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Department of Education,
Science and Training

Learning Disabilities Resource Package

Tools for assessing learning disability
and supporting students with learning
disability in Australian universities

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Contents

Acknowledgements	vii
Executive Summary	ix
1. Introduction	1
2. Background	2
2.1 Definition	2
2.2 LD in higher education	4
3. Methodology (Stage 1)	6
3.1 Subjects, procedures and survey development	6
3.1.1 Major questionnaire to DLOs in Australian universities.....	6
3.1.2 Supplementary LSA questionnaire	7
3.2 Data analysis.....	7
3.3 Limitations of the study	8
3.3.1 Major questionnaire to DLOs	8
3.3.2 Supplementary questionnaire to LSAs	8
4. Results (Stage 1)	9
4.1 Response to the major questionnaire to DLOs in Australian universities	9
4.1.1 Demographic data	9
4.1.2 Assessment and support.....	14
4.1.3 Understanding LD	18
4.1.4 Resources used and needed.....	22
4.2 Insights from the LSA questionnaire.....	23
4.2.1 Understanding LD	23
4.2.2 Resources used and needed.....	26
4.3 Summary of major findings from this study	27
4.3.1 Demographic data	27
4.3.2 Assessment and support.....	27
4.3.3 Understanding LD	28
4.3.4 Resources used and needed.....	28

5. Discussion (Stage 1)	29
5.1 Increased numbers of students with LD.....	29
5.2 Low levels of awareness about LD	29
5.3 Assessment of students with LD.....	30
5.4 Meeting needs of students with LD.....	30
5.5 Strategies to increase awareness of LD.....	31
6. Resource development (Stage 2)	31
6.1 The rationale for the development of a Web-based resource.....	31
6.2 Development of the resource package	32
6.3 Publicity and promotion.....	33
6.5 Professional development	35
6.5 Conclusions	35
Appendices	36
Appendix A – Survey questionnaire	36
Appendix B – Websites recommended by DLOs.....	42
Appendix C – Learning Disabilities: A definition	43
References	45

Tables and figures

Tables

Table 4.1 Students with disability and students with LD in universities.....	10
Table 4.2 Growth in numbers of students, students with disabilities and students with LD 1996 to 2001.....	10
Table 4.3 Gender of all students and students with LD	11
Table 4.4 Level of study of all students and students with LD	12
Table 4.5 Mode of study of all students and students with LD	12
Table 4.6 Language background other than English (LBOTE) of all students and students with LD.....	13
Table 4.7 Course load of all students and students with LD.....	13
Table 4.8 Age of all students and students with LD	14
Table 4.9 Timing of assessment of LD.....	14
Table 4.10 Institutional accommodations and extra support for students with LD.....	17
Table 4.11 Barriers for students with LD perceived by DLOs (expressed as a number and percentage)	20
Table 4.12 Overcoming barriers for students with LD perceived by DLOs, expressed as a number and percentage).....	22
Table 4.13 Distinction between learning difficulty and LD well understood within unit/faculty.....	24
Table 4.14 Distinction between learning difficulty and LD well understood within university	24
Table 4.15 Barriers for students with LD perceived by DLOs and LSAs.....	25
Table 4.16 Overcoming barriers for students with LD perceived by DLOs and LSAs.....	26

Figures

Figure 6.1 Opening All Options II entry page.....	35
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Abbreviations and acronyms

ALDA	Australian Learning Disabilities Association
AV-CC	Australian Vice-Chancellors' Committee
DEST	Department of Education, Science and Training (formerly DETYA)
DETYA	Department of Education, Training and Youth Affairs
DLO	Disability Liaison Officer/Disability Adviser
HREOC	Human Rights and Equal Opportunity Commission
LBOTE	Language background other than English
LD	Learning Disability/Learning Disabilities
LSA	Learning Skills Adviser/Study Skills Adviser
RDLO	Regional Disability Liaison Officer
SSS	Scotopic Sensitivity Syndrome

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Executive summary

The purpose of this 12-month two-stage project was to identify the numbers of students with Learning Disability (LD) in higher education, the support and accommodations currently available to them, and develop an information/resource package. Disability Liaison Officers (DLOs) in 36 of the 39 Australian universities listed on the Australian Vice-Chancellors' Committee Web pages in 2001 responded to a comprehensive survey that recorded quantitative and qualitative data about the demographic characteristics of students with LD, the types of support services and accommodations in place, and perceptions of the degree of understanding about LD within universities. The current study's findings offer a perception of the barriers facing students with LD and some strategies that might be useful in addressing these.

In Stage 1 the data obtained supported the findings of a similar study conducted in 1996 by Smith, Carroll and Elkins (1999) which estimated that at that time there were approximately 1000 students with LD receiving services in Australian universities. The current survey indicated that the figure is now around 1873. However, as with the 1996 survey, because of limited recognition and assessment of LD, this is likely to be a conservative estimate. This view is reinforced by the finding that there was considerable variation among responding universities with smaller universities reporting higher proportions of students with LD.

The number of students with LD at university has risen by 88.1% since 1996, while the general student population has risen by 14.5%. At responding universities the proportion of students with disabilities whose primary disability was LD ranged from less than 5% to more than 30%.

Demographically there appeared to be little difference between students with LD and all students in terms of mode of study, study load and age. However, when compared to all students, students with LD reported in this study were more likely to be male, be doing undergraduate study and less likely to be from a language background other than English (LBOTE).

The nature of assessment for LD varied widely as did the extent to which the universities bore the associated costs. Assistive technology was widely used in universities, but the pattern of software and hardware use indicated that there was a need for the most recent information and advice to be provided to DLOs regarding effective ways for students with LD to use assistive technology.

DLOs reported that the most common barrier for students with LD was lack of awareness and understanding within the academic community, and they strongly recommended professional development training for academic staff. This study used the important distinction between learning difficulties and LD as a measure of awareness about LD. Little understanding of the distinction was deemed to be an indication of low awareness. Only 17% of DLOs believed LD was well understood in their university and 20% said LD was not well understood in their unit.

62% of DLOs reported that there were really only two key resources, both Web-based, to guide their practice. Learning Skills Advisers (LSAs) showed a strong desire for professional development in this area.

Based on these findings the research team recommended a three-pronged approach to improving the awareness and knowledge of university staff of this “invisible” disability and thus improving accessibility of education to students with LD:

- easy access to up to date information and resources about effective learning strategies, assessment techniques, accommodations and assistive technology;
- professional development directed towards raising awareness and understanding of inclusive teaching and learning;
- support for academics through DLOs and LSAs focussed on particular individual student needs.

The research findings suggested that awareness of LD could be improved through the development of a comprehensive, yet concise, information resource package. Assessment procedures, responsibility for costs, efficacy of accommodations and assistive technology were also seen as areas in urgent need of further investigation. Stage 2 saw the development of a resource that is available primarily through the Web with supplementary materials available in a printed format. It covers:

- characteristics of LD and the difficulties faced by students with LD;
- recommendations relating to screening and assessment for students with LD;
- strategies for inclusive teaching practices to minimise the difficulties encountered by students with LD;
- summaries of the range of possible accommodations required to ensure equitable access to learning and assessment;
- recommendations regarding the most useful assistive technology for students with LD;
- links to local, national and international resources.

The authors suggest that to make the best use of this package it is important to present it in the context of professional development workshops to raise the profile of the issues, allow staff to explore the complex issues in an interactive way and provide the opportunity for individuals to address the particular issues causing them concern. Professional development presentations could be made available to DLOs, LSAs and staff developers in each major centre and reinforce the use of the package as an ongoing resource that staff would use to support their teaching practice.

The authors conclude that universities could better meet the needs of the growing numbers of students with LD. There are serious implications under the *Disability Discrimination Act* (1992) for educational institutions that do not recognise and appropriately respond to the needs of people with learning disability. It is hoped that use of the resource package and improved professional development will lead to improved understanding of this disability, the development of more effective policies and procedures within universities and encourage teaching practice which is more inclusive of the needs of students with LD.

1. Introduction

Learning disability (LD) is becoming a major issue in higher education institutions throughout the world. 10 -12% of the population who possess average or above intelligence learn differently to their peers because of LD (British Dyslexia Association 2001; Australian Learning Disability Association 2001). In the absence of consistent or comprehensive screening for LD, particularly among students who have learning difficulties in schools, it is difficult to gauge the prevalence of LD either in the school system or in post-secondary education. However it is the fastest growing disability type reported by disability support staff in universities over recent years (Mungovan, Allan, England & Hollitt 1999; Henderson 2001).

There are consequences under the *Disability Discrimination Act* (1992) for educational institutions that do not recognise and appropriately respond to the needs of people with learning disabilities. The Human Rights and Equal Opportunity Commission (HREOC) found in December 2000 that an education provider in South Australia had discriminated against a student with dyslexia (one of a number of types of LD) under the Act. The education provider was fined and required to make provision in its procedures to accommodate students with LD (DDADEC 2000).

Anecdotal evidence suggests the needs of students with LD are currently not being adequately met within higher educational institutions. Support materials for students with LD provide immediate assistance (Smith & Kraayenoord 1994; Eales 1995), but their impact in changing practice is limited. Systemic change is preferable (see Monash University 1993; *Learning disabilities in higher education* 1995). There is a need for clear assessment procedures, inclusive teaching and learning practices, improved resources, services and support. This is a big task but the research reported below has found that academics and support staff are seeking knowledge about the issue.

In the following chapters the background to the research is outlined, the methodology and results are presented, the research conclusions are discussed and the development of the Web-based resource package is described.

2. Background

LD affects students and adults at all levels of education and in daily life. With the movement to mass education in Australia resulting in a growth of student participation in higher education, concerns were raised for equity in higher education. In 1990 *A fair chance for all* (Department of Employment, Education and Training [DEET] 1990) outlined six areas of particular concern, one of them being students with disability. An important aim of this early equity initiative was to increase numbers of students from identified equity groups in higher education, so that their proportions at university reflected their proportion in the population of the relevant age group.

Disability funding for universities and legislative protection for people with disabilities under the *Disability Discrimination Act* (1992) resulted in improved structures for support. While support developed quickly for students with physical and sensory disabilities, students with LD were not as promptly recognised or supported (Smith, Carroll & Elkins 1999). The issue was exacerbated by the problems of definition, confusion about what constitutes learning difficulties and LD, and considerable ignorance about LD in the academic and broader communities.

In this section LD is defined, the prevalence of university students with LD in Australia and overseas is described, and the nature of Australian support for students with LD is reviewed.

2.1 Definition

The issue of definition is neatly put by Kavale and Forness (2000) who say the

...failure to achieve consensus about the proper response to the seemingly straightforward question, "What is LD?" has been a longstanding source of controversy, conflict and crisis.

LD can be defined in legal, clinical and operational contexts. In the higher education field both the legal and clinical definitions provide guidelines for forming an operational definition.

Australian legislation, the *Disability Discrimination Act* (1992), defines LD under the category of a disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction. The implication in this definition is that an organic malfunction is the essential element in assessing whether a LD exists.

The generally accepted clinical definition is provided by the American Psychiatric Association (1994):

Learning Disorders are diagnosed when the individual's achievement on individually administered, standardised tests in reading, mathematics, or written expression is substantially below that expected for age, schooling, and level of

intelligence. The learning problems significantly interfere with academic achievement or activities of daily living that require reading, mathematical or writing skills. A variety of statistical approaches can be used to establish that a discrepancy is significant. Substantially below is usually defined as a discrepancy of more than two standard deviations between achievement and IQ.

A smaller discrepancy between achievement and IQ (i.e. between one and two standard deviations) is sometimes used, especially in cases where an individual's performance on an IQ test may have been compromised by an associated disorder in cognitive processing, a comorbid mental disorder or general medical condition, or the individual's ethnic or cultural background. If a sensory deficit is present, the learning difficulties must be in excess of those usually associated with the deficit. Learning Disorders may persist into adulthood.

In practice there is consensus that the best method of definition is by elimination of alternative explanations for learning difficulties, such as intellectual disability, emotional interference, or a learning difficulty that is secondary to a sensory or physical disability (Lavoie 1990; Kavale & Forness 2000). All possible alternative explanations for a discrepancy between IQ and achievement need to be explored before a diagnosis of LD can be proposed. Clinical testing for LD is usually a later step in a process that seeks to eliminate other explanations of learning difficulty first (Mungovan et al. 1999).

Understanding of the definition of LD is enhanced by contrasting it with a definition of learning difficulty. Learning difficulty may be regarded as a generic term for any lower than expected performance in learning. The National Health and Medical Research Council (1990) offer the following definition for learning difficulties:

Learning difficulties [is] a generic term which refers to the substantial proportion (10-16%) of children and adolescents who exhibit problems in developmental and academic skills. These difficulties are considered to result from one or more of the following factors: intellectual disability, physical and sensory defects, emotional difficulties, inadequate environmental experiences, lack of appropriate educational opportunities.

The authors of this study believe there is a clear distinction between learning difficulties, a term which embraces all manner of difficulties experienced by students which may affect their academic performance (e.g. emotional upset, acquired brain injury, language issues or poor previous education) and LD which covers neurological disorders that interfere with the learning of students with average or above average intelligence.

The editors of the updated *Opening All Options* have suggested the following working definition, based on a definition published by the Learning Disabilities Association of Ontario (LDOA) (2001), which we believe is the best:

"Learning Disabilities" refers to a variety of disorders that affect the acquisition, retention, understanding, organisation or use of verbal and/or non-verbal information. These disorders result from impairments in one or more psychological processes related to learning in combination with otherwise average abilities essential for thinking and reasoning. Learning disabilities are specific not global impairments and as such are distinct from intellectual disabilities.

Learning disabilities range in severity and invariably interfere with the acquisition and use of one or more of the following important skills:

- *oral language (e.g., listening, speaking, understanding)*
- *reading (e.g., decoding, comprehension)*
- *written language (e.g., spelling, written expression)*
- *mathematics (e.g., computation, problem solving)*

Learning disabilities may also cause difficulties with organisational skills, social perception and social interaction.

The full text of this definition can be found in Appendix C.

2.2 LD in higher education

Learning disabilities are not well documented in higher education in Australia. The Department of Education, Science and Training (DEST) collects data on students with disabilities (including students with LD) as part of the enrolment statistics. Three questions relate to disability. Questions on the university enrolment form ask students whether they have a disability, what kind (selected from a list of six options) and whether they would like information sent to them.

This survey suggests there is a discrepancy between numbers of students with disabilities identified in DEST enrolment data and numbers actually seeking assistance at university. For example, one university, responding to this survey's question about numbers of students with disabilities who are currently receiving accommodations or service at the university, entered a figure of 450 (estimated), but added that more than 1000 have identified as having a disability in enrolment data. An unpublished census of data at the University of Tasmania found that the numbers of students reporting a disability in the DEST enrolment data and those seeking support from the disability officer were approximately equal. Yet when actual names were compared the overlap was less than half. In other words, many students reporting a disability at enrolment did not seek services, and many students did not reveal their disability at enrolment or were not aware of it at that time but later sought assistance.

In 1996 Smith et al. (1999) polled Australian universities about numbers of, and provision for, students with LD. Thirty-one of 37 Australian universities responded with figures that were either accurate or estimated. Smith et al. applied statistical tests to find there was little difference in most cases between accurate and estimated figures. The study suggested that 1.38% of all students at university receive support for disabilities. Among the students with disabilities it found that 11.9% were students with LD. Extrapolating from these figures, Smith et al. estimated 996 students with LD in Australian universities in 1996.

These Australian data can usefully be compared with data from the USA and UK. In 2000, US students with disabilities represented 6% of first-year students at four-year colleges. Of that number 40% (or 2.4% of the first-year student body) have an LD (Henderson 2001). Henderson (2001) reports that students with LD, compared to all college students with disabilities, were more likely to be Caucasian, older,

from higher income families and with college educated parents. This implies that testing and recognition of students with LD may be associated with class privilege.

In the UK figures for 1999/2000 reveal 3.9% of all students have a disability. Of that number 31% had an LD. The UK figures also show that in a four year period the student population has grown by 17.8%, while the numbers of students with disabilities has grown by 49.3% and the number with dyslexia (the British equivalent to LD) has grown by 164% over the period (Higher Education Statistics Agency 2001). In Canada several innovative associations (e.g. Learning Disability Association of Ontario [LDAO]) provide support for people with LD. Yet in a strongly regionalised education system, no national statistics are kept for students with LD in higher education (J. Drover, President Canadian Disability Service Providers in Post Secondary Education, personal communication, 12 December 2001). Eva Nichols (personal communication 17 February, 2002), a Canadian researcher on LD, says statistics for Ontario, Canada's largest province, indicate

In 1990/91, the total number of students who were reported as having disabilities were 2,911. That number has been steadily increasing and in 1998/99, the last year for which the data have been published, it was 7,879, with 3,244 or 42% reported as having LD.

The identification of higher proportions of students with LD in overseas data raises the question of whether Australian data is underestimating the incidence of LD and if so why.

3. Methodology (Stage 1)

The survey sought information through a questionnaire which elicited demographic information as well as the perceptions of DLOs and a limited survey of LSAs about institutional attitudes to LD, and barriers and support for students and for staff dealing with students with LD. Wider surveying of attitudes of interested parties, included reviewing Web pages of LD support organisations, Disability Unit Web pages, and liaison with representatives of associations advocating for students with LD. Approval was gained from the Australian Vice-Chancellors' Committee (AV-CC) for the survey stage of this project.

3.1 Subjects, procedures and survey development

3.1.1 Major questionnaire to DLOs in Australian universities

The AV-CC list of Australian universities, which includes major Australian universities but omits smaller higher education institutions, such as the National Institute of Dramatic Arts (NIDA) or the Australian Maritime College (AMC), was used as a source list of institutions to be surveyed. All university-based disability Web pages were visited to select the most senior or appropriate DLO to whom a survey questionnaire could be sent. DLOs were mailed a four-page questionnaire containing 22 questions, a covering letter explaining the project, and a reply paid envelope. Follow up phone calls and up to three emails encouraged the DLOs to return the questionnaires. A copy of the questionnaire was also available on the project's Web site. Later in the project more detailed information was gathered from DLOs by email and telephone to clarify points raised in the questionnaires. In a few cases questionnaires were answered collaboratively within a disability unit, but in most cases one person took responsibility for answering the questionnaire. In one case a response came from a single campus only of a multi-campus institution, and in another response two campuses replied separately. In the latter case responses were melded into one institutional response.

The initial stage of the study had a two-fold purpose. First, it planned to gather data about the numbers and characteristics of students with LD and how they are supported in Australian universities. The second purpose was to compare the views from DLOs across Australian universities with the views of another sector of the academic community, LSAs, which is involved with students with LD.

This survey was based on a study by Smith et al. (1999). For reasons of comparison, questions about the prevalence of students with LD and provisions for them followed the form of Smith et al.'s questions. Other questions were developed by the project supervisor and project officer addressing the stated purposes of the research project. The Advisory Committee reviewed and developed the questions. A further view on the composition of the questionnaire was sought from the

president of the Australian Learning Disability Association. DLOs responded to closed and open-ended questions.

The first page of the questionnaire contained an invitation to participate and a brief working definition of LD. The DLO and institution responding were identified. Subsequent pages gathered demographic details about the prevalence of LD, types of assistance offered in institutions, attitudes within the institution towards students with LD, and support used and required by DLOs, LSAs and academic staff in dealing with students with LD. DLOs were invited to suggest people at their institutions who may be interested in the work of this project. General comments were invited in a final open-ended question.

3.1.2 Supplementary LSA questionnaire

The decision to progress with a questionnaire to LSAs was based on the fortuitously coincidental timing of a seminar on LD for LSAs. The *Learning disabilities and higher education information day* was held on Friday 28 September 2001 at the Charles Pearson Theatre at Melbourne University by Melbourne and Deakin Universities and attended by 64 LSAs and other interested people from post-secondary education. The seminar targeted LSAs with the express purpose of informing them about the nature of LD, how it affects students, and showing some of the assistive technology available.

A one-page questionnaire for LSAs comprising questions 13 to 22 from the major questionnaire was distributed and introduced with a ten-minute address. Only LSAs working in higher education were encouraged to anonymously complete and return the questionnaires to a cardboard box at the lecture theatre entrance at the end of the day's proceedings.

The questionnaire addressed issues of understanding of LD within institutions, perceptions about the barriers faced by students, and support available to learning support and academic staff. The selection of questions from the major questionnaire, with only minor changes, for inclusion in the smaller limited questionnaire to LSAs meant a comparison of attitudes and opinions between the two groups was possible.

3.2 Data analysis

Qualitative and quantitative methods of data analysis were used. The survey questionnaire used closed and open-ended questions. Closed questions elicited yes and no answers or numbers or proportions. Quantitative data were analysed descriptively. Open-ended questions were analysed thematically using standard inductive techniques. In some cases further information about statements made in the questionnaire was sought from respondents.

3.3 Limitations of the study

3.3.1 Major questionnaire to DLOs

Confidentiality was not stressed in this survey, thus attitudes expressed, while personal, might have reflected institutional positions.

Variation in the manner of responding, for example as a group or as a single campus of a multi-campus institution, were limited to only four responses, and still gave a useful view for the institution responding. While some respondents noted that they had consulted colleagues, others spoke as individuals. In all cases one set of statistics and one amalgamated view from each university was received.

Personal attitudes about the barriers faced by students and the resources available or desired were expressed. It was not important for this survey to distinguish between collective or individual positions as the people chosen to respond tended to be senior people with responsibility for students with disabilities and thus spoke from a position of understanding within their institution.

The response rate for the major questionnaire was extremely high (92%) given that the survey was sent and returned during a six-week period in second semester, 2001. Answering the detailed questionnaire was time consuming and some respondents chose not to obtain, or did not have access to, statistical data. Overall not everyone answered every question with accurate and precise data, yet a high response to most questions provides workable data.

3.3.2 Supplementary questionnaire to LSAs

These questionnaires were confidential. The questionnaire to LSAs was distributed at a professional development seminar about LD. While the group included LSAs from within Victoria, New South Wales and South Australian the sample number of 23 is small and results from this study cannot be statistically verified.

Because of the limitations of the supplementary study, the emphasis throughout this report is placed upon the views expressed by DLOs.

4. Results (Stage 1)

After a preliminary comment about the major questionnaire, results for the major study will be reviewed in terms of four subsections: Demographic data, Assessment and support, Understanding of LD, Resources used and needed. Then, insights from the limited study of LSAs will be considered.

4.1 Response to the major questionnaire to DLOs in Australian universities

The data collected through this study is more accurate in regard to students with LD than DEST data collection because this data was collected mid semester two instead of at enrolment; was reported from DLO statistics, not self-reported by students; and reported students for whom LD is the primary disability.

Responses were received from 36 of 39 universities surveyed (92%). The 36 participating universities have a total student population of 652,516 (DEST 2001). This represents 90% of the national university student population for 2001. To ascertain that the respondent universities were representative of all 39 Australian universities, all universities were ranked in size of student population.

Representation was checked from the each of three divisions of 13 universities. Twelve of the 13 largest universities responded to the survey; 11 of the 13 middle universities, and 13 of the smallest 13 universities responded. This reveals a slight overrepresentation among the lowest bracket of universities.

In tabulating data an N value has been used to indicate the number of DLOs responding to that particular question.

4.1.1 Demographic data

Among the universities who responded 12,694 students with disabilities were receiving accommodations and/or services. Of the students with disabilities, 1,694 were students with an LD as their primary disability. These figures may be extrapolated to give an indication of the figure for all universities by multiplying it by a factor of 1.10553 (the inverse of 90.45422%). The extrapolated figures are 14,034 students with disabilities and 1,873 students with LD.

While the national average of students with disabilities drawn from this survey was close to 2% of all students, the percentages for individual universities ranged from over 5% to less 0.5%. Smaller institutions tended to report higher figures for students with disabilities. There was no particular state bias or differences in figures reported by urban universities compared to regional universities.

The range of students with LD as a proportion of students with disabilities varied greatly, with the highest four reports above 30% and the lowest four below 5%. Among these rankings there was no relationship to size of institution, state or region of the university.

Expressed as a percentage, 13.3% of students with disabilities in Australian universities had an LD as their primary disability. A similar study five years before (Smith et al. 1999) found that 11.9% of students with disabilities had an LD as their primary disability.

Table 4.1 Students with disability and students with LD in universities

	Number of students at responding universities (N=36)	Number of students at all universities (N=39)	Percentage of all students
Student population	652,516(1)	721,377(1)	-
Students with disabilities	12,694(2)	14,034*	1.95%
Students with LD	1,694(2)	1,873*	0.26%

(1) DETYA, 2001b (2) Current study

*Extrapolated from numbers given for responding universities

Using similar data collection to a study undertaken in 1996 (Smith et al. 1999), the growth in numbers of students can be seen. While the population of all students grew by 14.5%, the growth in numbers of students with disabilities was 60.6% and the growth numbers for students with LD was 88.1%.

Table 4.2 Growth in numbers of students, students with disabilities and students with LD 1996 to 2001.

	1996 (N=37) (1)	2001(N=39)	Percentage growth
All students	630,000	721,377(2)	14.5%
Students with disabilities	8,738	14,034(3)*	60.6%
Students with LD	996	1,873(3)*	88.1%

(1) Smith et al., 1999: (2) DEST, 2001b (3) Current study

*Extrapolated from numbers given for responding universities

This study found that the numbers of students accessing services through DLOs across the country had risen dramatically over a five-year period. Numbers of students with LD were also increasing in line with this trend, but only increasing by a small proportion in relation to other disability groups. This contrasted international trends where numbers of students with LD are growing as a proportion of all students with disabilities.

This is consistent with DEST data. For example, DEST (2001c) states that in 1996 there were 862 students with LD, while in 2000 the figure was 1652, a rise of 91.6%.

Numbers of students with LD were analysed in terms of gender, level of study, mode of study, language background, study load, and age of the population of

students with LD. As there was a variation in the numbers of universities providing data for each question, the results are presented as percentages.

Gender

In this study there were slightly more males than females reported with LD. This contrasted with the national figure for all students at university, which showed nearly 10% more females than males studying. Compared to the 1996 study, this showed a 5.1% increase in the proportion of males with LD. This finding is consistent with research that suggests the ratio of males with LD to females with LD is 1.1:1 (Shaywitz, Shaywitz, Fletcher & Escobar 1990).

Table 4.3 Gender of all students and students with LD

	1996 (N=24)		2001 (N=31)	
	Percentage of all students (1)	Percentage of students with LD (1)	Percentage of all students (2)	Percentage of students with LD (3)
Male students	45.7%	47.7%	45.0%	52.8%
Female students	54.3%	52.3%	55.0%	47.2%

N= Responding universities

(1) Smith et al., 1999; (2) DEST, 2001b; (3) Current study

Level of study

Over 90% of students with LD were undergraduates, compared with only 78% of all students studying at the undergraduate level. In 1996 only 5.6% of students with LD were receiving services from DLOs while in 2001 that percentage had risen to 10.3%. A distortion may exist in these figures as some postgraduate students may have suitable accommodations in place, or may have no need for accommodations such as extra time in exams or lecture note takers, and so are not seeking support from disability units (S. Smith, personal communication, November 26, 2001). This is an area for further study.

Table 4.4 Level of study of all students and students with LD

	1996 (N=31)		2001 (N=28)	
	Percentage of all students (1)	Percentage of students with LD (1)	Percentage of all students (2)	Percentage of students with LD (3)
Postgraduate	23.2%	5.6%	21.4%	8.2%
Undergraduate	76.8%	94.4%	78.6%	91.8%

N= Responding universities

(1) Smith et al., 1999; (2) DEST, 2001b; (3) Current study

Mode of study for students with LD

89% of students with LD studied in internal mode. This figure was close to the national figure for all students. There has been little change since the 1996 study by Smith et al. Note, students studying both internally and externally were excluded in calculating the percentage for all students.

Table 4.5 Mode of study of all students and students with LD

	1996 (N=21)		2001 (N=25)	
	Percentage of all students (1)	Percentage of students with LD (1)	Percentage of all students (2)	Percentage of students with LD (3)
Internal	86.6%	88.7%	85.4%	89.1%

N= Responding universities

(1) Smith et al., 1999; (2) DEST, 2001b; (3) Current study

Language backgrounds other than English

Only 56 students with a language background other than English (LBOTE) were reported. This represents only 3.3% of the entire group of students with LD. In comparison LBOTE students comprise 22% of all university students. The low figure here may partially reflect the difficult nature of assessing LD across languages in a dominant English language teaching environment. This is another area for future research.

Table 4.6 Language background other than English (LBOTE) of all students and students with LD

N=18	Percentage of all students (1)	Percentage of students with LD
Language background other than English (LBOTE)	22%	3.3%

(1) DEST, 2001c

Course load

More than two thirds of students with LD studied full-time. This was a slight increase over five years in the percentage of students doing full-time study.

Table 4.7 Course load of all students and students with LD

	1996 (N=23)		2001 (N=22)	
N=24	Percentage of all students (1)	Percentage of students with LD (1)	Percentage of all students (2)	Percentage of students with LD (3)
Full time	67.8%	63.5%	68.4%	65.3%

N= Responding universities

(1) Smith et al., 1999; (2) DEST, 2001b; (3) Current study

Age groups

More than half of students with LD in universities were under 25 years of age. Because of variability between estimated and actual figures, numbers from the 12 universities who provided actual figures were used and compared to DEST figures for all students. This comparison showed that the age distribution of students with LD was similar to the distribution for all students.

Table 4.8 Age of all students and students with LD

	Percentage of all students (1)	Percentage of students with LD* (N=13) (2)
Less than 20	27.2%	24.6%
20 to 24	33.5%	30.2%
25 to 29	13.5%	14.7%
30 to 39	14.9%	18.2%
40 and over	10.8%	12.4%

N= Responding universities

* Percentages calculated from universities offering actual figures on age groupings

(1) DEST, 2001c; (2) Current study

Time of assessment

DLOs were asked whether students were assessed before or after they came to university. The majority, nearly two out of three, were assessed before (many presumably at school). In Queensland the figure was 50%. In only one state, Tasmania, did the opposite occur. Students with LD may be recent school leavers or mature age students. There was insufficient data gained from this study to determine the proportion of recent school leavers with LD who had been tested during their school years. This is an important area for further research.

Table 4.9 Timing of assessment of LD

N=33	Percentage
Before coming to university	63%
After they came to university	37%

N= Responding universities

4.1.2 Assessment and support

Assessment procedures

A professional psychologist who administers a range of appropriate tests usually makes assessment for LD. An assessment report ideally specifies the nature of the LD, the student's strengths, and suggests appropriate accommodations to facilitate learning at university.

This survey found a considerable range in practice when it came to assessment of students. Testing may be free, subsidised or full cost to the student. It may be quick or it may involve a waiting period of some months (during which time interim accommodations may be put in place). This study found that universally assessment was done by, or overseen by, qualified professionals. Assessments happened more often off campus (17 reports) than on campus (13). At five institutions both forms

took place. In all cases students were required to pay for off-campus assessments. Some institutions have an arrangement whereby professionals are paid to do tests on campus. In two cases all (\$350) or part (\$40) of this cost was passed on to students. Costs for testing were reported between \$5 (at a neighbouring university clinic) to \$500. A usual cost was around \$300. In several institutions the counselling service or disability unit carries the cost. Universities who asked for off-campus testing for LD at students' own cost enrolled 43% of the nation's student population.

In six institutions an arrangement for administration of tests by later-year (interns, masters, clinical placements) psychology students, under supervision, was made. Waiting periods may be a problem on some campuses. One campus could only test in second semester because of the arrangement with the psychology department to use clinical placement students on field placement as assessors (under the supervision of a senior academic who is a registered psychologist), another university mentioned a two to three month wait.

DLOs were asked how effective they thought their current system was. Seventeen reported favourably, seven were positively disposed to their system but noted reservations and nine felt their system was not working well. The strongest concerns were about prohibitive cost to students (6 responses), time lags in testing (4), and the stress on unit time and resources (2). One institution had stopped providing testing for students due to cost. One regional university commented that it was difficult to obtain reports that provided useful recommendations.

Transition to university

Transition support varied for students with disabilities and students with LD. Many institutions reported general orientation or transition programs ranging from two hours to two weeks. In most cases no special program of arrangement was made for students with LD. Only five of the 23 DLOs who said their institutions provided transition/orientation programs could specify the number of students with LD undertaking generalised transition/ orientation workshops. No DLO indicated that any special provision had been made for such students in general workshops. Six universities ran specific sessions for students with disabilities and two universities offered a session for all equity students. No institution had an LD-specific transition program. Most institutions indicated that follow up support was available through the DLO, the LSA or the assistive technology people so that specific accommodations could be made. One university's learning skills unit ran a fortnightly group meeting for students with LD. One respondent pointed out that a policy of inclusive practice meant all academic staff running transition programs were made aware of accommodating the needs of students with disability.

Support for students with LD

In the survey questionnaire, accommodations and support services for students were listed and DLOs were asked which their institutions offered. Null responses and answers of "no" were treated as negatives. Smaller institutions had a higher proportion of students with disabilities, but, possibly because of lower overall numbers, tended to have a reduced range of accommodations. Some

accommodations, such as extra time for exams and assignments, the provision of a reader or writer in exams, a lecture note taker, a word processor or coloured paper for exams, or library assistance, are near universal. DLOs also frequently provided advocacy support for students. Because many accommodations and assistive technology options can be used by other disability groups, provision of a wide range of accommodations can benefit many students with disabilities and need not be seen as costly provisions for students with LD.

Some respondents mentioned further accommodations, not on the survey list. These included: large font text, material on CD-ROM, on-going training and assistance in adaptive technology, texts printed on coloured paper, and lists of commonly used words (without meanings) allowed in exams.

Adaptive (assistive) technology used by respondents included software such as voice activated software and text readers, for example Dragon Naturally Speaking, Dragon Dictate (an older version of Dragon Naturally Speaking), Text Help/Read and Write, Inspiration, Jaws Open Book, Wordsmith, Vocab Plus, Kurzweil 3000; and hardware such as dedicated computers in assistive technology labs or library, audio calculators, and scanners.

All but two institutions required documentation of LD before students were allowed to access accommodations and support. While several universities pointed to general policies on disability, only one institution had a specific LD policy.

Table 4.10 Institutional accommodations and extra support for students with LD

Accommodations (N=34)	Yes	No	No Answer
Examinations – extra time	34	0	0
Examinations – reader/writer	30	1	3
Examinations – taped questions and/or responses	22	5	7
Examinations – Interview exam	16	10	8
Examinations – word processor	31	0	3
Examinations – variation in format (e.g. no multiple choice)	20	6	8
Examinations – coloured paper	30	2	2
Notetaker for lectures	30	3	1
Remedial tuition in reading, spelling and/or writing	18	12	4
Library assistance	31	0	3
Adaptive technology	26	4	4
Audio taping (or videotaping) lectures	27	3	4
Assignments in alternative format (e.g. tapes)	24	4	6
Assignment editing	17	14	3
Assignment time extensions	33	0	1
Advocacy	31	0	3
Peer tutoring	17	12	5
Subject tutoring	11	17	6
Disability support group	12	16	6
LD support group	3	25	6
Taped texts	22	7	5
Electronic texts	24	4	6

Academic staff training about LD

Responses from DLOs indicate that academic staff receive very limited training in this area. Only seven of 33 responding universities indicated that they provided training, the others did not. When asked for details, six respondents indicated that training was essentially reactive and informal. A typical response was

If any lecturer requires any help or assistance, the disability unit will provide help.

Another DLO commented that a unit within the university's Certificate of Higher Education, which all new staff are encouraged to complete, covers the area of disabilities.

Only one university gave descriptions of what could be called proactive training programs:

Training is offered to all academic staff. As academic staff don't know if they have any students in their classes, emphasis is on teaching inclusively. This is because many students with disabilities do not identify as having a disability and/or may not seek support. If practices are inclusive they may not need any support.

4.1.3 Understanding LD

In this bracket of questions attitudes of staff towards dealing with students with LD were polled. Results from this section are compared with the views of LSAs who also deal with students with LD.

The distinction between learning difficulty and LD

There is a clear distinction between learning difficulties and LD. Learning difficulties embrace all manner of difficulties experienced by students which may affect their academic performance (e.g. emotional upset, acquired brain injury, language issues or poor previous education). LD covers neurological disorders that interfere with the learning of students with average or above average intelligence. People with some understanding of LD should be aware of the distinction.

DLOs were asked to say how well their unit understood the difference between learning difficulties and LD and how well the university as a whole understood it. Seventy-nine percent of DLOs thought there was a good understanding of the distinction in their unit. The 17% who said it was not well understood in their unit may reflect the idiosyncratic nature of many disability units with expertise developed around the background and interests of staff with ad hoc, rather than comprehensive, training in the area of disability.

However, only 21% believed the distinction was well understood in their universities. This view of ignorance on campus was reinforced by LSAs.

Barriers for students with LD

Respondents were asked to state what they thought were the three biggest barriers faced by students with LD. The responses were allocated to categories based on the nature of the barrier identified. If a DLO made more than one comment related to the same category, only one mention was recorded in that category. Thus these comments are not weighted by a particular focus of one DLO reporting several similar barriers.

Responses were grouped under ten categories. The first three relate to barriers within the personal domain, the next seven categories relate to the institution, and the final item relates to the community. A brief indication of the nature of comments in each section is given below.

The personal domain

1. Confidence and personal skills (e.g. students' failure to identify early, poor social skills among students with LD, low confidence and self esteem, male students' reluctance to seek help, and inability to come to terms with unsatisfactory grades).
2. Specific academic skills related to LD (e.g. keeping focused for long periods of time, doing the required reading, and moderating poor written expression).
3. Time management (e.g. needing extra time for assignments and exams, personal time organisation, and completing tasks on time).

The institutional domain

4. Awareness and understanding of LD among students and staff (e.g. students not understanding the impact of LD on planned study, academics' lack of empathy, the need to convince academics about affirmative action, ignorance of students and staff of support available, students not seeking help in developing coping strategies, and poor self-understanding by students).
5. Assessment and early diagnosis (e.g. unavailability of affordable and effective assessment, costly diagnosis, and limited assessment).
6. Resources and funding (e.g. access to learning materials, poor higher education funding, difficulty designing and resourcing appropriate assessments, lack of adequately trained staff, lack of opportunity for 1:1 contact, and lack of time to deal with students with LD).
7. Skills and knowledge of academic staff (e.g. lack of knowledge or understanding by academic staff, neglect of the learning process, and limited recognition of and poor support for developing individual learning styles).
8. Services and accommodations (e.g. finding appropriate and successful accommodations, difficulties working with professional bodies, inflexible processes, and difficulty negotiating accommodations).
9. Assistive technology (e.g. inadequate access to computers, low technology resources on campus, and low awareness among IT staff).

The community domain

10. External constraints (e.g. difficulty for students with LD in getting through the school system, lack of community knowledge of LD, the undefined nature of LD, and financial pressures to find work at the expense of time to study).

By far the most notable barriers were related to low awareness about LD within the institution. Twenty out of 34 DLOs suggested poor understanding or awareness both among staff and students was a major barrier. Other responses identified issues related directly to students, such as low self-esteem, reluctance to acknowledge their disability, and particular difficulties with academic skills. Lack of resources and effective assessment processes were also institutional barriers.

Table 4.11 Barriers for students with LD perceived by DLOs (expressed as a number and percentage)

Domain	Barriers	Mentions	%
Personal	1. Confidence & personal skills	14	41%
	2. Specific academic skills related to LD	10	29%
	3. Time management	3	9%
Institutional	4. Awareness & understanding of LD among students & staff	20	59%
	5. Assessment & early diagnosis	9	26%
	6. Resources & funding (including staff time)	7	21%
	7. Skills & knowledge of academic staff	5	15%
	8. Services and accommodations	4	12%
	9. Assistive technology	2	6%
Community	10. External constraints	6	18%

N=34 DLOs answered

Overcoming barriers

Having identified what they considered were significant barriers, respondents were asked what could be done to overcome them. In categorising these responses it seemed logical to follow the pattern dictated by DLOs in relation to their responses to the category above. Thus this section used the same headings, in the same order as the previous section. An additional category to include comments addressing policy and institutional culture was introduced. These categories are summarised below:

The personal domain

1. Confidence and personal skills (e.g. educating students with LD to recognise their strengths, promoting self-awareness, building confidence, and creating a secure on-line chat room).
2. Specific academic skills related to LD (e.g. holding transition programs before and during university, promoting more flexible assessment practices, doing 1:1 skills development, establishing a program to complete studies, and developing specific skills such as using mind maps, flow charts, table and templates).
3. Time management (e.g. extending time frames, developing time management strategies, and ensuring adequate time).

The Institutional domain

4. Awareness and understanding of LD among students and staff (e.g. lessening stigmatization, holding information sessions, promoting attitude change,

attempting to educate people, and acknowledging the problem). Comments here formed a collection of general attitudes that could apply to both the university and society generally. Because respondents did not specify the wider society or institutions external to the university they were categorised here because their comments were relevant to the university.

5. Assessment and early diagnosis (e.g. diagnosing LD in schools, sourcing a good assessment provider, prudently using the label of LD after careful diagnosis, and identifying “at risk” students in first year).
6. Resources and funding, including staff time (e.g. allocating more money for learning support [and more money for all students], providing better support materials, creating more resources for academic staff, funding specifically allocated for assessment, changing faculty workloads, and employing staff to work with students individually).
7. Skills and knowledge of academic staff (e.g. training staff in inclusive teaching practice, providing concise resources for staff with links to Web pages, giving professional development for staff on identification and referral, sensitising staff to problems for students with LD, and offering professional development for LSAs).
8. Services and accommodations (e.g. educating academics about extensions and accommodations, making alternative exam arrangements, establishing standards of curriculum delivery and assessment, and allowing self-paced assignments).
9. Assistive technology (e.g. informing about assistive technology early, in-servicing LSAs [especially about assistive technology], using text-to-voice note scanning in labs, and generally seeing where technological assistance can be used).
10. Policy and culture (e.g. establishing a discrimination-free environment, introducing specialised entry programs, giving students with LD full time status while they study part time, seeking acknowledgement from DEST and the AV-CC of low support for students with LD, and liaising more closely with secondary schools).

The community domain

11. External constraints (e.g. developing a public LD awareness campaign, promoting community education, and starting awareness at the beginning of secondary school).

DLOs showed an awareness of many ways for lessening the effects of perceived barriers. The strongest way to overcome barriers facing students, according to 47% of DLOs, was through improving support for academic staff. The second most favoured category was improving students’ academic skills with special attention to transition and individual attention for students with LD. Then four categories rated equally: raising general awareness and understanding within the university, improving service and accommodations, improved assessment and early diagnosis, and changing policy or culture. Aware DLOs saw the implications of resourcing going beyond their units or academic departments, to recognition of disability issues at university-wide and national educational administration levels.

Table 4.12 Overcoming barriers for students with LD perceived by DLOs, expressed as a number and percentage)

Domain	Barrier	Mentions	%
Personal	1. Confidence & personal skills	2	6%
	2. Specific academic skills related to LD	9	26%
	3. Time management	2	6%
Institutional	4. Awareness & understanding	7	21%
	5. Assessment & early diagnosis	7	21%
	6. Resources & funding	6	18%
	7. Skills & knowledge of academic staff	16	47%
	8. Services and accommodations	7	21%
	9. Assistive technology	4	12%
	10. Policy and culture	7	21%
Community	11. External constraints	2	6%

N=34 DLOs answered

4.1.4 Resources used and needed

Resources used by staff

DLOs used the Web as their major resource (26 mentions), focussing on two important Australian sites: the Australian Learning Disability Association (ALDA) site and the original *Opening All Options* site (a New South Wales Regional Disabilities Liaison Officers initiative developed in 1999). These sites offer practical, comprehensive information about LD and accommodations. Three other useful university Websites were reported as well as two international sites (See Appendix B for Website references) Colleagues were the next most important source (9 mentions), followed by literature, both practical guides and research literature (6 mentions).

Resources required

DLOs were asked what additional resources/support would be useful in assisting them to better support students with LD, and what additional resources/support they thought would be useful to academics in working with students with LD.

DLOs were wide-ranging in their own requirements. Training and resource packages rated highly (21 mentions). A respondent asked for

comprehensive information/resource package on best practice for supporting students with LD for DLOs

Another was more desperate, asking for

suggestions for staff education, as regular programs are usually unsuccessful as staff are already overwhelmed. Some creative tips please!

Support and training for students in assistive technology and via self-help kits was also recommended (3 mentions). The following comment is an example:

[We need] assessment centres to assess, support, train students in use of appropriate technology

Money (6 mentions), time (2 mentions), and staff to deal specifically with students with LD (2 mentions) were also needed. One DLO asked for

money to provide tutors and notetakers and a person to work specifically with students with LD

Another matter mentioned was the need for good psychological assessment reports. One respondent asked for

access to assessment that is convenient, inexpensive and relevant

The need for institutional support from both the university and DETYA was also stated, for example:

[We need] senior management support to assist students

Focussing on the needs of academics, DLOs recommended training (11 responses), improved resources (9 responses), and general information (10 responses). Such items as the following were asked for:

*a concise "how to assist" resource for academics;
training in inclusive teaching practices; and
resources for development of alternative formats for course material.*

One DLO put the case eloquently, saying:

We have good resources already. It's a matter of finding a helpful way of presenting them to academic staff.

4.2 Insights from the LSA questionnaire

A supplementary study was designed to give an indication of the attitudes of LSAs. These views cannot be seen to be representative because of their small sample size and findings below should be read with caution.

4.2.1 Understanding LD

The distinction between learning difficulty and LD

Among LSAs there was a balance between those who thought the distinction between learning difficulties and LD was well understood and those who did not think it was well understood in their units. In the tables below the attitudes of LSAs are compared with those of DLOs stated in the major questionnaire.

Table 4.13 Distinction between learning difficulty and LD well understood within unit/faculty

	Yes	No	Yes and no
DLO responses (N=34)	79%	18%	3%
LSA responses (N=23)	57%	43%	-

N=number of responses

When asked for a university-wide view about the distinction between the two terms, both groups were harsher in their judgement. Most respondents believed the distinction was poorly understood.

Table 4.14 Distinction between learning difficulty and LD well understood within university

	Yes	No	Yes and no
DLO responses (N=34)	21%	73%	6%
LSA responses (N=23)	13%	78%	-

N=number of responses

Barriers for students with LD

Both groups laid much stress on poor awareness and understanding as a barrier. Confidence and personal skills rated as a factor more commonly among DLOs. LSAs stressed that the lack of skills and knowledge of academic staff was a barrier. Although both were concerned about the demands of academic tasks, DLOs were most concerned. Early assessment and diagnosis was a concern among DLOs, but relatively unimportant to LSAs. DLOs and LSAs seemed aware of institutional barriers and issues related to assistive technology.

Table 4.15 Barriers for students with LD perceived by DLOs and LSAs

Barriers	DLOs (N=34)	LSAs (N=23)
1. Confidence & personal skills	41%	22%
2. Specific academic skills related to LD	29%	22%
3. Time management	9%	22%
4. Awareness & understanding of LD among students and staff	59%	48%
5. Resources & funding (inc. staff time)	21%	39%
6. Skills & knowledge of academic staff	15%	39%
7. Services and accommodations	12%	22%
8. Assistive technology	6%	26%
9. Assessment & early diagnosis	26%	9%
10. External constraints	18%	4%

Overcoming barriers

There was more consistency between DLOs and LSAs when it came to suggesting strategies to overcome barriers. Education was the main theme in the responses. Both DLOs and LSAs mentioned strategies to assist students to deal with specific academic tasks (either individually or through orientation workshops), saw raising awareness among staff and students as important, thought academics needed professional development, and were concerned with policy change. DLOs were more concerned about services and accommodations for students, and issues related to assessment and early diagnosis of LD.

Table 4.16 Overcoming barriers for students with LD perceived by DLOs and LSAs

	DLOs (N=34)	LSAs (N=23)
1. Confidence & personal skills	6%	8%
2. Specific academic skills related to LD	26%	26%
3. Time management	6%	9%
4. Awareness & understanding of LD among staff and students	21%	30%
5. Resources & funding	18%	17%
6. Skills & knowledge of academic staff	47%	39%
7. Services and accommodations	21%	4%
8. Assistive technology	12%	17%
9. Assessment & early diagnosis	21%	4%
10. Policy and culture	21%	26%
11. External constraints	6%	4%

4.2.2 Resources used and needed

Resources used by staff

LSAs tended to interpret this question differently, and in their responses mentioned, as resources, particular strategies or accommodations for dealing with students with LD (10 mentions). The Web and email listservs accounted for 10 mentions. Colleagues (9 mentions) and literature (3 mentions) were also used. Two staff stated their own personal experience in working with students with LD provided them with resources. Three LSAs said they used no resources.

Resources needed by staff

Among LSAs there was a strong demand for their own professional development and direction to resources. Seventeen mentioned training and development of resources as important. Another eight wanted a set of strategies or useful Web sites, while a further six wanted to know more about assistive technology. Free psychological assessment and reference to theoretical literature accounted for two mentions.

In stating what resources they thought academics needed, LSAs stressed training (7 responses) and information (11 responses). Two mentions were made of Web-based information. Two comments were made about a needed attitude change in academics and early identification of students with LD.

4.3 Summary of major findings from this study

This study identified the increasing numbers of students with LD in higher education and the support and accommodations currently available to them. There was a very high response rate to the major survey with responses from DLOs in 36 of the 39 Australian universities. Responses supported the findings of a similar study conducted in 1996 by Smith, et al. (1999). A useful picture of the barriers facing students with LD and some strategies that might be useful in addressing these was obtained.

It should be stressed that the supplementary study (LSAs) surveyed a small sample group and the finding cannot be statistically validated. Findings from this survey must be regarded as incidental support (or contrast) for the findings of the major survey. The following findings have been reported in this study.

4.3.1 Demographic data

- The number of students with disabilities in universities rose dramatically over the past five years by 60.6%.
- The number of students with LD rose at an even higher rate over the last five years by 88.1%.
- There was considerable variation among universities in reporting the percentage of students with disabilities as a proportion of all students, varying from 0.5% to 5% (average 1.9%). Smaller universities tended to report higher proportions of students with disabilities.
- The proportion of students with LD as a proportion of students with disabilities also varied widely between institutions from more than 30% to less than 5% (average 13.3%).
- There was little difference between students with LD and all students in terms of mode of study, study load and age, but students with LD were slightly more likely to be male and doing undergraduate study.

4.3.2 Assessment and support

- The assessment processes used varied widely across Australian universities.
- Most testing for LD was done by qualified professionals with more students tested off-campus than on-campus.
- Students bore the costs of testing in more than half the institutions polled (average \$300).
- Effective transition into university was considered important by most DLOs, yet few universities specifically focussed on the needs of students with LD.
- DLOs advocated an inclusive approach in provision of support but recognised the need to accommodate individual requirements.

- Assistive technology was not rated highly as a solution to barriers associated with LD and the knowledge of staff and students about assistive technology software appeared not to be up-to-date.

4.3.3 Understanding LD

- DLOs felt the most common barrier for students with LD was lack of awareness and understanding within the academic community.
- Only 17% of DLOs believed LD was well understood in their university and 20% said LD was not well understood in their unit.
- Staff training and information were considered to be the best ways to overcome barriers for LD students; however, currently universities offer little staff training in issues related to LD.

4.3.4 Resources used and needed

- DLOs considered on-line resources to be most useful in dealing with issues of LD.
- DLOs recommended professional development training for academic staff.

5. Discussion (Stage 1)

5.1 Increased numbers of students with LD

This study has shown a significant and growing number of students with LD in Australian universities. The variability in reported numbers among institutions and other evidence from the study and overseas suggests that the numbers reported may be a conservative estimate due to under reporting of the disability. The study suggests that identifying these students and accommodating their needs is a major challenge for DLOs and teaching staff alike.

5.2 Low levels of awareness about LD

Students with LD face a range of barriers in their attempts to study at university. Chief among these barriers, with 59% of DLOs noting issues related to this item, appears to be a lack of awareness and knowledge of LD, particularly within the academic community. Results from this study indicate that this ignorance may be widespread among academic staff and reflects the lack of professional development on LD issues within universities that was reported in the study.

The demands of academic teaching and consequent time constraints mean that unless staff are provided with specific opportunities to improve their understanding it will not happen. It appears that currently academic staff generally only become aware of LD when they interact with a DLO about the needs of an individual student. However, as not all students with LD are identified through formal assessment, it is particularly important that all academic staff are aware of LD and are thus able to meet the needs of all students through inclusive teaching practice.

LSAs also appear to have limited awareness and understanding of LD, yet this group plays an important role not only in supporting students with a range of learning difficulties but as catalysts for improving the quality of teaching practice. In this study, LSAs were very aware of their need for professional development, including training in assistive technology. The very positive response to the *Learning disabilities and higher education information day* suggests a mechanism whereby this could be achieved.

This study has found that misunderstanding about LD also extends to some DLOs, reflecting perhaps the lack of any formal qualification for DLOs, the ad hoc, rather than comprehensive, training provided to them, and the variability in organisation of and support for disability services within universities. This is cause for considerable concern as DLOs are very often the staff to whom academics turn for information and advice in supporting students with LD.

5.3 Assessment of students with LD

Assessment is a key to successfully meeting the needs of students with LD. Assessment reports clarify the type and extent of any LD and make recommendations regarding the support and accommodations required to enable the student to learn and demonstrate his/her learning. Accurate and comprehensive assessments are therefore vital in ensuring that the needs of students are identified and met. The concerns expressed by DLOs about assessments were related to the efficiency of the assessment mechanisms, the cost to students of assessment and the quality of reports.

There appears to be no common agreement or standard regarding assessment requirements or preferred procedures. There is also wide variability in the extent to which students are required to bear the costs of assessment. This is of particular concern in light of the fact that universities generally require assessment in order to accommodate the needs of students and the requirements of the *Disability Discrimination Act* (1992) in relation to such assessments.

Quality and comprehensiveness of assessment was not directly addressed in this study; however, it was clear from the responses that a number of DLOs had concerns about the quality of assessment reports. As almost two out of three assessments for LD are completed before students come to university, the quality of assessment in schools and the applicability of these assessments to higher education is worthy of further investigation.

It would seem from these findings that students with LD receive little attention at the start of their university career when they could greatly benefit from some development of learning skills, the establishment of accommodations, and introduction to assistive technology. As it is not possible to identify all students with LD at the commencement of their study and assess their needs, inclusive approaches to transition and orientation programs could greatly assist students with LD in their early days of university life.

The authors suggest that further research be conducted to evaluate testing for LD in universities with the aim of recommending a standardised testing procedure, a recommended range of tests and a standardised report format which would help to ensure that students and DLOs are provided with clear recommendations regarding the accommodations and support services required. They also suggest that the value of an LD screening tool to be used by DLOs within universities be further investigated.

5.4 Meeting needs of students with LD

A wide range of support services and accommodations are being provided by DLOs. However, from the outcomes of our survey, it would appear that many universities are providing these accommodations in a reactive way. A better approach may be to focus on teaching practice so that it is inclusive of the needs of all students, and supported by systemic provision for the particular needs of those with LD. Both DLOs and LSAs identified limited financial and time resources as major barriers to meeting the needs of students with LD. Given the increasing numbers of students with LD, and no increase in time or money, there is a real

need for universities to move to inclusive approaches. Responses within the survey considered an inclusive approach would offer an opportunity to meet the needs of students with LD in a more cost effective manner.

Assistive technology is widely used in universities, but the pattern of use shown through this survey indicated that many DLOs lack recent information and advice about the most effective way for students with LD to use it. DLOs in particular were keen to improve their understanding of the opportunities offered to students with LD through this technology.

A key issue for teaching staff is how to most equitably accommodate the needs of these students within the classroom. The authors believe up-to-date information and resources that are easily accessible such as through the Web via a resources package would help.

5.5 Strategies to increase awareness of LD

A proactive approach is required to improve disability awareness and promote the importance of teaching that is inclusive of the needs of all students. It has been well established that an inclusive approach provides the most equitable, cost effective and least stigmatising means for meeting the needs of a diverse student population and that such an approach has benefits for all students (Monash University 1993; O'Connor, Watson, Power & Hartley 1998). Such an approach is likely to meet the needs of most students in the classroom and reduce the need for individual support arrangements. One mechanism for improving awareness directly is to include information about LD as part of existing training courses for academics, such as in induction programs or the Certificate of Higher Education described by one respondent. Another is through further promotion to staff of material which directly addresses disability awareness and inclusive teaching practice (e.g. O'Conner et al. 1998; Barrett 1999).

While awareness of LD among most DLOs is high, they are keen to ensure that they have sufficient information and up-to-date strategies to ensure that they are able to provide effective support to students. They currently rely almost entirely upon only two Web based resources to inform their practice. The main resource *Opening All Options* had a NSW focus with much advice premised on policy and services available in that state. It had not been updated since it was developed in 1999 and therefore is becoming less effective over time. As the collective that created it no longer existed and copyright has been given to the University of Tasmania which hosts *Opening All Options* on its server there was no opportunity for updating. As it was conceived as a paper-based resource then transferred to a Website, there are limitations in the format and presentation of the original *Opening All Options*. Therefore there is a need for an information and resources package which is easily accessible and should be regularly updated.

Training and support programs are often unavailable to academics at the time that the need arises and therefore a “just in time” approach to information and resources is required to complement professional development programs.

The authors suggest that a range of opportunities for promoting awareness among academics of LD and inclusive teaching principles and practices be investigated.

6. Resource development (Stage 2)

The findings of the research undertaken in Stage 1 suggested that a resource package would be useful to provide information about LD, education about appropriate teaching and assessment practice, updated assistive technology, and training resources for the academic community. The research suggested that the package could also highlight issues of concern for students with LD, inform DLOs about best practice, present some screening measures which may indicate a need for assessment for LD, and offer materials for DLOs that will assist in the effective assessment of students.

The authors believe that academics need immediate access to resources that can assist them to advise appropriately students who have LD or may need screening for LD. DLOs need a comprehensive resource with material which is relevant, informative and easily accessible. Students need practical information about how they can improve their chances of success in higher education.

The authors concluded that awareness of LD could be improved through the development of a comprehensive, yet concise, information resource package. This has now been developed and has been made available primarily through the Web with supplementary materials available in a printed format. The package covers:

- characteristics of LD and the difficulties faced by students with LD;
- recommendations relating to screening and assessment for students with LD;
- strategies for inclusive teaching practices to minimise the difficulties encountered by students with LD;
- summaries of the range of possible accommodations required to ensure equitable access to learning and assessment;
- recommendations regarding the most useful assistive technology for students with LD;
- links to local, national and international resources.

6.1 The rationale for the development of a Web-based resource

This project canvassed the views of DLOs from regional, urban, small and large universities across Australia. The identified needs for information and guidelines were similar but the services available to meet individual needs vary across the country. This led the authors to recommend the development of a national resource which includes links to local support organisations and contacts. The Australian Learning Disabilities Association (ALDA), the RDLO network and other support organisations have contributed to the development of the State based contact and service lists included in the resource.

The Stage 1 research indicated that the people who daily engage with students with LD in Australia primarily turn to the Web for information. DLOs indicated that they regularly used the ALDA site which includes the *Opening All Options* resource (Mungovan, Allan, England & Hollitt 1999), a comprehensive guide for assisting students with LD within the post secondary education sector.

The limitations of *Opening All Options* are threefold. First, it was developed within the NSW context and much discussion of policy and services revolved around what was offered within that state. Secondly, as understanding is growing about LD, some material, for example about assistive technology options, has become dated. Thirdly, *Opening All Options* was developed as a paper-based resource, then transferred to a Web-based form, thus limiting the accessibility of its content, its visual appeal and the capacity for intuitive navigation.

Because the *Opening All Options* resource package was so highly regarded as a resource it seemed appropriate to develop further the existing resource rather than invent a new one. Thus, with the original authors' consent, the decision was made to update and redevelop *Opening All Options* as a primarily Web-based resource. To capitalise on the success of the original resource it was decided to retain the title, very pragmatically calling the resource *Opening All Options II*.

In light of the research findings that the Web was most frequently used by respondents when seeking information on LD and the ease with which online resources can be updated it was decided that the proposed resource package should be primarily Web-based but with supplemental printed introduction and fact sheets.

It is critical that any resource such as this is up to date especially as this field is constantly changing in relation to the understanding of LD, options for assessment, and assistive technology. Whilst the project funding is time limited the reference group has proposed that there should be an annual review of the information contained in the resource package. ALDA has agreed to undertake this review on an ongoing basis and the University of Tasmania has agreed to continue to host the site at least until a decision is made about the further development of a national disability related website or clearinghouse. Thus *Opening All Options II* can be reviewed, updated and enhanced over time. It is hoped that *Opening All Options II* will build on the original and remain a contemporary, relevant resource.

6.2 Development of the resource package

The original *Opening All Options* document was reviewed for currency and national relevance and additional sections to be included were identified. A proposed site map was developed and a small working party, which comprised a range of experts in the field, then edited the original document and developed new content.

A Web developer was engaged and, from a very early stage, material was progressively developed into a website. The Advisory Committee regularly reviewed the development work and provided direction to the authors. In addition to ensuring compliance with the WC3 guidelines the site has included features that enable users to change both text size and background colour to suit their particular requirements. These features will promote 'best practice for accessibility' in web development.

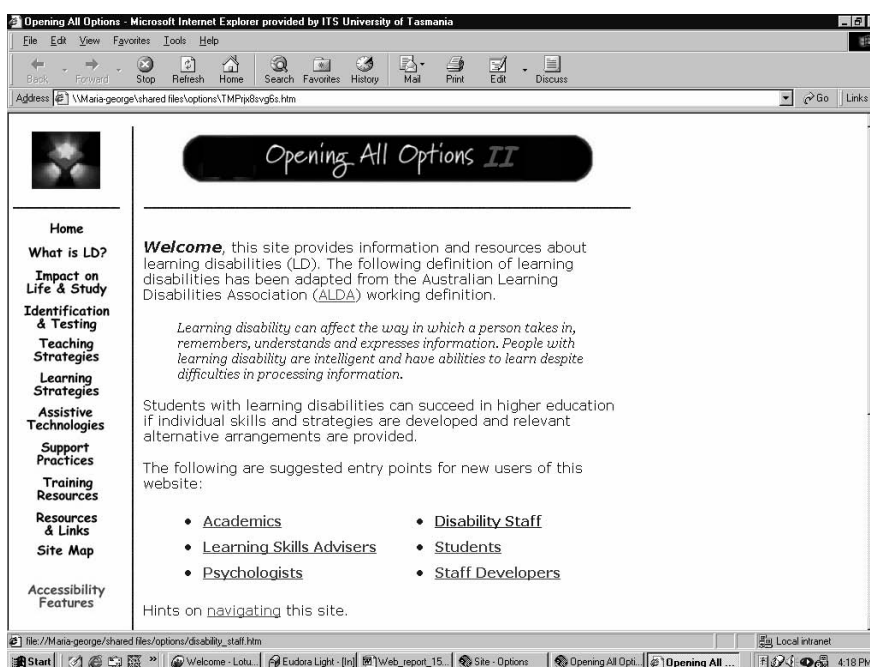
The resource package was reviewed during its development to take account of the views of all stakeholders. A group of 12 Academics, DLOs, Psychologists and Learning Skills Advisers were asked to answer a series of questions related to three aspects of the resource. The review panel consisted of: users, experts, and critical friends:

Reviewers were sent a questionnaire which directed their attention to a range of issues of concern in the development of the resource including: ease of navigation and accessibility of the site, visual appeal and presentation and accuracy and usefulness of the content. While overall comments were positive the review indicated that some refinement was needed in terms of navigation, clarifying definitions and entry points.

In response to this review the resource package was further developed and a site map was added. It is anticipated that the package will be further refined based on feedback from users in the three months following its launch.

A snapshot of the entry page from the resource is included below:

Figure 6.1: *Opening All Options II* entry page



URL: <http://www.utas.edu.au/options>

6.3 Publicity and promotion

While the resource has been developed the interest of the DLO community and RDLOs has been maintained through notices on two major listservs. A relationship has been maintained with those who participated in questionnaires and key figures who have either assisted in production or been on the Advisory Committee. It is planned to exploit these contacts to make the release of *Opening All Options II* widely known.

Another promotional element is the production of a DLO kit in association with the release of *Opening All Options II*. The kit contains a copy of the LD Decision

tree, coloured overlays for assisting students with Scotopic Sensitivity Syndrome (SSS), several texts which may be used for screening student to determine whether full psychometric assessment is needed and fact sheets on LD.

A major disabilities conference, the Pathways 6 Conference in December 2002, will provide an opportunity to promote the resource among DLOs and others in the disabilities and equity area as several of the people involved in the creation of the resource will attend and promote it.

6.4 Professional development

The authors are keen to see the resource have a continuing life in many forms and believe that the effective promotion of the package as a useful resource will be supported by professional development workshops. The aim of these workshops will be to inform the post-secondary education sector (TAFE and higher education) about LD and show how this resource can be used effectively.

Professional development workshops could assist in raising the profile of the issues, allow staff to explore the often complex issues in an interactive way and provide the opportunity for individuals to address the particular issues which are causing them concern. Professional development presentations could be made available to DLOs, LSAs and staff developers in each major centre and reinforce the use of the package as an ongoing resource that staff would use to support their teaching practice.

The very positive response to the *Learning disabilities and higher education information day* held at Melbourne University in September 2001 indicated that university academic learning skills staff are very keen to engage with these issues and are thirsty for knowledge about LD. In order to facilitate ownership and longevity of the resources developed by this project, state and territory tertiary education disability bodies could be involved in organising workshops.

Project funding from DEST has been limited to the production of the resource so any further professional development will need alternative funding, which the authors are vigorously pursuing. Key parts of the resource can be effectively adapted into PowerPoint presentations and paper-based fact sheets. The authors believe that a 'road show' that visits major capitals in Australia and is organised through local RDLO and/or higher education links may be a potent means of professional development.

This project has been supported by a vital and enthusiastic network of DLOs. The authors believe their goodwill and expertise can now be tapped to effectively promote an effective learning disabilities professional development program.

6.5 Conclusions

The authors conclude that universities could better meet the needs of the growing numbers of students with LD. There is a need for clearer assessment procedures, inclusive teaching and learning practices and improved services and support. There are implications under the *Disability Discrimination Act (1992)* for educational

institutions that do not recognise and appropriately respond to the needs of people with learning disability.

This is a big task but academics and support staff appear to be keen to improve their understanding of the issues and it is hoped that use of the resource package and improved professional development will lead to improved understanding of this disability, the development of more effective policies and procedures within universities and encourage teaching practice which is more inclusive of the needs of students with LD. In this complex area it is important that those involved understand the issues as well as implementing improved support strategies. Better practice and improved understanding will provide an inclusive learning environment which enables this growing number of students to achieve their full academic potential.

Appendix A

Survey questionnaires

TERTIARY STUDENTS WITH LEARNING DISABILITIES QUESTIONNAIRE
(Learning Disabilities Resource Package – A DETYA funded project)

Your name: Your position:.....

Email:..... Phone:.....

Your Institution:

INTRODUCTION

This questionnaire is part of a DETYA funded project to identify the numbers of students with learning disabilities (LD) in higher education and the support and accommodations currently available. With your assistance we will have basic data to evaluate the need for a package to assist academics, learning skills advisers and disability service providers to identify and support students with learning disability.

Smith, Carroll and Elkins (1999) estimated that there were more than 1000 learning disabled students in Australian universities in 1996. We anticipate the figure may be higher now and therefore this is a significant issue for the Higher education sector.

Thank you for your assistance with this worthwhile project

Professor John Williamson, Chair of the Advisory Committee

WHAT WE MEAN BY LEARNING DISABILITY

There is debate about definitions within the area of learning disabilities, but for the purposes of this project we are talking about neurological disorders that interfere with the learning of students of average or above average intelligence. The most common forms of LD are dyslexia (impaired reading), including problems with accuracy, rate and/or comprehension; dysgraphia (impaired written expression), including spelling, grammar and structuring; dyscalculia (impaired mathematics). Students with LD may have difficulties with some aspects of receptive and or expressive language and students with language disorders may also have LD. In this questionnaire we are focussing on students with learning disability as the **primary disability** (as opposed to a secondary disability e.g. as a result of cerebral palsy, ADHD, TBI or an emotional crisis).

MORE INFORMATION

More information about learning disabilities (LD) and details of this project are available at our website:

http://student.admin.utas.edu.au/services/ld_project.html

or from the Project Officer, Ed Irons by phone ☎03) 6324 3787 or email:

Edward.Irons@utas.edu.au

Please return this questionnaire in the reply paid envelope to:

Learning Disabilities Project
University of Tasmania *Student Services*
Locked bag 1-335
Launceston TAS 7250

BACKGROUND INFORMATION ON STUDENTS WITH LEARNING DISABILITIES

If possible, please provide actual numbers for each category and tick 'Act'. Otherwise provide estimates and tick 'Est'

1 How many students with **disabilities** are currently receiving accommodations and/or services at your university? Act Est

2 How many students whose **primary disability is LD** are currently receiving accommodations and/or services at your university? Act Est

3 How many of the students with LD **currently receiving services** are:

Male	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	Part-time students	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
Female	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	Full-time students	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
Postgraduate	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	Less than 20 years	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
Undergraduate	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	20 to 24 years	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
External students	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	25 to 29 years	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
Internal students	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	30 to 39 years	..... Act <input type="checkbox"/> Est <input type="checkbox"/>
LBOTE students (<i>Language background other than English</i>)	..... Act <input type="checkbox"/> Est <input type="checkbox"/>	40 years and over	..... Act <input type="checkbox"/> Est <input type="checkbox"/>

4 How many students were assessed as having LD?
before they came to university Act Est after they came to university Act Est

5 What pathway to university have these students with LD taken?
number coming directly from school Act Est number not coming directly from school Act Est

6 Are students with LD asked to self-identify at time of application or enrolment? Yes No

7 If yes, is any information on services or programs sent to self-identified students with LD when applications are received? Yes No

What form of assessment of students with LD is required by/undertaken in your university?
.....

Who does it (counsellor, psychologist, DLO)?
.....

Where does it take place (on-campus/off campus)?
.....

Who pays for it?..... How much does it cost?

How well does this process work?
.....

SUPPORT FOR STUDENTS WITH LEARNING DISABILITIES

Please tick your response as Yes or No and make comments where appropriate.

8 Do you offer students with LD a transition or orientation program? Yes No

If yes, the program is offered to (tick relevant group)

- all beginning students all students with disabilities
 all equity group students students with LD only

How many students attended the most recent courseHow many of these had LD?

Duration of course:..... days orsessions of..... hours

Is ongoing help offered after the course is completed? Yes No

Please give details:.....

9 What accommodations and extra assistance are currently provided for students with LD?

Accommodation	Provided?	Accommodation	Provided?
Examinations			
Extra time	Yes <input type="checkbox"/> No <input type="checkbox"/>	Audio taping of lectures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Reader/writer	Yes <input type="checkbox"/> No <input type="checkbox"/>	Assignments in alternative format (e.g, tapes)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Taped questions and/or responses	Yes <input type="checkbox"/> No <input type="checkbox"/>	Assignment editing	Yes <input type="checkbox"/> No <input type="checkbox"/>
Interview exam	Yes <input type="checkbox"/> No <input type="checkbox"/>	Assignment time extensions	Yes <input type="checkbox"/> No <input type="checkbox"/>
Word processor	Yes <input type="checkbox"/> No <input type="checkbox"/>	Advocacy	Yes <input type="checkbox"/> No <input type="checkbox"/>
Variation in format (e.g., no multiple choice)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Peer tutoring	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coloured paper	Yes <input type="checkbox"/> No <input type="checkbox"/>	Subject tutoring	Yes <input type="checkbox"/> No <input type="checkbox"/>
Notetaker for lectures	Yes <input type="checkbox"/> No <input type="checkbox"/>	Disability support group	Yes <input type="checkbox"/> No <input type="checkbox"/>
Remedial tuition in reading, spelling and/or writing	Yes <input type="checkbox"/> No <input type="checkbox"/>	LD support group	Yes <input type="checkbox"/> No <input type="checkbox"/>
Library assistance	Yes <input type="checkbox"/> No <input type="checkbox"/>	Taped texts	Yes <input type="checkbox"/> No <input type="checkbox"/>
Adaptive technology (specify below)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Electronic texts	Yes <input type="checkbox"/> No <input type="checkbox"/>

Other (specify)

10 Is documentation of the need for this assistance required (e.g., a psychologist's report)? Yes No

Please give details:

11 Does your university provide for the needs of students with LD separately or inclusively with other students? Yes No

Please give details:

.....

POLICY and SUPPORT FOR STAFF

12 Does your university have specific policy related to LD? Yes No

If yes, please attach a copy or refer us to the website?

.....

The terms "learning disability" and "learning difficulty" are often used interchangeably.

13 Is the distinction between "learning disability" and "learning difficulty" well understood within your unit? Yes No

14 Is the distinction between "learning disability" and "learning difficulty" generally well understood within your university? Yes No

15 Does your University provide specific training or support for academic staff who are teaching students with LD. Yes No

If yes, please give details:

.....

16 In your view, what are the **three biggest barriers** for students with LD?

.....

.....

17 How might we overcome these barriers?

.....

.....

18 What resources/support/websites have you found to be most useful to you in supporting students with LD?

.....

.....

19 What additional resources/support would be useful to you in assisting **you** to better support students with LD?

.....

.....

20 What additional resources /support do you think would be useful to **academics** in working with students with LD?

.....

.....

21 Do you know of anyone in your university who would be able to assist us with this project?

Name

Contact Number

Department/Faculty/Unit

.....

.....

Any other comments:.....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

LEARNING SKILLS ADVISERS AND LEARNING DISABILITY QUESTIONNAIRE

1 The terms “learning disability” and “learning difficulty” are often used interchangeably. Is the distinction between “learning disability” and “learning difficulty” well understood within your faculty? Yes No

2 Is the distinction between “learning disability” and “learning difficulty” generally well understood within your university? Yes No

3 Does your University provide specific training or support for academic staff who are teaching students with LD. Yes No

If yes, please give details:

.....
.....

4 In your view, what are the **three biggest barriers** for students with LD?

.....
.....
.....

5 How might we overcome these barriers?

.....
.....
.....

6 What resources/support/websites have you found to be most useful to you in supporting students with LD?

.....
.....
.....

7 What additional resources/support would be useful to you in assisting **you** to better support students with LD?

.....
.....
.....

8 Do you know of anyone in the university who would be able to assist us with this project?

Name	Contact Number	Department/Faculty/Unit
------	----------------	-------------------------

.....
.....

9 Any other comments:

.....
.....
.....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

Appendix B

Web sites recommended by DLOs

ANU Assistive Technology Project: Assistive technology in universities:
Independent assessment, advice & training. Viewed 28 June 2002
<http://www.anu.edu.au/disabilities/atproject/index.html>

Australian Learning Disability Association (ALDA). Viewed 28 June 2002
http://www.utas.edu.au/alda//what_is_ld/index.html

Hunter/Central Coast Disability Education Network. Viewed 28 June 2002
<http://www.newcastle.edu.au/services/ousr/disabil/regional/den/>

Learning Disabilities Association of America. Viewed 28 June 2002
<http://www.ldanatl.org/>

Lighthouse International: Introduction to adaptive computer technology. Viewed
28 June 2002, http://www.lighthouse.org/resources_adaptive_tech.htm

Opening All Options: A resource to assist students with learning disabilities in tertiary
education. Viewed 28 June 2002
<http://student.admin.utas.edu.au/services/alda/options/index.html>

University of Tasmania Disability Service. Viewed 28 June 2002
<http://student.admin.utas.edu.au/services/disability/index.html>

Appendix C

Learning Disabilities: A definition

“Learning Disabilities” refers to a variety of disorders that affect the acquisition, retention, understanding, organisation or use of verbal and/or non-verbal information. These disorders result from impairments in one or more psychological processes related to learning ([footnote a](#)), in combination with otherwise average abilities essential for thinking and reasoning. Learning disabilities are specific not global impairments and as such are distinct from intellectual disabilities.

Learning disabilities range in severity and invariably interfere with the acquisition and use of one or more of the following important skills:

- oral language (e.g., listening, speaking, understanding)
- reading (e.g., decoding, comprehension)
- written language (e.g., spelling, written expression)
- mathematics (e.g., computation, problem solving)

Learning disabilities may also cause difficulties with organisational skills, social perception and social interaction.

The impairments are generally life-long. However, their effects may be expressed differently over time, depending on the match between the demands of the environment and the individual's characteristics. Some impairments may be noted during the pre-school years, while others may not become evident until much later. During the school years, learning disabilities are suggested by unexpectedly low academic achievement or achievement that is sustainable only by extremely high levels of effort and support.

Learning disabilities are due to genetic, other congenital and/or acquired neuro-biological factors. They are not caused by factors such as cultural or language differences, inadequate or inappropriate instruction, socio-economic status or lack of motivation, although any one of these and other factors may compound the impact of learning disabilities. Frequently learning disabilities co-exist with other conditions, including attentional, behavioural and emotional disorders, sensory impairments or other medical conditions.

For success, persons with learning disabilities require specialized interventions in home, school, community and workplace settings, appropriate to their individual strengths and needs, including:

- specific skill instruction;
- the development of compensatory strategies;

- the development of self-advocacy skills;
- appropriate accommodations.

Footnote:

The term “psychological processes” describes an evolving list of cognitive functions. To date, research has focused on functions such as:

- phonological processing
- memory and attention
- processing speed
- language processing
- perceptual-motor processing
- visual-spatial processing
- executive functions (eg, planning, monitoring and metacognitive abilities)

Adapted (with permission) from:

The Learning Disabilities Association of Ontario (November 2001)

<http://www.ldao.on.ca/pei/defdraft.html#defn>

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