

Accommodating Disability in Higher Education: a closer look at the evidence for a mainstream framework of learning support

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Abstract

In a recently published research article in this journal, Avramidis & Skidmore (2004) argued that it is time we placed issues of disability provision more in the context of provision for the generic student. They presented a study based on the Learning for All Questionnaire (LfAQ), which investigated certain implied issues. Findings indicated a need for improved educational provision for all students. No differences were found between disabled and non-disabled students in perceived level of needs or support for university, tutoring and lecturing systems. This null finding was the same for the learning support needs of disabled versus non-disabled students, with both groups wanting identical changes to the way the university's central learning support service responds to learning needs. These findings were taken as calling for a move away from a 'specialist' framework of disability provision and towards a 'mainstream' framework instead, in which the needs of disabled students are accommodated within improvements made in learning for all. Further, the Disabled Students' Allowance should be given over to departments in order to help fund this change in 'institutional habitus'. In this article, four serious failings of the study and analyses are outlined. When these are addressed in a disability-theoretic reanalysis of the LfAQ data, every main finding is reversed. It is concluded that educational provisions are generally adequate. Students would welcome changes but these are more to do with increasing levels of convenience rather than learning support issues. Furthermore, the LfAQ data actually refute rather than support a mainstream framework of disability provision.

Background

The United Kingdom (UK) government is embarked on a strategy of increasing the academic base by encouraging 'widening participation' (Higher Education Funding Council for England, 1998; Thomas, 2002). Widening participation is partly an attempt to counter the fact that it is more difficult to get the positive message of the utility of higher education (HE) across to some groups; such groups have to consider factors featuring less strongly in the thinking of the notional prospective student (Leicester & Lovell, 1994; Scott, 1995; Preece, 1996; Berry, 1999; Weinstein, 2002). The disabled are one group which may remain underrepresented in HE, and also may have needs which are under-addressed when at university (Tomlinson, 1996; Kennedy, 1997; Singleton, 1999).

Disability is non-trivial and non-short-term departure from typical physical, sensory or psychological function, carrying, by default, significant ongoing disadvantage in regard to expected levels of adaptation to any pertinent environment (Towell & Hollins, 2000; Cooley & Salvaggio, 2002; Hemmingsson & Borell, 2002). At university, things that are taken for granted might act as tools that teachers expect students to bring to learning and assessment.

Disability provision, therefore, is about equity in access to knowledge and equality in status (Preece, 1996; Diaz-Greenberg et al, 2000; Weinstein, 2002). Perhaps particularly in HE, it is about reducing the impact on educational process and outcome of any disadvantage a student faces through being a member of a particular disabled group (ICIDH-2, 1999). Educational institutions are obliged to make 'reasonable adjustment' for the needs of disabled students, both current and to some extent prospective (Quality Assurance Agency [QAA] Code of Practice, 2000; SENDA, 2001). This involves identifying barriers which are likely to limit the performance or advancement of the disabled student, and identifying practices likely to unfairly discriminate on the basis of disability; in both cases, with a view to improving on these practices as far as possible and reasonable.

The Learning for All Questionnaire Study

Some issues potentially stand in the way of achieving better provision and better targeted provision. Addressing them needs practices and procedures to be put in place by universities, and also research to help inform these practices and procedures. Avramidis & Skidmore (2004) published a large university-based study with this in mind. It employed methodology based on a specially adapted questionnaire aimed at setting disability needs in the context of general needs: the Learning for All Questionnaire (LFAQ).

The study found that the overall student perception of the university support structure was that students generally feel that additional support could be given which is specific to the learning requirements for their particular department. It was also found that the needs of disabled students do not differ from those of non-disabled students. Additionally, students felt that some faculties (and hence departments) catered far less well for students than others, with the inference that this finding is also representative for disabled students. In particular, scientific disciplines were the least attentive to needs, and social and humanities disciplines the most attentive.

Avramidis & Skidmore (2004) drew the implication that universities could improve the support they give to disabled students by better tailoring specific support given to all within each department. This would carry the additional benefit of assisting students who are not known to learning support services (LSS) but who nevertheless have education-related issues in the same range of areas as disabled students. They also drew two even stronger conclusions from their findings. The first was that the resultant move of 'learning for all' support from the central LSS to the university

departments would mean that the duties of LSS were less demanding on resources and funds, which would free funds to be put towards the accommodations now made in the departments. The implication was that LSS as most universities know it should essentially be disbanded, and reduced to something more like a general administration, resource and counselling service (for both students and staff).

The second strong conclusion they reached was that this change in 'institutional habitus' would remove the need for the Disabled Students' Allowance (DSA), which currently tends to be assessed through the LSS and paid by the student's local education authority (LEA). This allowance pays for the student's individual equipment needs (home) and contributes towards the tutorial and other support given or arranged by the LSS (e.g., personal support workers including for mobility, Sign Language translators, and note-takers).

The term 'institutional habitus' was coined by Bourdieu & Passeron (1977), and extended by a number of other theorists (see Reay, 1998; Reay et al, 2001; Thomas, 2002). It is used by Avramidis & Skidmore to refer to the way that current thinking about disability provision in an HE context is governed by assumptions and beliefs which we tend to hold because of our particular framework of socialisation (psychologists have variously referred to this as cultural capital or enculturation). The most critical of these is the assumption that accommodating a specific group (here the disabled) necessitates specialised structures (learning support), which exist outside accommodations made for students more generally (the university departments). This new perspective is well worth consideration, not least because the possibility of catering for both disabled and non-disabled students with a single framework would bring with it the prospect of much greater educational and social inclusion. However, just because a particular view appears attractive on the surface, it does not automatically follow that it should be implemented. Rather, the possible drawbacks should be examined alongside its strengths; only then can policy-makers make a truly informed decision.

While I applaud the way the study was designed and carried out, I believe that most readers will be all too aware of the sensitive nature of this area of research. As the findings and conclusions are intended to influence those responsible for making and implementing disability provision policies in a university context, it is imperative that the findings are shown to be robust and that the conclusions follow reasonably from those findings. Therefore, in this article, I reassess some of the main findings and conclusions of the Avramidis & Skidmore (2004) article which are particularly pertinent to disabled students. Some theoretical and empirical shortcomings of their study are discussed, and where possible these are corrected or amended.

My concerns about the study are fourfold:

1. The most important conclusions do not stem directly enough from the data they present.
2. Some null findings were probably artefacts of the analyses rather than genuine similarities between disabled and non-disabled students.

3. Certain disabilities were excluded from the study, but this was not taken into account in reaching conclusions.
4. Correcting for 1-3 above in a reanalysis might lead to different findings.

1. The most important conclusions do not stem directly enough from the data they present.

Avramidis & Skidmore highlight their finding that any lack of well-suitedness with respect to disabled students is mirrored by a lack of well-suitedness for non-disabled students also. From this, they argue that any improvement in respect of one student group (disabled or non-disabled) will bring with it an improvement in respect of the other group also. In the background to their study, Avramidis & Skidmore point out that the time has come to place disability provision within a 'mainstream' framework of university provision as opposed to a 'specialist' framework. Drawing on their finding plus their theoretical position, they argue that, as accommodating students' needs does not require a LSS, then increasing that provision can be done without such a service. And, as the needs of disabled students can be best accommodated within improvements made for the generic student, then LSS is not required for improved disability support either. Their solution is that support for all students (both non-disabled and disabled) would come from the respective departments.

However, the findings they report do not unambiguously lead us to this solution. An alternative solution is that we should improve what departments are doing for all students, but we should also enhance (rather than reduce) the provision made by/via the LSS. A mainstream framework might help disabled students in only those areas where their needs are the same as those of nondisabled students. However, for many disabilities, there are bound to be requirements which not only are different from those of non-disabled students, but actually are inconsistent with improved provision for non-disabled students. We need to accept that it is just those accommodations that would *not* represent improvements for the non-disabled, which would probably represent the most significant improvements for one or more disabled groups.

2. Some null findings were probably artefacts of the analyses rather than genuine similarities between disabled and non-disabled students.

The conclusions reached regarding the similar needs of disabled and non-disabled students are based first and foremost on Avramidis & Skidmore's quantitative analyses of the data they obtained, with qualitative analyses subsequently used to support their quantitative findings. However, although similarities could be genuine, they could have resulted from a situation whereby the questions themselves militated against group differences showing up. In order to address this issue, I first carried out a content analysis of all 31 questions. Each question and sub-question (item) was assigned to one of three categories. The categories were:

1. Relevant to disabled and non-disabled students and likely to be interpreted in the same way;
2. Relevant to students with a disability differentially compared to students more generally;

3. Relevant to disabled students but not relevant to non-disabled students.

A summary of the result of this classification for the questions most relevant to provision (Q9, Q13 and Q17) is given later in the reanalysis section.

For now it is sufficient to note that the content analysis confirmed that some of the sub-questions were indeed likely to be interpreted in different ways by disabled and non-disabled students, and even by different disabled student populations (e.g., physical/sensory disability versus dyslexia). Other sub-questions were more likely to be interpreted in the same way by all students regardless of disability. What this all means is that analysing all sub-questions together might not show up differences between disabled and non-disabled students, even if these were in fact present in the data, because items exhibiting differences would be subsumed within a much greater number of items which carried the same interpretation by disabled and non-disabled students.

This issue can be circumvented by analysing each pertinent question in terms of sub-questions which a disabled student would tend to interpret first and foremost from the point of view of his/her own disability, followed by an interpretation from the point of view of a generic student, and separately analysing sub-questions which grouped together in terms of tending to predispose interpretation only as a generic student. I term the former the 'disability interpretation' although it also involves interpretation as a general student; and the latter I term the 'generic interpretation'. Such a classification is capable both of confirming and disconfirming Avramidis & Skidmore's conclusions of equal education-relevant needs for disabled and non-disabled students.

3. Certain disabilities were excluded from the study, but this was not taken into account in reaching conclusions.

The LFAQ was administered over the university Intranet to encourage completion by as many students as possible. Avramidis & Skidmore noted that in their sample of 69 disabled students, some groups were much less well represented than others. For instance, there were blind students on campus, yet no respondent was blind. This may have been due to the fact that a student could remain anonymous only when completing the questionnaire via the university Intranet, and this would be likely to cause more problems to blind students than to any other disabled group (Berry, 1999; Hecker et al, 2002; McAvinia & Oliver, 2002; Neumann, 2003). This situation means that the questionnaire, though intended and marketed as 'learning for all' (and therefore 'inclusive'), already excluded at least one disabled group. Indeed, as well as having issues of physical access to buildings, lifts, lecture theatres and so on, the blind have among the greatest education-related disadvantage of all single disabilities.

Additionally, for Avramidis & Skidmore, a student is either disabled or non-disabled. They did not contemplate the possibility that accommodations made for one disability might well represent an additional challenge (rather than an accommodation) to a second disabled student if also offered as a provision for this

second disability. If the reader bears this point in mind, then it becomes obvious that increasing departmental provision for non-disabled students might well lead to accommodations for some disabilities, but very probably not represent an equal accommodation for every disability in the department. Thus, the study should have, but did not, acknowledge that it does not automatically generalise to all disabilities in HE. It should have, but did not, discuss the likelihood that its recommendations would if anything lead to a worsening of the educational situation for at least some of the most traditionally disadvantaged disabled groups.

4. Correcting for 1-3 above in a reanalysis might lead to different findings.

In this section I present a reanalysis of the data on which Avramidis & Skidmore (2004) based their conclusions. In my reanalysis, I take into account the above points. In response to point 1, I restrict reanalyses to those parts of the LFAQ most germane to disability and learning support issues. I also contrast what students with and without a disability feel about university support, tutor support, lecturer support and learning support.

In response to point 2, I separate out those questions which are relevant to all students in the same way, from those questions which are likely to be interpreted differently if a respondent has a disability. If the Avramidis & Skidmore conclusion that disabled and non-disabled students have the same needs is correct, then separate analyses should still maintain the null finding for both types of question.

In response to point 3, I acknowledge two degrees of disablement from a LEA support point of view, and two types of disability: one, dyslexia and the other, all other disabilities. Although it would have been desirable to treat more individual disabilities as separate, there were practical limitations stemming from the number of students having each disability. The distinctions made here, though, are sufficient to show whether students with different disabilities see provision issues in the same way.

The Reanalysis

The LFAQ questionnaire comprised 31 questions, many with sub-questions. The questions were organised into six sections. Each section included at least one open-response question to ease any restrictions that might occur because of most questions having closed responses or pre-categorised responses. For the purposes of analysis, any of the 363 respondents was categorised as having a disability if responding 'yes' to any category in Q7 ('Would you consider yourself as experiencing any of the disabilities/special needs/medical conditions listed in the UCAS application form?'). This also applied to respondents who answered either Q10, 'If you have a mobility difficulty have you had support with access?', or Q21d, 'If you are disabled and you are not receiving the DSA please give reason ...'. The number of respondents having a disability according to this criterion was 70.

In this article I have distinguished between a disability *per se* and a disability that typically calls for support that is specifically educational in nature, irrespective of

whether other non-educational support is also required (e.g., personal care). A respondent was defined as having a more marked education-relevant disability if in addition to answering ‘yes’ to any item in Q7, they answered ‘yes’ to Q20, ‘Do you have or are you in the process of claiming the DSA?’. It was noted that of the 39 respondents fulfilling this criterion, only two did not also answer ‘yes’ to Q23a (‘Have you used the Learning Support Service?’). Thus, already we have an indication that disabled students hold the LSS to be a vital part of their existence at university. Table 1 shows that LSS is also made available to non-disabled students having learning issues.

		Group	<i>n</i>	No. using LSS
Non-disabled		Group 1 (Non-disabled)	293	8
Disabled	Disabled with assessment not leading to DSA	Group 2 (Non-DSA non-dyslexic)	21	3
		Group 3 (Non-DSA dyslexic)	10	4
	Disabled with assessment leading to DSA	Group 4 (DSA dyslexic)	28	23
		Group 5 (DSA non-dyslexic)	11	9

Table 1: Assignment of respondents to different groups.

Each of the two disabled groups implied above was further divided into two, according to whether their sole or main disability was dyslexia. The four disability groups were therefore as follows:

- Group 2: non-education-related disability, non-dyslexic;
- Group 3: non-education-related disability, dyslexic;
- Group 4: education-related disability, dyslexic;
- Group 5: education-related disability, non-dyslexic.

Group 1 comprised respondents who did not indicate having any disability in Q7. Table 1 summarises these groups and sub-groups in terms of having a disability and the education-relevance of the disability assessed via the Disabled Students’ Allowance (DSA). This table also gives the numbers of respondents in each of the five groups who had used the LSS.

Now that we have an understanding of the degree and type of assessed need of the disabled respondents, as indexed by eligibility for DSA and presence or absence of dyslexia, we can look again at Avramidis & Skidmore’s findings to see whether the needs of disabled and non-disabled students are identical. To do this we need to distinguish between those questions in the LFAQ which favoured a ‘disability interpretation’ over a ‘generic interpretation’, and those which did not. A summary

of the most pertinent questions of the disability interpretation and generic interpretation is presented in Table 2. Details of this reanalysis follow.

Disability interpretation	Generic interpretation
<i>Question 9</i>	
1. Space for study identified (in the library or your department).	2. Facilities (computer, books readily available).
3. Provision of further information (notes, online materials).	4. Comfortable working arrangements (warm, spacious rooms).
5. Library support (support from specialist librarians).	6. IT support (support from trained IT technicians).
	7. Time for study set aside.
	8. Social support (social events, societies).
<i>Question 13</i>	
<i>Negative</i>	
4. Tutor responsive to needs as they arise.	1. Any opportunities for face-to-face contact.
8. Clear guidance to study processes and assignments provided.	2. Active intervention from tutor (email contact etc.).
9. Reassurance available to ensure that you are on the 'right track'.	6. Guidance from tutor available throughout the course.
	7. Overall guidance to study requirements provided at outset.
<i>Positive</i>	
3. Access to tutor available if necessary.	
5. The tutor takes a personal interest in you.	
<i>Question 17</i>	
2. Lecture notes provided (handouts or electronically, etc.).	1. Tape recording in lectures allowed.
4. Copies of overheads provided beforehand.	5. Access to tutor available if necessary (through email, etc.).
7. Guidance to study requirements provided (for assignments, etc.)	
<i>Not analyzed</i>	
3. Taped lectures provided.	
6. Alternative exam assessment methods (extra time, etc.).	
8. Opportunities for alternative assessments (oral exams, etc.).	

Table 2: Summary of questions predisposing a given interpretation.

Q9 asked students how much support they felt was available from the university in eight different areas (Table 2). A content analysis suggested that three sub-questions or items were likely to be interpreted first from the point of view of one's disability and only then as a generic student. Of course, this would imply that students not having a disability would tend only to interpret such items from the point of view of a generic student. To give one example, 'space for study identified (in the library or

your department)': a generic student would almost certainly interpret this exactly as it is intended: 'Is there somewhere for us students to study in ...?'. However, a student who is blind or in a wheelchair can also interpret it relative to their own disability needs: 'Is there a space I can get to without too much risk to myself or others?' or 'Is there somewhere I can get to that has access wide/level enough for my wheelchair?'. The mere presence of such alternative interpretations for some disabled students means that responses from disability sub-groups will reflect both interpretations rather than just the interpretation open to non-disabled students (and students whose disability does not raise this particular issue).

Q13 concerned ratings regarding supportive interactions with the tutor. As with Q9, the items for this question divided into two: those almost certain to be interpreted as relevant to the generic student regardless of whether the respondent had a disability, and those interpretable firstly or additionally as relevant to their disability by those in a disabled sub-group. Table 2 shows that five items fell into the 'disability interpretation' category, with the remaining four falling into the category of 'generic interpretation'. However, things were slightly more complicated than for Q9. Specifically, items 3 and 5 carried disability interpretations which were likely to be more positive than the non-disability interpretations, whereas items 4, 8 and 9 carried more likely negative interpretations. For example, item 5 was 'The tutor takes a personal interest in you.'. This item could be taken to refer to the student as a generic individual or as someone who has a disability. However, beyond this, if disabled respondents interpreted the item in this way, they would be more likely to feel 'more noticed' because of disability rather than 'less noticed'. Thus, this item is more likely to yield a positive contrast between disabled and non-disabled groups (particularly when the disabled group has a physical disability), and this is shown in Table 2.

This situation contrasts with item 8, 'clear guidance to study processes and assignments provided'. Here, there is again an increased likelihood of an alternative interpretation for some disabled students, but it is more likely to be in a negative than a positive direction. For instance, a student who has a disability that makes working on practical projects more difficult (e.g., in engineering or the sciences) might ideally require more guidance if an assessment calls for the construction of a model. If this factor tends not to be acknowledged by the tutor, then the student is more likely to rate this item negatively than a non-disabled student. The implication here is that if for Q13 we combine all five items in the 'disability interpretation class', we will tend to reduce or even eliminate any real differences that exist.

Q17 concerned accommodations made by students' lecturers. This question had eight items, of which three (items 2, 4 and 7) invoke a disability interpretation. Although three other items (3, 6 and 8) would invoke a disability interpretation, they were deemed so specialist that valid comments from non-disabled students were not expected. For example, item 3 asked about being provided with taped lectures, as distinct from being permitted to tape lectures (item 1). As no meaningful comparison could therefore be made with items such as this one, they were not

included in the analyses. Items 1 and 5 would not be expected to invoke a disability interpretation and so were placed in the generic interpretation class.

Table 3 summarises the results of the above process for the respondent groups and item types. The top section of Table 3 summarises the mean of the disability interpretation item types, with the bottom section summarising generic interpretation item types.

	Group 1 <i>n</i> = 293	Group 2 <i>n</i> = 21	Group 3 <i>n</i> = 10	Group 4 <i>n</i> = 28	Group 5 <i>n</i> = 11	Overall <i>n</i> = 363
Disability interpretation						
University	3.377 (0.039)	3.222 (0.147)	3.500 (0.213)	2.693 (0.127)	3.032 (0.203)	3.165 (0.071)
Tutor	3.233 (0.061)	3.159 (0.230)	2.334 (0.333)	3.226 (0.199)	2.970 (0.318)	2.984 (0.111)
Lecturer	3.198 (0.042)	2.826 (0.156)	3.034 (0.227)	2.941 (0.135)	2.637 (0.216)	2.927 (0.076)
Overall	3.269 (0.032)	3.069 (0.120)	2.956 (0.173)	2.953 (0.104)	2.879 (0.165)	
Q13 Tutor, disability interpretation positive						
Tutor	3.486 (0.066)	3.405 (0.248)	2.600 (0.360)	3.375 (0.215)	3.727 (0.343)	3.319 (0.120)
Generic interpretation						
University	3.135 (0.037)	3.133 (0.138)	3.320 (0.201)	2.533 (0.120)	3.111 (0.191)	3.046 (0.067)
Tutor	3.294 (0.065)	3.452 (2.242)	2.450 (3.50)	3.241 (0.209)	3.250 (0.334)	3.138 (0.117)
Lecturer	3.399 (0.044)	3.382 (0.167)	3.400 (0.241)	3.447 (0.144)	3.592 (0.230)	3.444 (0.080)
Overall	3.276 (0.033)	3.323 (0.125)	3.057 (0.182)	3.073 (0.109)	3.318 (0.173)	

Table 3: Perceptions of sources of support. Figures in parentheses are standard errors.

A two-way mixed model analysis of variance (ANOVA) was carried out on the disability interpretation data. The ANOVA had five levels for ‘respondent groups’, the between-subjects factor, and three levels for ‘question’, the within-subject factor. This ANOVA is summarised in Table 4 (top). This table shows that across all five groups, students’ satisfaction with university provisions (Q9) was slightly positive (i.e., just above a mean rating of 3.00), with ratings of tutor support (Q13) and lecturer support (Q17) slightly negative, and the overall mean of all three sources of support very slightly positive. However, the difference between these three sources of support was not statistically significant (Table 4, top).

The overall picture for the different respondent groups as regards support was more clear-cut. The first thing to note is the sliding scale of satisfaction from non-disabled

(Group 1), to students whose disability received DSA support and is not dyslexia (Group 5, the most classically disabled group). The ANOVA confirmed that the overall difference between the groups was statistically significant, with Games-Howell *post hoc* tests showing that the non-disabled respondents indicated a satisfaction level distinct only from the two disabled groups receiving DSA support (Groups 4 and 5). Also of interest in Table 3 (top) is the fact that the two groups receiving DSA support, plus the dyslexic students not receiving DSA support, were negative about the overall support, with only Group 1 positive and Group 2 very mildly positive.

The ANOVA assessed the interaction between respondent group and source of support. This interaction was statistically significant, indicating that the specific rating of each of the three sources of support differed by group. The first analysis tells us, therefore, that different student groups do not feel they are supported to the same extent as each other. Specifically, disabled students who have been formally assessed and are receiving DSA support feel less catered for than their non-disabled counterparts. Additionally, this perceived failure does not go right across the board. Inspection of the means in Table 3 (top) shows that in relative terms, students in Groups 1, 2 and 5 show the same profile, of feeling supported most by the university and least by the lecturer. The two dyslexic groups not only differ from this profile, but also from one another. The non-education-related dyslexic group were least positive about tutor support, but education-relevant dyslexics were most positive about this source of support.

	Greenhouse-Geisser <i>df</i>	<i>F</i>	Sig	Observed power
Disability interpretation data				
Question	1.668, 600.509	2.352	0.106	0.433
Question * group	6.672, 600.509	2.856	0.007	0.915
Group	4, 360	4.287	0.002	0.928
Q13 Tutor, disability interpretation positive				
Group	4, 360	1.672	0.156	0.513
Generic interpretation data				
Question	1.709, 615.224	6.390	0.003	0.865
Question * group	6.836, 615.224	2.697	0.010	0.902
Group	4, 360	1.196	0.312	0.375

Table 4: Summary of analysis of variance statistical tests.

A second ANOVA was performed. This was a one-way ANOVA (with five levels representing respondent group) on the data likely to receive a disability interpretation, but with the direction of any difference having the reverse polarity (positive; see Table 2) to the data of main interest to this paper (negative). An example of an item included for Q13 was given earlier (students feeling they were taken notice of by their tutor). Table 3 (middle) shows that Group 5 was very much more positive about this kind of support than any other group, with Group 3 the most negative. The remaining three groups exhibited an equal level of satisfaction

with this element of tutor support. This implies that non-dyslexic disabled students tend to feel more acknowledged by their tutors than other students; with dyslexic students not in receipt of DSA support feeling much more ignored than other groups. Even when disability was more likely to confer a positive outcome compared to non-disabled students, there was a tendency towards differences between disabled and non-disabled student, and between different disabled groups. In view of these contrasting tendencies, plus the relatively few items contributing to the datum for a given respondent (e.g., see the differing levels shown in Table 3 [middle]), it was not surprising to find that the ANOVA (Table 4, middle) revealed no overall statistically significant difference between the five respondent groups.

Another ANOVA was carried out to test the assertion made by Avramidis & Skidmore that students in the faculty of social sciences and humanities indicated a higher level of support than students from other faculties, in particular the science disciplines. This analysis revealed no overall difference, either between all groups or between the social science and humanities faculty and any of the other faculties. Suffice it to say that this null result refutes the claim that science disciplines are perceived to be less sensitive to disability than any other discipline.

A final two-way ANOVA was carried out on the generic interpretation data. This analysis was essentially identical to the first ANOVA (see Table 4, bottom). In opposition to the first ANOVA analysis, lecturer support was seen as most adequate, followed by tutor support and then university support. All three sources of support were seen as mildly satisfactory or better. What this suggests is that lecturers are seen most positively in those areas where their activities are not directly relevant to disability. By contrast, the overall difference according to respondent group for perceived level of support did not reach statistical significance, and nor did the interaction between respondent groups and source of support. Although all five groups were mildly positive or better, the two dyslexic groups were the least positive, with the two non-dyslexic disabled groups most positive and the non-disabled group in between, but closer to the two non-dyslexic disabled groups.

To summarise the quantitative analyses: the data from the LFAQ actually show that disabled students have similar needs to non-disabled students when it comes to support that is no more relevant to disabled students than to non-disabled students. However, when the support in question can have a specific relevance to one or more disabled group over and above its relevance to the non-disabled, then differences do exist and those differences are dependent on the nature and extent of the student's disability.

This result is clearly relevant to university provision, tutor provision and lecturer provision, but it does not on the surface seem to speak to the main thrust of the Avramidis & Skidmore (2004) article: learning support. However, Table 2 shows that many of the items in the domain of lecturer support are either provided or requested via the LSS. Thus, the finding that non-dyslexic students, whether or not they receive DSA, feel more inadequately supported in this respect than all other groups, indicates that more learning provisions need to be made specifically for such

students. The finding that dyslexic students in receipt of DSA feel most let down by university support would seem inconsistent with my interpretation here. However, again, a glance at Table 2 shows that some of this source of provision (e.g., specialist library provision, learning to make more time for study) could come under the purview of learning support. I leave the issue of who should take responsibility for such provision until after presentation of the qualitative data.

Qualitative Data Analysis

The qualitative analyses centred on Q12 (university support), Q16 (tutor support) and Q19 (lecturer support). However, to speak more directly to LSS issues I also analysed Q26 (learning support as assessed by disabled students only) and Q30 (overall learning support as assessed by all students). A summary of counts made using the qualitative data is given in Table 5. Additional information is given in parentheses () and square brackets []: positive counts are shown by a plus sign, and negative counts by a minus sign. The curved parentheses denote counts directly relevant to the LSS, whereas square brackets denote comments which come under the responsibility of the department or university and outside the responsibility of the LSS.

	Group 1 <i>n</i> = 293	Group 2 <i>n</i> = 21	Group 3 <i>n</i> = 10	Group 4 <i>n</i> = 28	Group 5 <i>n</i> = 11	Total <i>n</i> = 363
Q12	139	10	2	17	4	172
University	(+0 -0) [+2 -125]	(+0 -0) [+1 -9]	(+0 -0) [+0 -2]	(+2 -2) [+1 -12]	(+1 -0) [+0 -3]	(+3 -2) [+4 -51]
Q16	103	7	7	11	7	135
Tutor	(+0 -0) [+16 -85]	(+0 -0) [+1 -6]	(+0 -0) [+0 -7]	(+0 -0) [+10 -4]	(+0 -0) [+1 -6]	(+0 -0) [+28 -108]
Q19	101	12	2	12	4	131
Lecturer	(+0 -0) [+10 -90]	(+0 -0) [+1 -11]	(+0 -0) [+0 -2]	(+0 -0) [+0 -11]	(+0 -0) [+0 -4]	(+0 -0) [+11 -118]
Q26	9	1	0	9	3	22
LSS	(+3 -2) [+2 -6]	(+0 -1) [+0 -0]	(+0 -0) [+0 -0]	(+3 -3) [+0 -2]	(+2 -0) [+0 -1]	(+8 -6) [+2 -9]
Q30	44	7	1	8	1	61
Support all students	(+4 -0) [+6 -25]	(+1 -0) [+0 -4]	(+0 -0) [+0 -1]	(+4 -0) [+0 -5]	(+1 -0) [+0 -0]	(+10 -0) [+6 -35]

Table 5: Summary of number of comments on LSS and departments, broken down into positive and negative. Numbers in parentheses () are comments on the LSS; numbers in square brackets [] are comments on university departments.

Let me begin with those domains sampled in the quantitative section. Q12 asked for comments on university provision. Almost half of all non-disabled students made comments, with two-thirds of comments suggesting better computing and/or library provisions for students generally. Of the remainder of comments, more pertained to

issues of space (e.g., more study areas, quieter locations around the university) than to any one other theme. No comments were relevant to education-related disability provision. Areas of concern ranged from parking for all students, through being treated better by non-academic staff (e.g., reprographics), to keeping the lake area or other areas of the campus tidy.

Group 1 respondents made comments about the need for improved disability provision. However, these were restricted to physical access issues, rather than to teaching, learning and assessment issues. For example, one representative comment was 'Improved disability access and improved entrance to university i.e., ramp by building xxxx.' (the identity of the building has been omitted to ensure anonymity and confidentiality). Comments from Group 2 mirrored closely the above. Thus most of the comments were about computing, library provisions and space for study. Of the three comments not on these themes, one was about placing more lecture material on-line, one was about removing flickering lights to aid health and safety and one was about multilingual spellcheckers for some computers. No comment made any reference to disability or learning support directly. Similarly, neither of the two respondents from the corresponding dyslexia group (Group 3) mentioned disability or learning support. Instead, they alluded to general computing and library facilities.

Turning to the two respondent groups with disabilities requiring DSA support, the dyslexic group (Group 4) echoed to a greater extent the areas for improvement as seen by the non-disabled respondents. However, a much higher proportion of comments were about things that tutors or lecturers could do to improve matters. For instance, four responses are represented by the comment 'Greater details provided to personal tutors so they are aware what facilities are available'. Similarly, a respondent said that 'Lecturers should be made more aware of disabilities and their effect on students'. These comments imply that academic staff ideally could be more disability-aware. Only one comment on the work of the LSS was made by respondents in Group 5, and this comment was positive: 'The level of support I have received has been entirely appropriate. Thanks'. The other three comments were about space and physical access provision: 'Learning support having smaller quiet study place – e.g., a lounge area in the LS office?'; 'Lighter doors, more lifts in more obvious places'; 'It could generally be more accommodating to mobility and visual impairments'.

Q16 concerned the tutor. Almost all respondents who made a comment indicated that they would ideally receive more input from their tutor. One comment capturing most aspects of the feeling expressed was 'Well it would be nice to have a tutor who could inform me at the start of my degree what I'm heading for, what I need to be doing academically and suggest what I could start doing earlier on in the course that would help me along the way'. The fact that so many were unhappy with their tutor tells us that students would welcome more direction, which, although a provision issue, cannot be taken as an institutional failing. One important element of most degree courses is 'independent learning'. However, although students are aware of this, they may not be in agreement with tutors about how independent they should

be. Also, as some comments acknowledged, tutors have to work within constraints as lecturers and researchers as well as accommodating all their tutorial students. This limits the resources that they can give to any one student. It should be noted that a small but not insignificant number of respondents either commented that no change is needed from their tutor, or explicitly said they were very happy with their tutor. An example of the five comments of the latter type was 'I think we have a good relationship'.

Comments from Group 2, although non-positive, were not quite as strong as those made by the non-disabled students (Group 1) who expressed their views. An example typifying this group was: 'I would like to feel that any problems I have would be taken seriously, and that some kind of interest was taken in both my academic and personal welfare'. It is worth noting that although these may not have been positive comments, they also were not asking for any marked change in provision. Group 3 gave comments similar to Group 1, but no positive comments were given. An example capturing the range of comments from this group was 'My tutor seems to be uninterested, although he is sympathetic when I am ill, unfortunately he isn't very organised and therefore never tells me the things I need to do in order to get extra time'.

Of the two groups in receipt of DSA support, Group 4 was very positive about tutor support. A typical response was 'None, she is very helpful and understanding'. Of the four comments which were not positive, only one could be seen as a strong comment. The remaining three reflected as much on the student as on the tutor; for example, 'Tutor actually bothering to make contact with me and inquire how I am getting on'. Group 5 was surprisingly negative about their tutor. Three comments made specific reference to lack of disability awareness. One of these was 'need more understanding and awareness of disability issues'. The only positive comment was 'never had any better! So ... no changes'.

Q19 concerned provisions in lectures. Group 1 was mostly dissatisfied with the lecturing provision. However, the comments reflected ideal provisions which were often inconsistent with one another. For example, some respondents wanted more detailed handouts, whereas others wanted shorter, more concise handouts. Some wanted fewer two-hour lectures because these were more like workshops, but others asked for more workshops. Also, some requests appear overly demanding. For example, two respondents wanted the lecturers to tape themselves and give tapes to students. Others wanted to be permitted to tape the lectures, one so that they could prove when a lecturer said something that was wrong. Some comments, though, were extremely positive about lecture delivery in general. One comment sums up the majority: 'Some lecturers do not provide print outs of OHPs or put notes on the net which just means that lectures involve frantic note taking, but besides that, my lecturers have all been good at lecturing!'. Generally, nothing in particular was said to be wrong, but things could be made more convenient to the student. No comment mentioned learning support or disability.

There were only two positive comments from Group 2. One was unambiguously positive. In the case of the other, whilst there was both a positive and a negative aspect, the stronger and more global message was negative. This comment, like some from the non-disabled group, asked that lecturers teach the way students think they should, rather than the way the lecturer thinks is appropriate. The two responses from Group 3 were more considered and more pertinent, and both requested change. These are captured by the comment, 'I have asked my teacher if I could have a copy of the notes before-hand, however, many of the lecturers don't do this. Also, I find it very hard to learn when people don't write things on the board and just talk at you. Some of my teachers do this'.

Comments from Group 4 were similar to the above group. No comments were positive. Two comments indicated that some lecturers were not in favour of students taping lectures, even when their disability makes this desirable or essential: 'Some lecturers are unwilling to allow tape recording to take place in lectures'. One comment implied that the disability was not taken serious enough: 'More organisation: my department lost my dyslexia report and didn't tell me so I didn't get extra time in exams'. The point here is that this group were unsatisfied with accommodation of their disability. Finally, Group 5 were not positive about lecturing. However, one of the four comments was more about how lecturers should deliver their lecture, rather than learning or disability *per se*. The remainder are typified by the comment 'Would be easier if I could get lecture notes before hand'.

The qualitative analysis of the above three questions makes it clear that those data do not speak directly to the LSS, although it was possible to establish an indirect relevance. Q30, on the other hand, permits us to determine whether students feel that their learning support needs relevant to the LSS should be improved. Table 5 shows that only a minority of students made comments on this issue (figures in curved parentheses). Not one of these comments said or implied that the LSS was inadequate or should be subsumed under departmental responsibility. The only disabled student in Group 5 who commented said 'The support system is good' (although also offering a suggestion for improvement based on giving a questionnaire to students before they start their course). The view from Group 4 was similarly positive: 'Fab team. Very nice. I wish I had more time to get in and see them again; I could do with some more guidance'. No Group 3 student made any comment. However, the view of one Group 2 student showed that the LSS was trusted to provide good support: 'I think the main problem may be that I don't know what support is available or how to access it, not that it isn't there!'. This overwhelmingly positive view of the work done by the LSS seemed to be shared by non-disabled students (Group 1) who commented on learning support issues: 'I think if I ever needed any support it would probably be available to me – I hope'.

In contrast with these views of the LSS, respondents tended much more often to indicate a dissatisfaction with learning issues under the responsibility of their department or library (figures in square brackets in Table V). The implied view of this Group 1 respondent was quite typical: 'Really the only issues I have are with the current situation in the library'. However, a similar number of respondents were also

concerned about fitting teaching provisions to some students generally: 'More time needs to be dedicated by the lecturers to improving teaching methods and supporting less academically able students'. Some comments asked for more dedicated space for studying, with others asking for more books and journals, or better laboratory or computing facilities. One response was clearly relevant to the issue of teaching provision but could not be easily classified: 'I'm quite satisfied about lecture support but totally unsatisfied on personal tutor support'. However, some non-disabled respondents commented that they would like to have more time between conclusion of modules and start of exams, better ventilation in study areas, cheaper photocopying or lower fees for joining the university gym.

The views of disabled respondents tended to highlight weaknesses in the links between departments and learning support, as typified by the following quote from a Group 4 student: 'I feel there needs to be more liaison between the different subject departments and the learning support team. I personally find the structure of the university week (being so unstructured) and work deadlines very difficult to meet and get into a routine'.

Q26 allowed a closer look at the views of students who are arguably most disabled. This question asked for comments regarding changes to the LSS. The first thing to note is that, even though this question was not open to them, a number of non-disabled students from Group1 elected to make comment. The most outspoken of these comments was 'I would like to see more support for "normal" students, we can't afford photocopying and books yet other people are given far more by the university and it's not right'. Although not as confrontational as the above, most of the comments did ask for additional support, but this support was outside the traditional realm of the LSS. An example is 'Provide courses to non scientists who would be interested in learning about UNIX, C++ etc.'. However, some students who did not indicate that they had a disability did intimate that they nevertheless had learning issues which the LSS could help with. Typical of the three Group 1 comments which indicated this was 'Awareness should be made of what's available. I would appreciate some of the support outlined above but didn't know about it'.

All students with a disability indicated that they acknowledged the work the LSS was doing, although some said that more was needed. Thus, for this question for the disabled respondents, the numbers in Table 5 do not indicate a dissatisfaction with the LSS as such, but rather a need for additional support. An example of the latter comments comes from a Group 4 student: 'Greater number of drop in sessions/equipment specialists'. Another student in this group asked the LSS 'to be available more times a week'. The one disabled respondent who was clearly dissatisfied with LSS came from Group 2, and said 'It all appears to be geared towards dyslexia. I have received little support for my [disability] and most of the support I have received has been inappropriate'. Even here, though, the respondent implied that some support has been received.

The finding is that disabled students require support from LSS, which differs from the support that non-disabled students would want. While non-disabled students may

well want more support, there is little agreement about what is needed, some requirements are beyond departmental control and are equal for all students anyway, and some requirements have little to do directly with learning issues. However, some students who do not see themselves as disabled do have learning issues. These students themselves seem to know that the solution is for their department to publicise what the LSS might be able to help with. Also, a very small minority of students who do have a disability that is not directly education-related feel they should be receiving more support than they currently get (one student out of a total of 363).

Discussion

Rightly or wrongly, the perception too often held by disabled individuals both within and outside HE is that although additional challenges posed by their disability should be met with education-relevant disability provisions, in reality provisions tend to be non-ideal (Riddick, 1995). If we are to respond to the equal rights of disabled individuals, which include the right to have the same opportunity to achieve their full educational potential (Weinstein, 2002), we must continuously monitor and identify likely barriers to educational attainment and make further adjustments required to meet this goal. In this respect, the Avramidis & Skidmore study is laudable, because it raises issues that are critical to widening participation of disabled individuals in HE. However, every one of the reanalyses presented here led to the same finding: that the conclusions reached by Avramidis & Skidmore are overstated as regards the needs of non-disabled students, and do not represent the interests or ideal needs of disabled students and prospective students.

The reanalysis of the Avramidis & Skidmore data showed that each of the four issues raised in this article were well founded. Content analysis of open-ended responses suggested that overall students felt that the tutor's role needs to be more supportive than is the case at present. The quantitative data are in line with this finding, showing that students were positive to different extents about university responsibility, lecturer responsibility and tutor responsibility. For issues likely to be interpreted in the same way regardless of disability, the lecturer came off worst, but for issues which could carry a disability interpretation, tutors came off worst. However, when qualitative analysis compared the formally disabled groups with the non-disabled group, it emerged that this comment tended very much more to come from non-disabled students than those disabled with formally assessed needs. This means that the comments on need for non-disabled students did not have in mind the same things as comment on need for disabled students.

Additionally, the satisfaction and needs of each of the four disabled groups was confirmed to be distinct, although naturally showing some overlap. The implication of the present findings is that simply giving non-disabled students more of the kind of support they need would not benefit disabled students as regards their disability. Indeed, it would place unreasonable demands on academic staff, and could lead to the generic student doing less rather than more self-directed study (crucial in the workplace beyond university).

The findings also imply and highlight the two different senses of disability provision: 'physical access' and 'education-related access'. As Hinnells (1999) points out, these represent two very distinct sets of problems for the disabled student. The first of these is access to and navigation around locations on the educational site, such as buildings and physical facilities (O'Connor & Robinson, 1999; Diaz-Greenberg et al, 2000). Clearly this does not lie in the realm of LSS, although the service can identify where additional provisions might be made, passing such information to the appropriate university bodies. The second is in the realm both of LSS and the students' departments, and it is to this interaction that I now turn.

Reducing Education-Related Disability Disadvantage

The findings indicate that to some extent, disabled students (particularly those whose disability necessitates DSA support) use alternative modes of accessing learning materials and even sometimes learning facilities. We should therefore respond both dynamically and pro-actively to the fact that disabled students may learn differently, accept and use course material in differing ways, access material in different ways, produce coursework differently, and experience examination contexts differently to the non-disabled student, sometimes in a disability-particular way (Riddell, 1998; Holloway, 2001; Colwell et al, 2002).

For instance, hemiplegic students might have very significant mobility issues, which should be addressed by the institution. But this should not be seen as the institution's sole or even main educational obligation. Rather, the same students would certainly also have challenges which more directly affected educational attainment (Preece, 1996). They might experience difficulty when producing written output, leading to shorter pieces of work. They might experience problems getting to the library or certain parts of it, and so might read less than expected. They might find it more difficult to get into a position with a good line of sight for viewing an instrument in a practical class, and so might miss out on vital concepts. They might struggle to get to the top floor of the building, and so might miss important seminars. They might not be able to move between tables in an examination room and so might become stressed or anxious and perform less well than expected during the examination (see Hemmingsson & Borell, 2002; Mandich et al, 2003; Witt & McDermott, 2004).

Most disabilities tend to affect how long it takes the student to do things, such as write up coursework or essays in examinations. But as well as issues of speed in different contexts, some disabilities make particular information systems difficult for the student to access. Indeed, even when a particular educational development, such as assistive computer-based technology or web-based teaching aids, clearly carries benefits to the generic student, it is not clear that it carries similar benefit to disabled students, or to one disabled student group as much as to another (Hecker et al, 2002; McAvinia & Oliver, 2002). Thus, significant thought needs to be given to whether the interaction of the new media is similar for disabled and non-disabled students (Weinstein, 2002; Liu, 2004). For example, Liu (in press) found that while a

computer-based scaffolding system (a problem-based hypermedia learning environment) both helped teachers to give better feedback to students and helped almost all subgroups of students (from the general 'learning disabled' to students with English as their second language and the 'gifted'), it actually made learning more challenging for students with dyslexia, just those students who might need it most.

We need to better acknowledge that different disabilities can carry very different challenges to the student and to the institution. For example, blindness and deafness are regarded as similar, in that they are both sensory disabilities. However, they do not overlap much in terms of education-relevant ideal disability provisions (Berry, 1999; Taylor & Palfreman-Kay, 2000; Noble, 2001; Colwell et al, 2002). The differences are shown by the following example: Wald (2003) concludes that an effective way of helping deaf students in lectures is to provide as much material as possible using the MS PowerPoint format. However, Neumann (2003) asserts that adequate provision for the blind would entail a lower reliance on this format. Thus, provisions for one disability may increase the problems for another disability and vice versa.

Implications for Learning Support for Disabled Students

Clearly it is important to ensure that learning support and departmental systems are adequate for students generally. However, it needs to be accepted that making available resources that would benefit non-disabled students equally or more than disabled students is logically inconsistent with the goals of disability provision: reducing educational disadvantage stemming from one's disability. The former is absolute, whereas the latter is relative. Furthermore, to assume that any single system based around the generic student is likely to also accommodate all disabled students is to misunderstand, both what differing challenges disability typically imposes on following a HE programme of study, and how disabilities can differ from one another. As acknowledged by Avramidis & Skidmore (2004), the current model of disability provision in HE is based around a specialist provision framework. However, in contrast to their argument, I maintain that the starting point should be for some disability needs (and not just environmental ones) to require specialist provision by a specialist service independent both of the student and the student's department. The LSS traditionally fulfils this role among others.

However, the present findings also indicate that some provision should be based within the department, and for at least some disabilities it is desirable to extend or consolidate such departmental provision. This of course requires both resources and finance for those resources; although not to the extent alluded to by Avramidis & Skidmore (2004). Avramidis & Skidmore argue that their data support the view that any financial burden should be met by taking away the DSA from individual students and giving it instead to the departments. I make two points on this issue. First, there is no indication from their data that additional 'reasonable adjustment for disability' requires anything more than a little more understanding of disability on the part of academic staff and a little more acceptance of the standards and modes of study by

the generic student. Second, both the findings and knowledge of disabilities suggest that students receiving DSA support would be in a more difficult situation if the support was given to the departments for all students, instead of to the disabled student as an individual.

For instance, the generic student would welcome more computing provisions. However, at present disabled students with DSA do not have as much use of computers, either departmental or in the library. They are given funds which allow them to take the bulk of the responsibility onto themselves; for example, setting up computer laboratory or coursework facilities in their own rooms. Giving their DSA funds to the department, even if it did result in departmental provision that could benefit disabled students, would take away the provision in their rooms. But it is this very provision that allows people with disabilities which result in slower work (i.e., most of them) to nevertheless produce work of the required standard to the required deadlines.

Clearly, disability provision is not perfect at present. But it is better than it has ever been and is still improving. Surely now is not the time to throw all this away for a utopian quest or a radically different system. There is room for improvement. A more adequate system, when it comes, will advocate the benefits of some standard common provision (inclusive provision; Poole, 2003), but will also acknowledge the need for some specific disability provision (exclusive provision, either within this framework or in parallel with it; Dale & Taylor, 2001). Best of all, the provision will seek to take with it both disabled students and academics, and will seek to be acceptable to all.

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