family to attend university (Waite, 2013; Wainwright & Marandet, 2010; O'Shea, 2015, 2016), mature (Reay, 2008), commuter or studying part time (Southall et al, 2016). These groups make up a greater proportion of attendees of post-92 universities, with their strong focus on widening participation (HESA, 2020a). The transition to higher education poses particular challenges for non-traditional students (Reay, 2002; Crossan et al, 2003; O'Donnell and Tobbell, 2007; Reay et al, 2010), and as a consequence they may feel a lower sense of belonging, which could in turn impact upon their retention and attainment.

Students with a disability make up a small but increasing proportion of those in higher education in the UK. In 2018-19, an estimated 14% of home students declared a disability (HESA, 2020b), most commonly 'specific learning difficulties' such as attention deficit dyslexia and dyspraxia. The disorders, proportion of undergraduates reporting disabilities increased 3% between 2014-15 and 2018-19 (HESA 2014, HESA, 2020b), largely due to a rise in the number of students experiencing mental health issues (Hubble & Bolton, 2020). While by law, institutions are required to make all reasonable adjustments for those with disability, even if they do so students may arrive at university with prior educational experience that does not adequately equip them to cope with the transition to higher education. Academic outcomes vary by disability status: those with disability are less likely to be awarded first or upper second class honours degrees (2.5% gap; OfS, 2020a), and are also more likely to discontinue their studies - although this varies by type of disability (OfS, 2019). They are also more likely to report lower levels of satisfaction, in particular with their course's organisation and management (OfS, 2020b; Neves & Hewitt, 2020).

Understanding differences in belonging, and how they are influenced by demographic or educational factors, is therefore important in allowing institutions to enact remedial steps addressing differences in social or educational capital of diverse student groups. In this study, feelings of belonging and the related constructs of self-confidence and engagement in students with and without disability at two institutions (one a highly selective Russell Group green campus university in the north of the country (SU), and the other a diverse post-92 university within a busy town close to London (KU)) were compared.

Methods

Data were collected using questionnaires. Ethics approval was granted by both universities through their respective Faculty Research Ethics committees. Questionnaires created using Google Forms or Survey Monkey were shared with students using an email invitation with a link to the questionnaire. Questionnaires contained an embedded information sheet and consent sheet and comprised two parts. The first part collected demographic and study information, while the second asked participants to rate their levels of agreement with a series of statements within five categories: academic self-confidence (3 statements), academic engagement (6 statements), belonging (6 statements), peer belonging (5 statements) and institutional acceptance (5 statements). Statements on academic engagement, academic selfconfidence and belonging were derived from Yorke (2016), while those on peer belonging and institutional acceptance were derived from Ribera et al (2017).

Participants rated each statement using five point Likert rating scale (from 1 = 'strongly disagree' to 5 = 'stronglyagree'). Six statements were negative and therefore reverse scored (i.e. 1 = 'strongly agree' and 5 = 'strongly disagree'; these are indicated in the tables below by 'rev'). Data were coded and entered into SPSS (version 26, IBM). As data were non-parametric, possible differences within and between institutions bv demographic and study characteristics were explored using Kruskal Wallis tests adjusted for ties. For response to statements, comparisons between those with disability, without disability, unsure of disability status or preferring not to state disability were compared within each institution and for the combined dataset using Kruskal Wallis tests adjusted for ties. Where significance at p < 0.05 was indicated, posthoc analysis was carried out using chi square tests adjusted using Bonferroni corrections. To test for differences in demographic characteristics by disability status across institutions, chi square tests were carried out using a cut-off point of p < 0.05. Within each of the five statement categories, reliability analyses were carried out using Cronbachs' analysis.

	Disability						
	Yes	No	Unsure	PNS			
KU	20 (14.6)	110 (18.3)	3 (2.2)	4 (2.9)			
SU	22 (7.3)	258 (85.7)	21 (7.0)	0 (0.0)			

 Table 1 Self-declared disability status of participants by institution. Data expressed as numbers (%)

Results

(a) Demographic analysis

A total of 445 students participated in this project, of whom 301 (67.6%) were from SU and 144 (32.4%) were from KU. Considerable demographic differences were apparent between the two populations (data not shown). In brief, by way of context, a greater proportion of SU participants were aged <20 years compared with KU (91% vs. 58.8%), and more were male (36.9% vs. 27.2%). By contrast, considerable ethnic diversity was apparent in KU students (29.9% white compared with 82.4%), and they were also more likely to always commute >45 minutes to the university campus (41.2% vs. 2.0%). Only a small proportion had dependents, a greater proportion in KU than SU (9.5% vs. 3.0%). KU students were also twice as likely to declare a disability (14.6% vs. 7.3%, which equated to 20 and 22 students for KU and SU respectively), although a larger number of SU students were unsure of their disability status (Table 1).

All year groups were represented in both institutions. A greater proportion of KU participants were first-in-family to attend university (37.2% vs. 25.2%). A greater proportion also reported having trouble finding a quiet place to work (24.1% vs. 9.6%). KU students had a variety of educational experiences prior to university; this question was not asked of SU students who largely enter university post A-levels or equivalent (data not shown). A greater proportion of KU students stated that they were or would be employed while studying (54.0% vs. 28.9%). Almost a third (30.4%) suggested they would be working <10 hours per week, with a further 23.7% working 10-20 hours per week (this question was not posed to SU students).

Next, we investigated whether and how disability intersected with other demographic categories. Comparing those with and without disability across institutions, there were no significant differences by gender (χ^2 (1, n =36), 0.056, p = 0.812), age (χ^2 (2, n = 42), 5.84, p = 0.054), or those with dependents (χ^2 (1, n = 39), 1.79, p = 0.811). However, significantly more of those with disability in KU were first-in-family to university (χ^2 (1, n = 41), 8.667, p = 0.003) and also working while studying compared with SU (χ^2 (1, n = 28), 4.21, p = 0.04). Significant differences were observed in the KU cohort between those with and without a disability for first-in-family to university (χ^2 (1, n = 126), 5.15, p = 0.023). This, albeit in a small sample size, highlights the importance of exploring possible additional needs in those with disability, related to other demographic characteristics.

(b) Comparison of self-confidence and engagement in students with and without a disability

Data are shown in Table 2 and are shown within each institution and for the combined dataset. Data are expressed as differences between those with disability, without disability or unsure about their disability status using Kruskal Wallis tests. Where differences were statistically significant, data are shown in bold followed by the results of posthoc analysis with Bonferroni adjustment, to identify which groups significantly differed. Significant differences were found when comparing responses from students with and without disability for all 3 academic statements within the selfconfidence category when data for both were combined. In addition. institutions significant differences were shown within the KU cohort for 2 of the 3 statements in this category. In all cases, students with disability had lower scores for the statements than those

Theme: Academic self-confidence (3 items)							
Item	KU	SU	Combined				
Loxport to do well	H(3) = 11.07, p = 0.01	H(2) = 5.88, p = 0.05	H(3) = 15.53, p = 0.00				
on my degree	Yes vs. no: 25.44, p = 0.04		Yes vs no: 65.12, p = 0.00				
l doubt my ability to study at university level (rev)	H (3) = 6.58, p = 0.09	<i>H</i> (2) = 14.72, <i>p</i> = 0.00 Not sure vs no: 55.37, <i>p</i> = 0.02	H(3) = 22.18, p = 0.00 Not sure vs no: 77.75, $p = 0.02$ Yes vs no: 71.53, $p = 0.00$				
I am confident of completing my degree successfully	H (3) = 17.01, p = 0.00 Yes vs no: 36.22, p = 0.00	H(2) = 16.60, p = 0.00 Not sure vs no: 54.61, $p = 0.02$ Yes vs no: 54.57, $p = 0.02$	H (3) = 33.86, p = 0.00 Yes vs no: 98.9, p = 0.00				
Theme: Academic engagement (6 items)							
l am motivated towards my studies	H (3) = 7.80, p = 0.05	H(2) = 0.95, p = 0.62	H(3) = 12.02, p = 0.01 PNS vs no: 117.74, $p = 0.01$				
I use feedback on my work to help me improve what I do	H(3) = 10.75, p = 0.01 NS posthoc after Bonferroni correction	H(2) = 0.44, p = 0.80	H(3) = 11.49, p = 0.01 PNS vs no: 97.64, $p = 0.03$				

Table 2 Differences in scores for academic self-confidence and engagement by
disability status and institution (only statistically significant differences are shown).*PNS: prefer not to state disability status. No: no disability. Yes: disability identified. Not
sure: unsure of disability status.

without. By contrast, within the category of academic engagement, significant differences were shown for only 2 of the 6 statements after Bonferroni correction. In both cases posthoc analysis showed a significant difference between those without disability and those who preferred not to state their disability status. Data are shown in Table 2.

(c) Comparison of belonging, peer belonging and institutional acceptance in students with and without a disability

Data are shown in Table 3, using the same format as Table 2. Significant differences in scores for belonging were also shown for 4 of the 6 statements in this category, but only for the combined data. For 3 of the statements, significant differences in score between those with and without a disability were found, while for 1 statement ('I wish I had gone to a different university') a significant difference was shown between those with and not sure of their disability status. For 1 statement ('I feel at home'), a significant difference between those without a disability and those who preferred not to divulge their disability status was shown.

Within the peer belonging category, significant differences between those with and without disability were seen for all 5 statements for the combined data, and for 2 statements, similar differences were seen in KU students with and

Theme: Belonging (6 items)							
ltem	KU	SU	Combined				
I feel at home in this	H(3) = 1.82, p = 0.61	H(2) = 1.42, p = 0.49	H(3) = 12.26, p = 0.01				
university			PNS vs no: 116.06, <i>p</i> = 0.01				
Being at this	H(3) = 3.51, p = 0.32	H(2) = 2.90, p = 0.19	H(3) = 11.39, p = 0.01				
enriching experience			Yes vs no: 55.67, <i>p</i> = 0.03				
I wish I had gone to a	H(3) = 3.38, p = 0.34	H(2) = 3.33, p = 0.19	H(3) = 14.10, p = 0.00				
different university (rev)			Yes vs no: 61.71, <i>p</i> = 0.01 Yes vs not sure: 84.29, p= 0.04				
Sometimes I feel like I don't belong at this	H(3) = 6.00, p = 0.11	H(2) = 6.22, p = 0.05	H(3) = 19.59, p = 0.00				
university (rev)		NS after Bonferroni adjustment	Yes vs no: 75.24, <i>p</i> = 0.00				
Theme: Peer belonging (5 items)							
I fit with other	H(3) = 14.88, p = 0.00 Yes vs. no: 37.11, p = 0.00	H(2) = 5.25, p = 0.07	H(3) = 21.73, p = 0.00				
students at my university			Yes vs no: 90.33, <i>p</i> = 0.00				
It is difficult to make	H(3) = 5.33, p = 0.15	H(2) = 2.04, p = 0.36	H(3) = 11.00, p = 0.01				
institution (rev)			Yes vs no: 54.16, <i>p</i> = 0.04				
I have very few friends or acquaintances at	H(3) = 3.76, p = 0.29	H(2) = 6.17, p = 0.05 NS after Bonferroni adjustment	$H(3) = 12.69 \ n = 0.00$				
this institution that share my views and			Yes vs no: 64 31 $n = 0.01$				
beliefs (rev)							
There are other students at this	H(3) = 4.57,	H(2) = 3.53, p = 0.17	H(3) = 8.02, p = 0.05				
institution who share my views and beliefs	p = 0.21		Yes vs no: 53.46, <i>p</i> = 0.03				
I can have quality	H(3) = 10.93, p = 0.01	H(2) = 4.32, p = 0.12	H(3) = 17.44, p = 0.00				
interactions with other students	Yes vs. no: 31.11, $p = 0.01$		Yes vs no: 79.65, <i>p</i> = 0.00				
Theme: Institutional acceptance (5 items)							
It is easy to get involved in clubs & organisations at this university	H(3) = 9.23, p = 0.03 Yes vs. no: 26.49, p = 0.04	H(2) = 0.57, p = 0.75	H(3) = 11.87, p = 0.01 Yes vs no: 57.30, $p = 0.02$				

Table 3 Scores for belonging, institutional acceptance & peer belonging by disabilitystatus & institution (only statistically significant differences are shown) *PNS: prefer notto state disability status. No: no disability. Yes: disability identified. Not sure: unsure ofdisability status.

without disability. For institutional acceptance, significant differences were found for only one statement ('It is easy to get involved in clubs and societies'); those with compared to without disability in KU and the combined data were significantly more likely to agree. Data are shown in Table 3.

Reliability analysis for statements within the categories as measured by Cronbach's analysis were as follows: belonging: 0.829; academic self-confidence: 0.789; academic engagement: 0.714; peer belonging: 0.878 and institutional acceptance: 0.668.

Discussion

Despite data being collected within two very different universities, overall, there was a strong level of agreement between institutions. Our survey data showed that although students with a disability reported lower levels of selfconfidence and peer belonging than those without, engagement and institutional acceptance were similar.

In our study, those who self-identified as having a disability had significantly lower levels of academic self-confidence, apparent across all 3 statements within the category, in agreement with results from initial use of the survey (Yorke, 2016). Others have also shown lower academic self-confidence in those with disability (Kim & Kutscher, 2020) as well as of psvchological hiaher levels stress (Baczewski, 2020); this may relate to the nature of the disability itself impacting upon the student's perceived ability to successfully navigate higher education. In this project no information was collected on the actual nature of the disabilities reported: however nationally. specific learning difficulties (e.g. dyslexia, dyspraxia) are the most common category of disability declared by students, while mental health issues such as anxiety are the second most common category (Hubble & Bolton, 2020). Either would make study at higher education more challenging if adequate support were not in place, including methods to enhance academic self-regulation (Ruban et al, 2003).

Academic success involves growth in two separate but related areas: academic selfconcept (belief in one's own academic abilities compared with those of peers) and self-efficacy (confidence in one's own ability to be successful; Kim & Kutscher, 2020), although self-concept is considered more global while self-efficacy is situation-specific (Bong & Skaalvik, 2003). Academic self-concept relates to how learners feel about themselves as learners (Guay et al, 2003), and links between academic self-concept and academic achievement have been shown (Liu, 2008; Kung, 2009), possibly due to enhanced motivation and autonomy in those with greater academic self-concept (Guay et al, 2010). Academic self-confidence and self-efficacy are closely linked, and self-confidence also contributes to academic self-concept (Pajares, 1997). Others have shown that those with disability have lower levels of self-efficacy than those without (Hen & Goroshit, 2014), and may experience interactions which reduce their academic self-concept (Hong, 2015). This suggests that the significantly lower academic self-confidence in those with disability in our study might contribute to lower academic selfefficacy and self-concept in these students, potentially impacting on their academic achievement. Self-efficacy can be increased or decreased by external influences including social factors, support networks available, the learning environment and resources available (Pajares, 1986; Zimmerman, 1989). The higher education environment can significantly influence the academic self-confidence and ability of those with disabilities (Kim & Kutscher, 2020). However, the type of disability also plays a part: presence of a learning disability was a significant negative predictor for academic ability compared with physical or sensory disabilities (Kim & Kutscher, 2020). Previous educational experiences are likely to be influenced by the nature of the disability, whether it is visible or not, and the levels of stigma and acceptance experienced by students (Kim & Kutscher, 2020). This also relates to the institution and whether disability is viewed as difference or a deficit; a combination of different learning needs and inflexibility of the institution (e.g. with relation to assessment tasks) increases stress for those with disability (Vincent et al, 2017). Selfefficacy can be improved by seeing others with disability succeed, having opportunities to apply their learning especially within teams, and building rapport with academic staff who set the tone for learning (Jenson et al, 2011).

Engagement:

Lower levels of academic self-confidence in those with disability in this study did not appear to relate to a lack of academic engagement, since most statements in this category did not differ by disability status. Others have shown that academic engagement of those with disability in school varies depending on a number of factors including type of disability, nature of task and peer group (Harris & Cancelli, 1993), as well as access to support (Carter et al, 2008). However, within the higher education sector, data are lacking.

General Belonging:

Scores for the more general belonging questions and for peer belonging were significantly lower in those with compared to those without disability. Those with disability were significantly more likely to agree that 'It is difficult to make friends at this institution' and 'I have very few friends or acquaintances at this institution that share my views and beliefs', and to significantly disagree with the statements 'I fit with other students at my university', 'There are other students at this institution who share my views and beliefs' and 'I can have quality interactions with other students' (see Table 3). We have previously shown that among higher education students, the nature of the physical space was important in enabling both a sense of belonging and social relationships to develop (Mulrooney & Kelly, 2020). Higher education establishments have invested in informal learning spaces to accommodate collaborative peer exchanges, but the extent to which such spaces are equally accessible and the potential for some students to be marginalised or excluded needs to be explored (Berman, 2020). Safe spaces provided for those with disability could inadvertently result in 'othering' or exclusion, while shared spaces could potentially allow for better integration between those with and without disability but may not be equally accessible to those with disability (Bertilsdotter Rosqvista et al, 2013). We did not ask about the physical space of the campus and its' impact on belonging or the establishment of social relationships with others in this study, but it is an area that would be worth investigating in future work.

Social relationships are an integral part of belonging (Read et al, 2018; Maunder, 2018; Meehan & Howells, 2019), and are also integral to learning, whether through informal support networks (Knowles et al, 2005) or formal curricular activities e.g. peer learning (Keenan. 2014). Therefore. those with disability who have not formed secure attachments with their peers are less likely to feel that they belong, and they may also be less likely to benefit from peer learning, some of which may happen in spontaneous interactions with friends. "Social capital" refers to the social networks which people are part of, enabling them to link with different social groups to their advantage (Portes, 1998). Attending university has the potential to expose all students to a wide range of social networks, thus improving their social capital, which contributes to sense of belonging (Ahn & Davis, 2020). However, disabilities may reduce students' abilities to participate in social activities, as may other students' attitudes towards disability, and the investment that those with disability are willing or able to make in developing friendships with their university peers. For example, a study of students with physical disabilities found that they formed few friendships at university, partly because they invested time and energy in their academic goals but also because they chose to maintain strong attachments with those outside the university instead (Papasotiriou and Windle, 2012).

Difficulties with social integration are common in some disabilities (e.g. autism spectrum disorders), so it is perhaps unsurprising that students with autism report feeling lonely and isolated (Graetz & Spampinato, 2008), and that social difficulties at university are common (Gelbar et al, 2014; Jansen et al. 2018; Gurbuz et al, 2019), even if students themselves want to make friends (Vincent et al, 2017). However, these difficulties can be overcome if specific support is available and academic benefits accrue from specific support such as peer mentoring and social activities aligned with the individuals' interests (Ashbaugh et al, 2017).

Institutional Acceptance:

Overall, disability status did not appear to relate to institutional acceptance. It should be noted that within the institutional acceptance category, significantly lower scores for the statement 'It is easy to get involved in clubs and organisations at this institution' for those with compared to without disability, in KU and in the combined data, may also relate to peer acceptance, since many university clubs and organisations are student-run. Gaps in social inclusion by disability status have also been shown by others, particularly with relation to participation in social and extracurricular activities (Sachs & Schreuer, 2011).

Relation to academic staff:

Social aspects of belonging are not restricted to peers but extend to relationships with academic staff (Dwyer, 2017; Oldfield et al, 2017; Rivera Munoz et al, 2019). Previous work has shown that interactions with staff can have either a positive or negative effect on students with disabilities (Scott, 2019); in particular, students who struggle to obtain the accommodations they need for their studies may well find interactions with staff a barrier to success (Cole & Cawthorn, 2015). Responses to statements about academic staff in this study did not differ by disability status, indicating that staff-related aspects of social belonging were not affected and that the differences we observed in self-efficacy were not directly due to negative views of staff.

The totality of student experience includes participation in social and learning activities, both within and outside the classroom. 'Participation' itself is a multi-component term, encompassing taking part, being included, involvement in various life areas, and having access to required resources (Moller & Danermark, 2007), an interaction between the individual and their environment (Eriksson & Granlund, 2004). This interaction may be more difficult for those with disability. Institutional attitudes towards those with disability, and whether reasonable adjustments are in place, may influence the academic attainment and student experience of those with disability 2004; Bessant, 2012). A social (Rao, constructivist approach to disability proposes that the environment, rather than the individual, should be changed to support those with disability. This includes the learning activities, assessment and teaching (Ginsberg & Schulte, 2008), but this approach may not be universally adopted and instead disabilities may be viewed as individual deficits. In this study we purposefully relied on respondents to selfidentify as having disability or not, and some stated they were unsure. We cannot comment on why some participants chose 'not sure' or 'prefer not to state' for their disability status, or on why these responses represented a higher proportion in the SU group. It may be because they have conditions which have not yet been diagnosed, because they were unsure what was meant by the term 'disability', or because they do not identify as having a disability (OfS, 2019). 'Disability' is a heterogeneous term; some disabilities are visible and therefore easier to identify and disclose than 'hidden' (Madriaga, 2007; disabilities Järkestig Berggren et al, 2016). Some students prefer not to disclose their disability status due to a perceived stigma (Eccles et al, 2018; Kendall, 2016). Students with mental health issues may be afraid to disclose their condition and seek fear of discrimination support for or disadvantage, although they are also more likely to have difficulties with their studies and to feel anxious or worried (Martin, 2010).

While prevalence of disability was much higher in KU than SU, this was not unexpected given the widening participation agenda of the former. Those with disability may have other intersecting needs which influence their experience and learning, and perhaps their ability to seek and take advantage of support. In our study, more of those with disability were first-in-family within KU, and in KU compared with SU whilst significantly more of those with disability were also working in the KU compared with SU cohort. By contrast, we found no differences in age, gender or dependants by disability, albeit in a small study population. Some students with disability have found learning support plans offered to be generic (Kendall, 2016), and while likely to be better than nothing, generic plans may not fully meet their needs; therefore, an individualised approach to identifying needs including identification of any intersections, and agreed with the students themselves, would be best.

To conclude, inclusive practices benefit the institution as well as the individual student (Department for Education, 2017), and individualised support to address lower levels academic self-confidence, peer & of institutional belonging among diverse students with disability is needed to ensure truly accessible higher education. A 'socially just' approach to pedagogy (as has been advocated, for instance, for those with autism in higher education (Madriaga & Goodley, 2010)), would extend beyond the bare

minimum to open up participatory and inclusive ways of learning, allowing all students to thrive.

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