Understanding the Experiences of Autistic and Dyslexic Women Transitioning into Tertiary Education

ABSTRACT

This report describes the experiences of autistic and/or dyslexic women who transitioned into tertiary education. Whilst the process of transition within school is often well documented, the transition from school into the world of work or tertiary education appears to be significantly under researched. In particular, students' preparation for transitioning to tertiary education versus their actual experiences was investigated, especially where students are subject to learning differences such as dyslexia and autism. This review aims to tackle these issues by focusing on how well-prepared women feel when they move into tertiary education and the experiences they have once they are there.

An analysis of the responses to a questionnaire focused on support has enabled us to identify a number of results. A high percentage of the participants in the study identified families and friends as the people who supported them the most when they transitioned into tertiary education. The areas where participants felt they needed the most support included; study skills, revising and preparing for exams, and having instructions given in a format that could be understood. Participants identified that they needed more support from tertiary education services for their mental health, finding their way around and organizing their time. We conclude this work with guidelines that have been produced based on advice from participants in this research, with a view to supporting autistic and dyslexic women transitioning to tertiary education in the future.

Keywords

Transition, Tertiary Education, Autism, Dyslexia, Further Education

INTRODUCTION

Throughout their school days, pupils make transitions, from year to year, class to class and between primary and secondary school. At the end of secondary education, however, students are expected to experience the 'rite of passage' (Bolt & Graber, 2010) from school to tertiary education or into the world of work. Transition 'involves movement from known situations to novel environments' (Bolt & Graber, 2010) and involves a period of 'separation, transition and incorporation, during which students may experience a period of crisis, learn how to resolve issues... and adjust to the new situation' (p 194). Understandably, there is often apprehension in the run up to a transition such as this, and Kirwan and Leather explain that this resistance to change is natural and to be expected (Kirwan & Leather, 2011 p33). However, the danger is that students' expectations for tertiary education do not match their experience (Bolt & Graber, 2010) and this area of transition appears to be significantly under researched, especially where students are subject to learning differences such as dyslexia and autism.

Dyslexia and autism are both covered under the Disability Act 2010. Dyslexia can be seen as a 'paradox' (Rowan, 2014) and is difficult to define categorically. In 2009, Dyslexia Scotland, in conjunction with the Scottish Parliament, provided the following 'working definition':

'Dyslexia can be described as a continuum of difficulties in learning to read, write and/or spell…These difficulties often do not reflect an individual's cognitive abilities and may not be typical of performance in other areas…'the definition continues '…Dyslexia exists in all cultures and across the range of abilities and socio-economic backgrounds…'(Dyslexia Scotland 2015).

Autism can be defined as a

'…developmental disorder and characterized by three main areas of difficulties, commonly referred to as the triad of impairments: difficulties with social interaction, (social) communication, and (social) imitation, the latter resulting in difficulty in dealing with change, adherence to certain routines, and restricted interests' (Vermeulen, 2012, Evans, 2017, Graham 2008 & Wing 2002).

Dyslexia has traditionally been thought to occur more in boys than in girls, for example, Hawke et al. (2007) cites studies by Finucci & Childs (1981) and Vogel (1990) which suggested that incidence for boys: girls ranges between 2:1 and 15:1, however there is now a significant body of research which suggests that incidence of dyslexia is equal. (Hawke et al. 2007). Hawke et al. (2007) and Finke (1998) suggest that girls may be less susceptible to environmental factors and socio-economic

factors in class and are more able to 'act out', thus covering their difficulties, therefore boys are more likely to be presented for diagnosis in the school situation. Finke states that 'females with dyslexia have been largely overlooked as a focus of inquiry…' (Finke, 1998) and this, combined with our perception of a similar bias within autism research, is the reason why the focus of this research has been based solely on female respondents. Many autistic women develop a range of coping strategies that may mask the myriad of difficulties they face in day to day life (Scottish Women Autism Network, 2012). 'There is a current lack of knowledge of how autism shows itself in women' (Fleming, Hurley & Mason 2015), however recent publications (Cook & Garnett 2018, Scottish Autism 2016) present empowering, helpful and supportive insights from the personal experiences of autistic women.

One of the main themes that emerge from a literature review of transitions into tertiary education is that of a mismatch between expectations and experience during the transition phase. Rowan (2014) states that the success of the transition period in the last year of school is directly related to students' engagement and continuation into higher education. However, it would appear from this literature review that there are discrepancies in the level of expectations for tertiary education, resulting inevitably in student and institutional disappointments when students are unable to continue their studies. Bolt & Graber (2010) suggests that many students can thrive at high school, but lack the independent study skills that are required to be able to flourish in the tertiary setting. Adolescents on the autism spectrum experience difficulty transitioning from secondary school to post-school activities, often due to transition planning processes that do not meet their unique needs (Hatfield, Falkmer & Ciccarelli 2017). Vermulen's research (2009) highlights the many layers of context.

"The neurotypical brain is inherently context sensitive"…"Many people with autism say that perception takes a lot of their energy. Possibily this is because top-down perception (first the situation then the detail) does not work well for them, and they percieve primarily bottom up, from the details to the whole situation".

There are also differences around cognition and executive functioning for autistic individuals, resulting in difficulties connecting past experience with present actions (Graham, 2008), all of which will impact on any type of transition.

LITERATURE REVIEW

Autism and dyslexia are considered to be disabilities under the Equality Act (2010), meaning that colleges and universities have a duty to make 'reasonable adjustments' and to make their services more accessible to autistic and dyslexic applicants, (Government, 2010) & (Scottish Transitions Forum, 2017).

Bolt & Graber (2010) suggest that there can be significant mismatches between students' transition expectations and experiences, which can centre around academic anxiety, access to lecturers and quality of feedback. They also highlight the social aspects of university/college life, where difficulties integrating in social environments and accessing social networks can severely affect students' abilities to transition successfully and fully into the tertiary education environment (Bolt & Graber, 2010). This can be particularly relevant in the case of autistic students. In recent years there has been a substantial increase in the number of individuals with autism entering colleges and university, however despite this increased enrolment, only a small minority of students with autism have successfully completed their university education (Siew, Mazzucchelli, Rooney & Girdler 2017).

Student Resilience

Students, especially those with a disability, need to develop resilience towards the attitudes of staff and peers in order to overcome their learning differences (Neilson, 2011). Students should be well prepared, with strategies to approach tutors sensitively, as well as knowing how to access other resources, such as the Disability Services and software support, in order to receive the support that they need.

Part of the transition period is to 'learn how to resolve crises' (Bolt & Graber, 2010) and Neilson (2011) advocates that students need to handle and overcome difficulties for themselves in order to succeed in tertiary education settings. However, this can be difficult for students whose past experiences directly affect the present conditions, 'the self of today has been born out of all the earlier selves we have lived' (Neilson, 2011). Doikou-Avlidou (2015) argues that students may suffer from insecurities as a result of their learning disabilities and Nalavany et al. (2011) also acknowledge the existence of low self-esteem in dyslexic students, which may be caused by years of teasing or bullying through school.

In addition, children and adults on the autism spectrum can find the world around them chaotic and confusing, which causes stress and reduces their ability to use coping strategies (McCreadie & McDermott, 2014). Kirwan and Leather (2011) and Nalavany et al. (2011) both acknowledge that emotional factors are inseparable from learning success. Furthermore, Doikou-Avlidou (2015) believes that feelings of insecurity centre around feelings of frustration because of the discrepancy between students' effort and academic achievement. Kirwan advocates that the development of a greater self-understanding of difficulties can directly and positively affect study and course success (Kirwan & Leather, 2011).

McCreadie and McDermott (2014), argue wellbeing approaches attempt to reduce stress by promoting positive coping strategies and research demonstrates the benefits of mindfulness training for autistic individuals (Singh et al., 2013, Spek van Ham and Nyklicek, 2013). Both Wilson and Savery and Doikou-Avlidou encourage the development of resilience and resourcefulness in order to overcome learning challenges (Wilson & Savery, 2013), Doikou-Avlidou suggests that the development of skills and abilities in other areas may compensate for a student's learning difficulties (Doikou-Avlidou, 2015)

In an ideal world, students would be able to develop sufficient resilience to be able to overcome the difficulties and challenges that are encountered in academic life. In practice, however, it appears that students can be significantly influenced by both good and bad experiences, and that these in turn become part of the 'baggage' that they carry, along with their learning difference, and which may affect their ability to cope with the rigors of tertiary education. In order, therefore, for students to successfully navigate their way through college or university, support networks can be put in place.

Support networks
Support networks are essential to the development of resilience for students, especially those with additional learning needs. These are discussed by many researchers, however there is a discrepancy in the literature as to the most useful support network for students.

1. Friends support
Bolt and Graber quote Kantanis (2000), who suggests that successful transition to university is dependent on 'effective social transition' (Bolt &Graber, 2010). They suggest that friends are the most important support network for students, as peer groups are best placed to buffer students from the extremes of the transition 'crisis', helping navigate around university/college and developing a sense of connection and belonging. (Bolt & Graber, 2010). Doikou-Avlidou goes further, suggesting

that the shared experience of having friends with dyslexia promotes mutual co-operation and help. However Rowan (2014) points out that the additional time that dyslexic students may have to spend in order to keep up with their studies may impact on their ability to develop and maintain a social network, which in turn isolates the student further by cutting off one of the key areas of support.

Similarly, one of the features of autistim can be difficulties with social interaction, communication and imitation. If an autistic student is having difficulties adjusting to universtiy/college life and therefore isolating themselves from developing a friendship group, this can result in a particularly anxious time for them.   They may find it useful to talk through their concerns with someone other than their family and friends, such as a counsellor or other autistic people (National Autistic Society, 2019).

2. Parent and school support

Anecdotal evidence suggests that parental support is also important in the life of a transitioning student, however Wilson and Savery suggest this may not be a key factor in a student's learning journey (Wilson & Savery, 2013). They advocate that schools can be crucial in the provision of support networks, developing resilience in students by providing a 'protective' environment, developing academic and study skills along with social competence (Wilson & Savery, 2013, Doikou-Avlidou, 2015).

3. Support from tertiary education institutions

Cameron & Nunkoosing (2012) highlight the importance of a student knowing what he/she is entitled to and what support is available, however, this raises the question of the reluctance on the part of many students to admit that they have a learning difference, as they may fear 'negative judgement' by peers or staff (Cameron & Nunkoosing, 2012).   It is therefore important that schools prepare students in terms of self-confidence and self-advocacy so that they are well equipped to pursue the support that they require. Kirwan and Leather's investigation into the provision of specialist support highlighted that many students are not aware of what study skills need to be developed, which makes it difficult for them to be fully engaged with academic processes at transition. (Kirwan & Leather, 2011).

4. Support from lecturers

Lecturers should be fully conversant with the needs of students with learning difficulties. There is a significant amount of literature relating to lecturers' approaches to students with learning difficulties and these could explain why there can be a mismatch between students' expectation and

experience. Many authors, (Kirwan & Leather, 2011; Cameron & Nunkoosing, 2012; Doikou-Avlidou, 2015) have expressed a view that that there are instances of negative attitudes towards learning differences such as dyslexia, largely due to a misunderstanding and lack of knowledge, resulting in in a culture of 'institutionalised disablism' (Gibson & Kendall 2010) within tertiary education. Consequently, students may be being disadvantaged simply because 'the overwhelming majority of British schools, colleges and universities remain unprepared to accommodate them in a mainstream setting' (Barnes, 1991).

Neilson argues that 'pedagogical tact' is required on the part of lecturers in order to 'prevent hurt, strengthen[s] what is good and enhance[s] what is unique'; a thoughtless comment or tactless approach by one tutor may have the potential to significantly affect a students' confidence or experience. Neilson (2011) goes on to suggest that the effects of such unintentional gestures or comments can be significant in reassuring or criticising students. Gibson and Kendall (2010) conclude that further training in this field would be invaluable.

Both Cameron and Nunkoosing (2012) and Doikou-Avlidou (2015) cite examples of lecturers' feelings that certain students' entitlement to 'reasonable adjustments' is unfair on students who do not have such considerations. Doikou-Avlidou suggests that as a result of misunderstanding of learning differences, such as dyslexia and autism, lecturers were either over strict or too indulgent during examinations and assessments (Doikou-Avlidou, 2015).

The use of inclusive teaching and learning approaches, including multisensory teaching, might help lecturers support learners throughout their tertiary education (Wilson & Savery, 2013). Wilson and Savery, along with Cameron & Nunkoosing, suggest that lecturers might usefully seek further advice from Student Services in order to be able to support students more imaginatively (Cameron & Nunkoosing, 2012; Wilson and Savery, 2013). Neilson believes that the best help that teachers can give students is that of time, both to understand the students' difficulties, and to provide suficient time and space for the student to be able to access and process the demands of the course, so that students can realise their potential and not be discouraged by their difficulties (Neilson, 2011).

5. Environmental support

Environments are particulary important for autistic students. Thought needs to go into the auditory and visual processing needs (Grandin & Panek, 2014) of autistic individuals as this can impact on someone's ability to attend college or university due to the crowds and noise (Graham, 2008). The provision of noise reducing headphones and an awareness of the busy times around the campus

can be helpful for a student who is affected in this way, so that they can plan their own movements to avoid particularly crowded areas. Autistic students need to have structures in place in order to support understanding of expectations, directions and rules (Spears & Turner 2011).

6. Information Technology Support

The emergence of assistive technology to increase or improve the functional capabilities of individuals with learning disabilities is significant, and students should be given the advice and support that they require in order to be able to access these valuable and ever improving resources (Fleming, Hurley & Mason 2015). For example, the use of Dragon speech to text software, mind mapping apps, ReadWrite/Claro etc, which can enable students to work independently at their intellectual level. Our experience and anecdotal evidence suggests that students may choose words that they can spell, instead of opting for a more complex word which may be more appropriate for the academic style.

Many authors (Wilson and Savery, 2013; Neilson, 2011; Kirwan and Leather, 2011) acknowledge the fact that students with additional learning needs require significantly more time to process and manage the demands of study at tertiary levels. Kirwan and Leather (2011) identify a variety of supports that may be developed with a student and which contribute to 'holding things at a systematic level'. These include visualisation, memory strategies, giving time to discuss ideas in a way which allows the student to 'extend, crystallise and articulate' their thoughts.

In addition, the provision and use of technological support such as computers and other IT equipment are key to bolstering a student's ability to work independently (Wilson & Savery, 2013). The acquisition of effective study skills, along with an increasing feeling of control through enhanced understanding of difficultles can lead to a more positive attitude and greater level of engagement and therefore a more successful outcome to tertiary studies. (Rowan, 2014).

METHODOLOGY

Qualitative research is an ideal methodology for a smaller scale project because it provides opportunities for the respondents to add their own comments in comparison to a larger scale project, where the sheer quantity of respondents means that 'number crunching' is the only practical method of data collection. Due to the fact that only 20-30 responses were anticipated, a revised Likert scale style of questionnaire was used (McLeod, 2008). Offering an even number of options enabled us to see the trend of the answer, rather than respondents opting for the middle question of the options. This, alongside some 'open style' questions allowed capture of the 'lived experiences' of the respondents and gave space for the respondents to offer their own narrative. It also provided information for statistical analysis at an ordinal level; we were able to capture the data without the scale values representing equal intervals in the responses. (Osherson & Lane, 2013) This level of statistical collection enables trends to be identified from the responses. Responses were analysed using Excel and appropriate graphs and tabulations were created in order to display results in a more visual format.

Ethical considerations

The study followed the code of conduct from the British Educational Research Association.

All questionnaires were kept anonymous and confidential with password protected computers and used only for this research project. The introductory page on the Survey Monkey and on the questionnaire stated that by completion of the questionnaire, informed consent was deemed to have been given, it also stated that the information received would be kept on a passworded computer and be completely anonymous. (Appendix 1)

Questionnaires

'As a method of data collection, the questionnaire is a very flexible tool (Walliman, 2004)'. Questionnaires are a good way to gather information in a structured way without the researcher having to be present. It was felt that this was the most appropriate method of data collection within the scope of this research because it enabled a wider range of participants to be reached in a short time.

The content of the questionnaire was determined by the initial literature review relating to the experiences of students transitioning from secondary to tertiary education.

The questions were focused around the stated aims of the study, viz:

- How well-prepared do women feel when they move into tertiary education?
- Can knowledge learnt in school transfer into skills which will help to cope with the demands of tertiary education?

Questions were highly structured and in a closed format in order to encourage thoughtful responses from the participants. The revised Likert style format used to ensure this was to give a scale of 1-4, meaning that respondents had to opt for 2 or 3 as the midpoint, indicating a tendency towards confidence or no confidence, rather than just ticking a middle score.   In order to ease analysis of the results, percentages were rounded to the nearest whole number throughout the research.

While questionnaires are relatively straightforward for organization and analysis of information, one of the limitations is that they do not allow for more in-depth responses to questions that the researchers may have. Questions 17 and 18 were therefore left for students to complete for themselves and related to specific advice that either they had been given or would give to a new student. The responses to these questions were particularly useful in compiling the advice list.

An information sheet was added to the questionnaire (online and paper versions) in order to give some context for the study. (Appendix 1).

Distribution

Questionnaires were distributed primarily via Survey Monkey, which was circulated to tertiary education providers in Glasgow city, Scottish Women Autism Network (SWAN) and Dyslexia Scotland as well as via personal contacts, including Social Media (Facebook and Twitter). The information that was collected was anonymous, an advantage of using a tool such as Survey Monkey. The surveys that were completed on paper were also anonymous; there was no opportunity for respondents to identify themselves in any way. Anyone identifying as female, of any age, could complete the questionnaire.

A limitation that we contended with was that the research uptake was quite slow and the number of participants, whilst greater than many previous studies, was not large enough to be truly representative of the student population. The Survey Monkey was initially available for one month, however it was extended to two months in order to attract additional responses. Once the survey

closed, the collated results were processed, and the results were graphed in various ways in order to demonstrate the trends.

Analysis

Answers that participants had given to broad questions in a survey were analysed and themes and patterns identified. Data from questions 1-16 was analysed using Excel spreadsheets, however, Questions 17 and 18, being more open and discursive in nature, required coding to identify key words and themes. This was done by developing bullet points with common themes and using https://www.wordclouds.com/ in order to create a word cloud. Quotes which represented the key themes were then chosen for the 'Student Voice' section.

Next steps

If further research was to be undertaken, semi-structured interview techniques could allow the researcher and interviewee to be more specific in the detail of the responses, which would result in more depth to the interviews, for example explaining why students chose to seek support from a particular type of person (peer, parents, tutors etc) or what specifically they found difficult about independent working.

The survey would probably benefit from a wider distribution if it was repeated, for example by using student forums and disability offices in different universities, instead of being primarily Glasgow based. The results that were drawn did not necessarily replicate previous studies and it would be interesting to repeat or extend the current study on a larger scale to investigate the validity of these results against a larger cohort of participants.

RESULTS AND ANALYSIS

The results of this research analysed according to each of the questions from the questionnaire.

Question 1: *What type of learning difference do you have?*
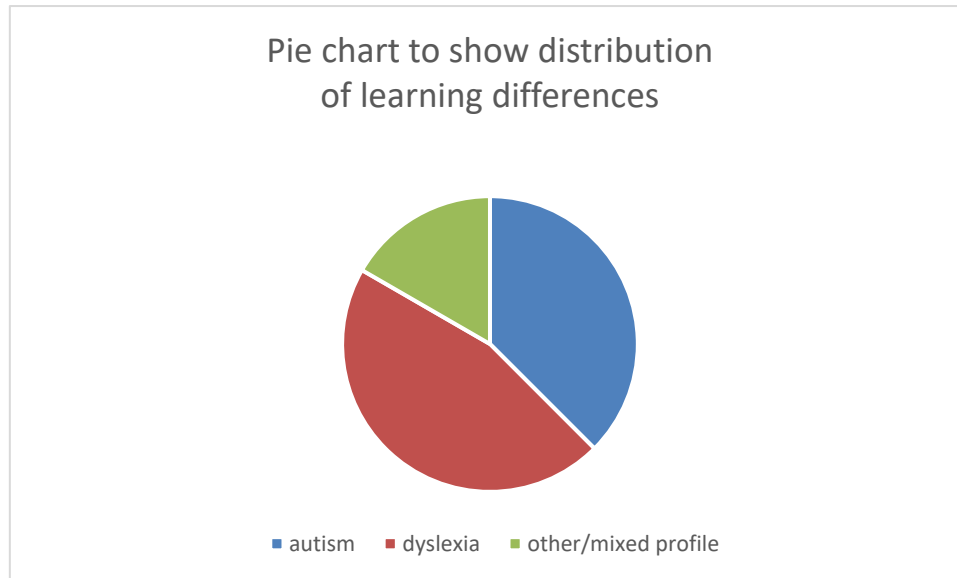
Analysis

24 participants completed surveys for this research. Whilst this is a small number of respondents, their responses nonetheless gave an indication of likely trends and it would appear that this is a larger number than has been sampled in previous studies (see literature review). Of the 24 participants, 9 (37%) stated that they had been diagnosed as autistic, including two with Asperger's and ADHD. 11 (46%) participants said they were dyslexic and 4 (17%) had multiple diagnoses including a combination of autism and dyslexia or no formal diagnosis.

Question 2: *When were you diagnosed?*

Q2: When were you diagnosed?
Results by diagnosis
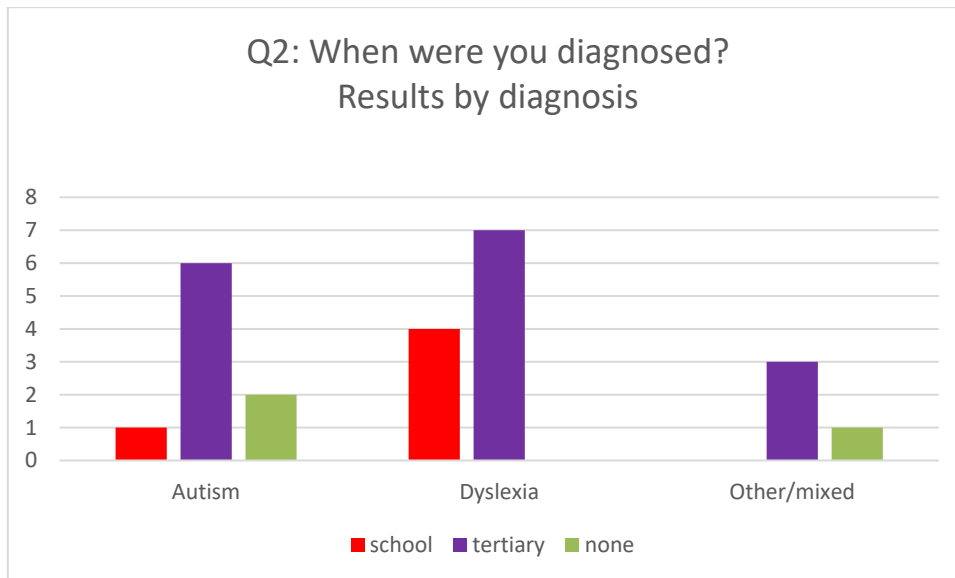
Results

Of the 24 participants, 5 stated that they had received their diagnosis at school, of which one specified that the diagnosis had been from primary school, 16 participants were diagnosed in tertiary education and 3 participants reported no formal diagnosis. It is interesting that many of the participants did not receive their diagnosis until they were in tertiary education. Within this study, dyslexic students had always received a diagnosis, and often this is from within the school system, whereas both autistic and the 'other/mixed' diagnosis category students have not always received a formal diagnosis.

Analysis

The discrepancy in diagnosis across the learning differences could be due to a greater understanding of dyslexic type difficulties, but taking into account all learning differences, it may also be due to funding in the school sector. However, a third reason could reflect the fact that girls are more able to 'fly under the radar' at school, as noted by Finke (1998). Our impression is that girls often manage to get through school by relying on a variety of strategies such as support from home etc. However, when exposed to the tertiary education environment, which may include the stresses of living away from home, they quickly find themselves struggling to meet the new challenges and are then referred for diagnosis (Bolt & Graber, 2010). Whether students were based at home or living away was not within the scope of this study, but could provide an area for further research.

Question 3: *What type of tertiary education are you attending?*

Type of tertiary education attended
-by learning difference
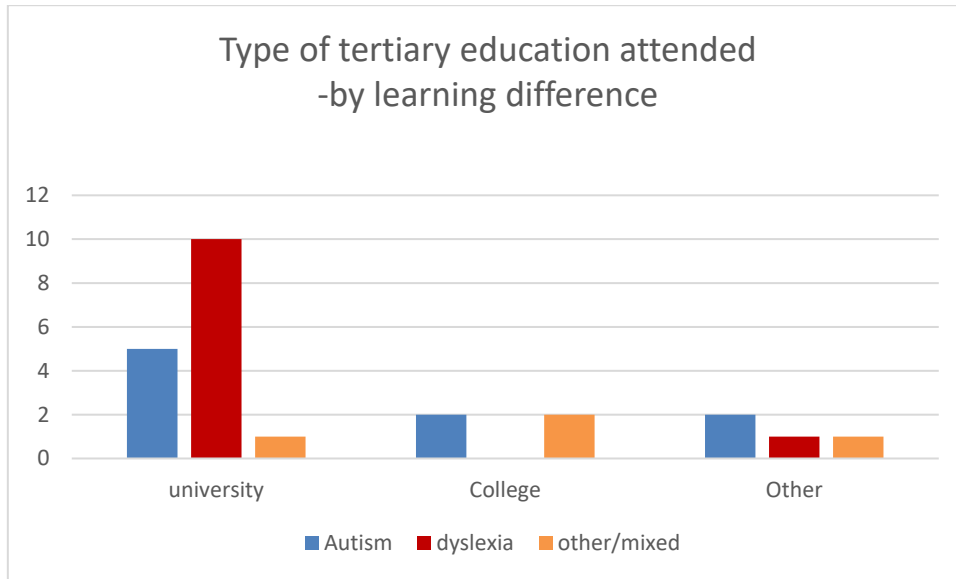
Results

16 participants were at university, 4 were at college and 4 were not currently in tertiary education.

Analysis

Although the questionnaires were distributed amongst colleges within the Glasgow area, as well as via Social Media etc., it is interesting that there are very few respondents reporting to be studying in College or 'other' tertiary education institutions, these would include apprenticeships etc. A suggested reason for this might be that motivation, organization and familiarity with questionnaires as a study tool is greater in the university environment.

Questions 4-16: The responses to the questions relating to confidence levels in selected aspects of transitioning into tertiary education are charted in a variety of ways below.

Given the discrepancy in numbers between autistic (9) and dyslexic (11) or mixed profile (4) students, it was decided to report all the results as averages within each question. Whilst this may negate some of the extremes, it means that there is an overview of trends within each area. Further investigations with a larger sample of students in each category would allow researchers to establish whether the average scores found here are truly representative and replicable within a larger study. The questions asked in this section are tabulated below:

| How confident do you feel in each of the areas below?	Abbreviation in graphs
4. Knowing where to go for academic support	Where support
5. Asking for help with your mental health	Mental
6. If you ask for help, the right support is available to you	Right supp
7. Study skills (reading, note taking, essay writing etc)	Study skills
8. Using new IT systems and software	IT
9. Learning/revising and preparing for exams	Exams
10. Instructions are given in a format that you can understand	Instructions
11. Working independently	Independent work
12. Organising your timetable	Timetable
13. Information will be available to enable you to get to your lectures on time?	Punctuality
14. Coping with lectures	Lectures
15. Finding your way around a new place	Finding way
16. Cooking, cleaning, shopping etc	Household
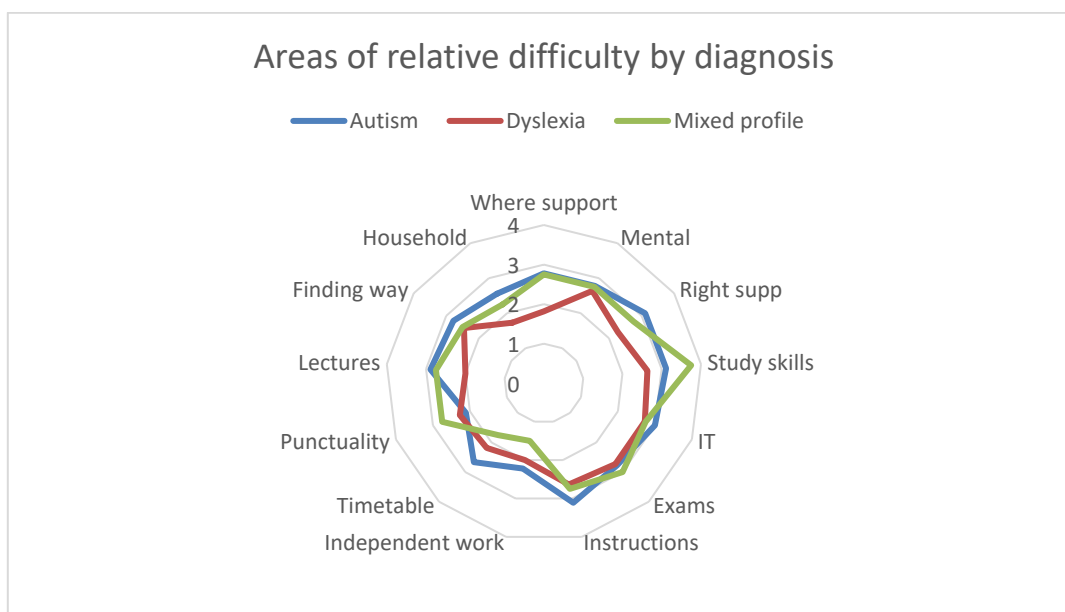
Fig 1: Areas of relative difficulty by diagnosis (drawn to show areas of difficulty towards outer rings of the radar chart)

Analysis

The overall picture shows that these students lack confidence in all the areas that were surveyed, in particular, *'study skills'* and in perceiving that '*instructions are given in a format that is easily*

understood', whilst other factors such as *'the correct support will be available'* when a student asks for it, also featured strongly. From the accompanying comments made by students, this aspect seems to be particularly notable with regards to the need for support with mental health. This reflects Bolt (2010) and Neilson's (2011) assertion that students need to develop their resilience to help them handle and overcome difficulties for themselves in order to succeed in many tertiary education settings (Neilson, 2011). It also reaffirms Kirwan and Leather (2011) and Nalavany et al.'s (2011) theories that emotional factors are inseparable from learning strategies, since without the correct support, self-esteem can drop, resulting in a perception that aspects of academic work become more difficult.
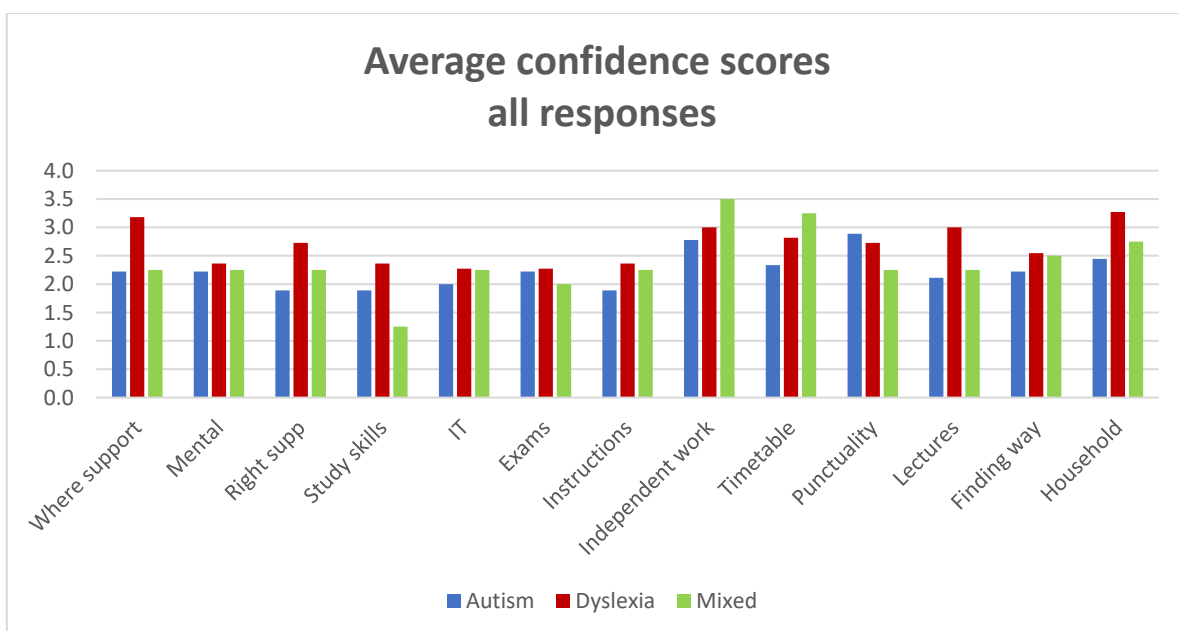

Fig 2; Average confidence scores for questions 4-16 by diagnosis. This graph shows higher numbers for greatest confidence levels.

Figure 2 shows confidence scores grouped by diagnosis and demonstrates some interesting differences between women with autism, those with dyslexia and those with a mixed or multiple learning differences. Whilst the responses to many questions are within a small range, there are some significant differences, which are discussed in the breakdown of individual learning differences below:
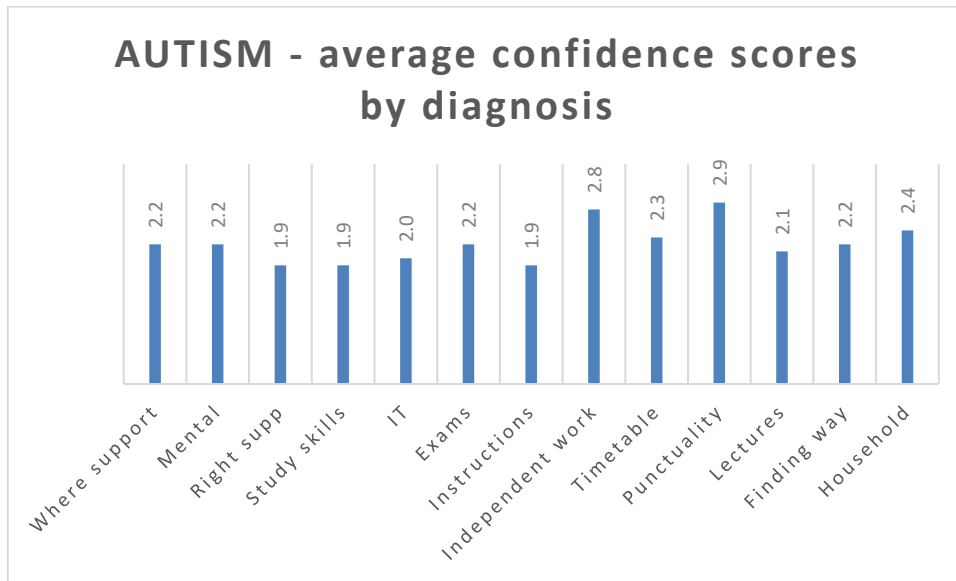
Fig 2a; Average confidence scores for questions 4-16 by diagnosis: Autism

Analysis

Looking across the whole range of questions, the average scores from the autism students showed less confidence than the dyslexic group. The autism results varied between 1.9 and 2.9, whereas the dyslexia results varied between 2.3 and 3.3, indicating a generally more confident approach to the transition phase for dyslexic students. This reduced confidence in autistic students could be due to a number of factors, including interpersonal skills and higher levels of stress (McCreadie & McDermott, 2014) and the impact that these have on coping skills and managing within the structure of the environment (Spears and Turner, 2011).

Discussion

Whilst the range of scores in autism and dyslexia were within one score difference, it would appear that the various factors involved in a mixed diagnosis results in an increase in the reported range: the average confidence range varied a total of 1 step score across autism and dyslexia in comparison to a 2.2 score difference in those with a mixed profile. Areas of relative strength for those identifying as mixed diagnosis included punctuality and independent working, suggesting that autistic students may rely more on their own capabilities and strategies, rather than depending on others to help them. This is reflected in the stronger confidence rating for independent working. However, in analysis the responses with regard to support, (fig. 4) suggest that autistic students use all forms of support, predominantly family or 'known' sources as a way of reducing their stress levels (McCreadie & McDermott, 2014). Their seeming reluctance to go to 'other'; study skills support, disability support,

academic advisors etc., highlights the 'triad of impairments' as discussed in the introduction, and the additional challenges that autistic individuals can have.

For autistic students, understanding instructions, study skills and getting the right support were areas where they felt less confident. If a tutor does not understand the importance of making instructions very clear, perhaps through a lack of knowledge (Gibson & Kendall, 2010), then a student with autism may find that they are unable to follow what is going on and therefore make mistakes. Graham (2008) makes the point that levels of comprehension need to be checked and communications should be made less abstract - written communications often offers the best support when giving instructions. The issue of getting the right support and developing study skills is related to the comments about independent working, and specifically to the difficulties that many autistic students have in asking others for additional help. Procedures for asking for help, from whom and when, need to be explicit and clearly demonstrated early on in the student's academic career (Graham, 2008).

Students with autism may not always see themselves as part of or belonging to the social community or group, this can lead to the appearance of being socially aloof; they need time to acclimatise to others, routines and the group or team (Graham 2008). However, these results suggest that they perceive friendships as being one of their main providers of support.
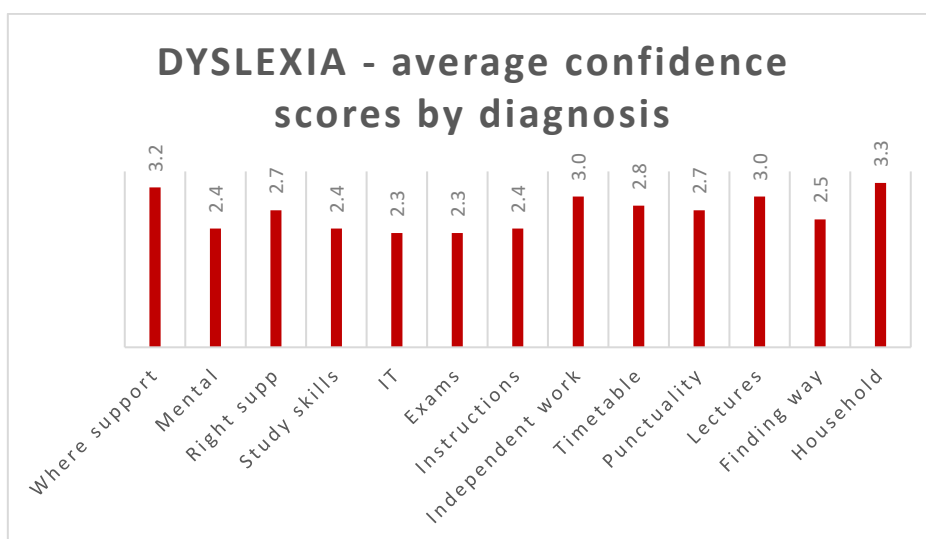
Dyslexia

Fig 2b; Average confidence scores for questions 4-16 by diagnosis: Dyslexia

Analysis

In general, the students with a dyslexic profile have higher confidence levels in their responses to the questions in comparison with the results from autistic students. This perhaps reflects the variety in the effects of the dyslexia spectrum on each student and their ability to be creative in seeing the larger picture and in problem solving (Finke 1998).

Discussion

The students with dyslexia seem to be confident about where to go to get help and this is reflected in the weighting they gave for whom they relied on for support. This group showed the most reliance on 'other', i.e. lecturers, study skills tutors, disability service support etc. and suggests that women with dyslexia may have developed more resilience and therefore be more prepared to ask for help (Neilson, 2011). However, the question should also be asked whether this is as a result of dyslexia being more overt and understood than other hidden learning difficulties such as autism (Doikou-Avlidou, 2015). The dyslexia responses to question 16 *'how confident do you feel cooking, cleaning and shopping'* suggests that these students are confident in practical applications, which concurs with Finke's (1998) suggestion that women with dyslexia may be less susceptible to environmental factors and thereby appear to be more confident in practical tasks.

Despite Bolt &Graber's (2010) suggestion that friends are the most important support network for students, it would appear from this study that only 13% of participants felt that friends were their first point of support. Far from Doikou-Avlidou's theory suggesting that the shared experience of having friends with dyslexia might help students, it is possible that students are unwilling to admit to friends that they have a learning difference. Rowan (2014) points out that the additional time that dyslexic students may have to spend in order to keep up with their studies may impact on their ability to develop and maintain a social network. This in turn isolates the student further, by cutting off one of the key areas of support.

Areas where dyslexic students felt less confident were in managing IT issues and in examinations. Difficulties with IT often centre around the slower processing speeds common in people with dyslexia, consequently students may require several iterations of the same information before it is assimilated. Anecdotal evidence from our experience suggests that it is not unusual for students to be given software and perhaps to be shown once how to use it before being provided with a wordy instruction manual, with the consequence that they find it difficult to access the information. This is ironic, as the very software that they find difficult to access may well be appropriate in supporting their dyslexic difficulties, for example in organisation or mind-mapping.

Whilst it has not been specifically investigated in this survey, there is evidence that many dyslexic students learn more easily through verbal or multisensory methods (Wilson & Savery, 2013). In the present academic climate, an issue for many courses is a reduction in face time with lecturers and this may affect a dyslexic's ability to interact and thrive in the new learning environment.

Previous experiences throughout schooldays may impact on students' confidence in exams or being able to cope under time pressure, as these students may have been exposed to failure and the potential for its associated negativity (Nalavany, 2011). Despite the provision of extra time, exams can cause these students a lot of anxiety, primarily because many dyslexic students have slower processing speeds and therefore may take longer to assimilate information. Consequently, it takes more time for examination questions to be processed and the answers retrieved and written down. Doikou- Avilidou (2015) suggests that lecturers could be either over strict or too indulgent during examinations and assessments.

In our experience, many students report that the provision of additional time or special arrangements can be last minute and variable in nature, causing examinees additional stress, which may also contribute to the low confidence rating. Doikou- Avlidou (2015) argues the case for lecturers to utilize oral examinations or provide alternative accommodations for assessments, although she acknowledges that the difficulties surrounding the funding for provision of additional staffing may result in a reluctance on the part of lecturers to address this issue. Perhaps any provision of additional training for tertiary education staff could include suggestions of ways in which students with learning differences might be able to present their knowledge in an equally justifiable, but different formats.
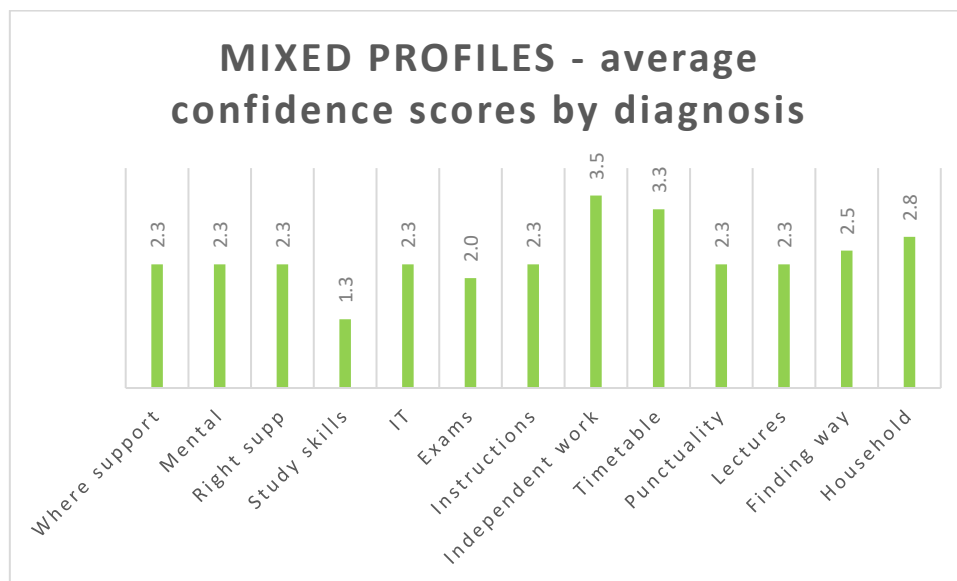
Fig 2c; Average confidence scores for questions 4-16 by diagnosis: Mixed profiles

Analysis

Students with a mixed profile appear to have a more wide-ranging levels of confidence across the questions. (2.2 overall as opposed to 1 scored by both autistic and dyslexic students), however, it should be noted that Fig 2c represents the responses from only 4 students, which makes it difficult to draw more general conclusions.

Discussion

The students with mixed profiles found study skills particularly challenging, which may be due to the overlapping of their learning differences causing difficulties, for example with accessing information and organization, as well as issues with reading and written work. In addition, many students with a mixed profile may suffer from the preconceptions about learning difficulties that were previously discussed. Staff being unaware of the need for support and wary of a student who presents with complex learning needs may result in 'institutionalised disablism' (Gibson & Kendall 2010). Students with a mixed profile appear to be more self-reliant than those with either autism or dyslexia. This result concurs with the discussion of figure 4, where the source of primary support is interrogated. Students with mixed profiles report that they rely on themselves for support, which ties in with their strengths in independent working, however friendships can also provide a valuable source of support for this category of student.

Question 17:

The responses to this question about who helped the students the most were sufficiently well grouped as to be able to make the answers numerical:
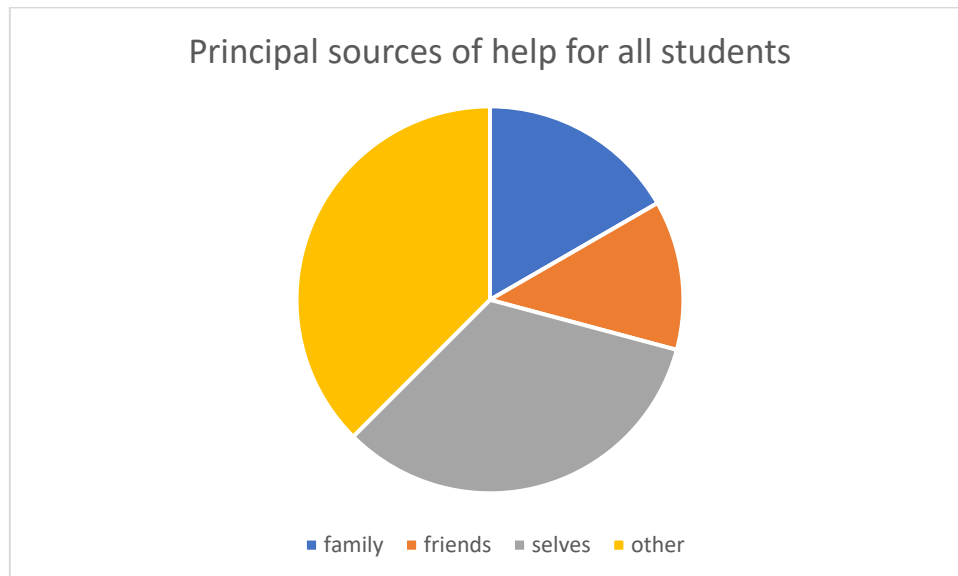

Fig 3. Pie chart of principal sources of support for all students at university or college.

Discussion

Taking the responses from all groups of students in this survey, there is a suggestion that, contrary to the review of literature, where Bolt &Graber (2010) advocate that 'effective social transition' is the most reliable method of succesful transition. In this survey, the majority (37%) of students relied on 'others' for support, including tutors, college/university staff and the college/university disability support services. This suggests that many students are, in fact, seeking support from professionals, rather than relying on friends or family, thereby establishing an element of independence which Wilson and Savery see as essential to success (Wilson & Savery, 2013.).
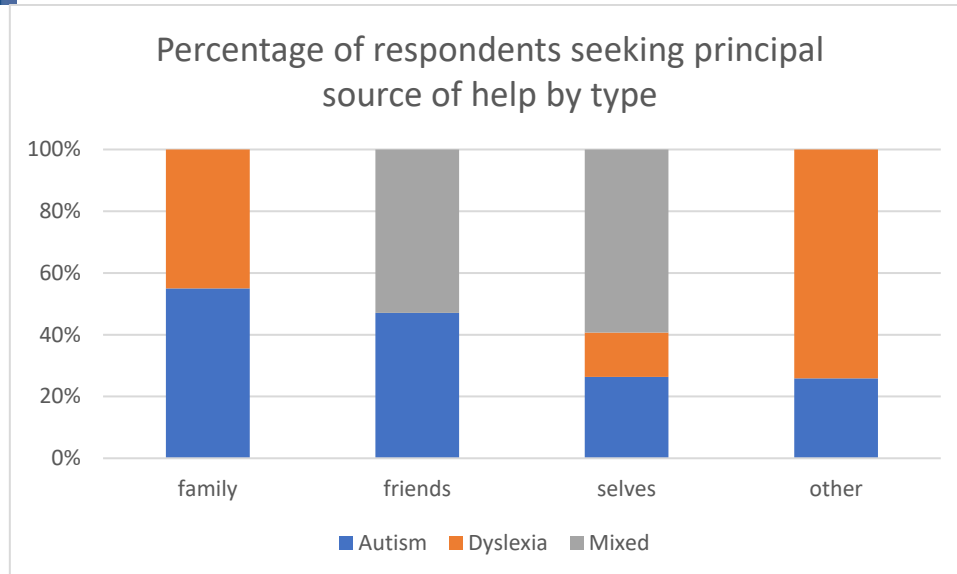
Fig 3a. Percentage of respondents seeking principal source of help by type.

This graph shows that for autistic and dyslexic students, family are the primary source of support, dyslexic students did not report reliance on friends for support, although they were a significant source of help for those with autism or a mixed diagnosis. All categories of students reported that they were self-reliant for support, especially those with a mixed diagnosis, however those with dyslexia were particularly reliant on 'other' sources of support, including Disability Advisors, university/college lecturers, study support advisors etc., as discussed above.

Next steps

- There is scope for further investigation to *investigate students' perception of whether lecturers, disability support services or study skills support staff provide the most effective suppor*t, and whether this support is more available to students with autism, dyslexia or those with a mixed profile.

- 17% of the respondents to this survey said that family were the principal source of support during the transition to tertiary education. This concurs with Wilson and Savery's findings that parental support does not feature highly for a transitioning student (Wilson & Savery, 2013) and is perhaps more of a reflection of a youngster's wish to be independent, than a particular wish to reject those who have supported them throughout school years. It would be interesting to take this survey a step further and *compare students who live at home during their time at university*, for example many students at Glasgow universities, *with a university where more students go away to complete their tertiary education*, for example in England.

Questions 18-19:

The responses to these questions have formed the basis of the guidelines for students with a learning difference to consider when they are transitioning into tertiary education. However, the quotes from these questions were used to develop a word cloud as a visual way of recording the frequency of the words used (higher frequencies result in a larger font in the cloud).

Fig 4: Word cloud developed from responses to questions 18-19…the larger the font of the word, the more frequently it had been stated in the responses to these questions.

*(*https://www.wordclouds.com/*)*

DISCUSSION

Of particular note is that several students referred to the library being an area of difficulty. University and college libraries, with their plethora of books and information available, both physically and online, can be particularly challenging for students who have learning differences. This is both in terms of libraries being an unfamiliar and potentially crowded environment as well as the fact that students find it hard to identify what will be pertinent to read. Managing the Dewey system to find books causes additional anxiety. Students themselves recommended that new students should take time to familiarise themselves with the workings of the library prior to starting their courses, in order to reduce stress when assignments were set. Library staff should be available to guide new students through the intricacies of the library system not only at the start of the academic year, but funding should be made available to enable these staff to continue to provide advice and help, in order for the library to become a more accessible resource for those with learning differences.

Many students reported that receiving a diagnosis was extremely helpful in coping with the stresses of college/university life, as it made sense of their difficulties. The recommendation was that if a student thought they might have a learning difference, that they should approach the disabilities team early in order to get appropriate help and diagnosis. For many students, however, the commencement of tertiary education can be so bewildering and challenging in terms of their own organizational skills, the additional burden of accessing the form filling and support may be too much to handle.
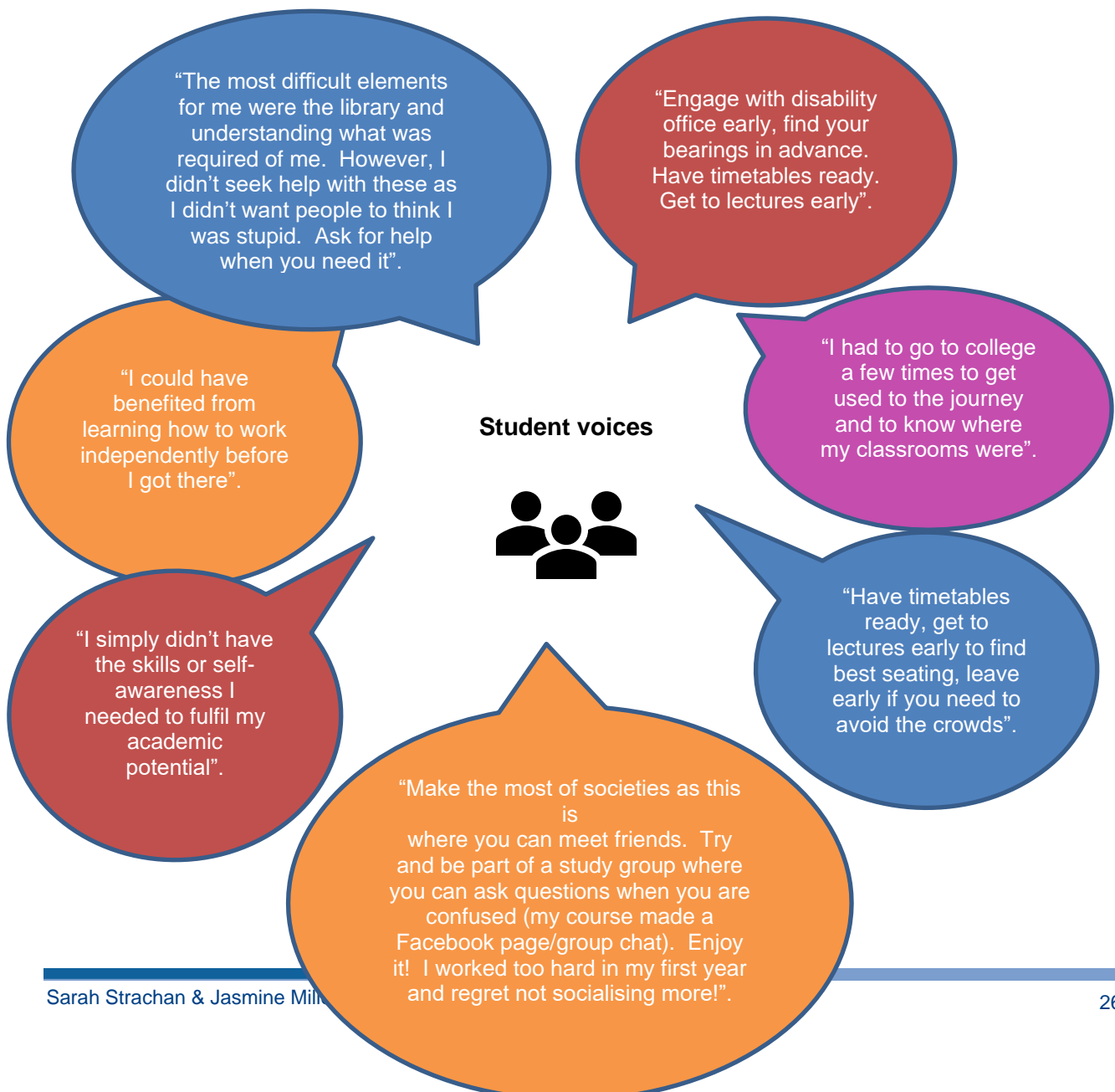
General preparations, such as finding your way around the campus, checking the route(s) to and from lectures and how to find rooms within buildings were highlighted by many students, who advocated that new students should take time to work these out in advance. In addition, the geography of the campus in relation to how to travel from living quarters (and how long it takes) requires advance preparation and practice.

A feature of many responses related to the importance of being proactive and persistent in seeking support. This included getting in touch with Disability Services in good time and applying for support early, so that academic and other worries did not get on top of the students in the early part of term. It would also be helpful if schools supporting the women's transition were informed as to what and where additional support is available so that they can guide prospective students to the appropriate resources in good time. It is possible to organize assessments and funding for students once they have accepted their places in the tertiary education system, enabling students to receive support

software etc in good time. This would have the added advantage that they can have time to familiarize themselves with this, prior to commencement of the new academic year.

Within tertiary education, there is a tension between the individual being independent and receiving sufficient support in order to thrive in an unfamiliar environment and to cope with the additional demands of academia. Whilst the student must take some responsibility for this themselves, as ultimately it is them who will benefit, it is incumbent upon tertiary institutions to make access to support as easy as possible, especially in an environment where more and more students with learning differences are accessing the higher education system, as discussed in the Literature review.

We conclude this discussion with a visual containing comments and advice from participants in this research, with a view to supporting autistic and dyslexic women transitioning to tertiary education services in the future.   The full texts are available in Appendix 2.

Student voices

"The most difficult elements for me were the library and understanding what was required of me. However, I didn't seek help with these as I didn't want people to think I was stupid. Ask for help when you need it".

"Engage with disability office early, find your bearings in advance. Have timetables ready. Get to lectures early".

"I had to go to college a few times to get used to the journey and to know where my classrooms were".

"I could have benefited from learning how to work independently before I got there".

"Have timetables ready, get to lectures early to find best seating, leave early if you need to avoid the crowds".

"I simply didn't have the skills or self-awareness I needed to fulfil my academic potential".

"Make the most of societies as this is where you can meet friends. Try and be part of a study group where you can ask questions when you are confused (my course made a Facebook page/group chat). Enjoy it! I worked too hard in my first year and regret not socialising more!".

CONCLUSION

CONCLUSION AND RECOMMENDATIONS

In conclusion, this research focused on how well-prepared women feel when they move into tertiary education and the experiences they have once they are there.

A high percentage of the participants in the study relied on 'others', families and friends as the people who supported them the most when they transitioned into tertiary education. This would suggest that, whilst many students have developed resilience , for example in asking for support, in fact, the skill sets with which they begin their tertiary education are insufficient to cope with the demands of further and higher education. These participants identified the need for more support with study skills, revising, preparing for exams and having instructions given in a format that could be understood. This could be provided by schools teaching more strategies to encourage skills such as independent working, essay structure and planning during the senior years, but support should also be provided by tertiary education institutions in order to support students in using and applying this knowledge in an academic environment.

It would appear that college/university staff may need to be given additional training or awareness raising so that they could become more familiar with the additional support needs of students with learning differences, as well as having a knowledge of where to signpost students. Ideally this should be a mandatory requirement, however, it is recognized that this can be particularly difficult in a complex environment where communication may be difficult between a college/university's centralised support system and faculty-based tuition centres. Additional investment from the relevant authorities would be necessary to implement the above suggestions, but the end result would facilitate the transition from school to tertiary education for not only neurodiverse students, but all young people experiencing this important transition.

Thinking about the transition from school into tertiary education, one participant highlighted a piece of advice from an article by Susie Agnew in a recent edition of 'Dyslexia Voice' (Dyslexia Scotland's members' magazine), advising students to go into their college/university before their course started, in order to make contact with the student disability service and beat the rush of students at the beginning of the new session. Many current students recommended that new students with dyslexia

and autism should take extra time to familiarise themselves not only with the geography of the university, but also with how to use a library and specialist software. Many universities provide orientation days or specialist IT support prior to the commencement of the first semester, and these may be beneficial to autistic and dyslexic students in order to give them a head start whilst the university is relatively quiet. Potential students should also investigate the plethora of study and organizational apps that are available for phones and tablets in addition to computer software.

Participants identified that they needed more support from tertiary education services for their mental health, it is therefore important that all staff who have contact with students should be aware of the support services that are available within their own institution, so that students who request help can be effectively signposted for additional support. It would be useful if students were also provided with a checklist of where to go in the event of particular worries, such as academic or mental health issues.

Recommendations for extension of this research project

- Extend distribution of questionnaires to boost numbers for analysis and therefore present more representative responses
- Add detail by developing semi structured interviews for more in-depth comments from students in future research
- Target colleges more specifically in order to get additional data from students on enterprise/apprenticeship schemes in comparison to more academic tertiary education approaches
- Compare students who live at home during the university years, for example many students at Glasgow universities, with a university where more students go away to tertiary education, for example in England.
- Compare the different types of support that are available to investigate which is most effective.
- Explore the concept and effects of 'institutionalised disablism' (Gibson & Kendall 2010) on students in the tertiary setting.

Recommendations for tertiary institutions

- Schools to provide more guidance into independent learning, study skills etc. prior to the end of schooling.

- University staff outreach to schools, in order to encourage the development of skills such as library usage, independent study/living etc. also to discuss the options available for additional support. Whilst this would require significant financial investment, the end result could be that fewer students experience the mismatch between expectations and experience and are therefore more able to continue tertiary education studies (Bolt and Graber, 2019)

- Universities/colleges to provide an optional, additional period of orientation prior to starting university, which is specifically designed for students with learning differences, - this could include orientation around the campus, libraries, study skills etc.

- Funding to library staff for additional training and support of students at all stages, including sessions being provided prior to the start of the academic year, in order to facilitate transition.

- Our results suggest that Bolt and Graber (2010) and Neilson (2011) may have correctly advocated that students need to develop a resilience and overcome difficulties for themselves in order to succeed at tertiary level, although it is possible that this is due to the fact that third party support was difficult to source or unreliable. If this was the case, then it is important for tertiary education institutions to inform both students and staff more effectively about how and where to access third party support.

- CPD for lecturers both to raise the level of understanding of learning differences, and to be able to support/know how to access support for students.

- More research into how best to examine/assess students with learning differences, using multi-disciplinary approaches, oral or visual methods rather than the traditional essay style approach.

- Timely provision of additional equipment such as computers, software etc, to allow for students to familiarize themselves with the technology

ACKNOWLEDGEMENTS

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TRANSITION TO TERTIARY EDUCATION QUESTIONNAIRE

Background to Questionnaire

This research is being supported by the General Teaching Council Scotland's "Teachers as Researchers" initiative, thanks also to Dr Catriona Stewart from Scottish Woman's Autism Network (SWAN) for her help with this questionnaire.

We wish to understand how well prepared you, as an autistic or dyslexic woman felt (or feel) on transitioning into tertiary education. Do you feel you have/had sufficient skills and access to the right support to draw on in order to cope with the demands of further/higher education or apprenticeship?

The main objectives that we want to address through the questionnaire are:

- How well-prepared do women feel when they move into tertiary education?
- Can knowledge learnt in school transfer into skills which will help to cope with the demands of tertiary education?

Based on feedback from the questionnaires, we aim to develop a set of guidelines to support autistic and dyslexic women transitioning to further/higher education.

All questionnaires will be kept completely anonymous and confidential on password protected computers and used only for this research project.

By completing the questionnaire, you consent to your responses being used for the research project.

Thank you,
Jasmine and Sarah.

TRANSITION TO TERTIARY EDUCATION QUESTIONNAIRE

When you went to tertiary education how would you rate your level of preparation/confidence under each of these areas?
*Please circle your answer.

1. What type of learning difference do you have?
    *Autism/Dyslexia/Other

2. When were you diagnosed?
    *School/tertiary/no formal diagnosis.

3. What type of tertiary education are you attending?
    *University/College/Apprenticeship/Other (please specify)

Please indicate how confident you feel with each of the questions below by circling the number that is most relevant to you. Add further comments if you wish.

Scale for all answers is 1-4:
1 - Not confident – don't know how to start
2 - Low confidence - would need help
3 - Somewhat confident – able to attempt independently
4 - Very confident – no help required

4.Knowing where to go for academic support?	1	2	3	4	n/a
5.Asking for help with your mental health?	1	2	3	4	n/a
6.If you ask for help, the right support is available to you?	1	2	3	4	n/a
7.Study skills (reading, note taking, essay writing)?	1	2	3	4	n/a
8.Using new IT systems and software?	1	2	3	4	n/a
9.Learning/revising and preparing for exams?	1	2	3	4	n/a
10.Instructions are given to you in a format that you can understand?	1	2	3	4	n/a
11.Working independently?	1	2	3	4	n/a
12.Organising your timetable?	1	2	3	4	n/a
13.Information will be available to enable you to get to lectures on time?	1	2	3	4	n/a
14.Coping with lectures?	1	2	3	4	n/a
15.Finding your way around a new place?	1	2	3	4	n/a
16.Cooking, cleaning, shopping?	1	2	3	4	n/a

Comments

17.What or who helped you most when you transitioned into tertiary education?
18.What advice would you give someone who is moving into tertiary education?
19.Any other comments relating to how well you felt prepared for your transition into tertiary education?

Thank you for taking part in this questionnaire.
Please contact us if you want further information about this research at
miller.jasmine28@gmail.com and sstrachantutor@gmail.com.

APPENDIX 2

These guidelines capture quotes given by autistic and dyslexic women who have transitioned into tertiary education services. They have been grouped according to themes and summarised for ease of reference.

Diagnosis

Summary:

- ✓ *Early diagnosis is helpful*
- ✓ *Understanding more about diagnosis makes things easier*
- ✓ *Helps to get correct supports in place early*

Quotes:

- I just wish I knew I was dyslexic before I went to university as it completely changed the way I learned once I knew I was

- If I were to give my 18-year-old self advice now it would be: 'in freshers' week, go to your director of studies, tell him you think you're dyslexic and sit on his desk until he refers you for an assessment.' Because until you understand how dyslexia affects you, and know what you need to do in response to it, you won't be able to learn properly and learning will be a demoralising, frustrating and dissatisfying experience for you. Not only that, your self-esteem will suffer and this will have a serious knock-on effect on you as a person, in all areas of your life, not just learning

- I was not aware it was autism causing my issues with tertiary education- I have been unable to complete my courses each time as I lacked confidence so gave up each time as I felt frustrated being unable to articulate myself correctly. I ended up in meltdown every time. I wish my autism had been noticed earlier so the correct supports could have been put in place

- Being diagnosed really helped me move forward

Preparation:

Summary

- ✓ *Most students felt ill prepared for university, specifically in the following areas:*

- *admin required, form filling etc*
- *journeys*
- *geography of uni*
- *study skills/independent learning skills were poor*
- *how to use a library*

Quotes:

- I had to go to college a few times to get used to the journey and to know where my classrooms were

- I think it definitely helped me to study in my home city, in an environment I'd already familiarised myself with by using the university library which I got access to because I was doing SYS French in my 6th year.

- I took a gap year which meant I was better prepared for living away from home which meant I didn't need to focus on those things. I really struggled with the preparation of coming to university- which bits of admin I needed to do and signing up to classes/ matching your timetable/ enrolment was a nightmare! I strongly believe there should be a support system or that- step by step guides opposed to long winded emails.

- I could have benefitted from learning how to work independently before I got there

- I was unprepared and had teachers in secondary school tell me I wouldn't cope which was unhelpful

- I really was clueless and then got so overwhelmed

- I didn't feel very prepared at all in a broader sense, however I did have study support in place that helped lots. Schools/other supporting bodies should try and emotionally prepare students move as uni can feel quite isolating at times

- Some of the reasons that I struggled are related to not knowing anyone who had been to university and not knowing how a library works.

- I simply didn't have the skills or self-awareness I needed to fulfil my academic potential.

- I struggled the most in my first year of uni with academic writing.

- I didn't know I was unprepared. That was helpful. Overthinking is bad for me

Support systems:

Summary:
- ✓ *get organised early,*
- ✓ *access support systems in good time,*
- ✓ *make frineds who can support you*

Quotes:
- "I think the best piece of advice I've come across recently was in an article by Susie Agnew in a recent edition of 'Dyslexia Voice' (Dyslexia Scotland's members' magazine). It was an excellent article. In it she advised any students to go into their university before their course started to make contact with the student disability service and beat the rush of loads of students at the beginning of the new session all inundating the student disability service with their needs".

- Know what works for you and what you struggle with and find ways to adapt that work for you

- Access peer support from autistic community & IT resources to help with dyslexia.

- Communication with disability services and tutors. Ask for what you need, don't wait for it to be given.

- Have a good support system and don't overthink it

- Make connections before you start and know where classes are and meet with support person

- Make the most of societies as this is where you can meet friends. Try and be part of a study group where you can ask questions when you are confused (my course made a Facebook

page/group chat). Enjoy it! I worked too hard in my first year and regret not socialising more!

- It is hard at first finding friends and getting into the swing but if you put yourself out there you will probably find what's right for you

Academic organisation:

Summary:
- ✓ *Be organized,*
- ✓ *allow time for tasks,*
- ✓ *get support in place early*

Quotes:
- Don't be afraid to ask for help, get extra time if needed.

- Stay organised and set time for tasks

- Mind maps and bullet points, journal

- Start assignments as soon as possible to have more time to look over and complete

- Engage with disability office, find your bearings in advance. Have timetables ready. Get to lecture early to find best seating, leave early if needed to avoid crowds.

- I would have different advice for autistic people than for all dyslexic people. I would tell an autistic person to apply for disabled students' allowance. Also I'd tell them not to panic when people expect you to be independent. Someone legally has to support you, so don't be afraid to fight for it. I don't have any advice for dyslexics

- Sort out food and cook big batches so that you have more time in the week for work.

- Stick with it, if you really are interested in it, if not don't push yourself it is ok to change your mind. To ask if you can get a copy of lecture slides and/or record the lecture. Maybe find a club or society that interests you and join/go along.

- Seek help because you need to ask to receive it. Don't be afraid of asking. There is help available but it's very difficult to know where to go/who to ask.

- Don't worry if you feel overwhelmed and that everyone else is finding it easier than you to settle in as most people feel exactly the same as you! Ask for help if you need it as its better to get it early before it becomes a massive issue and give yourself a break once in a while as its a huge move and will take time to adjust.

- The most difficult elements for me were the library and understanding what was required of me. However I didn't seek help with these as I didn't want people to think I was stupid. My advice would be to ask for help when you need it.

- Make sure you disclose that you have ASNs. Don't be afraid to ask for help at any time through your degree. Even if that means asking about things more than once. Find out what support is available to you. Think about what you are finding difficult and if there is any way you could solve this.

Academic support:

Summary:
- ✓ *importance of asking for help if required*
- ✓ *Awareness of where to go for help*
- ✓ *Using college as a stepping stone can be useful*

Quotes:
- Don't be afraid to seek help if overwhelmed

- I found the Student Disability service really helpful however I have no idea who to ask for help with mental health issues.

- All the support I've received has been excellent and really helped me in my first year.

- I went to college before going to university and it was a very useful stepping stone between school and uni. The smaller class sizes and the fact the lecturers were more easy to

communicate with helped with general organisational difficulties. The smaller group of students doing my course created a more supportive web of friends and classmates.

Other comments:

- I think lecturers should think of better icebreakers than 'tell everyone here a little about yourself' it's daunting and I don't know what the question really means...

- I feel that there are class dynamics in relation to the transition to tertiary education. Therefore, I feel that students who have come from a lower-class background and also have a learning disability will struggle more