

# Student belonging: the impact of disability status within and between academic institutions

Rebecca Barnes<sup>1</sup>, Alison F. Kelly<sup>2</sup> & Hilda M. Mulrooney<sup>2\*</sup>

<sup>1</sup>Department of Molecular Biology & Biotechnology, University of Sheffield, UK.

<sup>2</sup>School of Life Sciences, Pharmacy & Chemistry, SEC Faculty, Kingston University, Penrhyn Road, Kingston upon Thames, London, UK.

\*Corresponding author: [Hilda.mulrooney@kingston.ac.uk](mailto:Hilda.mulrooney@kingston.ac.uk)

**Keywords:** *Disability; Academic confidence; Academic belonging*

---

### Abstract

Belonging at university is a complex and important issue which relates to student attainment but is more challenging for non-traditional students, including those with disability. This study, part of a larger project, explored differences in academic self-confidence 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, 2015). In turn, academic 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 disorders, dyslexia and dyspraxia. The 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 self-confidence 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 = 'strongly agree'). 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 by 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 ( $\chi^2$  (1,  $n$  = 36), 0.056,  $p$  = 0.812), age ( $\chi^2$  (2,  $n$  = 42), 5.84,  $p$  = 0.054), or those with dependants ( $\chi^2$  (1,  $n$  = 39), 1.79,  $p$  = 0.811). However, significantly more of those with disability in KU were first-in-family to university ( $\chi^2$  (1,  $n$  = 41), 8.667,  $p$  = 0.003) and also working while studying compared with SU ( $\chi^2$  (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 ( $\chi^2$  (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 statements within the academic self-confidence category when data for both institutions were combined. In addition, 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

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

<b>Theme: Belonging (6 items)</b>			
<b>Item</b>	<b>KU</b>	<b>SU</b>	<b>Combined</b>
<b>I feel at home in this university</b>	$H(3) = 1.82, p = 0.61$	$H(2) = 1.42, p = 0.49$	$H(3) = 12.26, p = 0.01$ <b>PNS vs no: 116.06, <math>p = 0.01</math></b>
<b>Being at this university is an enriching experience</b>	$H(3) = 3.51, p = 0.32$	$H(2) = 2.90, p = 0.19$	$H(3) = 11.39, p = 0.01$ <b>Yes vs no: 55.67, <math>p = 0.03</math></b>
<b>I wish I had gone to a different university (rev)</b>	$H(3) = 3.38, p = 0.34$	$H(2) = 3.33, p = 0.19$	$H(3) = 14.10, p = 0.00$ <b>Yes vs no: 61.71, <math>p = 0.01</math></b> <b>Yes vs not sure: 84.29, <math>p = 0.04</math></b>
<b>Sometimes I feel like I don't belong at this university (rev)</b>	$H(3) = 6.00, p = 0.11$	$H(2) = 6.22, p = 0.05$ NS after Bonferroni adjustment	$H(3) = 19.59, p = 0.00$ <b>Yes vs no: 75.24, <math>p = 0.00</math></b>
<b>Theme: Peer belonging (5 items)</b>			
<b>I fit with other students at my university</b>	$H(3) = 14.88, p = 0.00$ <b>Yes vs. no: 37.11, <math>p = 0.00</math></b>	$H(2) = 5.25, p = 0.07$	$H(3) = 21.73, p = 0.00$ <b>Yes vs no: 90.33, <math>p = 0.00</math></b>
<b>It is difficult to make friends at this institution (rev)</b>	$H(3) = 5.33, p = 0.15$	$H(2) = 2.04, p = 0.36$	$H(3) = 11.00, p = 0.01$ <b>Yes vs no: 54.16, <math>p = 0.04</math></b>
<b>I have very few friends or acquaintances at this institution that share my views and beliefs (rev)</b>	$H(3) = 3.76, p = 0.29$	$H(2) = 6.17, p = 0.05$ NS after Bonferroni adjustment	$H(3) = 12.69, p = 0.00$ <b>Yes vs no: 64.31, <math>p = 0.01</math></b>
<b>There are other students at this institution who share my views and beliefs</b>	$H(3) = 4.57, p = 0.21$	$H(2) = 3.53, p = 0.17$	$H(3) = 8.02, p = 0.05$ <b>Yes vs no: 53.46, <math>p = 0.03</math></b>
<b>I can have quality interactions with other students</b>	$H(3) = 10.93, p = 0.01$ <b>Yes vs. no: 31.11, <math>p = 0.01</math></b>	$H(2) = 4.32, p = 0.12$	$H(3) = 17.44, p = 0.00$ <b>Yes vs no: 79.65, <math>p = 0.00</math></b>
<b>Theme: Institutional acceptance (5 items)</b>			
<b>It is easy to get involved in clubs &amp; organisations at this university</b>	$H(3) = 9.23, p = 0.03$ <b>Yes vs. no: 26.49, <math>p = 0.04</math></b>	$H(2) = 0.57, p = 0.75$	$H(3) = 11.87, p = 0.01$ <b>Yes vs no: 57.30, <math>p = 0.02</math></b>

**Table 3** Scores for belonging, institutional acceptance & peer belonging by disability status & 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 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 self-confidence 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 higher levels of psychological 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 self-concept (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 self-efficacy 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). Self-efficacy 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 (Rao, 2004; Bessant, 2012). A social 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 self-identify 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' disabilities (Madriaga, 2007; 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 support for fear of discrimination 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 of academic self-confidence, peer & 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.

## References

Ahn, M.Y. & Davis, H.H. (2019). *Four domains of students' sense of belonging to university*. *Studies in Higher Education*, 45(3), 622-634. DOI:10.1080/03075079.2018.1564902

Ahn, M.Y. & Davis, H.H. (2020). *Sense of belonging as an indicator of social capital*. *International Journal of Sociology and Social Policy*, 40(7/8), 627-642. DOI: 10.1108/IJSSP-12-2019-0258.

Allen, K.-A. & Kern, M.L. (2017). *The Need to Belong. In: School Belonging in Adolescents*. Springer Briefs in Psychology. Springer, Singapore. DOI: 10.1007/978-981-10-5996-4\_2.

Ashbaugh, K., Koegel, R.L. & Koegel, L.K. (2017). *Increasing Social Integration for College Students With Autism Spectrum Disorder*. *Behavioral Development Bulletin*, 22(1), 183- 196. DOI: 10.1037/bdb0000057

Baczewski, L.M. (2020). *Self-reported Experiences of Students with Autism Spectrum Disorder in Higher Education: A Population-based Sample*. UCLA Electronic Theses and Dissertations. <https://escholarship.org/uc/item/0sf796db>

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/ Henry Holt & Co.

Baumeister, R.F. & Leary, M.R. (1995). *The need to belong: desire for interpersonal attachments as a fundamental human motivation*. *Psychological Bulletin*, 117(3), 497–529. DOI: 10.1037/0033-2909.117.3.497

Berman, N. (2020). *A critical examination of informal learning spaces*. *Higher Education Research and Development*, 39(1), 127–140. DOI: 10.1080/07294360.2019.1670147

Bertilsdotter Rosqvista, H., Brownlow, C. & O'Dell, L. (2013). *Mapping the social geographies of autism – online and off-line narratives of neuro-shared and separate*

*spaces*. *Disability & Society*, 28(3), 367-379. DOI: 10.1080/09687599.2012.714257

Bessant, J. (2012). *'Measuring Up'? Assessment and students with disabilities in the modern university*. *International Journal of Inclusive Education*, 16(3), 265-281. DOI: 10.1080/13603116.2010.489119

Bong, M. & Skaalvik, E.M. (2003). *Academic Self-Concept and Self-Efficacy: How Different Are They Really?* *Educational Psychology Review* 15 (1), 1-40. DOI: 10.1023/A:1021302408382

Carter, E.W., Sisco, L.G., Brown, L., Brickham, D., Al-Khabbaz, Z.A. & MacLean, W.E. Jn. (2008). *Peer Interactions and Academic Engagement of Youth With Developmental Disabilities in Inclusive Middle and High School Classrooms*. *American Journal of Mental Retardation*, 113(6), 479–494. DOI: 10.1352/2008.113:479-494

Cole, E.V., & Cawthon, S.W. (2015). *Self-disclosure decisions of university students with learning disabilities*. *Journal of Postsecondary Education and Disability*, 28(2), 163–179. Available at: <https://files.eric.ed.gov/fulltext/EJ1074663.pdf>

Crossan, B, Field, J., Gallacher, J., and Merrill, B. (2003). *Understanding participation in learning for non-traditional adult learners: Learning careers and the construction of learning identities*. *British Journal of Sociology of Education*, 24(1), 55-67. Doi: 10.1080/01425690301907

Department for Education. (2017). *Inclusive teaching and learning in higher education as a route to excellence*. Department for Education: UK. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/587221/Inclusive\\_Teaching\\_and\\_Learning\\_in\\_Higher\\_Education\\_as\\_a\\_route\\_to-excellence.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/587221/Inclusive_Teaching_and_Learning_in_Higher_Education_as_a_route_to-excellence.pdf)

Dwyer, T. (2017). *Persistence in Higher Education through Student-Faculty Interactions in the Classroom of a Commuter Institution*. *Innovations in Education and Teaching International*, 54(4), 325-334. DOI: 10.1080/14703297.2015.1112297

- Eccles, S., Hutchings, M., Hunt, C. & Heaslip, V. (2018). *Risk and stigma: students' perceptions and disclosure of 'disability' in higher education*. *Widening Participation and Lifelong Learning*, 20(4), 191-208. DOI: 10.5456/WPLL.20.4.191
- Eriksson, L. & Granlund, M. (2004). *Conceptions of participation in students with disabilities and persons in their close environment*. *Journal of Developmental and Physical Disabilities*, 16(3), 229-245. DOI: 10.1023/B:JODD.0000032299.31588.f0
- Gelbar, N.W., Smith, I. & Reichow, B. (2014). *Systematic review of articles describing experience and supports of individuals with autism enrolled in college and university programs*. *Journal of Autism and Developmental Disorders*, 44(10), 2593–2601. DOI: 10.1007/s10803-014-2135-5
- Ginsberg, S.M. & Schulte, K. (2008). *Instructional accommodations: Impact of conventional vs. social constructivist view of disability*. *Journal of the Scholarship of Teaching and Learning* 8(2): 84-91.
- Goodenow, C. (2003). *Classroom belonging among early adolescent students*. *Journal of Early Adolescence*, 13(1), 21-43. DOI: 10.1177/0272431693013001002
- Graetz, J.E. & Spampinato, K. (2008). *Asperger's syndrome and the voyage through high school: Not the final frontier*. *Journal of College Admission*, 198, 19 –24. <https://files.eric.ed.gov/fulltext/EJ829415.pdf>
- Guay, F., Marsh, H.W., & Boivin, M. (2003). *Academic self-concept and achievement: Developmental perspective on their causal ordering*. *Journal of Educational Psychology*, 95,124-136. DOI: 10.1037/0022-0663.95.1.124
- Guay, F., Ratelle, C.R., Roy, A., & Litalien, D. (2010). *Academic selfconcept, autonomous academic motivation, and academic achievement: Mediating and addictive effects*. *Learning and Individual Differences*, 20, 644-652. DOI:10.1016/j.lindif.2010.08.001
- Gurbuz, E., Hanley, M. & Riby, D.M. (2019). *University Students with Autism: The Social and Academic Experiences of University in the UK*. *Journal of Autism and Developmental Disorders*, 49, 617–631. Doi: 10.1007/s10803-018-3741-4
- Harris, A.M. & Cancelli, A.A. (1993). *Academic engagement of students with learning disabilities in mainstream classrooms: challenging conventional wisdom*. *Journal of Educational and Psychological Consultation*, 4(4), 384-389.
- Hen, M. & Goroshit, M. (2014). *Academic procrastination, emotional intelligence, academic self-efficacy and GPA: A comparison between students with and without learning disabilities*. *Journal of Learning Disabilities*, 47(2), 116–124. Doi: 10.1177/2F0022219412439325
- Higher Education Statistics Agency. (2020a). *Higher Education Student Statistics: UK, 2018/19 - Student numbers and characteristics*. HESA: UK. <https://www.hesa.ac.uk/news/16-01-2020/sb255-higher-education-student-statistics/numbers>
- Higher Education Statistics Agency. (2020b). *Higher Education Student Statistics UK 2018/19*. HESA: UK. <https://www.hesa.ac.uk/data-and-analysis/sb255/figure-4>
- Hong, B.S. (2015). *Qualitative analysis of the barriers college students with disabilities experience in higher education*. *Journal of College Student Development*, 56(3), 209–226.
- Hubble, S. & Bolton, P. (2020). *Support for disabled students in higher education in England*. Briefing Paper 8716. London: House of Commons Library. <https://commonslibrary.parliament.uk/research-briefings/cbp-8716/>
- Jansen, D., Emmers, E., Petry, K., Mattys, L., Noens, I. & Baeyens, D. (2018). *Functioning and participation of young adults with ASD in higher education according to the ICF framework*. *Journal of Further and Higher Education*, 42(2), 259–275. DOI: 10.1080/0309877X.2016.1261091

- Järkestig Berggren, U., Rowan, D., Bergbäck, E. & Blomberg, B. (2016). *Disabled Students' Experiences of Higher Education in Sweden, the Czech Republic, and the United States – A Comparative Institutional Analysis*. *Disability and Society*, 31(3), 339–356. DOI: 10.1080/09687599.2016.1174103
- Jenson, R.J., Petri, A.N., Day, A.D., Truman, K.Z. & Duffy, K. (2011). *Perceptions of Self-Efficacy Among STEM Students with Disabilities*. *Journal of Postsecondary Education and Disability* 24(4), 269 – 283. <https://eric.ed.gov/?id=EJ966129>
- Kim, M.M. & Kutscher, E.L. (2020). *College Students with Disabilities: Factors Influencing Growth in Academic Ability and Confidence*. *Research in Higher Education*. DOI: 10.1007/s11162-020-09595-8
- Keenan, C. (2014). *Mapping student-led learning in the UK. Higher Education Academy: UK*. [https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/hea/private/resources/peer\\_led\\_learning\\_keenan\\_nov\\_14-final\\_1568037253.pdf](https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/hea/private/resources/peer_led_learning_keenan_nov_14-final_1568037253.pdf) (accessed 23/07/20)
- Kendall, L. (2016). *Higher education and disability: exploring student experiences*. *Cogent Education* 3: 1256142. Doi: 10.1080/2331186X.2016.1256142.
- Knowles, M.S., Holton, E.F. III. & Swanson, R.A. (2005). *The Adult Learner: the Definitive classic in Adult Education and Human Resource Development (6th ed)*. Burlington, MA: Elsevier. ISBN: 10:0750678372
- Kung, H-Y. (2009). *Perception or Confidence? Self-Concept, Self-Efficacy and Achievement in Mathematics: a longitudinal study*. *Policy Futures in Education*, 7 (4), 387-398. Doi.org/10.2304/pfie.2009.7.4.387
- Liu, H. J. (2008). *The relationship between EFL student academic self-concept and language performance*. *Feng Chia Journal of Humanities and Social Sciences*, 17, 165-184.
- Madriaga, M. (2007) *Enduring Disablism: Students with Dyslexia and Their Pathways into UK Higher Education and Beyond*. *Disability and Society*, 22(4), 399–412. DOI: 10.1080/09687590701337942
- Madriaga, M. & Goodley, D. (2010). *Moving beyond the Minimum: Socially Just Pedagogies and Asperger's Syndrome in UK Higher Education*. *International Journal of Inclusive Education* 14 (2): 115–131. DOI: 10.1080/13603110802504168
- Martin, J. M. (2010). *Stigma and Student Mental Health in Higher Education*. *Higher Education Research and Development*, 29(3), 259–274. DOI: 10.1080/07294360903470969
- Mauder, R.E. (2018). *Students' peer relationships and their contribution to university adjustment: the need to belong in the university community*. *Journal of Further and Higher Education*, 42(6), 756-768. DOI: 10.1080/0309877X.2017.1311996
- Meehan, C. & Howells, K. (2019). *In search of the feeling of 'belonging' in higher education: undergraduate students transition into higher education*. *Journal of Further and Higher Education*, 43(10), 1376-1390. DOI: 10.1080/0309877X.2018.1490702
- Moller, K. & Danermark, B. (2007). *Social recognition, participation, and the dynamic between the environment and personal factors of student with deaf blindness*. *American Annals of the Deaf*, 152(1), 42-55. DOI: 10.1353/aad.2007.0012.
- Mulrooney, H.M. & Kelly, A.F. (2020). *The university campus and a sense of belonging: what do students think?* *New Directions in the Teaching of Physical Sciences*, 15. DOI: 10.29311/ndtps.v0i15.3590
- Neves, J. & Hewitt, R. (2020). *Student Academic Experience Survey 2020*. Higher Education Policy Institute: UK. <https://www.hepi.ac.uk/wp-content/uploads/2020/06/The-Student-Academic-Experience-Survey-2020.pdf>
- Newman-Ford, L., Fitzgibbon, K., Lloyd, S. & Thomas, S. (2008). *A large-scale investigation into the relationship between attendance and attainment: a study using an innovative, electronic attendance monitoring system*.

Studies in Higher Education, 33(6), 699-717.  
Doi: 10.1080/03075070802457066

O'Donnell, V.L. & Tobbell, J. (2007). *The transition of adult students to higher education: legitimate peripheral participation in a community of practice?* Adult Education Quarterly, 57(4), 312-328. DOI: 10.1177/0741713607302686

Office for Students. (2019). *Beyond the bare minimum: are universities and colleges doing enough for disabled students?* Insight 4. Office for Students: UK.  
<https://www.officeforstudents.org.uk/publications/beyond-the-bare-minimum-are-universities-and-colleges-doing-enough-for-disabled-students/>

Office for Students. (2020a). *Gap in degree outcomes (1sts or 2:1s) between disabled students and non-disabled students.* Office for Students: UK.  
<https://www.officeforstudents.org.uk/about/measures-of-our-success/participation-performance-measures/gap-in-degree-outcomes-1sts-or-2:1s-between-disabled-students-and-non-disabled-students-hesa/>

Office for Students. (2020b). *The National Student Survey: Consistency, controversy and change.* Insight 6. Office for Students: UK.  
<https://www.officeforstudents.org.uk/media/0fb736eb-ba54-472f-849b-f3c81ad2e03d/the-national-student-survey-consistency-controversy-and-change.pdf>

Oldfield, J., Rodwell, J., Curry, L. & Marks, G. (2017). *A face in a sea of faces: exploring university students' reasons for non-attendance to teaching sessions.* Journal of Further and Higher Education, 43 (4), 443-452. DOI: 10.1080/0309877X.2017.1363387

O'Shea, S.E. (2015). *Filling up silences – first in family students, capital and university talk in the home.* International Journal of Lifelong Education, 34(2), 1-17. DOI: 10.1080/02601370.2014.980342

O'Shea, S. (2016). *First-in-family learners and higher education: Negotiating the 'silences' of university transition and participation.* HERDSA Review of Higher Education, 3, 5-

23. <https://www.herdsa.org.au/herdsa-review-higher-education-vol-3/5-23>

Pace, C.R. (1982). *Achievement and quality of student effort.* Paper presented at the 1982 Meeting of the National Commission on Excellence in Education in Washington, D.C. <https://files.eric.ed.gov/fulltext/ED227101.pdf>

Pajares, F. (1996). *Self-efficacy Beliefs in Academic Settings.* Review of Educational Research, 66 (4), 543- 578. DOI: 10.3102/00346543066004543

Pajares, F. (1997). *Current directions in self-efficacy research.* Advances in motivation and achievement, 10 (149), 1-49.

Papasotiriou, M. & Windle, J. (2012). *The social experience of physically disabled Australian university students.* Disability & Society, 27(7), 935-947. DOI: 10.1080/09687599.2012.692027

Portes, A. (1998). *Social capital: Its origins and applications in modern sociology.* Annual Review of Sociology 24: 1–24. DOI: 10.1146/annurev.soc.24.1.1

Rao, S. (2004). *Faculty attitudes and students with disabilities in higher education — a literature review.* College Student Journal, 38(2), 191-198.

Read, B., Burke, P.J. & Crozier, G. (2018). *'It is like school sometimes': friendship and sociality on university campuses and patterns of social inequality.* Discourse: Studies in the Cultural Politics of Education, 41(1), 70-82. DOI: 10.1080/01596306.2018.1457626

Reay, D., Crozier, G. & Clayton, J. (2010). *'Fitting in' or 'standing out': working –class students in UK higher education.* British Educational Research Journal, 36(1), 107-124. DOI: 10.1080/01411920902878925

Reay, D. (2002). *Class, authenticity and the transition to higher education for mature students.* Sociological Review, 50(3), 398-418. DOI: 10.1111/1467-954X.00389

Ribera, A.K., Miller, A.L. & Dumford, A.D. (2017). *Sense of Peer Belonging and Institutional Acceptance in the First Year: The*

*Role of High-Impact Practices*. Journal of College Student Development, 58(4), 545-563. DOI: 10.1353/csd.2017.0042

Rivera Munoz, C.A., Baik, C. & Lodge, J.M. (2019). *Teacher and student interactions in the first year of university*. Journal of Further and Higher Education, 18 (1), DOI: 10.1080/0309877X.2019.1664731

Ruban, L.M., McCoach, D.B., McGuire, J.M. & Reis, S.M. (2003). *The Differential Impact of Academic Self-Regulatory Methods on Academic Achievement Among University Students With and Without Learning Disabilities*. Journal of Learning Disabilities 36(3), 270-286. DOI: 10.1177/002221940303600306

Sachs, D. & Schreuer, N. (2011). *Inclusion of Students with Disabilities in Higher Education: Performance and participation in student's experiences*. Disabilities Studies Quarterly, 31(2). <https://dsq-sds.org/article/view/1593/1561>

Scott, S. (2019). *Access and participation in higher education: Perspectives of college students with disabilities*. NCCSD Research Brief, 2(2). Available at <http://www.NCCSDclearinghouse.org>

Southall, J., Wason, H. & Avery, A. (2016). Non-traditional, commuter students and their transition to Higher Education – a synthesis of recent literature to enhance understanding of their needs. Student Engagement and Experience Journal, 5(1), 1-15. DOI: 10.7190/seej.v4i1.128

Strayhorn, T.L. (2012). *College students' sense of belonging: A key to educational success*. New York, NY: Routledge. ISBN: 9781136312397

Thomas, L. (2012). *Building Student Engagement and belonging in Higher Education at a time of change. Final report from the What Works?* Student Retention and Success programme. York: HEA.

Thomas, L., Hill, M., O'Mahony, J. & Yorke, M. (2017). *Supporting Student Success: strategies for institutional change: What Works?* Student Retention and Success

programme Final Report. London: Paul Hamlyn Foundation. <https://www.phf.org.uk/wp-content/uploads/2017/04/Summary-report-final-no-crop-1.pdf>

Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Attrition*. 2nd edn. The University of Chicago Press.

Tinto, V. (2017). *Through the eyes of students*. Journal of College Student Retention: Research, Theory & Practice, 19(3), 254-269. DOI: 10.1177/1521025115621917.

Vincent, J., Potts, M., Fletcher, D., Hodges, S., Howells, J., Mitchell, A., Mallon, B. & Ledger, T. (2017). *'I think autism is like running on Windows while everyone else is a Mac': using a participatory action research approach with students on the autistic spectrum to rearticulate autism and the lived experience of university*. Educational Action Research, 25(2), 300-315. DOI: 10.1080/09650792.2016.1153978

Wainwright, E. & Marandet, E. (2010). *Parents in higher education: impacts of university learning on the self and the family*. Educational Review, 62(4), 449-465. DOI: 10.1080/00131911.2010.487643

Waite, S. (2013). *'Knowing your place in the world': how place and culture support and obstruct educational aims*. Cambridge Journal of Education, 43(4), 413-433. DOI: 10.1080/0305764X.2013.792787

Wilson, D., Jones, D., Bocell, F., Crawford, J., Kim, M.J., Veilleux, N., Floyd-Smith, T., Bates, R. & Plett, M. (2015). *Belonging and Academic Engagement Among Undergraduate STEM Students: A Multi-institutional Study*. Research in Higher Education, 56, 750-776. DOI: 10.1007/s11162-015-9367-x

Wong, B. (2018). *By chance or by plan?: The academic success of non-traditional students in higher education*. AERA Open, 4(2), 1-14. DOI: 10.1177/2332858418782195

Yorke, M. (2016). *The development and initial use of a survey of student 'belongingness'*,

*engagement and self-confidence in UK higher education*. *Assessment and Evaluation in Higher Education*, 41(1), 154-166. DOI: 10.1080/02602938.2014.990415

Zimmerman, B. (1989). *A Social Cognitive View of Self-regulated Academic Learning*. *Journal of Educational Psychology*, 81 (3), 329-343. DOI: 10.1037/0022-0663.81.3.329

Zumbrunn, S., McKim, C., Buhs, E., & Hawley, L. R. (2014). *Support, belonging, motivation, and engagement in the college classroom: A mixed method study*. *Instructional Science*, 42(5), 661–684. DOI: 10.1007/s11251-014-9310-0