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## Students with Dyslexia: Research Projects at Northumbria University

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**ABSTRACT** *Northumbria University has about 700 registered disabled students, the majority of whom (around 58 per cent) are registered as having dyslexia and account for approximately two per cent of the total student population. Therefore dyslexic students represent the largest single group of disabled students and are those with whom most staff are likely to come into contact. The research authors were keen to ascertain whether there was a difference in academic performance between dyslexic and non-dyslexic students in respect of degree classification and assignment marks and to investigate whether dyslexic students generally felt supported in their academic studies. Research involved both qualitative and quantitative strands and the areas explored include pre expectations; general support throughout study; methods, flexibility and clarity of learning tasks, in particular assessment and levels of performance throughout and at the end of their study. This research is ongoing, however, findings have proved invaluable as a basis in the construction of good practice guidelines in dealing with the pedagogic needs of this diverse student group.*

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### Introduction

Northumbria University, at the time of writing this article, had around 700 registered disabled students. The majority of these, around 58 per cent, were registered as having dyslexia and accounted for approximately two per cent of the total student population. Therefore dyslexic students represent the largest single group of disabled students and are those with whom most staff are likely to come into contact.

Northumbria has a strong commitment to providing appropriate support services for dyslexic students. The university has a number of disabilities advisors, two of whom specialise in dyslexia. Services offered include screening tests, aid (including financial) in respect of full dyslexia assessment, access to specialist software, one-to-one support and access to a support group. With a student's permission relevant staff are advised of the student's difficulties and supportive strategies are suggested. As recommended by a psychological assessment, special exam arrangements are made which may include extended time, scribes, use of a PC, and so on.

Nevertheless, particularly when students previously had bad experiences, it is felt that it is often difficult to get students 'through the door'. Additionally, as a student progresses through university, lecturers change, programme options are made, and it may not always be possible to inform appropriate staff in advance. The disabilities adviser and dyslexia tutor try to encourage students to be proactive in approaching lecturers and learning resources staff to ask for help or explain their needs as such staff are not always informed directly by the disabilities adviser. Therefore within this research, authors were keen to ascertain whether there was a difference in academic performance between dyslexic and non-dyslexic students. For example: did dyslexic students receive lower degree classifications than non-dyslexic i.e. were the former more likely to be classified as 2.2 and third while the former were more likely to be classified as first or 2.1? Were assignment marks of dyslexic students throughout their programme likely to be lower than those of their peers?

These hypotheses and the desire to investigate whether dyslexic students generally felt supported in their academic studies form the basis of the study.

## Methodology

There were two strands to the research, qualitative and quantitative. About 100 of the 400+ dyslexic students at Northumbria in their final year in 2003 were used for the qualitative study. Students who graduated in the summer of 2003 were interviewed. Contact was established via the university's Disabilities Adviser to seek permission to divulge names and contact details of the students to the researcher. Once names and phone numbers were provided, the researcher conducted brief telephone interviews with 17 students from a variety of the university's academic programmes.

The quantitative sample was drawn from those graduates of Northumbria University between 1995 and 2003 that had signified dyslexia on their UCAS form and were therefore assumed to have been diagnosed with the condition prior to enrolling at university. The university's information systems allowed researchers to randomly sample students whilst attempting to ensure an appropriate quota representing all schools, programmes, cohorts (based on start year) and gender. Anonymous data was requested on both final degree classifications and assessment marks for all students in the identified cohorts. In all, 22 cohorts of students, from six of Northumbria's ten schools, were selected.

## Expectations and Support in Admission

Biggs (1999) and Entwistle (1996) present evidence which advocates that students' pre-existing abilities and skills, interacting with the teaching and departmental context experienced, influence their learning and studying and, concomitantly, the quality of their learning outcomes. This suggests that ensuring students are provided with a supportive environment from the offset could be a key factor. For higher education (HE), initial contact for the student with the university is at admissions phase. During the interviews, some interesting observation was reported on the admissions process, previous experiences and expectations of support.

Of the 17 students with dyslexia interviewed, 12 had been diagnosed before entering the institution. Of

those 12, three students reported having had extra English lessons at their schools or colleges prior to coming to Northumbria University. One of these students said they had benefited greatly from such help '*beyond the basic exercises where you look at B and D and that sort of thing*' and hoped to have similar help at university. One student reported having had extra time in exams at high school and another, at college, had a tutor to look at her work and help her with her spelling.

For one student, help at school comprised being placed in remedial classes. Other students had no support at all. One student reported that his dyslexia was seen as a problem by his school, which made him feel that he was '*being awkward and they were being hassled*'.

Two of the twelve had been at other universities prior to Northumbria and had been diagnosed while in those HE institutions. One of these students commented on her dyslexia being diagnosed towards the end of her course:

*At the time nobody could do anything for me – they said 'dyslexia, what does that mean?' I said, 'I don't know.' I just left. I was brought up in an era where people did not acknowledge dyslexia. When I finally was diagnosed, no one knew what to do about it.*

The other student transferred from another university to Northumbria in his second year. His dyslexia was identified in his first year at his previous university after his personal tutor suggested dyslexia screening, subsequent to the submission of a piece of non-assessed work. This is illustrative of how a combination of heightened staff awareness and formative assessment can be a useful diagnostic tool.

Among those who did know that they were dyslexic when they applied to Northumbria University, all but two declared this on their application forms. These students did not feel that disclosure of their dyslexia would influence their university acceptance, knowing that the university could not discriminate against them:

*I don't think it crossed my mind that much. I thought it would be harder for me at university, with written stuff.*

Two students had not mentioned their dyslexia on any of their application forms because they were worried that this might influence the university's decision to accept them:

*I thought I would be penalised. I didn't think I'd get onto the course anyway because it was oversubscribed I had thought I might struggle with the essays. When I knew I had got through rang up and had a word with someone (in Personnel) and said I am dyslexic but didn't put it on my form because I didn't think I would stand a chance. She said we are not like that, it'll be fine.*

One student did not disclose his dyslexia until after his placement year at which time he said he had already proved himself and realised that it was not much of a hindrance.

It is clear that for these students their pre-existing support experience had been somewhat mixed with slightly more negative than positive incidences reported. During the interviews it was apparent that, on the whole, based on these experiences, they did not have great expectations in respect of the support they would receive at Northumbria University and it appeared that students felt they had to take the initiative.

A couple of students also found that there was some delay before adequate support was in place. One said that, although she tried to get help from the Disabilities Adviser and her colleagues, the process seemed time-consuming since it was difficult to make appointments. *'I was rushed off my feet. Didn't feel as if knew what was going on.'*

Another found that, because her last dyslexia test had been over five years previously she had to be retested. This took time and she did not get equipment until the end of first year:

*That was not really anybody's fault; I didn't know it was there. I don't know quite how they could have put it in place earlier....*

So although central support systems are in place it would appear that improvements could be made on highlighting the services available to the students as early as possible.

### **General Support Throughout Study**

Along with pre-existing abilities and skills (Biggs, 1999; Entwistle, 1996), Morgan and Beaty (1997) and Beaty *et al* (1997) mention how staff-student relationships have an influence on the learning outcomes of dyslexic students. As previously mentioned, with a student's permission, relevant staff, usually programme and/or guidance tutors, are advised of the student's difficulties. These identified individuals are then usually asked to act as a liaison point between the student and teaching staff to discuss how students may be assisted with their learning. It would appear that positive comment often depended on the background knowledge of dyslexia by the teaching staff. This was clearly expressed by one student.

*It is dependent on lecturers and how sympathetic they are or how knowledgeable they are about dyslexia. Some of them haven't a clue. Need to have a basic understanding of what it is and how they could make things easier for students Even to know which students in the class are dyslexic and checking if they need things clarifying without making a big scenario about it so that dyslexic students have to put their hand up and they need to come over.*

For one student this lack of general understanding was frustrating, but he acknowledged how it was difficult:

*With a lot of the tutors they don't have an understanding of dyslexia I don't have an understanding, to be totally honest. They understand you need more time but don't really know how to help me. And I don't really know how they could help me!*

However where this understanding did exist students responded very positively. In one case a guidance tutor had a dyslexic sister the student noted: *'amazing he really understood where I was coming from when I got frustrated with the reading'*.

Most students were very complimentary about the support given by the specialist dyslexia tutor. One student commented:

*I have learned where my difficulties are, which is why I relied more heavily on [dyslexia tutor]... my work makes sense to me and I often assume people know what I am talking about but my work does not flow. I make assumptions and that is where [her] job comes in, she helps it flow.*

In one case, it was pleasing to know that although the student said she did not often need help she was convinced that, if she had, it would be there:

*If I needed to knock on door and say to lecturers I have not followed this, they would be more than happy [to help]... In the past when I said I wanted to read up more on this, lecturers have given me list of places to look, things to look up.*

Another student said that staff were supportive but did not have much idea what dyslexia was or what was involved and therefore the student felt *'I had to do a lot of explaining myself'*.

Interestingly, in one case the student's guidance tutor was also course director. She reported on how this felt intimidating as she was concerned that in the director role the tutor may think the programme too difficult for her. However, she felt she could speak freely with another class teacher who has a friend who is dyslexic.

Generally, most tutors were seen as sympathetic but one student did report how on their programme he felt that:

*I was fighting for everything and I felt so stupid sometimes that I would have to ask in the middle of a class to clarify what they*

*were saying. It was embarrassing. I was thinking, should I ask them this question and thinking yes I will have to because I don't understand.*

In comments generated by students it is clear that the quality of staff-student relationships is an important issue to them and some correlation seems to exist between favourable responses and the background knowledge on an individual staff member. In the cases highlighted above this knowledge often came from personal experience of dyslexia within family and friends. This would suggest that guidance tutors should be recommended to attend dyslexia awareness courses as an element of good practice within this role.

### **Advance Provision of Programme Materials**

Although there are a number of manifestations of dyslexia, recognised common difficulties include the difficulty for an individual to get down their thoughts on paper, note taking, listening and remembering, comprehension and trying to make sense of notes taken previously. To help students cope with these difficulties, it is considered good practice to, on request, provide handouts prior to lectures. This allows students to read beforehand to assist in familiarising themselves with the topic and could help them with supplemental note taking. As for some, the adjustment of type and size of font used on documents can also help. Lecturers should be encouraged to provide materials in an electronic format where possible. During interviews, there was evidence that most did provide materials in advance but there was concern that the time lag for provision was quite short, for example, generally one day in advance.

Inevitably other difficulties arose, for example a student reported that the lecturer did not use either Overheads or PowerPoint as a presentation medium *'A nightmare, although amazing to listen to'*. This lecturer agreed that, if the student gave him a disk, he would save skeleton outline from which he presented his lectures. However, he would only give this after lectures to ensure she attended!

On another programme, use was made of a number of visiting lecturers. This caused difficulties for the student, as they were unable to contact them beforehand to ask for notes. They reported that in some cases, notes would be brought with them and made available to students at the end of the sessions whereas others 'did not even think' to do this.

In another case, there were good intentions but, unfortunately, these were only short-term:

*I did approach one lecturer and ask for lecture notes in advance. He sent them to me once and that was it! I just thought, oh well, I have managed this far.*

In one case, a student felt arrangements for advance provision of materials should have been handled by their guidance tutor. When this was not forthcoming from all lecturers; this led to a clouded judgement of the guidance tutor.

*The guidance tutor was not that great.*

The end of the first example is quite enlightening, anecdotal evidence does suggest that (unlike in this case) most lecturers do often use electronically generated presentations but are slightly reticent about providing these in advance of the lectures through fear of non-attendance. In informal conversations with many academic staff, this is a view, which is biased by the student group in general, not those with specific learning needs such as dyslexia.

### **Clarity of Instruction in Learning and Assessment Tasks**

It is within this area and particularly with assessment that dyslexic students are likely to find their biggest challenges. A number of dyslexia manifestations fall within this area. There may be a delay in achieving the automatic learning of tasks so that they are done without thinking. For example, writing down words, extra mental effort is required as there is often a need to constantly relearn or practise activities. This can manifest itself within certain learning tasks, implicit questions are often missed, sequencing of thoughts and ideas can be difficult.

This is exemplified by one student, who discusses how he would go to a tutor only if he had a problem but explained that, in fact, he did not always realise he had a problem. If he misunderstood something, he did not always realise he had misunderstood it.

*I don't think they appreciated how much having dyslexia can affect students. What they missed out on was it is not just about written work. It is sometimes about understanding because you have a very unique way of seeing things sometimes...They did not pick up on that until the second year.*

On a positive note, the student felt that in the second and third year academic staff were more proactive in checking his understanding.

Some students felt that assignment tasks were not always made clear at the outset, but most felt that they could go back to their tutors to ask about them. However, some examples of good practice were cited. A Physiotherapy student said they always had a lecture prior to an assignment which indicated exactly what was needed and afforded her 'the opportunity to delve in depth'. Whilst a student in Design noted how the briefs were always really flexible and students could do whatever they wanted as long as it fulfilled the requirements i.e. could tailor to suit own special skills, e.g. for presentations, this student used voice-overs so she 'did not have to think in-between'.

For dyslexic students an estimated 40 per cent longer time (Anon, online) is spent of learning tasks above what other students may have reasonably spent. Therefore this can potentially have a major impact on assessment tasks. Methods used and the flexibility are potential crucial factors and are discussed next.

### **Methods and Flexibility in Assessment**

At Northumbria University, dyslexic students are granted an automatic two-week extension on assignments but not all students had been made aware of this fact. One student claimed that she found out only in her last year that this facility was available.

Generally dyslexic students reported that, if they required extensions of deadlines on assignments, they were given these by their tutors. However, occasionally students reported difficulties. One said that some tutors' response to a request for an extension tended to be, '*well you have known about this for ages*'. The other concurred that some lecturing staff held a negative attitude to granting extensions.

The desire to be the same as the other students was strong among the students interviewed, one of whom commented that, whether you are dyslexic or not you have to get an assignment done within a time frame and she felt it was all a matter of good time management. The following exemplify comments made by the students:

*I didn't really want to have extra time because it just dragged out what I was doing.*

*I just wanted to be accepted as the same...I don't think it would have benefited me that much [from an extension].*

*I am very organised. We had five essays to hand in at the same time at the end of the year. I honestly thought I was going to have to [ask for extra time] but I thought it I did that I would not get my pass mark at the same time as everybody else.*

In respect of methods of assessment, it generally was felt that exams did not favour dyslexic students and that more should be based on course work, e.g. one student commented that six months worth of work was assessed in a two hour examination which she felt disadvantaged her. Students said that they would prefer more continuous assessment and that it should take different forms, e.g. some dyslexic students are strong vocally and would appreciate more oral assessment.

UK HE has experienced a sea change in recent years in forms and methods of assessment (Hounsell *et al*, 1996; Gibbs, 1995; Nightingale *et al*, 1996; Banta *et al*, 1996) with the introduction of portfolios, proposals,

journals, log books, oral, audio-visual and mixed-mode assignments. It has also involved group or collaborative assessment and peer assessment (Hounsell & McCulloch, 1999). These new forms and methods may impact both on students' approaches to studying and on learning outcomes (Hounsell, 1998) and may be beneficial to students with dyslexia.

However, there was some evidence of preference toward traditional forms of assessment. One student expressed a slight preference for individual essay based assignments:

*I like doing essay assignments the best, partly because you've got a bit longer. It's just down to you personally what you do and how you work, whereas when you are working in a group you are relying on other people to do the work. [Presentations] I find it quite daunting standing up and having to remember, because I have a learning disability, what it is I have got to say..... Presentations are quite difficult for me..... I don't like exams because of the pressure and again I find it hard to remember because of my disability.*

Conversely, another student expressed a preference for examinations:

*I am so disorganised in getting started, planning out and deciding when I have done enough background reading that when it comes to assignments I am always running late. So, I prefer exams because you have a set time.*

One aspect many students did agree upon was the desire to have regular (every couple of weeks or so) scheduling of assignments:

*I think I prefer workbooks – work that is ongoing rather than a specific essay because I feel under less pressure when there is a small piece of information to find, it's less challenging. I don't like presentations – having to speak in front of the group.*

*The way assessments are scheduled tend to have two main points – just after Christmas and just before you break up for the summer. I have a learning difficulty and it is quite hard for me to plan this, so it would be better for me personally if it was spread out over the year more, rather than in two big chunks, when you have about seven assignments to get in. I think it would be better if it was split into four chunks rather than two.*

*I get all my assignments at the end of each module, obviously with all the modules ending at the same time you need a lot of organisation. I would prefer to have them spread out more.*

*Generally, my assignments are fairly regular, but for some reason we ended up very busy just before Christmas. On the whole I think this works fairly well.*

It is also notable that two of the students providing comment above expressed a dislike for presentations as an assessment method.

There was some concern expressed by a few students about the need to continually reiterate their dyslexic status when they handed in an assignment. For example, one student, even though she had informed relevant tutors of her dyslexia she reported how:

*Some ...seemed to think, 'right Ok' and then did nothing about it...I know they get email about dyslexics but they don't know me. I am just a name.*

Subsequently she felt she had to append a note '*just to let you know I am dyslexic*' to each assignment.

Staff themselves appear to be a little unconfident in assigning marks to piece of work with one reporting how a lecturer voiced this concern to them:

*one of my lecturers did say to me he did not know if he was marking my work correctly, giving me enough for what I had put down,*

*had no idea. They need criteria...He probably took marks off that he should not have. ...They desperately need help!*

The same student felt that, because her tutors had no idea what was permissible or not, she used to spend much time phoning the Disabilities Adviser to intercede on her behalf because, if she approached her tutors direct:

*their first reaction would be 'No, we can't do that', straight down the line rather than saying I don't see why not, or I'll ring the advice centre and check it out and see what they think. So I just stopped going to them first and went straight to [Disabilities Adviser] and said could you contact my lecturer.*

These concerns led us to investigate performance on a wider scale.

### **Assignment Performance**

If dyslexic students were disadvantaged in terms of marks in comparison with their non-dyslexic peers, one might expect their assignment marks to be lower than the median mark for their cohort.

Quantitative data was extracted from a number of courses where there were dyslexic students within the cohort. These programmes were a representative cross section of Northumbria University. However, for most cohorts the number of dyslexic students was very small (usually between two and four). Although these small numbers should be treated with some caution, results indicated that programmes such as Sociology, Urban Property Surveying, Economics and Marketing Management every dyslexic students' assignment mark was below the median mark for the cohort ( $p < 0.05$ , non-parametric sign test). Conversely in two programmes (Fashion and Fine Art), the dyslexic students' marks were actually above the median mark for their cohort. To illustrate the caution that must be applied to these results for Fine Art, in 1997 dyslexic marks were above the median in the following cohort marks dropped to below the median. In four out of 22 cohorts no significant differences were found.

At first, the finding above would suggest programmes that are heavily reliant on theoretical and written work (Sociology *et al*) are more challenging for dyslexics than those seen as ‘practical’ (Fashion). Does this hypothesis follow on a school basis? Programmes located in the Design and Health Schools might be expected to contain more practical work than others? Upon examination of academic school marks, no evidence was found to support this hypothesis ( $p>0.05$ ).

Therefore, investigation turned to the specifics of assignments. In this case, one might hypothesise that dyslexic students will receive better marks for those assignments which assess elements such as designing, creating and performing and may perhaps receive poorer marks for assignments assessing elements requiring the accessing and managing of information sources, particularly written resources. See Table 1.

Table 1: Mean Marks of Students by Assignment Type

Assignment type	Mean mark attained by all students for all modules	Mean mark of dyslexic students for all modules
Essays	59%	55%
Portfolios	61%	60%

Incomplete information (i.e. sample sizes, standard deviations, withdrawals) meant that formal statistical analysis could not be conducted with any accuracy. However, in Table 2 raw results suggest that it is very unlikely that there would be a difference between performance of dyslexic and non-dyslexic students between the assignment types. These findings are consistent with those of Jorgensen *et al* (2003) who report that a comparison of average grades and course pass rates revealed that students with disabilities generally did at least as well, and in some cases significantly better, than their non-disabled peers. However, Osborne’s (1999) findings on written assessment suggest that dyslexic students are still disadvantaged in examinations, despite the special provision available to them. This is examined in more detail next.

## Examinations

Some programmes within the sample did not have any examinations as an assessment method. In fact one student reported that the fact there were no exams was one of her main reasons for choosing that particular programme and went on to suggest that this may be what attracted other dyslexic students to certain programmes.

Of those programmes, which did include examinations all students clarified that extra time and any requested special exam arrangements (e.g. readers and scribes) were honoured. Often the dyslexic students were in a separate room:

*It was really helpful being in a separate room since they all had the same amount of time so you were not disturbed by other people leaving beforehand.*

However, this was not always the case:

*It is all computerised and that was a bit annoying. People were coming in halfway through anyway because you just booked [space in a lab] when you wanted to do it. Now and then you would hear people talking. It did get a bit disturbing, trying to switch off.*

The nature of some exams proved problematic for other students, e.g. one student reported how an examination:

*was really a memory test of three years worth of work... filling in missing words, things I’d never seen before. I needed questions clarifying. It took me all my time to read the paper. They wouldn’t let you take a dictionary in and would not clarify any questions...I must have scraped through by the skin of my teeth.*

Programmes in the research sample which undertook examinations were inspected and there was some evidence to suggest ( $p<0.05$ ) that dyslexic students do score lower in examinations than their non-dyslexic

peers. This was found to be true in all but one case and hence is consistent with the findings of Osborne (1999). This would indicate that allow the institution has successfully implemented a number of examination support mechanisms further improvements could be made to supply a more conducive environment.

To conclude, final degree classifications were examined in an attempt to ascertain whether dyslexic students, despite all support mechanisms, may be underachieving at graduation?

### Final Classifications

One might assume that dyslexic students would leave university with lower classification than their non-dyslexic counterparts. Table 2 illustrates both observed and expected frequencies for the research sample.

Although on first sight it would appear that there is some slight underperformance in the dyslexic/2.1 category it can be seen this is also the case for non-dyslexic students. Indeed no statistical evidence was found ( $p>0.05$ ) suggesting any difference between the two groups. However, this does not mean Northumbria University can be complacent about the support we give dyslexic students, as previous findings suggest, at the individual assignment level there was some potential cases of underachievement.

These results are similar to those of Jorgensen *et al* (2003) who found that students with both physical and learning disabilities had graduation rates virtually identical to those of non-disabled students. The National Working Party (1999) report also concluded that, in universities where there was an established

system of support for dyslexic students, degree classifications achieved by dyslexic students were not significantly different from other students.

### Conclusion

In this research, a multi-faceted approach was taken in the investigation of the experience of dyslexic students at Northumbria University. However, in attempting to establish whether academic performance was 'compromised', at a programme level, the small numbers of dyslexic students within a cohort established only indicative rather than conclusive evidence. Richer information was gained from the qualitative processes.

In line with much of the literature (Biggs, 1999; Entwistle, 1996; Peers & Johnson, 1994; Lizzio *et al*, 2002, it would appear that students' pre-existing experience and expectations can influence student attitudes to HE relationships. Evidence suggests that getting information the earlier the better is a useful strategy to pursue. It is proposed that when joining instructions are posted to students, information on all Student Services (including Dyslexia Support) is included. There would be some argument that with two per cent of the student population expected to be dyslexic, this would be overkill. However, other groups e.g. international students are in high proportions and they would also benefit from timely knowledge. It is also suggested students would benefit from a named contact within their academic school as a liaison point.

There is no doubt that academic staff need to be more dyslexia aware. Although Northumbria University does offer dyslexia awareness events they can only reach small numbers at any one time. As a result of

Table 2: Observed and Expected Frequencies for Degree Classification of Dyslexic and Non Dyslexic students

Degree	Dyslexic		Non-dyslexic		Total
	Observed	Expected	Observed	Expected	
1 <sup>st</sup>	3	3.88	79	78.1	<b>82</b>
2.1	18	22.2	451	447	<b>469</b>
2.2	26	20.4	406	412	<b>432</b>
3 <sup>rd</sup>	3	3.5	71	70.5	<b>74</b>
<b>Total</b>	<b>50</b>		<b>1007</b>		<b>1057</b>

this study, staff handbooks illustrating good practice in dealing with the pedagogical needs in a diverse group will be produced and distributed next academic year. Within this, priority will be given to handling, what staff believe to be quite contentious, the advance provision of teaching materials.

It is proposed that a compromise can be reached, within the general student body, those who are dedicated to the learning process are prepared to make some effort to understand staff concerns. At the beginning of the teaching programme, staff could ask students to add themselves to a materials distribution list. Tutors can then use this distribution list to provide relevant materials in advance. By making use of a Virtual Learning Environment this only need be a one-off task on the part of the tutor.

Pleasingly, examination of the degree classifications show there are few significant differences between performance of students with dyslexia and their non-dyslexic peers. However, there was some indication that on individual pieces of work there may be some sign of slightly lower performance. This may be worth further longitudinal investigation especially as 'inappropriate' assessment procedures e.g. multiple-choice or short-answer questions (Thomas & Bain, 1984; Scouller, 1998), promote surface approaches while perceptions of 'good teaching' promote deep approaches (Denicolo *et al*, 1992, Prosser & Trigwell, 1999). Finally, given some of the concern expressed by students about the constant need to reiterate their status to staff, a further area which may be worthy of future examination is whether dyslexic students are more likely to withdraw from a programme.

Research is continuing in a school-based survey concentrating on assessment, early indications are that dyslexic students were the only student cluster who stated they were able to positively focus on examination questions and there was no significant evidence of them finding examinations more stressful than other assessment methods. These findings would suggest that coping strategies that dyslexic students have developed for general learning, along with any learning support they have been provided with has helped them deal positively with academic life.

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