

1995 - 96 Report of the Learning Technology Dissemination Initiative

August 1996

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LTDI LEARNING
TECHNOLOGY
DISSEMINATION
INITIATIVE



Scottish Higher Education
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Second Report of the SHEFC Learning Technology Dissemination Initiative

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Report of the SHEFC Learning Technology Dissemination Initiative

Executive Summary

The SHEFC Learning Technology Dissemination Initiative was established in August 1994. In its first year 14 workshops were held and support was provided for implementation projects, mainly in the subject areas of modern languages, economics and statistics, but also in generic areas such as assessment and study skills. A report describing the activities in the first year of the initiative was published in November 1995.

This report summarises the activities of the second year of the Learning Technology Dissemination Initiative and its continued efforts to facilitate the most effective use of Learning Technology within the Scottish Higher Education community.

During the second year of LTDI, the work has built upon and expanded from the successes of the first year. A further 14 workshops have been held and new implementation projects established within the areas of business, management and life sciences, in addition to the provision of on-going support for established projects. A new focus during the second year of the project has been to raise awareness of the Metropolitan Area Networks and their application for teaching and learning.

All the activities specified in the proposal for the second year of the initiative have been delivered. Workshop attendance figures achieved by the second year of the initiative exceed targets stated in the project proposal by more than 30%. Additional targets were established by LTDI in the form of specific aims and objectives, the majority of which have been achieved and in many cases exceeded.

- LTDI staff have been involved in implementation support activities in 17 different institutions, and additionally in staff development activities in 9 of these institutions. Detailed implementation support, where the identification of an appropriate opportunity to use technology to enhance a course develops into a process of discussion, reflection and evaluation is believed to be a unique and vital aspect of the service offered by LTDI. Emphasis is given to the long term nature of the design and execution of a new implementation project in order to embed it securely within the holistic course framework.
- Evaluation forms completed by staff who have received implementation support indicate that the academic community has widely varied needs and concerns when planning to integrate technology into courses, and that implementation projects result in a wide range of different teaching applications. The ability of LTDI staff to demonstrate a thorough understanding of pedagogy in addition to subject specific knowledge was highlighted. Support from the LTDI was described variously as encouraging and helpful through to crucial.
- Workshops have been organised by the LTDI on a variety of subjects, including some generic issues and the Metropolitan Area Networks. Staff from every SHEFC funded institution have participated in these workshops. Workshops are

an effective method of raising general awareness of a topic, complementary to direct approaches requesting more detailed support.

- Seminars have been held in 13 institutions, promoting detailed discussion of different aspects of learning technology and usually giving the opportunity for some practical activities.
- LTDI has been successful in promoting collaboration between staff in different institutions, through the establishment of focus groups and e-mail discussion groups.
- The information services supported by LTDI are in constant demand. The LTDI publications, in particular the Information Directory and 'Implementing Learning Technology', have prompted much favourable comment, and many requests for copies have been received from throughout the UK higher education community. The LTDI World Wide Web site is also actively accessed and referenced from sources within and beyond Scotland. Typical access figures are between 100 and 150 hits per week.

The LTDI is playing an active role in disseminating information about and supporting the implementation of good practice within the Scottish Higher Education community. The initiative has established a clear profile within the academic community, complementing other related initiatives, and there is continued and increasing demand for its services from throughout the sector.

It is anticipated that the third year of the LTDI will enable more emphasis to be placed on encouraging institutions to assume the support role currently provided by the LTDI, while continuing to disseminate information and foster collaboration where this is appropriate.

1. Introduction

The Learning Technology Dissemination Initiative (LTDI) was established with funding from the Scottish Higher Education Funding Council in August 1994 to support academic staff throughout Scotland in the integration of technology with their teaching. A report was published in November 1995 describing the activities in the first year of the project.

This report summarises the activities of the second year of the LTDI, from 1 August 1995 to 31 July 1996.

2. Aims and Objectives

In the original proposal for LTDI (June 1994) the scope of the initiative was described as *“to enable teaching staff to identify situations where computer-based learning materials are appropriate, to make them aware of the materials currently available and develop the skills to allow teaching staff to adapt materials for their own courses”*.

For this second year of the initiative it was agreed that towards the same general aim LTDI should provide *“a series of workshops; a collection of resources; advice and information services on the applications of learning technology and an implementation support scheme for academic staff”*. Additionally *“LTDI implementation support consultants will be active in raising awareness of the potential of the Metropolitan Area Network technology and will contribute to the development of the applications of the MANs for teaching and learning.”*

In order to establish specific aims and objectives, the activities and deliverables specific in the proposal were expanded to form the more detailed targets specified below.

The target constituency is all the institutions in Scotland which are funded by the Scottish Higher Education Funding Council, and in particular, the staff within those institutions responsible for teaching and learning.

- i. To provide an in-depth consultancy and implementation support service to the academic community in Scotland.
- ii. To maintain support for implementation projects started in 1994/95.
- iii. To promote awareness of learning technology and its potential in teaching and learning.
- iv. To promote awareness of the MANs, and their potential within teaching and learning.

v. To provide a general support and information service to staff who enquire via e-mail, telephone, letter or other means.

vi. To develop and maintain a collection of the best examples of computer based teaching and learning materials.

vii. To increase the knowledge base about learning technology within the academic community.

Specific objectives for 1995/96 can be found in appendix 6. It should be stressed that these aims and objectives were established at the start of the second year of LTDI, and were believed to represent challenging targets for the year. The majority of these targets have been achieved and in many cases exceeded. Details of LTDI activities and achievements, which can be matched against these objectives, are presented in the following sections of this report.

3. Project Activities and Deliverables

3.1 Implementation Support Projects

Implementation Support is the phrase used by LTDI to describe the individually tailored practical support service that is offered to institutions, departments or individuals. Support activities typically fall into one of several broad groupings:

- seminars where departmental staff can discuss specific issues relating to the integration of technology into courses, and have the opportunity to spend some time in hands-on evaluation of software.
- detailed discussion with course teams about course structure, and whether learning technology can usefully be integrated into particular courses.
- support for individual staff, in the identification of suitable courseware, and assistance with its integration and subsequent evaluation of effectiveness.

During 1995/96 implementation support has been offered in the subject areas of Business & Management and Life Sciences (including psychology, health sciences and biological sciences) and in generic areas such as study skills, assessment and basic statistics. Continued support has been available for projects in Economics, Modern Languages, mathematics and some generic areas.

More than 90 examples of implementation support activities have been undertaken in 17 institutions. Activities range from input to departmental or faculty meetings to discussions with individual staff. Not all have resulted in the immediate integration of learning technology, however in most cases software has either been used with students, or planning and evaluation of its potential is underway. In a few cases institutional staff are awaiting specific items of software which have not yet been released in a finished version.

The LTDI approach recognises that an important aspect of implementation support is the raising of the general awareness of learning technology, the benefits it can offer for teaching and learning, and of the range of implementation and integration strategies. The importance of promoting discussion of these issues, while not necessarily leading directly to use of new materials, should not be undervalued.

Life Sciences Assessment Group

A group was established by LTDI in January 1995, to act as a self support network and forum for discussion of issues relating to computer based assessment within the life sciences area. Membership encompasses 14 Scottish institutions. Three meetings have been held on the subjects of: constructing multiple choice questions; analysing student responses and alternative methods of assessing students using technology (e.g. through modified essay questions and concept mapping). Further discussions via an e-mail group have included negative marking, scaling, multiple choice questions and setting up a biology question bank.

Video-MAN

In collaboration with the NETSKILLS project, based at the University of Newcastle upon Tyne, LTDI has established an e-mail discussion list, for the promotion of discussion about some of the technical and educational issues relating to the use of video on Metropolitan Area Networks.

On-going support for Implementation Projects established in 1994/95

Where implementation projects established in the first year of LTDI required continued support this has been available, facilitated by the continued employment of three of the year one consultants. At least ten projects have progressed from exploratory discussions in 1994/95 to full implementation in 1995/96.

3.2 Seminars

16 seminars have been held in 13 institutions, in response to invitations that LTDI received directly, or in response to pro-active contacts and suggestions made by LTDI staff. Seminars have been arranged within departments on a subject specific basis (7 institutions); across subject areas and in conjunction with institutional staff development teams (9 institutions). Seminars have covered topics such as:

- Using technology for assessment
- Using technology to enhance teaching and learning
- The construction of effective multiple choice questions
- Using the World Wide Web for teaching and learning
- Video conferencing
- Evaluating new pieces of software
- A students perspective on LT.

3.3 Workshops

Ten subject based or generic LTDI Workshops have been held during the second year of the project, at venues in Dundee, Edinburgh and Glasgow. Additionally four Metropolitan Area Networks Awareness Days have been held. (Statistics from the Metropolitan Area Networks Awareness Days are presented separately, in section 3.4.)

A typical workshop included keynote presentations, case studies, and perhaps parallel sessions, where delegates could select from three or four options. There was usually a long lunch break with the opportunity to have hands on access to a variety of software packages as well as general opportunity for discussion with other delegates.

A total of 779 different individuals have attended LTDI workshops and awareness days. One workshop was oversubscribed; late registrants were encouraged to transfer to an alternative LTDI workshop, at another venue.

527 delegates have attended subject based or generic workshops, including 440 different individuals, representing almost every SHEFC funded institution.

A summary of programmes is in appendices 1.1 - 1.4

A summary of feedback in appendix 2.1

Breakdown of attendances in appendix 3.1 .

3.4 Metropolitan Area Networks Awareness Days

Further to the establishment of the four Scottish Metropolitan Area Networks (MANs) SHEFC recognised the need to provide staff with information and training in their effective use. During its second year, LTDI has been involved in raising awareness of the MANs and their potential, although in future years this will be the responsibility of other initiatives, notably the TALiSMAN project.

Four MANs Awareness Days were organised in conjunction with the local MAN management group, one in each of the MAN areas (AbMAN - Aberdeen, ClydeNET - Clydeside, EaStMAN - Edinburgh & Stirling and FaTMAN - Fife & Tayside). Each of the awareness days involved a series of presentations and talks in the morning, with an open exhibition including posters and demonstrations in the afternoon. Exhibitors were largely, but not exclusively, drawn from local projects funded under the Use of MANs Initiative(UMI).

A total of 459 delegates attended the MANs awareness days, including 422 different individuals.

Summary of programmes is in appendix 1.5

Summary of feedback from the MANs Awareness Days is in appendix 2.2

Breakdown of attendances is in appendix 3.2 .

3.5 Publications and Information Services

3.5.1 First year report

The report on the first year of LTDI (prepared by Dr Neil Pitcher) was published. Copies were circulated to all SHEFC funded institutions, all TLTP projects, all CTI centres and most higher education institutions in England and Wales. Further copies have been distributed on request.

3.5.2 Newsletter

A newsletter was produced in October, giving updated information about the new LTDI team and the programme of activities for the coming year.

3.5.3 UseIT

UseIT is a four sided A4 document giving practical ideas and suggestions for how to use technology in teaching, gleaned from experiences gained during the first year of LTDI. Informal feedback indicates that UseIT is seen as being a very useful document, and demand for it has been such that a reprint was necessary. It has been widely circulated to much acclaim, copies being requested by institutions throughout the UK, including a number of CTI centres and it was reprinted, with permission, in the newsletter of CTI centre for Chemistry.

3.5.4 MANage IT

MANage IT is a two sided A4 document intended to answer some immediate questions about the MANs, and their use within teaching and learning. It is targeted at academic staff who do not have specialised computing or network knowledge, but who have perhaps heard about the MANs and would like to know a little more about what they offer, or where to go for further information. MANage IT includes some information about video conferencing and some of the UMI projects.

3.5.5 Information Directory

The LTDI Information Handbook developed and published during the first year of the project has continued to be in demand throughout the academic community in Scotland and elsewhere. The handbook has been updated throughout the year, and has recently been split into two sections the 'Information Directory', and 'Implementing Learning Technology'.

The Information Directory contains summary information from TLTP projects, CTI centres, the ITTI catalogue, plus additional information on subject specialists, useful Web sites and other suggested reading.

The handbook, and latterly the information directory have been distributed at all workshops, and are also available via the LTDI World Wide Web site. Further copies, or photocopy masters are made available on request, where possible.

3.5.6 Implementing Learning Technology

The information previously included in the LTDI Information Handbook has been expanded and now forms a separate document, a companion to the Information Directory, called Implementing Learning Technology. Expert contributions were sought in addition to input drawing upon the experiences of the LTDI team, in order to produce a detailed practical guide to all aspects of the integration of technology into teaching.

3.5.7 Case Studies Document

This document, currently in the final stages of preparation, details information from 10 implementation support projects from the first and second years of LTDI. Case Studies have been selected in order to show as wide a range of contrasting examples as practical, and are drawn from a wide range of subject areas, and institutions.

3.5.8 World Wide Web services

The LTDI World Wide Web site has been expanded and updated during the year. In particular it now includes a considerable amount of information about the MANs, their potential use in teaching, video conferencing and links to each of the individual MAN Websites.

Some workshop bookings have been received through the World Wide Web, and enquiries about LTDI have been received from as far away as Australia.

Since April 1996 detailed access statistics have been available (Appendix 5) showing that the LTDI WWW site is accessed regularly from a variety of sites within Scotland, the UK and further afield. For information, it is possible to consider access figures for LTDI relative to those for TLTP (hosted by the same server, hence equivalent statistics are also available), with LTDI accesses generally being at about 25% of the level of demand on the UK-wide targeted TLTP. Within the LTDI site, the information about the Metropolitan Area Networks has been of particular interest.

3.5.9 External Publications

LTDI has published articles, describing the project or our experiences, in the following publications:

SocInfo Journal (Journal of CTI Centre for Social Sciences and Policy Services) (Issue 1, September 1995) 'The Users and Successful Use of Computer-based Learning in the Social Sciences' Illustrating features of courseware and establishing general guidelines for successful implementation.

TLTP Newsletter 5 (Autumn 1995) 'Learning Technology Dissemination Initiative : Update' Description of LTDI activities, implementation support service and workshop programme for 1995/96.

Computing in Scotland (British Computer Society regional newsletter) (October 1995) Description of forthcoming LTDI activities.

Biology Network News (Newsletter for Biology Network - funded by the employment department, open to all UK Biological departments) (November 1995) 'LTDI targets Life Sciences' Brief description of LTDI and forthcoming activities.

ALT-N (Newsletter of the Association for Learning Technology) (Issue 12, January 1996) Report on the Foundation Biological Sciences workshop.

Life Sciences Educational Computing (CTI Biology Newsletter) (Vol 6 No 3, February 1996) Short article publicising LTDI Specialist Biological Sciences workshop.

TLTP Newsletter 7 (Summer 1996) 'Supporting Implementations' Article highlighting different integration strategies with particular reference to TLTP projects.

Active Learning 4 (July 1996) 'Tenacious Lecturers Target Procurement : the problem of obtaining TLTP software'.

Various conference proceedings - see conferences attended (section 3.7)

3.6 Resource Collection

The resource collection established during the first year of the project has continued to be extended and expanded. The collection includes materials funded under the ITTI, TLTP schemes and from commercial and public domain sources, and all materials are recorded in a database.

In particular the collection of TLTP materials has expanded greatly during the second year of LTDI, as more projects have been able to release their products.

3.7 Contributions to Conferences

International Conference on Technology in Mathematics Teaching (ICTMT) September 4 - 7 1995, Napier University

LTDI presented a paper 'LTDI : Implementing Learning Technology' and participated in the conference exhibition. Delegates were from a wide range of European, American and Australian higher education institutions.

Embedding Technology into Teaching (TLTP / CTI Conference) 28 - 29 November 1995, Heathrow

LTDI participated in the exhibition at this conference. Delegates came from a wide range of UK universities, and included TLTP and CTI staff.

Society for Research into Higher Education (SRHE)

12 - 14 December 1995, Heriot-Watt University

LTDI presented an exhibition stall at this conference. The theme of the conference was 'The Changing University : the pressures, opportunities, dangers, challenges, effectiveness and consequences of the changes currently affecting higher education'. Delegates were from across the UK.

The 1996 Scotcat Annual Conference

19 January 1996, Glasgow Caledonian University

LTDI ran a workshop session ' Learning Technologies for Part-time students' at this one day conference, organised by the Higher Education Quality Council.

CTI-AFM Conference

2-3 April 1996, Brighton

This annual conference aims to bring together academic staff interested in the use of computers for teaching, whether novice or expert. LTDI had an exhibition stand.

Architecture Schools Computing Association (ASCA) Conference

April 9 - 11 1996, Edinburgh College of Art

LTDI gave a presentation and led a discussion 'Build IT into your teaching' . Delegates were from schools of architecture across the UK.

COSHEP Management & Leadership conference

6 - 7 June 1996, Troon

(COSHEP is the Committee of Scottish Higher Education Principals). LTDI gave a presentation 'How can technology help in learning?'

1st International Symposium on Networked Learner Support

17-18 June 1996, Sheffield

A presentation entitled 'Support for case-based learning in an undergraduate human factors class' was written and presented at this conference by a member of the LTDI team. The conference focused on electronic libraries.

Directions for IT in Higher Education

12 June 1996, University of Stirling

LTDI participated as a delegate in this one day event held for staff of the University of Stirling.

Dissemination Conference on Flexibility in Teaching and Learning Projects

25 June 1996, University of Glasgow

LTDI participated as a delegate at this conference which featured information about phase 2 FITLS projects.

SEDA Conference

25-26 June 1996, Derby

LTDI participated as a delegate at this conference.

Conferences in August & September 1996, where participation was confirmed during the academic session 1995/96

Interactive Learning '96

15 -17 August 1996, Heriot-Watt University

LTDI co-presented with TLTSN a seminar 'Integrating computer based learning into higher education'.

The Northumbria Assessment Conference

4 - 6 September 1996, University of Northumbria

LTDI ran a workshop 'A GNOTy problem - groups negotiations and technology'. A practical workshop looking at ways of using technology in assessment other than multiple choice questions.

Association for Learning Technology Conference

16 - 18 September 1996,

Glasgow Caledonian University / University of Glasgow / University of Strathclyde

LTDI presented a paper 'LTDI: Supporting Implementations' and a poster 'LTDI : Implementations in Practice'. The poster won first prize in the conference poster competition.

3.8 Promotion of Collaborative Activities

LTDI staff believe that collaboration between academic staff in different institutions can be of enormous value to the educational process, and have been active in the promotion of collaboration. In addition to the collaborative activities included in section 3.1 of this report such as the Life Sciences Assessment group, the establishment of electronic discussion groups, and the evaluation study, LTDI has been involved in collaboration with several other projects.

3.8.1 TLTSN

LTDI is represented on the consultative group for the Teaching and Learning Technology Support Network (TLTSN).

A meeting was held soon after TLTSN was established in order to clarify the roles of the two projects within Scotland, and to minimise possible confusion. It was agreed that in general, LTDI has a subject focus and aims towards implementation at a departmental level, whereas TLTSN has an institutional focus, looking towards longer term change and policy at an institutional level.

There is close and frequent communication between staff in LTDI and TLTSN; no practical difficulty has been identified in the delivery of an effective service to the academic community.

3.8.2 MARBLE

MARBLE is funded under the UMI to develop and deliver resource based learning materials, for specified subject areas, for delivery via the World Wide Web. In addition MARBLE aims to promote collaboration between institutions. LTDI maintains close links with a number of the staff involved in developing materials for MARBLE, particularly in the areas of biology and psychology.

3.8.3 SMARTT

The SMARTT project has been funded under the Regional Strategic Initiative to carry out a needs analysis and provide training for the use of networking technology. LTDI has assisted in planning some sections of this project, and has delivered some training sessions on the use of computer based learning materials, uses of electronic mail in the support of teaching and learning and video conferencing.

3.8.4 TALISMAN

Having been involved in raising awareness of the MANs, LTDI was closely involved in the establishment of TALISMAN project and anticipates working closely with this team in the coming year, in order to avoid any unnecessary overlap in provision and to share relevant experiences.

3.8.5 TLTP Evaluation

An external evaluation of TLTP took place during the year. LTDI was invited to co-operate with this evaluation and the final TLTP evaluation report comments on the favourable impression that was made on the evaluation team by the work of the LTDI.

4. Evaluation Study

During the autumn of 1996/97 an independent, external evaluation of the first and second years of LTDI will be carried out on behalf of the funding council.

An internal evaluation study has been carried out during 1995/96. Broadly, the aim of the study was to investigate whether the service being provided by LTDI was viewed by the academic community as being useful. Information gathered was used to inform planning for the third year of LTDI.

The study consisted of different sections:

4.1 Statistics

All the activities included in the proposal for the second year of LTDI have been carried out and all the targets stated in the proposal have been met in full. Specific aims and objectives, in many cases extending and expanding upon those in the original proposal were established as targets, and these are stated in appendix 6 to this report.

Thirteen of the sixteen expanded aims have been met in full. In particular all institutions have been represented at LTDI workshops, and LTDI has been involved in the staff development programme in 43% of institutions. Actual workshop attendance was over 30% higher than anticipated in the second year proposal. General attendance figures are given in appendix 3.

Those targets that were not met in full are:

- No staff from the Edinburgh College of Art or the RSAMD attended an LTDI subject based workshop (aim 1) although both were represented at MANs Awareness Days.
- The case studies document implied by aim number 11 is in the final stages of preparation and will be available for circulation in the autumn of 1996.
- No staff from Moray House Institute of Education attended a MAN Awareness Day (aim 12). This may have been due to Moray House planning and running their own event focusing on the MAN and its implications for teaching and learning, in September 1995.

4.2 Feedback from academic staff

A questionnaire was posted to academic staff who have been directly involved in LTDI Implementation Support Activities. A return rate of just over 50% was achieved.

The evaluation forms returned were very positive in tone, giving the impression of a useful and valued service, although most staff indicated that the role of LTDI as an information provider was at least as important as the implementation support service. In some cases support from LTDI was viewed as being instrumental in the establishment of an implementation, in other cases it was useful, but not essential. A sound understanding of pedagogy was considered more important than subject specific knowledge, although this was viewed as a useful bonus.

Details from the evaluation forms are given in Appendix 4.

4.3 Meetings with LTDI contacts

Meetings have been arranged with the LTDI contact in each institution to look ahead to year three of LTDI and to plan specific activities for 1996/97. These meetings have also provided an opportunity for feedback about the service provided by LTDI to date.

LTDI contacts often undertake very different roles from each other within their own institutions and this has in many cases been highlighted by these discussions, and in some cases contacts have changed as a consequence. Where LTDI contacts are closely involved with institutional policy on teaching and learning it is easier to ensure that the services provided by LTDI compliment those being provided within the institution, but in many cases these are very busy individuals and it is not

appropriate for them to be responsible for the day to day distribution of LTDI publicity materials.

5. Comments and Experiences of Interest

5.1 General Publicity Issues

5.1.1 Distribution of Publicity Materials

LTDI have attempted to seek the most effective method for distribution of publicity materials within the academic community, but it is difficult to ensure that all interested staff are aware of the project, and the services that it offers.

A series of leaflets has been prepared giving the dates of workshops. Some leaflets have listed all workshops, giving minimal information, others have had a subject theme, giving more detail of the likely programme. Multiple copies of these leaflets have been distributed to academic departments, through the LTDI contact in each institution.

Additionally it has been found useful to target selected staff and departments with fliers about six weeks prior to each workshop. The flier includes as much information as possible about the forthcoming workshop. The further distribution of this flier on relevant e-mail lists has been successful in attracting enquiries from individual staff who have not received information about the workshops by other means.

Posters briefly describing LTDI activities have also been distributed in the hope of attracting the attention of staff who might otherwise not have known about LTDI.

5.1.2 Implementation Support Leaflets

The implementation support pack developed in year 1 was redesigned into a small booklet, giving examples of different implementation support activities, and contact details for each consultant.

5.1.3 Display Boards

Four display boards were designed, as A1 laminated posters. Two of these contain information of a general nature and could be reused in future years. These posters have proved to be most robust, and offer a quick and convenient means of advertising LTDI activities at conferences and other meetings.

An additional poster is currently being prepared for the ALT conference in September 1996 to illustrate some of the stages and issues involved in the integration of technology into teaching.

5.2 Implementation Support Issues

The 1994-95 LTDI Report discussed the long term nature of a full implementation support service and the variability in the demand for such a service particularly between different subject areas and institutions.

Some projects that were initially established during the first year of LTDI have only recently resulted in the use of software in a classroom situation. Continuity of support to these projects has been very important, and the need to offer some continuity to projects established more recently is therefore to be noted.

In other cases, particularly where staff already have some experience of using computers as a teaching tool, implementation support consists of little more than discussing some ideas and possible options, and assisting in the identification of an appropriate package. There are examples of such cases where LTDI has not learned if or when a package has actually been adopted as a teaching resource, especially when the implementation has occurred a considerable time after contact with LTDI.

The role of LTDI as an information provider and catalyst for potential change over time is important, but very hard to quantify. A delegate at a workshop or a seminar who is just starting to think about the potential for technology within teaching and learning is unlikely to look to immediate changes in their courses. They might spend months or years exploring the idea mentally before making a firm decision in favour of change. Ideally implementation support should be available to staff at the moment that is most appropriate to each department or individual. It is suggested that the most cost effective method of offering such support, over what could potentially be a long timespan, is for LTDI to assist in devolution of responsibility for supporting implementations to an institutional level. It has therefore been proposed that in its third year LTDI actively involves institutions in the development of an internal implementation support structure.

The need for an efficient system of reporting and recording has become increasingly clear. The database of contacts includes information about implementation support activities, and implementation support consultants keep records of visits made. In order to eliminate the possibility of two LTDI staff approaching the same member of academic staff in a search for information, it has been necessary to explore strategies to establish a central record of *informal* contacts within institutions. A number of different approaches have been tried, and LTDI is working towards the most effective and reliable system.

5.3 Workshop issues

5.3.1 Workshop dates

The identification of suitable workshop dates is crucial, but this can be difficult when institutions use different models for their academic sessions.

Following the suggestions made in the 1994-95 LTDI Report workshops were scheduled to take place approximately once per month through the academic year. One workshop had been planned, and advertised for early October, but it became apparent that the start of the academic year was not a time when staff are able to attend external events, and this workshop was therefore rescheduled.

The final week of the academic session is often a convenient time for staff to be able to attend an event, and a time when accommodation can be located more easily.

5.3.2 Workshop Venues

It was decided not to hold a workshop in Aberdeen during the second year of the project. This decision was based on the small numbers attending workshops in Aberdeen during the first year of LTDI, and on the increased difficulty and expense of holding workshops there, because LTDI staff are required to make an overnight stay. The decision did give rise to a small number of comments from staff based in Aberdeen, however it is noticeable from feedback forms received that 36% of staff from institutions in Aberdeen do *not* list Aberdeen as their first choice (compared with the next closest at 12% of Dundee staff not listing Dundee as their first choice).

Institutions in Aberdeen were particularly invited to host individual events arranged by LTDI and the availability of implementation support has been stressed when communicating with contacts in Aberdeen. A number of seminars were indeed held at The Robert Gordon University and The University of Aberdeen. The possibility of arranging an event at Northern College was discussed, but the college felt that it would be difficult to identify a date when most of the interested staff would be free to attend.

Feedback suggests that Edinburgh and Stirling are the most widely acceptable venues for workshops or similar events.

In general a higher attendance can be expected from staff in institutions close to the venue for a workshop. Attendance figures are detailed in appendix 3.

The facilities offered by different venues varies enormously. Workshops held at those venues where it has been possible to arrange for the provision of local computers and technical support have on the whole been smoother to organise. The quality of projection and other facilities offered by commercially run venues has also been reflected in a reduction in the administrative burden associated with planning these workshops.

The LTDI team would like to record our grateful thanks to all the local staff in institutions and venues who have contributed so much to the smooth execution of workshops.

5.3.3 General workshop Issues

Planning and preparing for workshops has been a labour intensive and time consuming activity. Some flexibility in the structure of workshops has been useful in order to exploit the facilities in venues, and to respond to the needs of different groups amongst the delegates. The inclusion of some element of choice in the programme, such as parallel sessions, where delegates opt for one of two or three concurrent activities, is popular amongst the delegates, but is not without organisational difficulties, and can increase the costs considerably.

The availability of technical support, both from within the LTDI team and at venues, has been of great importance. Where it has been possible to install or configure software on the evening prior to a workshop this has assisted the smooth running of events. This has been especially true for the Metropolitan Area Networks awareness days where in some cases it was necessary to install a new (temporary) network to support the demonstrations.

5.4 Software Issues

During the second year of LTDI several TLTP projects have reached the stage of releasing software for distribution. LTDI staff have attempted to obtain sample materials from every TLTP project, and many projects have been most helpful in arranging for us to obtain copies of some or all of their products, and in furnishing us with publicity materials for onward distribution. The LTDI team wishes to record its thanks to all projects that have given materials, and to acknowledge gratefully the support of the TLTP co-ordinator who has assisted greatly in this process.

Difficulties have arisen from time to time both with obtaining TLTP materials from projects, and particularly with date stamping of demonstration copies. In some cases a great deal of time has been spent in downloading and installing or reinstalling software.

A number of commercial companies have also made available demonstration copies of software in response to letters and telephone requests. Where a particular piece of software has been identified as of interest to LTDI activities, telephone approaches to the appropriate distribution organisation appear to be the most successful method of obtaining copies of material, perhaps because the exact nature of LTDI can be difficult to summarise concisely and clearly, but can be explained in a conversation.

5.5 Hardware Issues

LTDI consultants draw extensively on the resource collection when visiting staff and discussing possible implementation strategies. However, many pieces of software now demand considerable computing power or space in order to run efficiently, and

some problems have been encountered in devising suitable strategies for installing, storing and moving software between machines.

In response to these problems, two ZIP drives were purchased. This has proved to be a practical and appropriate solution. The installation of large packages on a ZIP drive rather than the within the main network space allows them to be accessed easily by any of the LTDI machines when required, while remaining fully portable for demonstrations in other institutions.

The temporary installation of software for demonstration purposes, on institutional machines is not always straightforward. Where possible, LTDI consultants prefer to use our own machines which can be set up in advance and where they can have confidence that the software will work as expected. Particular difficulties have been encountered where installation is to take place where machines are networked. If it really is necessary to install software on other machines, the assistance of a local technician is invaluable. All software installed for demonstration purposes is removed before departure.

During the second year of LTDI we have been fortunate to obtain a data projector, which is portable (just) and can be used to project directly from a PC, a Mac or a video. The projector has proved to be both reliable and robust. It has greatly enhanced the ease of setting up many demonstrations and in particular it has improved the quality of display available to LTDI.

The quality and reliability of some of the LTDI laptop computers, including those still under guarantee, has been disappointing. In the main office a separate keyboard and mouse are usually used in order to reduce the wear and tear on the integral devices.

6. Financial Statement

The administration of funds is carried out through the Heriot Watt University Finance Office. A sum of £250,000 has been allocated by SHEFC. Details of expenditure to date from the LTDI account have been prepared by Dr. Rist and submitted to SHEFC.

7. Recommendations

The experiences of the second year of the Learning Technology Dissemination Initiative give rise to a number of recommendations:

- The new implementation of Learning Technology to support teaching and learning is rarely a quick process. Provision should be made at institutional level or elsewhere to ensure that support is available for staff, if needed, throughout the different stages of the implementation process.
- The emphasis of the LTDI team should be to move away from large scale dissemination activities such as workshops towards encouraging institutions to

develop their own strategies for supporting staff in the most effective adoption of Learning Technology.

- LTDI should actively promote collaboration between institutions and assist in the establishment of cross-institutional focus groups.

The proposal for the third year of the LTDI was prepared giving full consideration to the issues that have given rise to these recommendations, and it is intended that these recommendations should be acted upon in the third year of the initiative.

8. Conclusions

The Learning Technology Dissemination Initiative has continued to be active in the promotion of Learning Technology and its application to teaching and learning.

Implementation support activities have been undertaken in 17 SHEFC funded institutions, including on-going support for established projects in addition to new implementations. Of the remaining four institutions, a further two were in receipt of detailed implementation support during 1994/95.

During 1995/96 the LTDI has organised workshops, on a variety of topics, which have been attended by 779 academic staff.

The LTDI has promoted awareness of the Metropolitan Area Networks by a variety of means, but particularly through workshops and the distribution of MAN publicity materials.

The LTDI is sharing its experiences and observations regarding the use of technology to enhance teaching and learning with the wider academic community through original publications, academic journals and conferences.

Appendix 1 : Details of Workshops

Appendix 1.1 Workshops in the area of Life Sciences

Appendix 1.2 Workshops in the area of Business & Management

Appendix 1.3 Workshops in Generic areas

Appendix 1.4 Workshops for Teacher Educators

Appendix 1.5 Metropolitan Area Networks Awareness Days

Appendix 1.1 Workshops in the area of Life Sciences

Workshop 2 : Foundation Life Sciences

Date : 5 December 1995

Venue : University of Strathclyde

Total Attendance : 57

Keynote Presentations :

Anatomy without the smell

Ann Gibson (Glasgow Caledonian Uni.)

BIONET - The Manchester Experience

Mike Cunningham (Manchester University)

CTI Biology - An Internet Service

Eamonn Twomey (CTI Centre for Biology)

Parallel Sessions:

First Steps into the WEB

Greg Stoner (LTDI)

Software Evaluation

Helen Watt (LTDI)

Swap Shop

Kathy Buckner (LTDI)

Problems, Issues and Solutions

Jen Harvey (LTDI)

Software Demonstrated:

Applying Behavioural Sciences to the Teaching and Training of Health Professionals (TLTP 61), Life Sciences Consortium (TLTP 32), PCCAL (TLTP 28), Pharma-CAL-ogy (TLTP76), Quercus (TLTP 16), STEPS (TLTP 13), ADAM, Computer simulations for pharmacology teaching, Radiflex, Sheffield Biosciences Programs, Statistics for the Terrified

Workshop 6 : Psychology

Date : 9 February 1996

Venue : University of Stirling

Total Attendance : 60

Keynote Presentations :

Feeding the five thousand - problems and solutions in the management of gargantuan laboratory classes
Ian Bushnell, Margaret Martin (Uni. of Glasgow)

Computer support for practical class management and data collection

Hamish MacLeod (University of Edinburgh)

New Technology and the social context of learning

Charles Crook (Loughborough University)

Parallel Sessions:

Session 1 :

Making experiments more relevant
University),

Douglas Forbes (Glasgow Caledonian

Video conferencing - a reality now!	Graham Dean (Lancaster University),
A beginner's guide to the Web	Richard Cox (University of Edinburgh)
Session 2:	Simon Booth (University of Stirling)
IT resources to support psychology education	Greg Stoner (LTDI)
Qualitative data analysis	Annie Trapp (CTI centre for psychology)
	Ann Lewins (University of Surrey)

Software Demonstrated:

Anatomy software for psychologists, Applying behavioural sciences to the teaching and training of health professionals (TLTP 61), Cognitive and Experimental Psychology, Graphics COPE, The Observer, PASS (TLTP 8), PsyCle (TLTP 30), Qualitative Data Analysis, QUTAL (TLTP 43), Statistics packages for psychologists, STM Experimenter, SuperLab.

Workshop 9 : Specialist Biological Sciences

Date : 5 March 1996
 Venue : University of Dundee
 Total Attendance : 76

Keynote Presentations :

PILS, programs and videos, the pharma-CAL-ogy project in action	Ian Hughes (University of Leeds)
Students as multimedia authors	Jim Aiton (University of St. Andrews)
A tale of two CTIs	Eamonn Twomey (CTI Biology)
	Jacqui Nicol (CTI CLUES)
Review of the ALTER project on assessment, with reference to biologists	Joanna Bull (Luton University)

Parallel Sessions:

Swapshop (case studies & discussion)	Ian Thompson (Napier University), A Ryle (University of Edinburgh), B Cook (University of Glasgow)
DIY - develop or not to develop your own?	N Hole (University of Edinburgh) S Hole (The Open University in Scotland) David Baty (The University of Dundee)
Biology students as web and internet users	P Meaden (Heriot-Watt University) N Hamilton (University of Aberdeen)

Software Demonstrated:

Biodiversity (TLTP 23), Bioquest, CLIVE (TLTP 75), E-LAB-orate (TLTP 73), F.A.C.S. and flow cytometry, GraphIT (TLTP 1), Medical case studies, Medical Physics (TLTP 63)

Appendix 1.2 Workshops in the area of Business and Management

Workshop 4 : Accounting, Finance and related areas

Date : 11 December 1995
Venue : University of Edinburgh
Total Attendance : 61

Keynote Presentations :

Teaching and Learning Styles	Greg Stoner (LTDI)
Experiences and best practice in the use of learning technology	Alan Sangster (University of Aberdeen)
Case Study - Byzantium : An evaluation of its use	Denise Gallagher (Uni. of Huddersfield)
	Tony Sweetman (Teesside Business School)
Case Study - GraphIT : Expectations and realities of implementation	Margaret Milner (University of Glasgow)
Clyde Virtual University Strathclyde)	Linda Creanor (Unis. of Glasgow and

Software Demonstrated:

BITE (TLTP 40), Byzantium (TLTP 48), EQL, GraphIT (TLTP 1), Impetus, Infotec, An introduction to ratio analysis, ITTI software, Mathematics for business studies, MENTOR (TLTP 41), Statistics for business studies, WinEcon (TLTP 37).

Workshop 10 : Marketing, Operational Research and Management

Date : 12 April 1996
Venue : University of Strathclyde
Total Attendance : 41

Keynote Presentations :

Learning technology integration strategies : successes and failures	Helyn Thornbury (University of Strathclyde)
Evaluating CBL for use in teaching	Ailsa Nicolson (CTI AFM)

Parallel Sessions:

Session 1:

Using the multimedia marketing CD ROMs	Robert Hamilton (University of Glamorgan), Craig Griffin (Manchester Metropolitan
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U.)

Statistics for business students	Margaret Milner (University of Glasgow), Colin Jex (Lancaster University)
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Computer based assessment Aberdeen)	Jen Harvey (LTDI), Alan Sangster (U. of
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Session 2:

Teaching with business games	Stephen Tagg (University of Strathclyde), Rupert Loader (Uni. of Reading, x-
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LTDI)

Operational Research	Mentor Team
Using the WWW and the MANs Strathclyde)	Greg Stoner (LTDI), Niall Sclater (U. of

Software Demonstrated:

Business Games and simulations, Byzantium (TLTP 48), EQL, Graphics COPE, GraphIT (TLTP 1), Mathematics for business students, MENTOR (TLTP 41), MultiMedia Marketing (TLTP 64), Question Mark, Statistics for business STEPS (TLTP 13), TASCMAAD, WinEcon (TLTP 37).

Appendix 1.3 Workshops on Generic Topics

Workshop 1 : Assessment

Date : 19 September 1995
Venue : The University of Dundee
Total Attendance : 64

Keynote Presentations :
Technological Solutions to Assessment Jeff Haywood (University of Edinburgh)
CALM Case Study George McGuire (Heriot Watt University)
MESO Implementation Anna McVicar (Glasgow Caledonian Uni.)

Software Demonstrated:
Byzantium (TLTP 48), Optical Mark Reader, Question Mark, QUTAL (TLTP 43), Thesys, CATS
(TLTP 54), CEILIDH (TLTP 14), TILT (TLTP 1), Examine (ITTI)

Workshop 5 : Evaluating Implementations

Date : 18 December 1995
Venue : Napier University
Total Attendance : 46

Keynote Presentations :
Overview on Evaluating Implementations Erica McAteer (University of Glasgow)
Music Case Study Celia Duffy (University of Glasgow)
Integration - Resources Margaret Brown (University of Glasgow)
ELTHE Philip Crompton (University of Stirling)

Parallel Sessions:
 Zoology Erica McAteer (University of Glasgow)
 Clues John Milne (University of Aberdeen)
 WinEcon Philip Crompton (University of Stirling)

Software Demonstrated:
TILT (TLTP 1) (Various packages), CALMAT, CLUES (TLTP 29), WINECON (TLTP 37), STELLA

Workshop 7 : Study Skills

Date : 5 January 1996
Venue : Royal Scottish Academy of Music and Drama
Total Attendance : 37

Keynote Presentations :
The influence of teaching and assessment methods on student approaches to learning Jen Harvey (LTDI)
How student learning styles effects the way they choose to use CAL material Richard Lyle (U of Glasgow)
The TILT Experience Carol Primrose (University of Glasgow)

Software Demonstrated:
Beyond Courseware (TLTP 31), CLASS (TLTP 10), PASS (TLTP 8) , TILT (TLTP 1)

Appendix 1.4 Workshops for Teacher Educators

Workshop 3 : Technology in Education

Date : 6 November 1995
Venue : Moray House Institute of Education
Total Attendance : 47

Keynote Presentations :

IT skills - The bottom line	Mr Philip Strange (SCET)
Images for Teaching Education	Penni Tearle (University of Exeter)

Parallel Sessions:

Exploring the Internet	Greg Stoner & Brian Shields (LTDI)
Assessment through Technology	Helen Watt (LTDI)
Authoring	Lorna Banks (Heriot Watt University)
Scottish Interactive Technology Centre	Tony van der Kuyl (Moray House)
Powerpoint	Nora Mogey (LTDI)

Software Demonstrated:

Psyche (TLTP 30), KAL-CAL (TLTP 5), PASS (TLTP 8), CLASS (TLTP 10), Dimensions in Multiculture, TILT (TLTP 1), Statistics for the Terrified.

Workshop 11: Getting IT together

Date : 14 May 1996
Venue : St. Andrew's College of Education
Total Attendance : 37

Keynote Presentations :

Toys or Tools: Computers in the Primary Classroom	Shona Milne (Northern College)
Some developments in Learning technologies in Secondary Schools	Roddy Stuart (City of Glasgow Council)
IT Competences 5-14	Mike Jamieson (Bridge of Don Academy)
IT Competences for intending teachers	Bob Munro (University of Strathclyde)
On-line in Argyll and Bute	Martin Mulholland (Argyll & Bute Council)
Getting to grips with the MANs	Alistair Thompson (St Andrew's College)
Inspecting IT	Martyn Roebuck (HMI, SOEID)

Software Demonstrated:

Rather than LTDI arranging demonstrations, speakers made available examples of software that they mentioned that is in current use in schools and colleges of education.

Appendix 1.5 Metropolitan Area Networks Awareness Days

Workshop 8: EaStMAN

Date : 21 March 1996
Venue : Heriot-Watt University
Total Attendance : 91

Presentations :

The EaStMAN network	Richard Field (University of Edinburgh)
Video Conferencing facilities	Brian Gilmore (University of Edinburgh)
The Marble Project	Jeff Haywood (University of Edinburgh)
PICS Image Data Archive	Peter Hancock (University of Stirling)
NetMuse	Stephen Arnold (University of Glasgow)
Electronic Library Programme	Carolyn Rowlinson (University of Stirling)
TALiSMAN	Roger Rist (Heriot-Watt University)

Exhibition and Demonstrations:

Omnibus; Pearl; Marble; NetMuse; Click and Listen; Art College Web server; Idioms; C-Web; Pics; Tascmad; Elib; Smartt; Netskills; LTDI MANS web pages; Video on video-conferencing; Video conferencing experience.

Workshop 12: FaTMAN

Date : 21 May 1996
Venue : University of Dundee
Total Attendance : 117

Presentations :

The Use of MANs	Steve Cannon (SHEFC)
Overview of FaTMAN	Malcolm Bain (University of St. Andrews)
The FaTMAN Network	Mike Whitehead (University of Dundee)
Video Conferencing	Richard Murphy (University of Dundee)
Using MANs for computer supported co-operative work and CBL	Colin Allison (University of St. Andrews)
Philosophy Web server	Roger Young (University of Dundee)
Clyde Virtual University	David Whittington (Strathclyde University)
Electronic Library Programme	John MacColl (University of Abertay, Dundee)
TALiSMAN	Roger Rist (Heriot-Watt University)

Exhibition and Demonstrations:

Pearl; Human Embryo web server; Philosophy web server; applied computer studies; Tascmad; Mathematics web server; advanced computer supported learning; FaTMAN Helpdesk; Clyde Virtual University; TadMAN; EduLib; TAFIS; Ariadne; CuSee Me;LTDI MANS web pages.

Workshop 13: AbMAN

Date : 14 June 1996
Venue : University of Aberdeen
Total Attendance : 96

Presentations :

Overview of AbMAN	James Buchan (University of Aberdeen)
Video Conferencing	Wallace Anderson (University of Aberdeen)
The Marble project	Jeff Haywood (University of Edinburgh)
Expanding opportunities for computer assisted learning	Simon Heath (University of Aberdeen)
Delivering Multimedia on demand	Ian Richardson (The Robert Gordon University)
Electronic Library Programme	John MacColl (University of Abertay, Dundee)
TALiSMAN	Roger Rist (Heriot-Watt University)

Exhibition and Demonstrations:

Human Embryo web server; Tascmad; Marble; Consortium for provision of digital video and images on demand; FaTMAN Helpdesk; EduLib; TAFIS; Ariadne; Jilt; Bestiary; LTDI MANS web pages.

Workshop 14: ClydeNET

Date : 26 June 1996

Venue : University of Glasgow

Total Attendance : 155

Presentations :

Overview of ClydeNET	Colin Cooper (University of Glasgow)
Video Conferencing Facilities	Bruce Rodger (University of Strathclyde)
NetMuse	Stephen Arnold / Celia Duffy (Uni. of Glasgow)
The Marble project	Jeff Haywood (University of Edinburgh)
Clyde Virtual University	David Whittington (University of Strathclyde)
Electronic Library Programme	Nicola Clare (University of Strathclyde)
TALiSMAN	Roger Rist (Heriot-Watt University)

Exhibition and Demonstrations:

Tascmad; Marble; FAB; NetMuse; Begin; Medical Man; Co-working for courses in design; Clyde Virtual University; Idioms; EduLib; Ariadne; Jilt; Calf; LTDI MANS web pages.

Appendix 2 : Details of Feedback from Workshops

2.1 Feedback from LTDI workshops (not including MANs awareness days)

2.2 Feedback from MANs awareness days

Appendix 2.1

Feedback from LTDI Workshops (not including MANs awareness days)

Feedback forms were collected at the ten LTDI workshops:

				% of attendance
Assessment	19 Sept	Dundee	41	63
Education	6 Nov	Moray Ho	29	60
Found. Biol Sciences	5 Dec	Strathclyde	23	40
Accounting & Finance	11 Dec	Edinburgh	20	32
Evaluating Implementations	18 Dec	Napier	15	33
Study Skills	5 Jan	RSAMD	17	44
Psychology	9 Feb	Stirling	22	37
Specialist Biol Sciences	5 Mar	Dundee	47	61
Marketing, OR & Mgt	12 Apr	Strathclyde	26	63
Education	14 May	St Andrews Col	18	49
		Total	258	48 %

Respondents represent 19 SHEFC funded institutions (not RSAMD or Edinburgh College of Art) . The geographical institutional bases of respondents is given below:

Aberdeen	31
Fife/Tayside	40
Edinburgh	66
Glasgow & area	91

Delegates were mostly lecturers:

Table showing responses to the question :

What is the *main* activity of your job?

.	Job							
Institution	1	2	3	4	5	*		Grand Total
*	39	4	2	0	2	8		55
Aberdeen	8	2	0	1	1	2		14
Abertay	7	0	1	0	2	1		11
Caledonian	7	0	0	0	1	1		9
Dundee	7	3	2	0	0	0		12
Edinburgh	8	5	0	0	1	2		16
Glasgow S.of Art	0	0	0	0	0	1		1
Glasgow	8	5	0	1	3	4		21
H-W	2	3	1	2	0	4		12
Moray House	11	1	0	0	0	0		12
Napier	10	2	1	1	0	1		15
Northern Col	4	1	2	0	0	0		7
Paisley	12	0	0	0	0	2		14
QMC	4	0	0	1	0	0		5
RGU	5	2	0	0	0	2		9
S'Clyde	6	4	0	0	2	5		17
SCOT	5	0	0	0	0	0		5
St Andrews Col	14	0	2	0	0	0		16
St Andrews Uni	1	2	0	0	1	0		4
Stirling	1	1	0	0	0	1		3
Grand Total	159	35	11	6	13	34		258

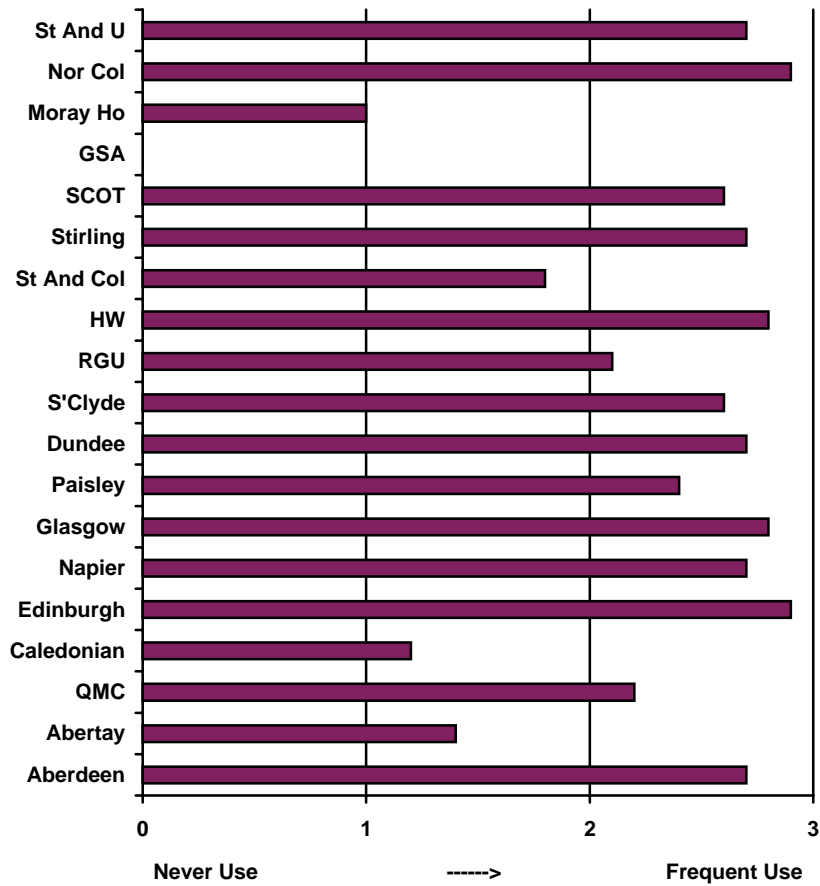
Code :

Job	
1	Teaching / Lecturing
2	Research
3	Management
4	Staff Development
5	Other

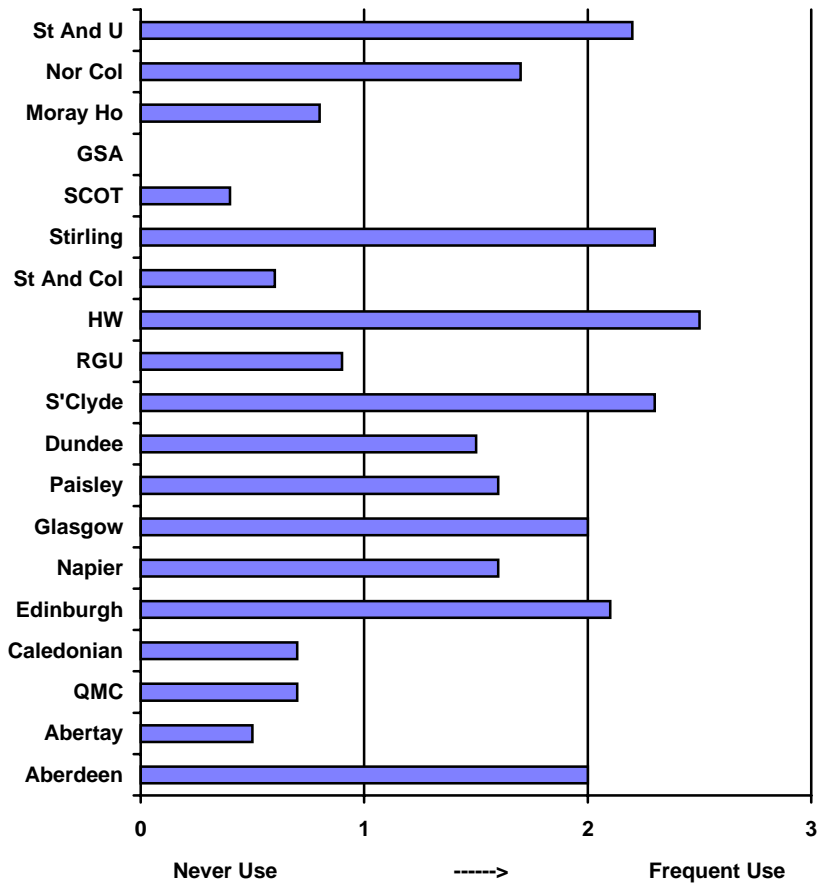
* represents missing responses - including incomplete, unreadable, ...

Experience of different computer tools is indicated in the following diagrams. Please note that the number of responses from each institution is VERY small, so these diagrams should be viewed with that in mind. This data is not necessarily representative of the true pattern within each institution.

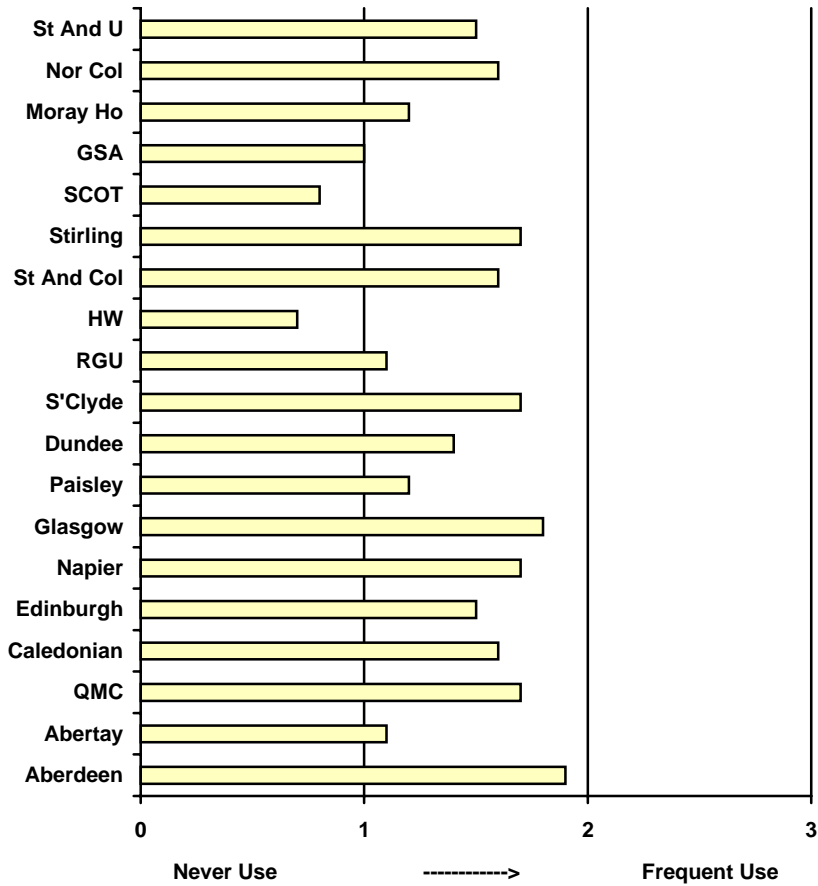
Experience using E Mail



Experience using the World Wide Web

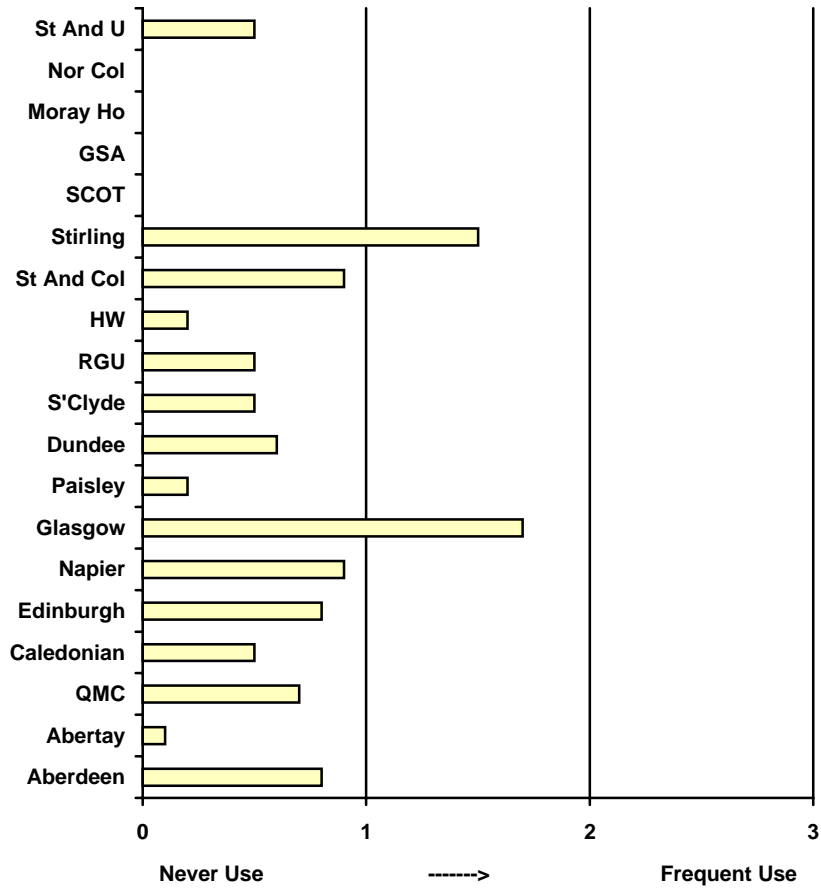


Experience using CAL packages

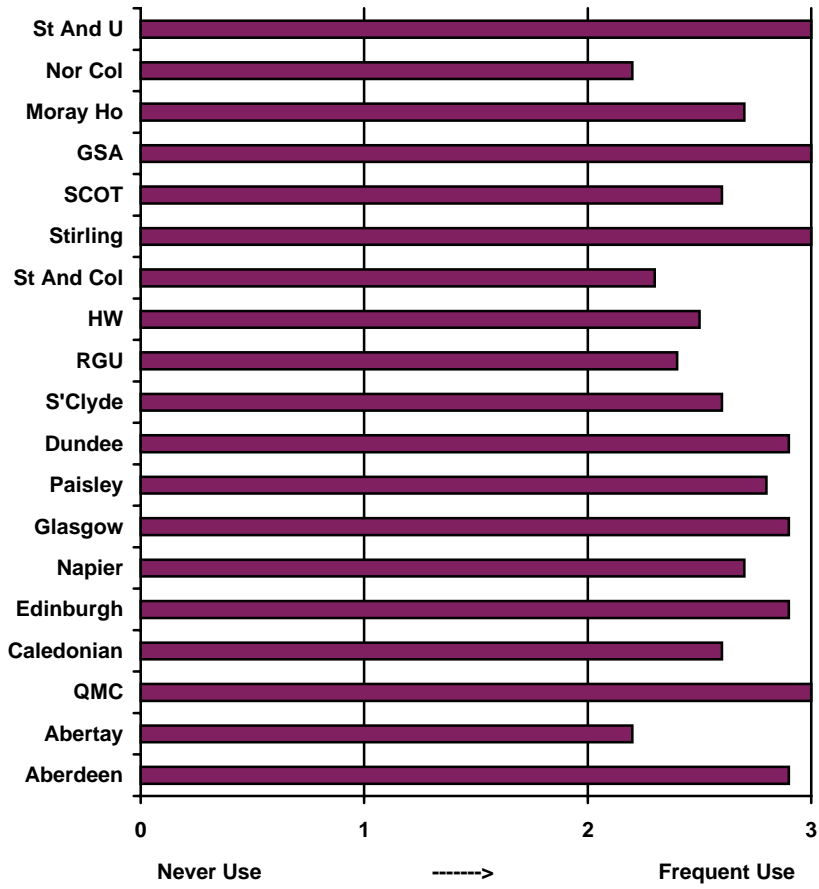


Here, the data from Heriot Watt may appear particularly surprising. However a considerable proportion of the respondents from Heriot Watt are not involved directly in teaching.

Experience using computer based assessment



Experience using standard productivity tools



(Standard productivity tools such as word processors, spreadsheets, databases,.....)

Delegates found out about workshops in a variety of ways:

How did you find out about the workshop?	Number of responses
Direct Mailing	91
Word of mouth	49
Institutional Mailing	81
World Wide Web	12
Other	12

10 - 4 is the most popular time for workshops:

When is the best time for workshops?	Number of Responses
9 - 1	15
1 - 5	7
10 - 4	189
9 - 5	18
eve	4
weekend	5

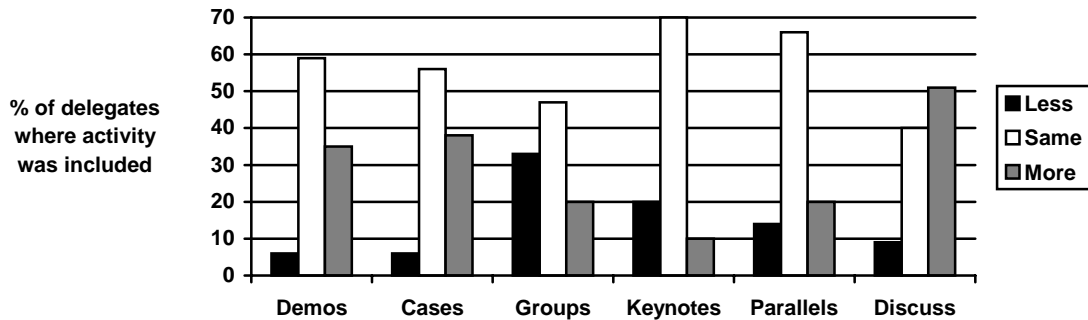
For information about preferred locations see tables below. The final table collates all the figures, regardless of the 'home' city of delegates. The first five tables split the data up, according to the location of their base institution.

From	Choice	1st	2nd	3rd	4th	5th
Aberdeen	Aberdeen	16	1	6	2	0
	Dundee	1	15	4	2	3
	Edinburgh	6	3	8	6	2
	Glasgow	2	4	4	5	10
	Stirling			9	7	9
Dundee	Aberdeen		8	8	7	10
	Dundee	29	2			11
	Edinburgh	2	17	7	7	
	Glasgow	2	1	8	6	16
	Stirling		5	13	12	3
Edinburgh	Aberdeen	2	1	1	7	41
	Dundee	2	4	14	26	6
	Edinburgh	46	2	3		1
	Glasgow		15	4	13	2
	Stirling	2	21	12	6	2
Glasgow	Aberdeen	2	1	2	7	66
	Dundee		3	24	64	5
	Edinburgh	2	33	34	6	3
	Glasgow	73	2	2		1
	Stirling	1	9	64	1	3
Stirling	Aberdeen					4
	Dundee				4	
	Edinburgh		3	1		
	Glasgow		1	3		
	Stirling	4				
Total	Aberdeen	20	11	17	23	121
	Dundee	32	24	42	96	25
	Edinburgh	56	58	53	19	6
	Glasgow	77	13	21	24	29
	Stirling	7	35	99	26	17

After weighting these figures, to allow for a greater number of respondents being from some cities rather than others, Edinburgh and Stirling emerge as the venues with the highest general acceptability.

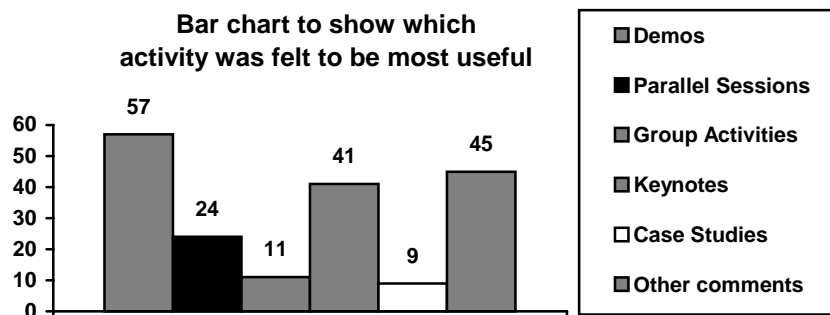
Generally the balance of the workshops was felt to be about right, with perhaps a need to allow a little more time for discussion - but delegates did not want the workshops to last any longer than the 10 - 4 format typically used.

Bar chart showing delegates preferences for amount of time spent on different activities during workshops



Generally software demonstrations were felt to be the most popular and useful section of the workshops. Where keynotes are indicated on the diagram, often one particular keynote presentation was specifically mentioned, rather than the respondent indicating that keynote presentations in general are the most useful.

Bar chart to show which activity was felt to be most useful



38% (48/118) respondents indicated that there were parts of the workshops that were not useful. In most cases this was an individual presentation, or demonstration that was not judged as of direct relevance to the respondent.

7 individuals indicated that they would not wish to attend another LTDI event. Of these 5 had been at one workshop (Acc & Fin) and two of these had been from a non-SHEFC institution. Overall more than 97% of delegates indicated that they would be happy to attend another LTDI event.

Many delegates indicated that they would like to follow up the workshop in some way

Maintain contact with other delegates	124
Obtain some of the demonstrated software	175
Seminar at own institution	73
Visit by LTDI staff	50

Table showing respondents who would like to follow up the workshop by obtaining a copy of some of the demonstrated software.

Institution	Software			Grand Total
	No	Yes	Blank	
*	10	43	2	55
Aberdeen	6	7	1	14
Abertay	2	8	1	11
Caledonian	2	7	0	9
Dundee	3	9	0	12
Edinburgh	8	8	0	16
GSA	0	1	0	1
Glasgow	10	10	1	21
H-W	5	5	2	12
Moray Ho	1	10	1	12
Napier	3	11	1	15
Nor Col	2	5	0	7
Paisley	2	12	0	14
QMC	0	5	0	5
RGU	1	8	0	9
S'Clyde	7	10	0	17
SCOT	0	5	0	5
St And Col	7	9	0	16
St And U	2	1	1	4
Stirling	2	1	0	3
Grand Total	73	175	10	258

Overall 68% of respondents indicated an interest in obtaining some of the demonstrated software.

Table showing, by institution, whether respondents believed an institutional seminar, following from, or similar to the workshop, would be useful.

.	Seminar		*	Grand Total
	No	Yes		
*	32	21	2	55
Aberdeen	11	2	1	14
Abertay	9	1	1	11
Caledonian	5	4	0	9
Dundee	8	4	0	12
Edinburgh	14	2	0	16
GSA	1	0	0	1
Glasgow	16	4	1	21
H-W	8	2	2	12
Moray Ho	5	6	1	12
Napier	9	5	1	15
Nor Col	4	3	0	7
Paisley	9	5	0	14
QMC	4	1	0	5
RGU	7	2	0	9
S'Clyde	15	2	0	17
SCOT	3	2	0	5
St And Col	9	7	0	16
St And U	3	0	1	4
Stirling	3	0	0	3
Grand Total	175	73	10	258

Those institutions where at least 50% of respondents indicated an interest in LTDI arranging an institutional seminar were:
Dundee, Glasgow Caledonian, Moray House, Napier, Northern College, Paisley, and St Andrews College. The high incidence of teacher training institutions in this list is interesting.

Table showing, by institution, whether respondents were interested in receiving a follow up visit from LTDI staff.

These requests have been followed up wherever possible, usually by a telephone call in the first instance, to establish whether a visit might be beneficial.

.	Visit			Grand Total
	No	Yes	*	
*	37	16	2	55
Aberdeen	10	3	1	14
Abertay	8	2	1	11
Caledonian	8	1	0	9
Dundee	9	3	0	12
Edinburgh	15	1	0	16
GSA	0	1	0	1
Glasgow	18	2	1	21
H-W	8	2	2	12
Moray Ho	8	3	1	12
Napier	11	3	1	15
Nor Col	7	0	0	7
Paisley	8	6	0	14
QMC	4	1	0	5
RGU	8	1	0	9
S'Clyde	17	0	0	17
SCOT	3	2	0	5
St And Col	14	2	0	16
St And U	2	1	1	4
Stirling	3	0	0	3
Grand Total	198	50	10	258

The particular interest expressed in Paisley was closely matched by interest in an institutional seminar, and furthermore was focused in a single department. However, despite several approaches by LTDI, it has not proved possible to follow up this interest at a departmental level.

Appendix 2.2 Feedback from LTDI Metropolitan Area Networks Awareness Days

A total of 268 feedback forms were returned from these Awareness Days

			Number	Percentage of Attendance
EaStMAN	21 March 1996	Heriot-Watt University	62	68%
FaTMAN	21 May 1996	University of Dundee	81	69%
AbMAN	14 June 1996	University of Aberdeen	54	56%
ClydeNET	26 June 1996	University of Glasgow	71	46%

Delegates came from a variety of backgrounds, but a considerable proportion were from computing services. The 'other' category includes a number of librarians. Overall, these figures contrast with those from other LTDI workshops where 62% of respondents described themselves as teachers.

What is the *main* area of responsibility in your job?

	<u>n</u>	<u>% of respondents</u>
Teaching	90	36
Research	41	16
Management	26	10
Computer Services	55	22
Other	38	15

Respondents were asked whether, in the context of their work, they use a computer regularly for different activities:

This table shows number of positive responses (and percentage of respondents in that job category) e.g 75 (83%) of the 90 teachers did use computers to access information

n (%)	Accessing Information	Preparation of materials	Communication	Administration of teaching	Teaching
Teaching	75 (83)	84 (93)	77 (86)	72 (80)	58 (64)
Research	40 (97)	36 (88)	34 (83)	10 (24)	12 (30)
Management	19 (73)	13 (50)	21 (81)	14 (54)	4 (15)
Comp. Services	51 (93)	45 (82)	49 (89)	11 (20)	17 (31)
Other	33 (87)	30 (79)	31 (82)	12 (32)	10 (26)
Blank	17 (94)	17 (94)	15 (83)	11 (61)	9 (50)

Generally this table shows a very high rate of usage of all those aspects of technology considered, with managers generally making less use of the technology than other delegates.

Respondents had learned about the Awareness Days from a variety of sources:

Direct mailing	75
Word of mouth	47
Electronic mail	24
Institutional publicity	62
World Wide Web	7
Other	23

There was no one consistent view about what was the most useful aspect of the MADs, although Elib was not selected as often as other parts of the day (the question was 'which were the most useful aspects of the day?', so it should not be concluded that Elib was not useful, only that it was not the *most* useful part of the day).

	EaStMAN	FaTMAN	AbMAN	ClydeNET	TOTAL
UMI Projects	16	4	3	3	26
Elib	0	1	1	1	3
TALiSMAN	4	7	7	2	20
Exhibition	3	5	2	6	16
Talking	1	3	1	6	11
Info update	14	10	3	4	31
VC	6	2	0	2	10
Other	12	37	25	37	111
Blank	6	12	12	10	40
TOTAL	62	81	54	71	268

Many of the responses coded as 'Other' made comments like "It was all useful".

154 (57%) of respondents said that there had been no aspects of the day that were not useful. Of the other 43% three groups of comments could be identified:

- comments about some presentations being too technical
- comments about presentations of no direct relevance to the individual respondent
- comments about poor timekeeping in presentations

96% of respondents said that they would be prepared to attend another LTDI event - only one respondent said that they would not (the remaining returns were blank)

Respondents indicated that they would be interested in following up the workshop in a number of ways :

Maintain contact with other delegates	111
Obtain some of the demonstrated materials	146
Departmental seminar in your institution	83
Follow up visit by LTDI staff	34

Respondents were asked to identify those areas where they would be interested in receiving training:

Electronic Mail	50 (19%)
Electronic Conferencing	92 (34%)
Video Conferencing	126 (47%)
Designing and developing for WWW	180 (67%)
Adapting or Tailoring courseware	113 (42%)
Uses of networks in teaching	140 (52%)
Searching electronically for materials	91(34%)
Electronic assessment tools	117 (43%)

Cross tabulating this data with main job responsibility gives the following table - which shows figures as a percentage of respondents giving that task as their main job responsibility.

% of job	Teaching	Research	Mgt	C Service	Other	Blank
Email	21	17	12	16	21	28
Econf	36	32	31	38	34	28
Vconf	37	44	58	60	53	39
WWW	68	59	73	70	71	61
Tailoring	62	29	38	24	42	33
Networks	71	32	58	29	58	56
Searches	40	37	35	20	37	33
Asst	60	37	35	29	34	56

Figures that seem to be a particular interest here are

- the high percentage of teaching staff seeking information about the applications of networks to teaching
- low level of interest amongst computer services staff in training about the applications of networks to teaching - is this sort of information already known to them, or are they not interested in teaching applications?
- The generally high level of interest in designing for the WWW
- Interest amongst teaching staff in tailoring and adapting courseware
- Interest amongst teaching staff in electronic assessment tools
- Interest in video conferencing much higher amongst managers and computer services staff than amongst teaching staff.

Appendix 3 : Breakdown of Attendances

Appendix 3.1 Attendances at LTDI Subject Based and Generic Workshops

Workshop DELEGATES (not including speakers, demonstrators, etc.)

Workshop	1	2	3	4	5	6	7	8	9	10	Tot
Topic	G	LS	E	BM	G	LS	G	LS	BM	E	
Abertay	27	2		1	1	3	3	7	1		45
Aberdeen	1	1		3	1	1	2	4	1		14
Dundee	2	3	3	5	3	1	2	10		2	31
Edin Col Art											
Edin U				12			4	2	2		20
Caledonian	1	8	1	5	2	4		1	1	1	24
Gla Col Art						1					1
Glasgow U	5	2		2	1	4		3	2	1	20
H-W	1			3	2	1	3	1	4		15
Moray Ho			12		1					5	18
Napier	3	2		4	10	1	4	1	4		29
Nor Col	1		5		1	1	1			5	14
Paisley	3	6		1	2		2	5	2	3	24
QMC	2	5	1		1		1	4			14
RGU	1	3			2	2		6	1		15
RSAMD											
St And Col	4		7		2	4	1			6	24
St And U							3	6			9
Stirling			3	1	1	2	9	1		1	18
S'clyde		7	9	1	2	1	4	1	4	4	33
SCOT				2	3	4			1		10
Total - delegates only	51	39	41	40	35	30	39	52	23	28	378
Total - delegates and demonstrators	64	57	47	61	46	37	61	76	41	37	527

No inferences should be drawn from these data

Appendix 3.2 Metropolitan Area Networks Awareness Days

Delegates at Metropolitan Area Networks Awareness Days
(not including speakers, demonstrators, etc.)

	EaStMAN H-W U	FaTMAN Dundee U	AbMAN Aberdeen U	ClydeNET Glasgow U	Total
Abertay	2	26	1		29
Aberdeen		1	21		22
Dundee	2	54		2	58
Edin Col Art				1	1
Edin U	18	3	1	5	27
Caledonian	1	1	1	33	36
Gla Col Art				5	5
Glasgow U	2		1	34	37
H-W	9	1	1	2	13
Moray Ho					0
Napier	19	2	3	4	28
Nor Col		2	3		5
Paisley	1			9	10
QMC	3				3
RGU			26		26
RSAMD				1	1
St And Col				4	4
St And U	2	7			9
Stirling	5	1		1	7
S'clyde	2			22	24
SCOT	2				2
Total	68	98	58	123	347

No inferences should be drawn from these data

Appendix 4: Summary of Evaluation Forms

Just over 100 evaluation forms were distributed to individuals who had received implementation support during the first or second years of LTDI. Implementation support may have involved a single meeting, or a series of meetings, as an individual or as part of a group. The form was printed on both sides of one A4 sheet. Forms were distributed with a pre-paid addressed envelope for the reply. After four weeks, most non responses were followed up with a phone call or an e-mail message.

The 54 returns received so far have been collated to form this report.

Forms were received from 17 institutions:

U. of Aberdeen	3	Moray House	2
U. of Abertay	3	Napier U.	5
U. of Dundee	4	Northern Col.	1
U. of Edinburgh	8	Queen Margaret Col.	4
U. of Glasgow	6	Robert Gordon U.	4
Glasgow Sch. of Art	1	RSAMD	1
Glasgow Caledonian U.	6	St Andrews U.	1
Heriot Watt	2	SCOT	1
		Stirling	1

The first question asked about what kind of support had been provided. Respondents could tick several answers.

Raising general awareness of Learning Technology	38
Introduction of new technology for specific course(s)	22
Facilitating contact with colleagues	20
Information on software	45
Information on hardware	4
Assessment issues	12
Evaluation issues	8
World Wide Web	10
Other information	4

How many staff from your institution have been involved in this implementation ?

These responses indicate that 223 staff have been involved - but some of these were from departmental seminars, or other group activities, rather than more formal 'implementations'.

What were the most useful aspects of your contact with LTDI?

Although this was a completely open question, it has been possible to identify groups of responses - shown in the table below. Knowledge about particular packages and about the general range of courseware available are viewed as being important by the largest group of respondents.

Provision of Information	3
Awareness of Software	14
Raising general awareness	5
Facilitation of Networking	3

Some of the individual comments in response to the question are listed below:

- Practical advice re hardware needs.
- Awareness of the strengths & weaknesses of the software.
- Staff very helpful - Quick responses.
- The fact that LTDI staff are subject specialists, so staff here felt more comfortable with them as teachers in their own right.
- Encouragement in the design of the research project.
- Raising awareness amongst colleagues of the potential of CBL.
- Personal help from Nora.
- Contact and discussion with others involved in similar methods of assessment.
- Excellent 'one to one' support.
- Confidence built in ability to use IT, felt less IT dyslexic than normal!
- The fact that contact had been acquired with someone who could offer round advice on aspects of computing / IT and who was ready and willing to tailor a service to our needs.
- Sue Hewer's knowledge.
- Giving us the confidence to know that we were not re-inventing the wheel and our approach was broadly sensible.
- User friendly, expert help and advice.
- Ideas on how to evaluate software.
- Awareness raising in the potential for learning technology applications within our department.
- Development of documentation.

Describe how you are using / planning to use technology in this implementation.

The huge variety of responses to this question, of which some are selected here, give a flavour for the sort of support work with which LTDI has been engaged :

- To act as dry labs ie. computer simulations of lab experiments.
- As a teaching aid to support lecture material.
- As a revision aid.
- We are currently implementing staff development programmes in the application of student centred learning packages using new technology.
- Using Study Skills - within student induction & as student support.
- Integrate into teaching of Economics.
- Develop electronic delivery of teaching materials.
- We're making increasing use of the Web and some staff are putting teaching material on it.
- Used the software provided with one very weak student.
- Planning to use powerpoint for lectures and making the material available to students.
- Use technology to assist in assessment of learning.
- Increase use of computers for language teaching.
- Use of wordprocessing in teaching and assessing language training
- Development of Web-based training in advanced statistical techniques for researchers.
- Replacement of lecture-based with CAL-based coursework.
- Statistics tuition software running as a resource during the lectures.
- Provide learning back up for my biomechanics module.
- For open learning, and assessment purposes.
- Increased use of software support for statistics teaching.
- Supplementary self-help material in undergraduate and Msc courses.
- Using life sciences courseware simulation as tutorial.
- Using Question Mark for questionnaires and self-assessment tests.
- Planning student authoring projects.
- Implementing objective testing in 1st & 2nd year courses in geography. Exploring the institutional and educational issues involved with a change to objective testing using computer assisted assessment. Developing learning materials for staff.
- Has been used in a supporting role for lectures & tutorials - some direct reference to it in tutorials - students expected to access minimum 1 hour a week for 12 weeks (Timetabled time) - sections used match lectures given.
- We intend using more of the software to support lecture material. We will do this when the software becomes available.
- Introducing software for basic statistics in a principles of investigation course.
- Support to those Bsc (Hons) Physiotherapy/ Podiatry students with little physics to underpin their 1st and 2nd year Biomechanics lectures.
- Use of Multi Media in teaching on - line tutorials.

Were there any ways that you believed / hoped LTDI could offer support, but that were not available to you in practice?

The vast majority of respondents answered 'No' or left this question blank. The responses received were :

- Help in developing specific programmes for our department.
- Need more specialists in *other* subject areas.
- Funding!
- Not much which could make a quick, direct contribution to our institution. (SCOT)
- Delivery of the product.
- Initial information about LTDI not as readily available.
- Specific software identified could not be obtained.
- More hands on help with using the web - given addresses but connections / downloads not very successful and time consuming.
- Found that we couldn't use technology for what we had hoped.
- More help on web based systems of authoring.

How important was support from LTDI in assisting with this implementation?

The responses here create a picture of the LTDI team providing encouragement and support, especially in helping institutional teams over initial hurdles.

- Important in finding correct contact.
- The much needed 'kick' to make any move was kindly made.
- LTDI was encouraging.
- If LTDI did not exist it is unlikely that we would have attempted to investigate computer assisted MCQs.
- I have found the support from LTDI was very helpful.
- Very useful at start of project.
- Support from LTDI came at a critical time for us and has been vital in creating the atmosphere in which IT can be used by colleagues.
- LTDI provided basic stimulus for and information to enable implementation.
- Very little support after initial meetings - WinEcon delayed.
- Support was useful rather than crucial.
- At the time, support was crucial.
- Support of this sort is extremely useful in keeping one on the right track.
- In most cases initial support was the most important.
- Very useful forum for discussion.
- It was very helpful.
- I needed someone to lead me through the capabilities and potential uses of these interactive packages.
- What assistance I did receive was valuable and if time allowed to pursue project properly it would be very useful.
- Not vital... but might have delayed start without support.

How important was it / is it that LTDI staff have specialist subject based knowledge or an understanding of pedagogy?

Respondents generally felt that these are both important, with an understanding of pedagogy generally being viewed as vital, and subject specific knowledge desirable, but not essential.

Very important (7)
Of paramount importance
Not essential, but useful
Important - at least one is vital
Important (2)
Quite important
Vital

Subject Specific knowledge

Not essential
Very (2)
Bonus, but not essential
Knowledge of technology more important
Bonus
Useful

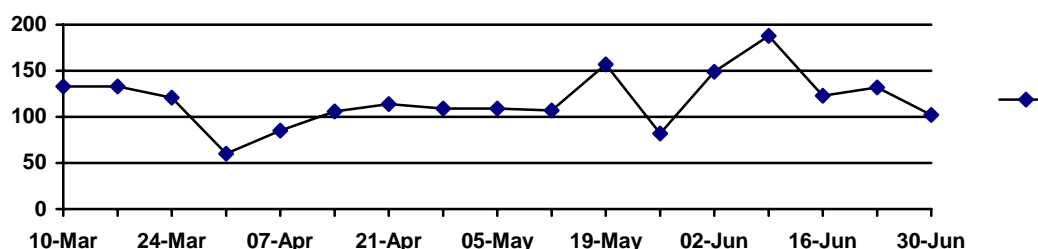
Understanding of Pedagogy

Vital (2)
Important (2)
Very, very, important
100% Important
Essential (2)

Appendix 5 : World Wide Web site usage information

Since March 1996 access to the LTDI web site have been monitored on a weekly basis. Accesses from within ICBL and other 'known' machines (e.g. LTDI team members private machines) have been omitted from these figures.

Access to LTDI WWW site (March - June 1996)



The frequently accessed sections of the LTDI WWW site are shown in the table below. These figures are for general information only, to give an impression of site usage, and are not claimed to be totally reliable. Due to the nature of the program used to retrieve this information accesses logged include graphics which contribute to pages, hence pages with a high number of graphics record proportionately higher numbers of accesses.

General LTDI pages	23 %
MANs pages	30 %
Workshop Information	8 %
Staff pages	6 %
Handbook	12 %
UseIT	7 %
Resources and subject pages	5 %

Access is made from all over the world - between May and July 1996 the countries with the most accesses to the LTDI site were :

UK	3580
Australia	108
US Educational	88
Netherlands	41
Canada	22
Columbia	14
Ireland	9

Recently statistics collected have been able to include information about which sites are active in providing links to the LTDI site . Sites which are amongst the most successful in linking to LTDI include the main TLTP site and a variety of UK universities (not just Scottish HE Institutions), CTI centres and TLTP projects. The Lycos, Webcrawler and Altavista search engines all regularly provide links to LTDI .

Appendix 6: LTDI Objectives for 1995/96

These objectives specify the targets established by LTDI for 1995/96, to supplement those included in the project proposal. All except two of these objectives have been met in full, objectives 11 and 12 have been partially met.

1. To involve staff from every SHEFC funded institution in workshops .
2. To involve 500 distinct academic staff in national and local workshops.
3. To be involved in the staff development programme in at least 40% of SHEFC funded institutions
4. To maintain an active World Wide Web site providing information about LTDI and the use of learning technology within teaching.
5. To publish other printed or electronic documents of use to the academic community in Scotland (and possibly beyond).
6. Where an enquiry is relevant to LTDI activities, to respond by the provision of information about implementation strategies, software, 'expert' contacts, ... or where the enquiry is not directly relevant to LTDI activities to respond by directing the enquirer to other relevant initiatives, where such are known.
7. To establish a collection of materials created from the TLTP, ITTI and related projects.
8. To establish a collection of the best examples of computer based materials from commercial sources.
9. To offer an implementation support service which would normally:
 - have the written support of the relevant member of the institutional management team
 - involve more than one member of academic staff
 - promote reflection on pedagogical issues
 - identify specifically the aim of the (proposed) implementation
 - lead to the construction of a plan of action which addresses that aim
 - result (in most cases) in the integration of learning technology into teaching.
10. Follow up the implementation projects described in the report for year 1 as level 2 or level 3, providing detailed support as required.
11. To produce a document describing in detail a sample of the implementation projects commenced in 1994/95.
12. To involve all (connected) SHEFC funded institutions in workshops focussing on the MANs.
13. To offer support to staff who wish to explore the use of the MANs for teaching or research purposes.

14. To publicise information about other projects which make use of MAN technology.

15. LTDI staff will be able to demonstrate an in-depth knowledge of the potential uses of a variety of learning technology packages.

16. LTDI staff will demonstrate an awareness of new developments within learning technology.

Appendix 7 : LTDI Project Staff

Dr Roger Rist, Project Director

Ms Nora Moge, Development Officer

Mrs Kathy Buckner, Implementation Support Consultant - Life Sciences (0.4 FTE)

Dr Jen Harvey, Implementation Support Consultant - Life Sciences

Mrs Sue Hewer, Implementation Support Consultant - Modern Languages, MANs (0.7 FTE)

Mr Brian Shields, Implementation Support Consultant - MANs (0.4 FTE)

Mr Greg Stoner, Implementation Support Consultant - Business & Management

Mrs Helen Watt, Implementation Support Consultant - Generic Areas (0.6 FTE)

Miss Wilma Brown, Secretary (0.5 FTE)

Mr David Kerr, Technician

Appendix 8 : LTDI Consultative Group Membership 1995/96

Dr Douglas Anderson (The Robert Gordon University)

Dr Malcolm Bain (University of St Andrews)

Dr Jeff Haywood (University of Edinburgh)

Dr Mike Kibby (University of Strathclyde)

Mr Gerard Madill (SHEFC)

Ms Nora Moge (LTDI Development Officer)

Dr Kate Morss (Queen Margaret College)

Mr Steve Partridge (University of Dundee)

Mr Mike Quickfall (Moray House Institute of Education)

Dr Roger Rist (LTDI Project Director) (chair)