

The LINC project - Learning in Networked Communities

an Adapt Project

Final Internal Evaluation Report

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Section 1 Introduction

1.1 Purpose of the Evaluation

The LINC project enabled UHI Millennium Institute to undertake three important developments which are relevant both for its own future and for issues of widening access to higher education and the development of e-learning, which are being actively pursued by tertiary education establishments and governments world-wide.

Broadly these three LINC developments were to:

- create a collaborative community learning network structure to provide wider access to higher education in some of the most remote parts of Scotland
- develop and evaluate online learning resources for 12 level one degree modules, test two virtual learning environments and tutor learners studying online
- offer learning opportunities to the local community and local Small and Medium-sized Enterprises (SMEs) which are relevant for their business needs

Given the importance of the LINC project as a case study it was essential to evaluate the project and identify the lessons both for our own institution and for wider generalisation to others. The importance of evaluation was recognised from the outset with internal evaluation being included as one of the eight objectives for the project. In addition external reviewers evaluated the management and achievements of the project (Nicol & Gordon 2001).

This report is the final internal evaluation report and examines the achievements of the whole project. This report incorporates and extends the findings of the interim evaluation report of May 2001 (Broumley et al 2001).

1.2 The UHI Millennium Institute context

The UHI Millennium Institute is creating a federal, distributed university based on a network of thirteen FE colleges and research institutions. It is the first institution of Higher Education in the Highlands and Islands of Scotland. The location of the partner colleges gives UHI Millennium Institute a region that covers almost one fifth of the UK and contains a population of just under half a million. Despite the previous lack of Higher Education (HE) provision within the area there has traditionally been good participation in HE, although not in all parts of the Highlands, but this participation has been at the cost of young people moving out of the area, often not to return. The lack of local HE provision has resulted in very low participation in part time HE courses, but very high participation through distance learning (Raab 1998). A key goal for UHI Millennium Institute is to address the issue of wider access to HE for people in remote rural communities and, by so doing, to increase participation rates. This is reflected in the concepts underlying UHI Millennium Institute which are to:

- widen access to high quality tertiary education;
- increase participation rates through new approaches to learning and teaching making the most of the new information and communication technologies;
- develop an indigenous research and development infrastructure;
- support the region's unique cultural and environmental heritage;
- act as a major catalyst for economic and social regeneration. (UHI Millennium Institute 1998)

A critical aspect of UHI Millennium Institute is to provide access to Higher Education using information and communication technology to provide learning opportunities across the network of colleges, supported by a broad bandwidth Wide Area Network.

1.3 Background and scope of the LINC project

A network of thirteen establishments in an area as vast as the Highlands and Islands still leaves many potential learners a large distance from their nearest place of learning. Whilst

many people may have their own computers and can access learning via the internet from home, the use of ICT for learning can be an additional barrier for many with lower incomes, even in comparatively wealthy countries (Gladieux & Swail 1999, OECD 2001, Osborne and Gallacher 2001). Some Colleges within UHI Millennium Institute have sought to extend access to learning through Local Learning Centres (LLCs). These colleges have their own wholly owned learning centres¹, but establishing and running this type of outreach centre is expensive, therefore extending the network this way will be slow. The LINC project offered an opportunity of extending the LLC network (offering UHI Millennium Institute programmes) by collaborating with learning centres owned by other organisations and thus creating a much wider network of centres and therefore putting learning within reach of a larger community. The project also offered the chance to develop online learning resources for twelve modules at undergraduate level one (SCQF framework) of UHI Millennium Institute's degree programme. The modules selected were from Business Administration, Tourism, Child and Youth Studies, Rural Health and Computing degrees. Independent evidence from Young et al (2000) suggests that there is demand for these subjects to be delivered flexibly within Scotland, and particularly where conventional access is difficult. In piloting these modules UHI Millennium Institute is able to assess uptake and develop delivery mechanisms which aim to contribute to the economic development of the region, in accordance with its underlying concepts.

The LINC project offered UHI Millennium Institute an opportunity to widen access to part time HE through a partnership with Local Learning Centres (LLCs) and by offering online learning to the local community. The project's objectives were to:

1. support the development of community learning networks in the eleven UHI Millennium Institute/HIE areas in a consistent way that is compatible with SUfl and Scottish Executive plans for community based learning
2. develop systems, processes, skills and services that will effectively support the learning experience in Local Learning Centres throughout the rural and remote regions of the Highlands and Islands
3. undertake market research in each community to identify demand and training needs within business, among individuals and within organisations and to help build a database of local learning opportunities
4. define and to launch a programme of targeted marketing activities designed to stimulate demand and further strengthen the growing awareness of learning opportunities through the SUfl and UHI Millennium Institute networks; also to target marketing activities in relation to the growing sectors identified by HIE
5. enhance and develop local integrated information and guidance database systems associated with each centre (this is to complement and integrate with the Careers Service, SUfl/Learning Direct national database and with the proposed enhanced Integrated Skills Information Service (ISIS) project being developed by HIE, the Careers Service, UHI Millennium Institute and others);²
6. trial a range of delivery mechanisms for learning programmes in each of the local community learning centres for a target of 530 beneficiaries in up to 230 SME's through the deployment of ICT and learning support staff and student mentoring systems
7. take a selected range of existing programmes, modify them to fit delivery systems and to offer them to learners within a UHI Millennium Institute quality systems framework, exploiting new ICT where appropriate;
8. undertake an action-research, evaluation and dissemination programme for the project, closely involving UHI Millennium Institute and EU partners, external consultants and SUfl
(UHI Millennium Institute 2000)

In February 2001 a new development was added to the project objectives and that was the provision of short work-related courses to meet local demand.

¹ One College is itself a network of Learning Centres.

² This objective was incorporated into work being undertaken by SUfl and is no longer part of LINC.

The LINC project is deemed to be one of the largest and most complex of the ADAPT projects underway in the UK. It ran in three phases:

- **phase 1:** April - September 2000: establish networks of Local Learning Centres, carry out staff development programmes, develop learning materials, market learning opportunities, recruit students for semester 1;
- **phase 2:** September 2000 - January 2001: tutor students on five modules³; refine support mechanisms; recruit students for semester 2; refine networks; carry out additional staff development; collect evaluation data;
- **phase 3:** February - June 2001: tutor students on 12 modules; recruit students for additional short courses; carry out surveys into demand for learning within the eleven regions; collect and analyse evaluation data;

A major constraint on the whole project has been timescale. The project application was submitted in late January 2000; it was accepted six weeks later and work started in April 2000. Initially it was envisaged that 12 online modules would be ready for September 2000, to be used with 530 students in semester 1 of 2000/01⁴. This allowed five months to:

- establish the network of learning centres
- carry out market research
- create marketing materials and market the modules
- recruit students
- develop and review learning resources
- carry out staff development
- install and test the equipment and software needed to support online learning
- establish networked learning administrative structure
- organise the administrative systems to monitor and track students
- plan evaluation and dissemination

Given that all project staff had to be recruited too, this extremely demanding timescale did have a serious impact on project achievement in all areas and resulted in communication difficulties between different parts of a very complex project.

Despite this caveat, the LINC project attained some very significant outcomes and has made a positive contribution to the development of UHI and the provision of networked learning.

1.4 Evaluation questions and methodology

The main themes of the internal evaluation (in accordance with the original application) are to investigate the:

- Theme 1:** Organisation for networked learning in rural communities
Theme 2: Development and use of online learning resources - the experiences of staff and students
Theme 3: Processes and systems for supporting learning in networked communities in the Highlands and Islands of Scotland

The main evaluation questions are:

- Were the objectives of the programme met?
- To what extent did the LINC project meet the expectations and requirements of stakeholders?
- To what extent did the learning centres meet the expectations of stakeholders?
- What are the lessons for developing online resources?
- What was the student experience of using online resources?
- How effective was the support for learners?

³ Only five modules were offered in semester 1.

⁴ This was modified in August 2000 to the three-phase approach outlined in section 1.2 above.

- What was the experience of staff tutoring online?
- What were the differences (if any) between the two learning environments?
- What systems must be put in place to support networked degrees?
- What are the lessons for future developments?

The stakeholders include all those working on the project with UHI Millennium Institute, HIE, the LECs, Local Learning Centres, Local authorities and other agencies involved with community based education, SMEs and the students who have taken part in the project.

Qualitative and quantitative methods were used for data collection – the main ones were:

- Semi-structured interviews (used with LINC co-ordinators, module developers, tutors, Learning Environment Mentors, project administrators and Learning Environment co-ordinator)
- Questionnaires (used with students, Local Learning Centre staff, employers and Local Enterprise Companies)
- Pyramid groups (used with LINC co-ordinators, LLC staff and module developers)
- Computer logs (of student activity)

1.5 Outline of the Report

The following six sections cover

- Establishment of learning networks
- Development of learning resources
- Supporting online learners
- Feedback from students
- Feedback from employers
- Lessons from LINC

Each section gives both descriptive and analytical information and draws together the lessons learnt. The final section summarises these lessons, addresses the questions raised above and makes recommendations.

Section 2 *Establishing Learning Networks*

2.1 Introduction

Essential to the success of the LINC project was the establishment of community learning networks. This section examines how these networks were established, the roles and expectations of the key stakeholders and their views and the outcomes of the project. From this, recommendations for future support for community networked learning can be identified. The evidence cited here draws on the work of the LINC co-ordinators and the staff of Local Learning Centres. The section examines the work of the LINC co-ordinators, the network of Local Learning Centres, market research and marketing, the recruitment of beneficiaries (students) to both online degree courses and short courses and finally, staff development.

2.2 The LINC Co-ordinators

The eleven LINC co-ordinators were appointed to establish a network of co-ordinated Local Learning Centres within the geographical areas covered by the colleges making up the UHI Millennium Institute partnership. Each co-ordinator was attached to an Academic Partner (AP) although one AP was not within the boundary for EU Objective One Funding the co-ordinator in that college played a valuable cross-project role. Some co-ordinators were employed full-time and others part-time. Not all came into post at the same time.

2.2.1 The role of the co-ordinators

The work of the LINC co-ordinators spans the first four of the project's stated objectives, and impacts significantly on the sixth (see section 1.3 for project objectives). They are therefore a critical group for the success of the project. As the post was new and the range of duties undertaken had to reflect the local area needs, the evaluation has considered the extent to which co-ordinator's work was general or location specific. All co-ordinators were involved in the following (listed in order of priority given by the co-ordinators)

- | | |
|------------------------------------|-------------------------|
| 1. Local Learning Centres | 4. Project Management |
| 2. Networks in the Local Area | 5. Support and Guidance |
| 3. Marketing and Awareness Raising | 6. Market Research |

Co-ordination with the Local Learning Centres included providing:

- a link between the project and the learning centres through regular contact with LLC staff, passing on information about the LINC project
- general support, such as assisting with funding bids
- support and training LLC staff where required
- support in establishment and/or development of the learning centres.

The extent to which these activities were successful can be seen in the feedback from staff in Local Learning Centres - who identified themselves as part of a network centred on UHI Millennium Institute or the local Academic Partner.

Networking in the Local Area; was important not only to achieve the objectives of the LINC project but also to facilitate the sustainability of networked learning in the community. Co-ordinators worked with a network of local groups and agencies involved in community education. Co-ordinators described themselves as taking a proactive approach to networking, making and following up contacts, organising and attending meetings and becoming involved with existing Community Learning Networks.

Marketing; and raising awareness of the LINC Project was critical for the success of the project as it was an essential part of recruiting the students (beneficiaries) with whom the financial well-being of the project lay. Marketing is discussed in more detail in section 2.5 below.

Project Administration; was an important part of the co-ordinators' role, especially within the Academic Partner. This aspect of the co-ordinators' role ties in closely with responsibility to attract the required number of match-funded beneficiaries.

Providing Support and Guidance; included work with LLC staff, other co-ordinators, tutors / module writers. In addition support and guidance for the students (including providing induction at the start of the module) often became the responsibility of the co-ordinators. Support was provided in a reactive manner, by the co-ordinators making themselves available as the 'point of contact' to staff and students. (For more detail on student support see Section 4.)

Market Research; in most cases this was done using existing College databases. (For a more detailed discussion of market research see section 2.4).

When we examined the variation between co-ordinators, two sources of variation emerged.

1. *Situational Variation*, which related to differences in the working environment of individual Co-ordinators. This was the most common source of variation. Co-ordinators highlighted the variation between Academic Partners: some were supportive, others were not; some had a strong community development focus, others were specialist institutions with little history of community education or LLC work; some had a network of well established LLCs, while others were starting from scratch. Other minor sources of variation came from the allocated hours of the co-ordinator, whether the co-ordinator held a dual role in the project, from the varying level of local networks in existence and from the geographical nature of the catchment area.
2. *Personal Variation*, which related to the personal strengths and previous experience of the individual Co-ordinator. For example, some Co-ordinators came from an educational or teaching background, while others were from a marketing or administrative background. The personal strengths and interests of some co-ordinators had a major influence on their role, as they actively sought out opportunities to use these specialised skills.

It is difficult to quantify these differences, particularly the personal variation. This variation was reflected in the different outcomes from the LINC project in different local areas. Some areas secured funding to enable developments, built on LINC, to be extended to a wider section of the community. Other areas saw no spin-offs from LINC. There is some evidence to suggest that the areas which benefited most from LINC were those with little previous outreach provision from their local Academic Partner. Areas where college learning centres were well established had less to gain from the project overall.

2.2.2 Expectations of LINC co-ordinators

As the LINC co-ordinators were key stakeholders in developing the community networked learning infrastructure it is important to understand their expectations at the outset of the project and to consider their feedback on the extent to which these have been realised. This has been done by considering both their hopes and concerns. The most general hopes for the project were that it would:

- Make learning and training opportunities more widely available to people in local communities through the establishment or development of Local Learning Centres⁵
- Expand the range of opportunities available through online learning
- Establish links between the College, the LLCs, the LEC, the Local Authority and UHI Millennium Institute, which would create a networking ability and decrease the isolation of each agency
- Address the perceived mismatch of supply and demand in adult education

⁵ The project has enabled some learning centres to achieve Learn Direct badging, which was a direct benefit of participation.

The co-ordinators felt that these hopes had all been realised, although in relation to the last point this has been achieved on a local rather than a regional level to date.

After three months of the project the major concerns of the co-ordinators were:

- Timescales - 15 months is not a realistic timescale in which to achieve all the objectives of the project
- Communication - across different aspects of the project communication would be hindered by the time pressures
- Recruitment - insensitivity of the beneficiary rules for the local economies
- Learning centres - particularly difficulties with Service Level Agreements between Local Learning Centres and the colleges
- Interface - between UHI Millennium Institute and Academic Partners in regard to administrative issues to do with networked learning and support for the LINC project
- Marketing - small budget and unrealistic timescales

Experience throughout the project confirmed that these concerns were realistic and did have major impacts on the project achievements.

However, by June 2001 the co-ordinators considered that the project had contributed to some very positive developments. These include:

- Development of networks of Local Learning Centres, some of which have led to the establishment of other initiatives within their area. This view is confirmed by several LLC staff, and the development of a network of LLCs in collaboration with UHI is seen as a very tangible outcome of LINC.
- Improved communication between the Academic Partners / UHI and the local community and those involved in adult education. This has ranged from establishing the College / UHI as a presence in the local area, to the development of highly proactive College Learning Networks which encompass all the local stakeholders in online learning.
- The development of networks between the LINC co-ordinators and other UHI staff which has a positive benefit on other collaborations within UHI.
- Lessons learnt about developing and tutoring online courses (these are discussed in more detail in Section 3, Section 4, and Section 5).
- Benefits to individuals who have participated in online learning.
- Identified the need for clear developments of systems and processes within UHI.

However they still had reservations about the following:

- The relevance of the online resources for local needs, the level was too high and what was needed were more basic courses especially in IT. This is a controversial issue within the project as some LLC staff consider that there was plenty of demand for the degree level modules, but not from people who fulfilled the beneficiary categories. Feedback from students indicated that there was a significant proportion of graduates using the degree modules as Continued Professional Development (CPD) (see Section 5) this group could be a significant source of demand for online degree modules in the future.
- The requirement for 150 hours of study over 10 weeks was too demanding for most SMEs, the constraints of the degree programme meant that the courses were not as flexible with regard to start and finish times as people required.
- Staff development for the VLEs did not meet the needs of LLC staff and tutors, resulting in lack of adequate student support for the first cohort of students.
- Variability in student induction, pastoral and academic support (these issues are dealt with in more detail in Section 4).
- The social side of learning was underdeveloped in the modules, leaving students feeling rather isolated (this view is corroborated by student feedback, see Section 5).
- Perceived lack of central control of the project, which left many co-ordinators unclear about the project rules and priorities.

- The amount of paperwork that the project generated and the level of monitoring required, which left people feeling they were engaged in an elaborate 'paper chase'. (These requirements were dictated by the Adapt funding mechanisms).
- The Adapt project was based upon a number of UHI systems and processes being in place, however this infrastructure was not in place, and the timescale of the project negated the possibility of it being put in place. As a result numerous administrative and operational problems arose. These systems and processes did not (and could not) develop spontaneously through the project. They need to be put in place at a network wide level.

The work of the LINC co-ordinators did result in significant gains, particularly the establishment of networks of local learning centres and in developing relationships with other agencies involved with adult / community learning. These have, in some areas, left considerable benefits that UHI can build on in the future. In addition the project has enabled various systems for networked learning to be tested and has resulted in valuable feedback for the organisation.

2.3 Local Learning Centre Networks

2.3.1 Introduction

Across the UK there are many different types of learning centres ranging from those wholly owned and integrated into the training function of the host organisation, to virtual centres which only exist as a networked facility (Jefferies 2000). The LINC project itself has included a range of different types of local learning centres, varying in ownership, staffing, facilities and provision. However all learning centres involved in the project had to adhere to the standard criteria laid down by Sufl.

The development of a wide network of Local Learning Centres within the LINC project was a critical objective for the project. The Local Learning Centres ensured that the networked learning was accessible to learners who did not have other access to computers, thus removing one of the accessibility barriers to online learning (Gladieux & Swail 1999, OECD 2001, Osborne & Gallacher 2001).

Objective two states that the project should:

'develop systems, processes, skills and services that will effectively support the learning experience in Local Learning Centres throughout the rural and remote regions of Highlands and Islands'

The map (Diagram A1. 1) shows the location of the centres and details of the Local Learning Centres affiliated to each Academic Partner are given in a summary of the LLC affiliation is given in Table 2. 1.

The role of staff in the centres is to provide support for the learners, ranging from pastoral and administrative support, to study skills advice and (depending on the skills of the LLC staff themselves) some technical help. It was never intended that the LLC staff would provide academic support, which would be made available online through the module tutor. The role of the LLC staff has provided additional added value for learners, which may not be available to people studying through conventional distance learning or online learning routes.

Table 2. 1 indicates the number of Local Learning Centres attached to each Academic Partner. Learning centres located within College are listed separately – these are libraries, study centres and open access centres which can be used by local people on a flexible basis. The LINC co-ordinators were the key project staff who liased with those in the LLCs, indeed many of the LLCs were recruited into the project through the activities of the co-ordinators.

By January 2001 a total of 43 Learning Centres were actively involved in the project, along with six learning centres located in Academic Partners, giving a total of 49 facilities across the Highlands and Islands. Eight more were under development. The distribution of learning

Table 2. 1 Local Learning Centres associated with Academic Partners

Academic Partner	LCC	AP Learning Centre	Total Facilities	To be established
AC	9		9	-
HTC	4*	1	5	-
IV	-	1	1	4
LCC	2	1	3	-
LC	4	1	5	-
MC	4	-	4	1
NHC	3	-	3	1
OC	9	-	9	2
SC	5	1	6	-
SMO	4	1	5	-
TOTAL LLCs	43	6	49	8

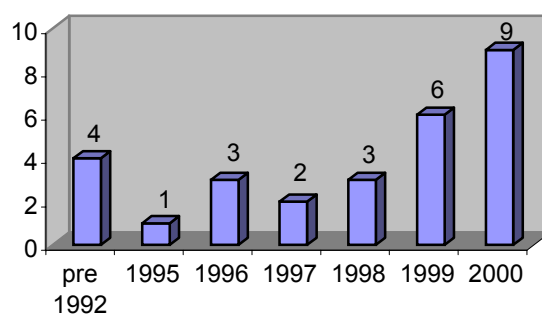
* This includes one learning centre owned by NHC, but managed by HTC for this project.

centres is pragmatic, based on what was there already. Much of the work of LINC coordinators has been to work with existing learning centres, only in a few cases are completely new centres being developed. The pattern of learning centre provision did not always mirror population density. This uneven development of learning centres is indicative of the difficulties being faced when trying to develop the infrastructure for networked learning at the same time as trying to implement a complex and detailed project.

2.3.2 Characteristics of the learning centres

In October 2000 a questionnaire was sent out to the 47 LLCs then listed in the project, of whom 29 responded, giving a 62% response rate. The responses show how recent the development of LLCs is in the region, with only 4 in existence prior to 1992, 1 being founded in 1995 followed by rapid growth up to 2000; details are given in Diagram 2. 1. Of the 29 respondents, the majority (17) are in remote rural areas or remote villages with 7 in small towns, 1 in a large town and 4 in other locations, including an airport and remote islands.

The fact that 52% of LLCs who responded to the questionnaire were founded in the last two years indicates the newness of this type of learning provision. It suggests that in addition to becoming involved in a new and demanding project that the centres also had development issues of their own in creating and sustaining their businesses.

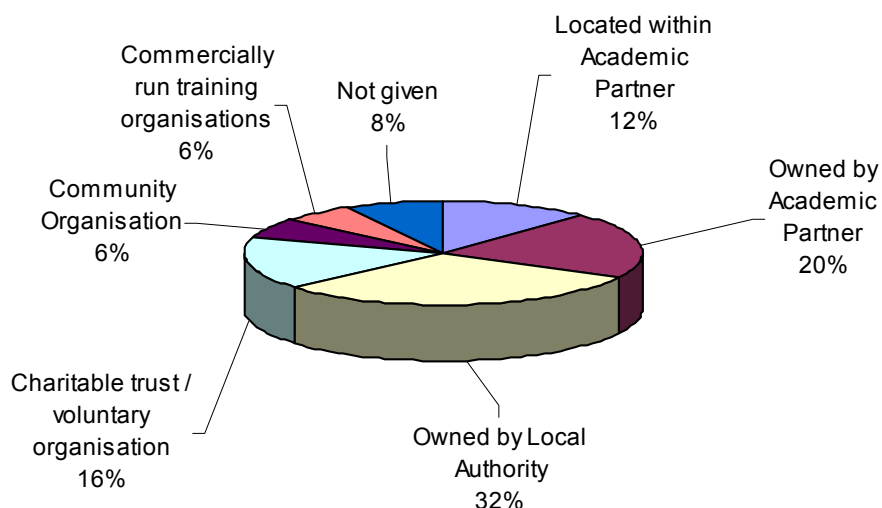
Diagram 2. 1 Establishment of Local Learning Centres participating in the project

The pattern of ownership of the 49 centres participating in the project can be divided into six groups:

- Owned by and located in an Academic Partner
- Owned by, but not located in, an Academic Partner
- Owned by a Local Authority
- Owned by a community organisation
- Commercially run training organisations

Diagram 2. 2 shows the pattern of ownership within the project with the percentages for each category.

Diagram 2. 2 Pattern of ownership of Local Learning Centres



The fact that organisations with such diverse ownership have collaborated within the LINC project represents considerable co-operation between a group of organisations that may not always share the same objectives, but in this instance have co-operated to widen opportunities for learning across the Highlands and Islands.

The picture that emerges is one of tremendous variation between the LLCs themselves – their origins, their funding, and the facilities they offer students. They range from purpose-built, fully-staffed, brand new facilities, which include classrooms, computer labs and video conference (VC) suites, to an unstaffed back room in a village hall, containing a single computer.

The sources of this variation are numerous and include:

- *Academic Partner involvement* – some APs have a long- and well-established network of LLCs while other have had to establish their LLC networks from scratch
- *Function of LLCs* – where they have existed, some LLCs have been set up in a way that makes them very amenable to the requirements of LINC. Others are set up very differently (for example some have no Centre managers, others were set up as community facilities – not specifically for educational purposes).
- *Physical Location* – some LLCs are simply more difficult to get to or more isolated, which makes the provision of various forms of support from a central location more difficult.
- *Ownership of LLCs* – LLCs not owned by Colleges dominate the LLC provision for LINC purposes. Their aims vary, some are commercially driven, others community focused.
- *Facilities* – LLCs vary in the range of facilities (e.g. PCs, training / teaching rooms, other facilities and support they can offer). Their staff vary in qualifications, skills and experience.
- *Commitment* – given the differences outlined above it is not surprising that LLCs vary in the commitment they are able to give to LINC.

- *Profit motive* - six of the LLCs who responded to the questionnaire are required to make a profit, others were not profit making but did need to break even, while only 3 of the independent learning centres claimed to be fully subsidised.
- *Type of premises* – of the questionnaire respondents 48% were located in either a school or college, 10% in other local authority buildings, 10% in commercial premises, but 28% were in very different types of building (ranging from an airport to workshop units).

In the view of one of the LINC co-ordinators “there is no level playing field where privately-owned⁶ LLCs are concerned”

Interestingly, 79% of the LLCs who responded to the questionnaire considered themselves part of a network with UHI Millennium Institute or one of the Academic Partners. Given the range of LLC participants within the LINC project, and the fact that the questionnaire was issued only six months after its start, this represents a significant development towards both objectives one and two of the project.

2.3.3 Attitudes of LLC staff to the LINC project

LLC staff were also asked about their attitudes towards the LINC project and the learning opportunities that it provided. The results indicate that there were perceived benefits from becoming involved with LINC which included that:

- participation enabled the centre to develop in line with its business plan
- the modules complemented other provision
- the modules provided a good route for existing learners to move into higher education
- the project would stimulate a demand for online learning in the area

In contrast, LLC staff were more ambivalent about how useful the modules would be:

- to improve employment prospects in the area
- for the needs of local employers
- for the needs of local people
- in bringing new learners into the centres

A picture emerged that involvement with LINC was considered good for business, however there were reservations about its benefits for the local community. The relevance of online learning for the business activities of the learning centres is not disputed. Provision of access to computers and internet activities was rated a major / important learning centre activity, alongside the provision of training facilities. The LINC project offers an opportunity to combine both, hence its relevance for the Centres' business plans. What was being questioned in these responses was the nature of the learning opportunities themselves, and particularly the fact that all the modules offered are level one degree modules.

Interestingly, by the end of the project some LLC staff believed that there was significant demand for this level of educational opportunity in their area, but not from people who fulfilled the Adapt beneficiary categories. In particular there had been demand from groups such as classroom assistants, care assistants and other local authority employees who were excluded under the Adapt rules. However there was feedback from several sources within the project to suggest that a mix of further and higher education opportunities would be appropriate⁷. Although some people argued that the level of provision affected the recruitment of beneficiaries and that it contributed to the lower than anticipated number of beneficiaries being recruited; it would appear that this impact was not universal across the project.

Within the learning centres what appears to be critical for success (both in marketing courses and student support) is the knowledge and skills of the individual members of staff, rather than any model of ownership and operation. Local knowledge is essential, as are learner

⁶ 'Privately owned' here means not owned by an Academic Partner.

⁷ A view corroborated by the inclusion of short courses into the project from February 2001.

support skills, particularly in ICT, where a skilled person can provide invaluable help for a student whose ICT skills are limited. The variability in skills and experience of LLC staff within the project means that a more individually tailored approach to staff development is necessary. This is being addressed at a national level through SQA provision.

By the end of the project Learning Centre staff who completed exit questionnaires felt that there had been tangible benefits for them; in particular:

- establishing the feasibility of the local learning centre concept
- creating networks of local learning centres
- providing additional equipment and technical resources for adult learning
- providing online learning opportunities
- funding to continue networked learning developments

The issues that caused concern were to do with the management of the project, technical difficulties (mainly in semester 1), the apparent lack of testing of online learning materials before the project went live and funding for the learning centres. Some recommended improved training for tutors to improve the speed of response and level of feedback they gave. The use of video conferencing could help to reduce students' sense of isolation.

Given the LLC perception of the benefit of the LINC project for their businesses it is vitally important that future developments with LLCs start with a clear agreement about funding and other resources which will be made available at the outset. Difficulties did occur in LINC because the funding model was developed through the project, however these lessons can be used as a basis for future agreements.

The experience of this project has strengthened networks of local learning centres, both amongst each other, with the local UHI Academic Partner and with UHI itself. Learning centres could have an extremely valuable role to play in the development of online learning communities within the Highlands and Islands and in widening access to learning. The provision of resources at a local centre means that people who do not have computer equipment at home can still be included in e-learning opportunities. Learning centres thus become a means of bridging the digital divide and helping to provide equity of access (Barraket 2001, Bidwell and Petry 2001). There is evidence, both from early work within UHI (Cribb 1999) and from the evaluation of this project (see section 5.1) that UHI attracts a significant proportion of mature students with non-conventional entry routes. These students are often best supported, at least in the early stages of their studies, with personal contact in a local learning centre (George and Cannell 2001). This will enable them to build up their own self-help groups with other students and benefit from the skills of LLC staff.

2.4 Market Research

Market Research was the third objective of the LINC project, which was:

'to undertake market research in each community to identify demand and training needs within business, among individuals and within organisations and to help build a database of local learning opportunities'

The decision about the type of learning opportunity to be offered in the LINC project was taken during the application process, based on internal college marketing together with feedback from HIE. The modules being offered were all in the areas of Business Studies, Tourism, Care and IT Applications (see Table 2. 5 for details). Independent evidence from Young et al, in a recent study of Supply and Demand in Further Education in Scotland, suggests that there is demand for these subjects to be delivered flexibly within Scotland, particularly where conventional access is difficult (Young et al., 2000). However, the tight timescales for the project meant that little additional market research could be carried out before recruiting learners onto the 12 level one degree modules which had been identified as the 'product'.

Although LINC co-ordinators did not have a wide remit for market research, they all felt the need to carry out some investigation into the demand for learning in their own area in the

early months of the project. Most co-ordinators used local agencies and other organisations as sources of market information in order to identify local learning needs. The agencies used included:

- LECs and other economic development organisations
- various forms of local learning networks
- Employment Services, and the Scottish Executive
- information within the UHI Millennium Institute network

A possible consequence of the limited market research was that there was a very uneven take up of the modules, particularly for the first cohort of students (semester 1).

In the final months of the project the LINC co-ordinators did carry out a Labour Market Analysis for their own areas which has resulted in some useful market research intelligence. The general picture of population trends over the region is of an ageing population, with numbers stable in some areas, falling in areas like the Western Isles and Sutherland and growing in Inverness. Whilst there are pockets of relatively high unemployment overall unemployment rates are low. Most of the rural areas are heavily depended on small businesses for employment although 45% of employment in the region is with large employers like local authorities, the health service and larger industries. The variation across the region means that education provision needs to be flexible to meet local needs.

In areas seeking to attract people from small seasonal businesses, timing and flexibility of programmes is an important issue. If employment is seasonal (April to September/October), then the best time for study is in the winter, which would require some re-thinking of semester dates. Similarly many small businesses found the demands of 10 hours per week study for 15 weeks too great to be able to release their employees for the full time. There appears to be a demand for much shorter and more specifically targeted courses from employers in addition to basic ICT skills, Access to Higher Education and general further education courses. In addition there is potential for development with specific categories of people, such as women returners, older people and in community development. However if these opportunities are to be developed through the LLC / UHI partnerships they should be based on partnerships which empower the communities rather than simply enabling communities to come within a provision which is determined for them by others (Flet 2001).

2.5 Marketing the project

Project marketing was a critical role for the LINC co-ordinators, it was also one of the key objectives of the project. Objective four was to:

‘define and to launch a programme of targeted marketing activities designed to stimulate demand and further strengthen the growing awareness of learning opportunities through the SUfl and UHI Millennium Institute networks; also to target marketing activities in relation to the growing sectors identified by HIE’

The budget allocated for marketing activities was £10,550 which for a project funded to £2,370,100 meant 0.4% of funding available for marketing (UHI 2000). At a joint meeting with LINC project management staff and managers from the Adapt support office it was admitted (by the latter) that the marketing budget for this project was extremely small in comparison with other Adapt funded projects⁸.

Early in the project it was decided to maximise the small amount of funding by utilising the graphic design and printing departments of one of the Academic Partners. However it proved challenging to create marketing materials for a product which itself was under development, and which few of the co-ordinators had much information about. The funding was spent on commissioned generic leaflets and information packs that LINC co-ordinators supplemented with their own local information.

⁸ Personal communication from LINC Project Manager

The key marketing activities undertaken by the co-ordinators were:

- Promotional materials to key locations (eg colleges, Local Learning Centres, libraries, post-offices etc)
- Meetings with local organisations (Councils, LECs, Business groups, etc)
- Mailshots and direct approaches to SMEs (these were targeted, often using the knowledge of Local Learning Centre staff, or local databases)
- Promotional events (eg. road shows, open days/evenings, local exhibitions)
- Advertising and press releases
- Information sent to families via young people in high school

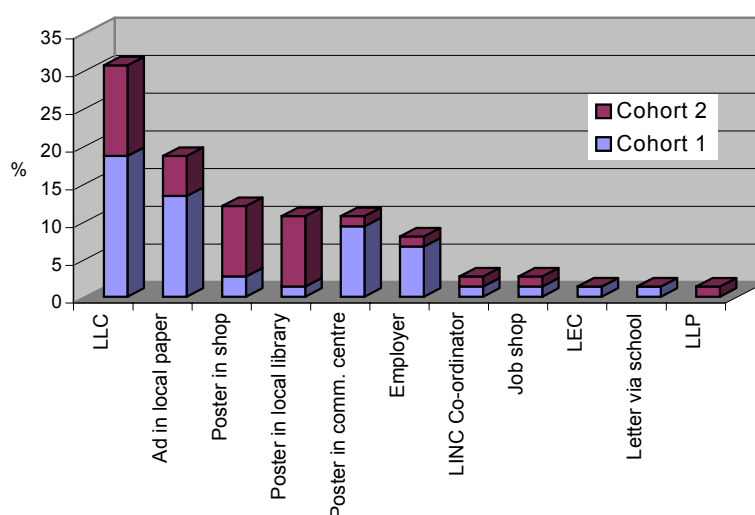
LINC co-ordinators reported several issues had impacted on their marketing for the first group of students. The main ones were:

- *timescale* – the ability to market the project (and thus recruit the required number of beneficiaries) was limited by the timescale of the project. There was a feeling that marketing activities should have begun well in advance of the start of the project in order to recruit the numbers of students anticipated in the application.
- *uncertainty*, about the student support in Local Learning Centres, the ADAPT beneficiary rules and the product itself inhibited some co-ordinators, leaving them uncertain about eligibility for the project. Such uncertainty is to be expected in a project as novel and ambitious as this. A longer timeframe would probably have dissipated these worries.

Some of the marketing concerns of the LINC co-ordinators were reflected in the feedback from LLC staff. Whilst the majority felt that they received enough copies of the marketing materials, they also felt that other materials would have been more useful (particularly details about individual modules) and that the materials were received too late into the project.

As part of the student questionnaire and in order to find out which marketing activities had been most useful, students were asked how they had found about LINC to identify the most useful source of information. Diagram 2. 3 shows the sources the students had consulted to find out about the modules.

Diagram 2. 3: Sources of information about LINC for students



LLC = Local Learning Centre;
LLP = Local Learning Partnership

LEC = Local Enterprise Company;

The Local Learning Centre was the most frequently used source of information for both cohorts; it was also the one cited as the most useful by both groups (see Table 2. 2). There is difference between the two cohorts in the next most frequently cited sources of information, with cohort one using advertisements in the local press, posters in community centres and employers for information. Of these they claimed that information from employers and the community centres were most useful. Cohort two relied on posters and advertisements in the

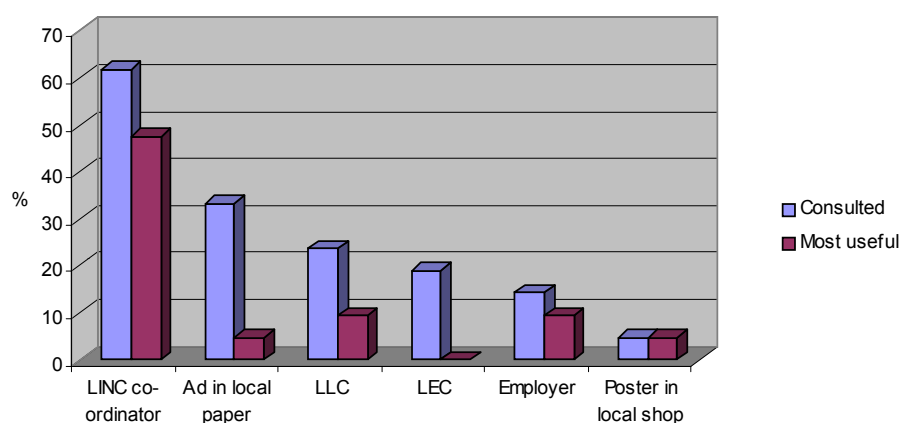
Table 2. 2: Most useful source of information for students

Source	% Cohort 1	% Cohort 2
LLC	55	36
Employer	20	21
LINC Co-ordinator	15	18
Advert in local paper	0	18
Poster in Community Centre	10	0
Poster in Library	0	3
Job Shop	0	3

press for information, but when asked which were the most useful it was the information through their employers and the information in the local paper that they cited. In addition some students in both cohorts cited the LINC co-ordinators as being their most useful source of information. Although the two cohorts had used different sources of information overall they both found the LLC, the LINC co-ordinators and their employers the most useful.

Employers were also asked where they found out about the project and which source was most useful. Their responses are summarised in Diagram 2. 4.

Diagram 2. 4: Information sources used by employers



The LINC co-ordinators were clearly the most influential sources of information on the project for the employers. In addition employers reported finding out about the project from the Local Learning Partnership, Adult Guidance Network, friends and a mail shot, but none of these were considered the most important source of information.

Despite the concerns about marketing from those within the project, those who were attracted into the project did find useful sources of information, largely from the people working within the project, either LINC co-ordinators or LLC staff.

2.6 Recruiting students

The beneficiary targets for the project are stated in objective six, which requires the project:

'to trial a range of delivery mechanisms for learning programmes in each of the local community learning centres for a target of 530 beneficiaries in up to 230 SMEs through the deployment of ICT and learning support staff and student mentoring systems'

According to one of the people actively involved in the LINC project application, the target figure of 530 was arrived at through a process of negotiation with the ADAPT Support Unit. As the LINC project was seen as a pilot, the requirement for numbers of learners was to be sufficient to test the material and evaluate the project. The process of discussion led to a formula based on each module having one student at each learning centre. The figure was not related to the number of potential beneficiaries in the region, nor was it founded in any systematic research. Given the very strict criteria for designation as a beneficiary and the type of learning opportunity (degree level one) this simplistic formula has resulted in an over optimistic target, which has created recruitment and funding problems. The latter problems arose because the draw-down of funding relates to the beneficiary activity and module completion, therefore the budget for the project was predicated on attracting the target number of beneficiaries.

The original target of 530 beneficiaries was broken down into target numbers for each area. When it became apparent that these original targets would not be met an attempt was made to revise the figures while maintaining the financial viability of the project. The revised recruitment target for the project was 415 (see table 2.3).

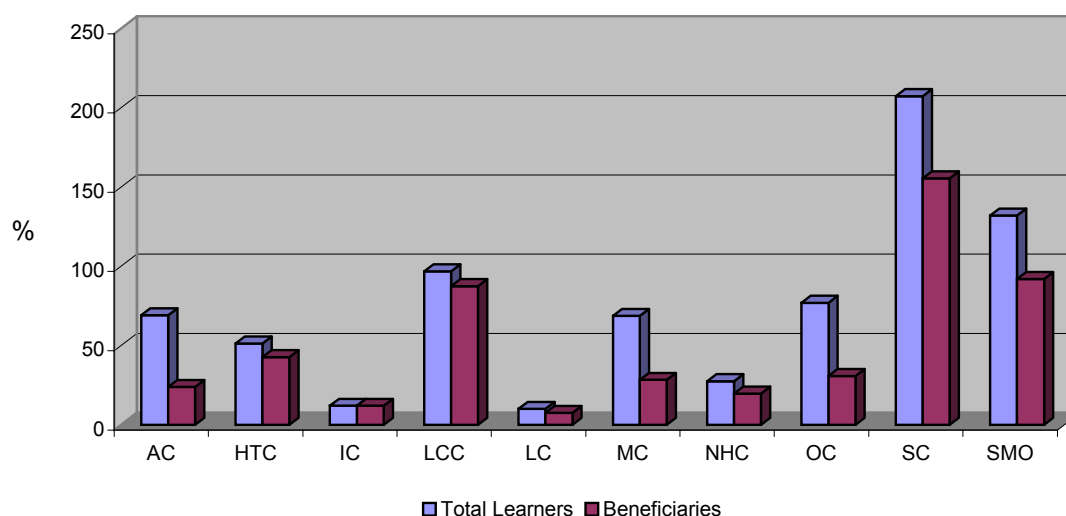
Recruitment was then carried out in two phases, for semester 1 (152 learners) and semester 2 (131 learners). Semester 1 included 89 learners who did not attract matched funding (ie 59%). Recruitment for semester 2 was 98% beneficiary (129). In total 192 beneficiaries were attracted which is 36% of the original total. Details of the area targets and recruitment for each phase of the project can be found in Table 2.3⁹.

Table 2. 3: Original and Revised Beneficiary Targets by Area

Area (by Academic Partner)	Original Target	Revised Target
AC	42	34
HTC	82	58
IC	151	116
LCC	32	29
LC	40	34
MC	67	56
NHC	51	36
OC	13	11
SC	27	21
SMO	25	20
Totals	530	415

Target numbers for each area were determined rather subjectively, although the local knowledge (of LINC co-ordinators and LLC staff) was important. Without prior market research accurate prediction was impossible. Diagram 2.5 shows the percentage recruitment to original target for each area within the project. Only one area met the original target for beneficiaries, although 2 met the target in terms of absolute numbers of learners recruited.

⁹ The revised targets produced by the then project manager in September 2000 have a rather uncertain origin and are used here with caution.

Diagram 2. 5: Percentage Recruitment by Area Targets - Original Targets

In addition there were project-wide factors that impacted on the recruitment levels, some of which related specifically to the categories of people eligible as project beneficiaries, for example:

- the beneficiary rules established by the ADAPT programme reflected the needs of the early to mid 1990s, a time of economic downturn. In the relative economic prosperity of 2000 these categories did not reflect the economic needs of the area
- the match-funded category rules were highly restrictive, reducing the potential number of beneficiaries in areas with high seasonal employment and few suitable SMEs
- the ADAPT funding restrictions to targeting SMEs does not reflect the fact that 45% of employment within the region is within the public sector
- agreement with the ADAPT Unit in Birmingham that self employed beneficiaries could be included came after the first cohort of learners had been recruited

These issues affected both the marketing of the project and recruitment to the project.

Recruitment of students for semester 1 produced a very uneven distribution of students on each module, see Table 2. 4 below. This uneven recruitment lead to staffing difficulties for the module with the largest intake, which were resolved by recruiting an additional tutor. In the second semester student recruitment was capped to ensure a manageable cohort for each module.

The uneven distribution of students on these modules highlights a significant issue for UHI Millennium Institute in creating a structure for networked learning. It is necessary to decide where the responsibility for updating and staffing the module lies, within the whole network. A system that locates both ownership and staffing responsibility with the college that developed the online resources will create a monopoly situation that could create severe staffing distortions across the network. It also has implications for quality standards.

Table 2. 4: Recruitment to each module

Subject	All Students			Beneficiaries		
	Cohort 1	Cohort 2	Total	Cohort 1	Cohort 2	Total
Accounts		26	26		25	25
Applications of IT	74	41	115	42	35	77
Child Development		9	9		8	8
Economics		5	5		5	5
Health and Society		4	4		2	2
Managing People	17	11	28		9	9
Marketing	23	17	40	4	16	20
Organisational Behaviour	9	2	11	6	2	8
Problem Solving	17	8	25	6	3	9
Rural Development		11	11		9	9
Small Businesses		10	10		9	9
Tourism		4	4		4	4
Totals	140	148	288	65	127	192

The view of many within the project was that the Adapt beneficiary criteria severely restricted the recruitment. Some areas could have met the recruitment targets if it had been possible to recruit people who did not fit the criteria, but in other areas the level of the modules on offer was also an issue.

An administrative issue which created confusion during the recruitment phase was the lack of a common application / registration document. A solution was found for the second cohort, which was an online registration document that created the basic database for student information. This has clear relevance for UHI Millennium Institute-wide administrative systems for networked degrees.

Finally, during the first phase of the project there was a policy of open access for those who it was felt could benefit from the programme¹⁰. This resulted in wide disparity in previous educational levels¹¹, and left some tutors feeling that too many of their students did not have the requisite skills (particularly IT skills) to undertake the work successfully. This feedback was used to modify the recruitment procedure and try to ensure that the people enrolled on the modules would have the relevant skills to benefit from the programme. Analysis of the students in the two cohorts does show some significant differences between the cohort 1 and 2 students (see section 5.2).

In February 2001 it was decided to widen the remit of the project by including a number of short courses, in addition to the degree level modules. These short courses were taught face to face in several of the Academic Partners and covered issues such as health and safety, food hygiene and first aid. A short evaluation was used with these courses (see Appendix 2). Table 2. 5 gives the totals numbers attending these courses, the number of beneficiaries, the number who completed evaluation forms and the percentage response rate.

¹⁰ Applicants were advised of the level of the modules on offer.

¹¹ From those with few formal qualifications to those with PhDs.

Table 2. 5: Short courses

Course	Total learners	Beneficiaries	Evaluations returned	% Response Rate
REHIS Elementary Food Hygiene	121	107	87	72
REHIS Intermediate Food Hygiene	5	5	4	80
Elementary First Aid	40	32	0	0
First Aid Certificate	20	19	10	50
Introduction to Health and Safety	20	18	17	85
Computer Aided Design	9	9	0	0
ECDL	10	10	0	0
Desktop Publishing	6	6	0	0
NEBOSH	2	2	2	100
Safety Passport	349	230	0	0
Totals	582	438	120	21

Note: 13 respondents did not give their courses. Several courses did not complete evaluation forms, so nothing can be said of these, however those that did send in evaluations had high completion rates.

Overall the level of satisfaction with the short courses was high with 80% or more rating as 'very good' or 'good' they way the courses met their objectives, were relevant for the participants' current jobs, relevant for job prospects and easy to apply in work. Table 2.6 shows the percentage responses.

Table 2. 6: Satisfaction with short courses

	Very good	Good	Satisfactory	Poor
Course met its objectives	62	26	8	5
Relevant for current job	60	21	14	6
Relevant for job prospects	48	33	15	5
Easy to apply at work	41	42	14	3

In addition to the modules studied this group were also interested in short courses in the following areas:

Computing

- Introductory, 'improvers', databases

Management

- General Management
- Risk Assessment Management
- Accounts & Finance
- NEBOSH
- Hotel management/License trade courses
- Stress Management
- Human Resources/Employment Law
- Certificate in Personnel Management
- Staff Management / Wages & Salaries

First Aid

- Basic first aid
- Advanced first aid
- Emergency first aid
- Day First Aid Course

Food and hospitality courses

- Intermediate Food Hygiene / food handling
- Diploma food hygiene
- Cooking/baking course
- Displaying food
- Internet cooking
- Anything concerning hotel work
- Any course which will improve performance (food related)

Nursery School provision

Health & Safety : Health and Hygiene

- Health & Hygiene
- Intermediate Health & Hygiene
- More in depth Health & Safety
- Advanced health & hygiene
- Manual handling

Deaf sign language

HACCP

The possibility of studying online only appealed to 17% of this group, 56% said they did not want online study, with 27% were not sure. Those who would like to study online were interested in the following courses:

- Spelling, grammar and writing
- Stress Management
- Volunteer Management
- Interpersonal Skills
- Nursery School provision
- Health & Safety
- Staff Management
- Wages & Salaries
- Displaying food
- Food preparation
- Computing course
- H&S/Environmental Management
- Risk Management
- Fire assessment
- First aid
- Advanced first aid
- Management/supervisory skills
- Chef Skill Management

The participants who completed the evaluation questionnaires had a similar age profile to those studying the online modules, with slightly more in the youngest age group and fewer in the 45-54 group (Table 2. 7 and, for comparison, Table 5. 1). Seventy three percent were female, 27% male.

Table 2. 7: Age distribution (Short Courses)

Age Group	% Participants
18-24	11
25-34	28
35-44	34
45-54	21
55-64	7

The group had a wide variety of previous qualifications, ranging from those with none (14%) to those with (undergraduate and postgraduate) degrees, (23%). In comparison with the participants on the online modules more of this group had no previous qualifications or were educated to standard grade level and fewer had HNC/D level qualifications or above.

The response to the short courses suggests a healthy demand for short course provision and that the courses were well presented and well received. As all the courses were run on a face to face basis it is difficult to generalise about the appeal for such courses to be online, although this option clearly appealed to a minority of the respondents. The difference between this group's attitude to online courses and that of the module students (see section 5.7) is interesting, and it might suggest that online and face to face courses appeal to different sections of the market, at least at present.

2.7 Staff development

Staff development for both LINC co-ordinators and LLC staff was co-ordinated by the LEARN Reflective Practice Unit (Perth College) based on a plan drawn up by the initial LINC project team. Details of the staff development provided are given in Appendix 3

As much of the staff development work had to be carried out in parallel to the development of learning resources and the establishment of an infrastructure for networked learning, there was a tendency for the events to become information sessions rather than training sessions. In addition there was no full time co-ordinator for the LEARN Unit until five months into the project, so staff development programmes had to be taken forward on behalf of the Unit by others. The timing of the training events was largely determined by the need to prepare for a September intake of students. However this meant that some training took place before relevant decisions on beneficiary status had been taken, or learning materials were in place (due to the late delivery of one of the learning environments). These factors did impact on the quality of the training provisions made.

Feedback from participants indicated that the achievements of staff development were:

- An opportunity to meet with others and build up a network of mutual support and guidance
- An opportunity to find out how other people are progressing and to benefit from their experiences
- Dissemination of useful information about the ADAPT Project

Participants' concerns were that:

- The events offered few opportunities to supplement existing skills
- Some events were premature, e.g. beneficiary recruitment rules were being discussed before Local Learning Centres were established
- The volume of material given out at training events was overwhelming, particularly for those with little or no local support from their Academic Partner
- There was little training in the use of the Virtual Learning Environments

The last point was a major concern for the first cohort of students, but was rectified somewhat for the second group.

The following additional training needs were highlighted by the LINC co-ordinators:

- Use of the Virtual Learning Environment and online modules, (it was felt that this would improve the marketing of the learning resources, the ability to support students, and give people a greater appreciation of e-learning)
- Project Management skills (which would have helped with the administration of the project)
- Budget management skills (to enable the co-ordinators to handle the complex financial requirements of the project)
- Marketing training, (which was felt necessary by some who did not have a marketing background)

Local Learning Centre staff identified an overlapping group of needs:

- ICT skills demanded of students
- Use of the Virtual Learning Environments and learning resources

- Student induction
- Practical experience of using the online resources
- Enrolment of beneficiaries to the project
- Marketing of the project
- Monitoring beneficiaries
- Relationship with Learn Direct
- Availability of other learning materials (ie materials which could be used within the project other than the 12 degree modules)

Feedback from both students and module developers / tutors identified the following development needs:

- E-tutoring or e-moderating to provide students with the relevant academic support during the module presentation
- Design of learning resources for interactivity
- More advanced use of the Virtual Learning Environments (to use their interactive features more effectively)
- Skills needed to give appropriate feedback to distance learning students

For the first cohort of students the limited training for LLC staff in the VLEs, learning resources and ICT skills may have restricted the advice some LLC staff could give students which may have made the learners more dependant on tutors than was anticipated. Without local support in using the technology, beneficiaries who were not computer literate struggled with the learning materials. However, the training events took place before one of the learning environments was operational and just as completed resources were becoming available in the other, which made comprehensive, timely training difficult. The steps taken to rectify this, largely through the LINC co-ordinators, did result in improvements for the second cohort of students.

Wide differences in skill and experience across LLC staff means standardised 'one size fits all' training is not always appropriate, a more personalised approach to training is required. As several people found it very difficult to attend training sessions run in regional centres alternative (possibly online) options should be investigated.

In conclusion some of the centrally provided training was carried out before the training needs of the participants had been established and before it was clear what the final regulations would be for beneficiaries, and before learning environments and learning resources were available. This had a knock on effect on the quality training provided. To a large extent these issues reflect the very tight timescales the project was operating under. The fact that there is evidence (see Section 5) of an improvement in support provided between cohort 1 and cohort 2 attests to the fact that these issues were identified and steps taken to address them during the project.

2.8 Lessons for the future

The LINC objectives on establishing networked learning communities were laudable and clearly fitted very well with the wider mission of UHI Millennium Institute and interfaced to government policy (for example see Opportunity Scotland 1998, Strategic Framework for Further Education, 1999). Indeed it might be argued that government initiatives created a climate which facilitated the development of the network established through LINC.

This section summarises achievements, limitations and lessons for networked learning that the LINC project has demonstrated. It also examines progress in relation to the project's objectives.

2.8.1 Achievements

Significant achievements have been made, which include:

- The establishment of a learning network comprising 49 Learning Centres and Academic Partners (of which 32 LLCs are owned by other organisations)

- Additional funding for subsequent networked learning developments through LLCs in some areas
- Wider access to learning through the creation of online learning opportunities for people who would not otherwise be able to take part in degree level learning
- Greater involvement by some of UHI Millennium Institute's Academic Partners in their local communities
- An increased collaboration between different agents involved with community learning
- Improved communication between independent LLCs and UHI Academic Partners
- Creation of fora which addresses the mismatch between supply and demand for learning in local communities
- Provision of flexible learning opportunities in subjects targeted by an independent study on Supply and Demand for Further Education in Scotland
- Valuable lessons about developing and tutoring online
- Flexible access to degree level provision
- Provision of short courses for those who want specific vocational courses in face to face situations
- Benefits for learners who took part in the project

2.8.2 Limitations

The following limitations emerged, the most general being:

- Tight timescales of the project
- Communication between people working on different parts of the project
- Communication between those working on the project and UHI Millennium Institute/Academic Partner staff
- Variations in commitment to the project by UHI Academic Partners
- ADAPT beneficiary rules did not match the economic realities of the area

These factors had a knock on effect on the LINC project, creating more specific difficulties in the establishment of a network for learning. These include:

- Insufficient time for market research on the demand for networked, online degree level learning opportunities in the area – particularly in the target group, employees of SMEs
- Restrictions on funding and time for marketing
- Lack of demonstration software to show potential employers/learners when marketing the online modules
- Recruitment targets, which were not closely related to local demand and which appeared to reflect the target number of beneficiaries needed for the financial viability of the project rather than the potential number of beneficiaries in the local area
- The infrastructure for UHI Millennium Institute to fully administer and support networked learning was not fully in place
- Funding agreements for some LLCs were not in place leading to delays in payment for LINC partners
- Staff development did not take place at the most appropriate times within the project and did not meet all learning needs
- Variations in the operation of Service Level Agreements
- Perceived lack of central control of the project (partially due to the complexities of the project and partially to the fact that in fifteen months there were four different project managers)
- Amount of time needed to complete the complex paperwork associated with an Adapt project

2.8.3 Lessons for the future

The lessons from this section of the report include that:

- 1 It would be beneficial to have greater market research evidence about the demand for online learning opportunities (including at both sub-degree and degree level) within the Highlands and Islands community.
- 2 Consideration should be given to developing 'taster' online learning sessions, which could be used in marketing, recruitment and student selection.
- 3 The administrative structures for networked learning need to be further developed, including the creation of UHI Millennium Institute-wide online registration, interfaced to Student Information Systems (SIS).
- 4 The impact for staffing of uneven recruitment to networked degree modules must be addressed.
- 5 All the administrative and funding procedures for collaborating partners in projects must be established from the outset.
- 6 Thought should be given to creating flexible online resources for staff development within large-scale projects to facilitate transmission of information and the development of skills. Where existing accredited resources are suitable these should be considered.
- 7 The LLCs have a valuable role to play in networked learning, particularly in supporting non-traditional learners and bridging the digital divide, and thought should be given to their future involvement in networked learning.

In addition there are implications for student induction, student support and design of online learning resources that arise from this section and are dealt with in more detail in Section 3, Section 4 and Section 5.

In conclusion this section has considered the achievements in relation to objectives 1-4 of the LINC project. It has found that objective 1, to create a community learning network in eleven HIE areas has been achieved, although with individual variations. In some areas this has led to ongoing developments built on the LINC experiences. The progress through two iterations of online learning has enabled the project to identify the main systems and processes required to support online learners in LLCs and to put several of these in place (objective 2). It has also enabled the identification of systems and processes still needing to be established. Market research (objective 3) was the most difficult objective to meet under the timescale of the LINC project, but there have been some steps taken to improve the knowledge about the demand for online learning in the area, however these need to be developed further. Marketing activities were carried out for the project, which led to the recruitment of beneficiaries to both online degree level courses and face-to-face short courses.

Section 3 Developing learning resources

3.1 Introduction

Section three of the report focuses on the experiences and perceptions of three groups involved in the UHI Millennium Institute LINC project: the online module writers, the co-ordinators and the mentors who assisted these writers. In doing so the report will address objective 7 of the LINC project:

‘to take a selected range of existing programmes, modify them to fit delivery systems and offer them to learners within the UHI Millennium Institute quality systems framework, exploiting new ICT where appropriate’

The extent to which this objective has been met will be considered in the discussion.

There were twelve module developers, two co-ordinators and three mentors. Two of the module developers worked in partnership with other colleagues within their institutions, however the majority worked alone to develop online resources. The module developers, co-ordinators and mentors were all employees of the different colleges that form part of the UHI Millennium Institute network. Most of the modules that were developed for online learning were already part of an existing degree programme and had been delivered in a face to face setting. Two of the modules were modules developed for new degree programmes. All these modules had undergone or were in the process of undergoing validation subject to the strict criteria set by the Open University Validation Service (OUVS). In most cases writers had developed the original face to face module, though this was not always the case.

The list of modules developed is:

(Delivered semester 1 & 2)

- IT Applications
- Problem solving
- Managing people
- Marketing
- Organisational Behaviour

(Delivered semester 2)

- Child development
- Economics
- Tourism Marketing
- Business Finance
- Rural Development
- Business Planning
- Rural Health

Each college agreed to release the module writers under a specific Service Level Agreement (SLA) which allowed them two days per week (or equivalent) to undertake the task of producing the online courses. The writers were supported by training sessions in the form of workshops and by mentors who had also worked under SLAs, which provided time for supporting the writers.

The two co-ordinators and three mentors were allocated slightly differing roles. One of the co-ordinators had a remit in relation to the use of the learning environments and technology; the other co-ordinator acted as a pedagogic specialist and also had a mentoring role. The other three mentors had specific responsibilities in relation to the learning environments. One had responsibility to support module writers in relation to graphics, one in relation to the WebCT learning environment and the other to support the writers developing modules using the Fretwell Downing learning environment. This last mentor also provided input on accessibility of learning resources for people with disabilities. Two VLEs were assessed during the LINC project to inform UHI Millennium Institute’s choice of VLE for institutional use.

This section of the report is structured under the following headings:

- 3.1 Writing the learning materials
- 3.2 Staff development
- 3.3 Support from LINC – the Learning Environment Mentors (LEMs)

- 3.4 Support from the Academic Partners
- 3.5 Comparison of the Virtual Learning Environments
- 3.6 Evaluation of modules
- 3.7 Lessons for the future

The findings discussed in these sections are based on interviews with the module writers, the mentors and staff development evaluations, carried out in Sept – November 2001 and again in May – June 2001.

3.2 Writing the learning materials

The analysis is organised under the following main headings:

- Expectations and progress with the task of writing
- Development of the learning materials

3.2.1 Expectations and progress

The module writers were keen to participate in LINC. They considered that they had extended their professional skills through the development of online resources and gained a deeper insight into teaching, learning and their own subject area. They expressed personal satisfaction at having achieved a difficult task and valued being part of a team. However these gains were at the cost of some anxiety and trepidation amongst the writers at the beginning of the project and several concerns focused on issues in relation to IT skills.

At the time of the first interviews most of the modules were completed and ready for delivery with only three still incomplete. However, the three that were incomplete were very close to completion. One of the writers stated *“that the module would never be complete as it will always require updating and modification”*. This is an interesting point in that one of the advantages of the learning environment is that it allows for changes to be made. This, however, does raise further issues; the main ones are likely to be:

- Time available for making such changes. Development time is normally allocated ‘upfront’ within the institutions, in other words prior to delivery. There is at present no mechanism for allowing time for ongoing changes. This issue is likely to become increasingly problematic and was commented on by the developers, for example in relation to the use of links to other websites. These external websites may be changed or not kept up to date and this means that there has to be a continuous monitoring of the value of those external sites.
- Who is in charge of the changes or perhaps who has ownership of the module? Is it the original writer (except in cases where the writer has actually left the institution) or is it the tutor? This issue could create tensions both within institutions and between institutions within the network.

The main barriers to progress that emerged were:

- Lack of time
- Little time for researching what was already available
- Lack of guidance on in-house style
- Lack of IT skills
- Lack of computing resources and technician support
- Uncertainty about how students would cope with learning online or if activities will work

The difficulties about resources, lack of time and guidance is a theme that several of the writers returned to on many occasions. It is interesting to note that the focus is mainly on time and technical issues. In listing the difficulties the module writers don't include pedagogic issues (perhaps because they regarded themselves professional educators) but the mentors

and the co-ordinators did express considerable concern about the lack of understanding of pedagogy for the *online environment* as opposed, traditional face to face learning. Perhaps what was needed was not pedagogy in general in relation to constructivist and social constructivist principles but an emphasis on how these principles can be expressed in the online environment. This suggestion ties in with the worries that have been expressed in relation to how online activities would work and also the fact that a number of developers shied away from group activities/assessments online.

With regard to the perceived lack of IT skills, an initial audit of existing IT skills of any new module developer seems essential. It may be that a formal qualification in IT skills should be a prerequisite for anyone becoming involved in writing online. The new ECDL qualification may be suitable either as a whole or in selected parts.

3.2.2 Development of the learning materials

This section considers three issues in developing online learning resources: course design, activities and assessment and integration of Personal and Professional Capabilities (PPCs).

3.2.3 Course Design

The main starting point for most was to create an overall outline and a framework of the course before the actual content was developed. This is illustrated by comments from one of the writers: *"I looked at Objectives of module ... then looked at Outcomes and created a map (a holistic picture) – I actually drew a map. Then I created a second map – once I had taken on board what an online module should do... what was in it for me. So I created two maps setting out the course from start to finish"*. These comments reflect the approach to course design introduced in the staff development provided by Strathclyde University and exemplified in current literature (see for example Rowntree 1993).

Developers concentrated on producing text-based materials. There was also considerable use made of links to other online resources such as websites. There was some use made of graphics, photographs/videos and CD-ROM, however, this was limited to a small number of module developers. There was insufficient time to produce multi-media resources for the current modules, although by the end of the project multi-media resources were available.

The majority of developers did undertake some research and did look at other materials. However, there was caution here both in terms of worries about using websites that might not be updated and also in relation to copyright issues when using others' materials. It was noted that there were some excellent materials around and that we should perhaps consider using courses that are already developed. This final point seems an important one and one that should be considered carefully when future modules are being developed. This would probably entail delaying the start of the writing process and encourage a longer period of targeted research of currently available materials.

There are a number of interesting issues arising from these descriptions. Most of the module writers felt themselves to be effective educators in that they identified their main needs in terms of skills as being IT rather than pedagogic ones. Yet the approach taken seems to be to convert what was a module descriptor for face to face delivery into an online format. The suggestion that the main medium was text in some form or another might suggest that full advantage was not taken of the online environment. This point is also emphasised by Carr-Chellman & Duchastel (2000) when they warn that transposing a traditional course into an online format is not advisable.

Evidence from this project would suggest that the pedagogic skills for face to face teaching do not transfer automatically into a new medium, to create interactive resources for online learning. It is necessary to explore the different ways in which the online environments can be used to encourage and develop interactivity. Feedback from students (discussed in more detail in Section 5) indicates that not enough use was made of the opportunities for connectivity in the learning resources, and that although the writers had developed some very useful activities these were mainly for individuals to use alone. The students' views correspond with the mentors and some LINC co-ordinators who questioned the level of pedagogic skill for online delivery of some of the writers. However, it is important to be

cautious here. Whilst there are recommendations for developing online modules there is generally a lack of effective evaluation of online learning environments (Bonk & Wisner, 2000). This project has been valuable in providing the opportunity to address that lack for the modules developed here.

It is also interesting to note that Carr-Chellman & Duchastel (op.cit.) state that one of the most important aspects of an online course is the study guide – yet the focus for the writers seemed to be on the content of the course and the learning objectives. One of the mentors also refers to the fact that there was a lack of structure to some of the materials developed and another mentor suggests that an essential skill is to be able to produce a leaflet that overviews the course. However, against that, the lack of a study guide may have been because the developers expected that study guide type information would be provided elsewhere. What this does suggest is that there is a need for clear guidelines to module writers in relation to what information is required within the module and what will be provided elsewhere. This was clearly recognised by the writers in that they did request a ‘housestyle’.

3.2.4 Activities, assessment and interaction

All the module writers reported that the assessments were the same, or virtually the same as for the face to face modules. The only reported differences were two group reports that had been replaced by individual reports in the online environment due to perceived problems of managing online group work and an oral presentation being considered as too problematic for the online environment. There are some interesting points here in terms of perceptions of what is needed for successful group work. It seems that the majority of writers assumed that face to face contact would be needed and therefore avoided this form of activity. However other institutions, such as the Open University, are embedding online group activities into some of their online courses. LINC student feedback indicated that this type of activity would have been very welcome.

There is considerable evidence that writers aimed to include interaction within the module. Nine of the writers stated that they had included tasks that aimed to encourage student-student interaction. Opportunities for both asynchronous and synchronous communication were cited. Email and telephone is mentioned as a point of contact between student and tutor. The main reasons for including these activities was to allow student interaction and to allow students to learn from each other. It was also seen important in terms of monitoring progress and providing feedback.

It is clear from this that all the writers regarded interaction as an important part of the learning process though the reported reasons varied slightly with the main one being that it encouraged student centred learning. It is also clear that the writers also avoided group assessments and were possibly not aware of how group activities could be managed in an online environment. The emphasis on the importance of interaction links into the UHI Millennium Institutes emphasis on teaching and learning strategies based on the social constructivist approach (UHI Millennium Institute 1999). In addition it demonstrates awareness of issues related to learner centred approaches (see e.g. Bonk & Wisner, 2000). However, it is interesting to note that whilst interaction and group work is seen as valuable; most of the activities were aimed at the level of the individual. Recent developments in interactivity in distance learning include a framework for analysing interactivity in materials (Roblyer 2000) which would be a useful staff development and evaluation tool for future UHI MI online developments.

It could be that a factor which affected the level of interactivity in the modules was that the learning environments did not necessarily lend themselves to easy incorporation of group activities. Bonk & Wisner (op.cit.) suggest that most web tools are not geared towards student centred learning. They argue that as the tools derive from behavioural learning models they have embedded tools for tracking and controlling student learning rather than providing tools which will allow for student control. This is particularly true of one of the learning environments used in this project (see section 3.5).

An interesting related point is that at least one of the module writers argued that the students should not be able to access the whole course at the start and assessments should only be

provided as the student progressed through the module. This would suggest that there is still a sense of the tutor needing to control the pace of delivery. This is an area that is receiving increasing attention in terms of research and it is noted by Daradoumis & Marquès (2000) that considerable structure is required in terms of group activities. This is therefore likely to be one area where the differences between face to face and online delivery are considerable and drawing on classroom pedagogy may not allow for effective online interaction.

3.2.5 Integration of personal and professional capabilities within the module

The majority of writers were familiar with the Personal and Professional Capabilities (PPC) framework. In general it was suggested that the PPCs were embedded within the modules; however, there was little evidence of a mechanism which ensured that the PPCs were evidenced in the assessments. It was assumed that embedding PPCs would be sufficient. There was a sense amongst some of the writers that as the modules were stand alone ones PPCs were not an essential part of the module.

The personal and professional capabilities framework was developed by the UHI Millennium Institute in order to meet the demands of the Dearing (1997) and Garrick (1997) reports in relation to developing graduates with skills that would enable them to function effectively in a work environment. It has been integrated into all the degrees developed; however, whilst the writers of these modules were aware of the PPC requirements they seem to have deemed that the stand alone nature of these modules meant that PPCs did not need to be included. It could also be that, as these modules were aimed at a population with considerable work experience, these students were seen as not requiring transferable skills. It may also be that the writers found it difficult to translate the PPC requirements into a suitable online format and given the pressure of time they felt that the most important aspect of the module was to develop the content. (However it is an essential quality requirement that the PPC framework is integrated into UHI Millennium Institute's online learning provision).

There are two issues arising from the development of capabilities within the module. The first one is that the development of capabilities may in fact be particularly important for the kind of population that these modules were aimed at. The beneficiaries came from work situations where they were required to retrain so that they could avoid redundancies or be able to find alternative employment. As the capabilities are about developing transferable skills it could possibly be argued that these are extremely important for this type of student. The second issue is that the module writers had to deal with an entirely new context for developing teaching materials. The medium (online) may require different ways of assessing that build on the strengths of that particular medium. As many of the modules were to some extent being transferred from face to face delivery there was a perceived problem when the face to face mode of assessment seemed not feasible online (e.g. an oral presentation or group work). The alternative ways of operating for example, group activities, especially in terms of how to structure activities online did not form a large part of the training as the focus was on the technical issues. This may account for the reticence in terms of developing the kind of assessments that include capabilities.

3.3 Staff development

Three two-day workshops were provided on writing online learning resources and use of the Virtual Learning Environments (VLEs) between March and June 2000. In addition there was ongoing support by VC, CMC and a workshop for e-tutoring for those tutors whose modules were offered in phase 2 of the project. The initial training was provided by Strathclyde University, later workshops were through UHI Millennium Institute's two LEARN Units.

3.3.1 Skills required

The focus of the staff development was on IT skills; however, pedagogy and student learning were also featured in the early training. The group of skills that the writers and mentors thought were required to develop online learning resources were:

- Pedagogy for online learning
- Generic IT skills

- Skills in using virtual learning environments
- Course design
- Writing for open learning
- E-tutoring

All of the mentors felt that writers should have basic IT skills and it was suggested (as also stated elsewhere) that an initial audit was vital. The two co-ordinating mentors suggested that there was a need for flexibility and also far more research at the beginning of the process to select from what is already available, although Adamson (2001) points out that using material developed for different learning outcomes is not necessarily ideal. Openness to peer review and good time management skills are also required. With hindsight what is missing from this list are the skills required for supporting students at a distance, which go beyond e-tutoring.

3.3.2 Training provided and its usefulness

The data here demonstrates that the most valued training session was the one held in Inverness with input from Strathclyde University. There was considerable dissatisfaction expressed in relation to the input in on the Fretwell Downing learning environment, particularly that the input in relation to this platform was too technical. There was also a sense of frustration with the fact that technological problems prevented access to this learning environment.

Module developers considered that the most important element missing from the training was an opportunity for practical exploration of the learning environment. In addition there were limited opportunities to share experiences with other writers.

There were different levels of participation by the mentors in the training process with one of the co-ordinating mentors having a considerable involvement and one of the learning environment mentors also making an input. The remainder were not involved in the provision of training but did attend the workshops. There was agreement that the training sessions for one of the learning environments was problematic but generally the mentors felt that the training was adequate.

However, in terms of organisation for writing, it was felt that modules should be developed by a team with a subject specialist, an IT specialist and a design specialist, a view corroborated by others in the project. If the module writer is expected to undertake all these roles then the training needs to be considerably broader than that provided.

It is interesting to note that technical issues dominated the evaluation of the training provision and were emphasised in relation to skills by the developers. There was little comment on issues in relation to pedagogy or design from the developers and this is in contrast with comments from the mentors. There may be a number of factors contributing to this emphasis on technical issues and the need for training on the practical aspects:

- the fact that the developers were expected to write the materials and put it in the learning environment themselves.
- lack of time meant that there was a need to develop usable materials rapidly. This is likely to mean that developers would choose safe options using material already tested and avoiding undue complications. This is supported by a number of developers commenting on the need 'to keep it simple'
- copyright issues limited the materials included in the learning resources
- lack of opportunity to explore a range of different courses and see different types of media used, and possibly also an opportunity of evaluating different materials from a user perspective may have led to a focus on seeing the skill of developing online courses as one that is necessarily to do with technical skills
- lack of a skills audit did perhaps not allow for training and support to be made available at the level that each individual required.

It is interesting to note that a number of the developers and the mentors suggest that the most fruitful approach to developing online material is to work with a team that has a range of expertise. This is corroborated by the mentors and co-ordinators with one mentor suggesting

a team of a subject specialist, a design specialist and a technical expert. (This division of labour is echoed in statements by other mentors and some of the developers).

3.4 Support for writers – the Co-ordinators and the Learning Environment Mentors

Two co-ordinators had responsibility for developing the learning resources and administrating the Virtual Learning Environment (VLEs). The four Learning Environment Mentors were staff with lecturing experience who also had considerable experience in using technology to support learning and teaching in their own professional practice. They were appointed to give professional advice and technical help to the module developers. There is evidence from other institutions that this type of support can make a significant contribution to academics beginning to use technology to support learning and teaching (McNaught & Kennedy 2000).

Three mentors gave VLE related support (one of whom also provided expertise in accessibility issues) the fourth provided specialist graphics support. The mentors were physically sited in their employing colleges, which meant that they were not necessarily in the same locations as the developers therefore they set up support mechanisms to provide easy access, through electronic 'meeting' space, providing forms to request support or by providing email/telephone access. There was variation in how proactive the mentors were, some approached the writers offering support while others waited to be contacted.

Tutors felt that the most useful aspect of the support was having somebody on hand when required, somebody with a different perspective. The mentors with the specific role in relation to learning environments were considered to be responsive, helpful and available. Time factors were considered problematic and this may have mitigated against effective use of some of the technical support that was available. Note also that the least useful aspect of the support was that it was not on hand locally and the most important missing technical support was that it was not generally available in the summer months and that it was not immediately available when required.

The mentors expected to provide support in relation to the learning environments and the production of graphics. One of the co-ordinating mentors expected that support would be needed at two levels: general IT skills and advice in relation to the learning environment. It was expected that basic IT training, where this was required, would be provided at local Academic Partner level. The mentors felt that some of their specific skills, such as graphics and assessment engines, were not utilised fully. This may reflect a need for effective communication between all those involved and perhaps a more proactive involvement on the part of the mentors.

It became apparent that there were differences in need for support amongst the writers, which related to their initial level of IT skills. The general message is that those who were confident and had the required level of skills were able to seek support in a focused manner. Those lacking in confidence were unlikely to be able to identify the specific question they needed to ask to access the right kind of support. This observation reinforces the need to carry out an audit of skills prior to embarking on module development in order to focus training and support more effectively. It was also noted that it was essential to provide the writers with suitable hardware and software, and that there were considerable differences between the colleges here.

Feedback from the mentors on the support needs for those developing online learning resources highlight the requirement for support in:

- pedagogy for online learning
- copyright issues¹²

¹² One mentor, with legal training, became the copyright guru for the project.

- house style (needs an more explicit framework to ensure quality and continuity)
- design skills
- accessibility issues (particularly in relation to current Human Rights and Equal Opportunities legislation)
- technical support in producing materials for a specific VLE

The concerns expressed by the mentors about the production of learning resources were:

- timescales and their effect on quality
- lack of clarity of the mentor role
- the lack of understanding of pedagogy in relation to interactive online learning
- difficulties with the late delivery and installation of one of the learning environments

Whilst other institutions have found the mentor role valuable there is mixed feedback from LINC. Certainly there was plenty of praise for the individuals who provided support, but in order to work effectively there needs to be clarity about the support on offer and when it is available. One of the reasons for this difference between UHI Millennium Institute and other institutions would be due to the dispersed nature, and considerable distances between sites, and the fact that Academic Partners are both part of UHI Millennium Institute and independent FE colleges. The fact the module writers complained that there was no support during the holidays and that the support wasn't necessarily available in their Academic Partners suggests that they did find the support valuable. The insight of the mentors and co-ordinators into the module development process gives us constructive guidance for future development of online resources.

3.5 Support from Academic Partners

Module development was contracted by the LINC project to Academic Partners with a Service Level Agreement (SLA) under which the Academic Partners were to provide the developers with the appropriate time, hardware and software to undertake the work. All the writers were allocated to the project on a part time basis with a target of completing their modules by July 2000. Although the majority of the work was completed by then, not all modules were ready for delivery in September 2000, the original start date for the learners. It has already been noted that the time available for development was totally inadequate. The fact that modules were ready for delivery is a credit to the professionalism of the writers, many of whom worked well beyond the time allocated to them.

When asked about the time issue the majority of writers felt that the time allocated was insufficient but they found it difficult to specify actual time spent on development. Those that suggested that time was sufficient all came from the same college, which provided dedicated resources and considerable technical support. Most of the colleges provided adequate resources in terms of hardware and software, but there was considerable variation in the level of technical resource some colleges were able to provide¹³, leading to a situation where some developers had to provide their own computers.

3.6 Comparison of the Virtual Learning Environments

Two VLEs were tested as part of the project, WebCT and Fretwell Downing. WebCT was chosen because it is a popular and well supported VLE, quite widely used in HE institutions. Fretwell Downing had been selected as the Ufl learning environment. The management modules were located on Fretwell Downing, the others on WebCT. The late delivery of Fretwell Downing created serious problems both for training, implementation and student

¹³ Technical resources were not provided through the project funding.

support. Some of the LINC co-ordinators and LLC staff felt that there were additional burdens in providing student support across two learning environments rather than just one.

The main strengths of WebCT were identified as providing a flexible and robust interactive system that is easy to work within. It allows access to update materials and also provides for tracking and monitoring student progress. There is an integrated discussion system that allows for some degree of interactivity. It is a system that is easy to install and relatively cheap to run. The main problems with this environment were that it relied on one server and may therefore have problems if there are server difficulties and also that it is a 'developing' product, which it may be difficult to keep up to date with.

Fretwell Downing provides good links between student record management systems and the learning environment. The main problem with this environment is that it is designed to be a management information system rather than a learning system. It lacks any form of discussion or email system therefore does not support interactive learning or student centred learning. It is an example of a learning *environment "embedded with devices for tracking, managing and controlling student learning, rather than innovative ways to nurture student control and responsibility for learning"* (Bonk and Wisner 2000, p9). As such this VLE does not seem compatible with UHI Millennium Institute's professed approach to learning and teaching (UHI Millennium Institute 1999). In addition, it is more difficult to make changes to the materials and the screen is not as clear as the WebCT screen. This latter point means that it could be confusing for students to use.

Both systems provide the facilities for delivery of teaching and learning materials but the integrated nature of the WebCT environment means that students are presented with a coherent and comprehensive learning platform - more work would be required to achieve the same degree of transparency in the Fretwell Downing LE.

Comparison of the two suggests that WebCT offers academics greater control over the material in the learning environment and the facility to modify resources more readily; the use of a discussion board facilitates interactivity. Fretwell Downing provides a very detailed student administration system, which may be more appropriate at VQ and NVQ levels than degree level, but does not provide an integrated discussion system, WebBoard was used for discussions. Both systems provide for student tracking and in use both proved to be equally robust. The flexibility and greater control of WebCT made it the preferable option for developers and student feedback showed that WebCT was perceived to be the easier environment to work in (see section 5.6 for details).

Tutors and mentors voiced scepticism as to whether the VLEs would still provide the informal/social contact that students get in a campus-based environment. There is evidence within the literature suggesting that this kind of support can be provided online (Asenio, Hodgson & Trehan, 2000). They comment on a project where students worked online or face to face. The comment on the online students' observations in terms of "*There is also quite a strong social dimension ... Specially in the early stages a lot of the discussion was nothing to do with work.*" Asenio, et al, op.cit.,p. p15). It would be worthwhile to explore this issue through research and projects that have already been undertaken and identify good practice in this area so that this dimension can be built into future modules.

3.7 Evaluation of modules

A system of peer review and external review of the modules was developed. Peer review was provided by subject specialists within the UHI Millennium Institute network who were involved with the degree provision, but not colleagues in the same Academic Partner. External review was provided by experienced developers of online learning resources in other HE institutions, these evaluations concentrated on the pedagogic review. Time constraints meant that these reviews were not completed until modules were being delivered. The process used was an end of development evaluation, on reflection a more effective process might have been several short evaluations undertaken as material was being developed (Nielsen 2000, Donnelly 2001).

3.8 Lessons for the future

3.8.1 Achievements

Despite what many considered to be totally unrealistic timescales

- Twelve online modules were developed, 5 for use in September 2000 and 7 more for use from February 2001
- Staff involved enhanced their professional skills

In the process the organisation has learned important lessons for future development of this type of learning resource.

3.8.2 The lessons learnt

The main issues that arose from the developers and mentors were that:

- The time available was insufficient, this may have affected the quality of materials and has possibly led to the advantages of the online environment not being fully utilised
- Developers require certain pre-requisite IT skills
- The majority of the module writers and mentors favour a team approach to development
- Clear channels for communication are essential so that information is disseminated rapidly and developers can be supported in a timely manner
- A greater pedagogical understanding and knowledge for the online environment is required. This is evidenced in terms of the way that the modules were developed and also in terms of attitudes towards group activities online.
- There is a need for clear guidelines on a house style so that developers know how to lay out modules
- Clear guidance on the information which will be provided elsewhere (eg student induction into using the VLE) is necessary to avoid duplication or gaps
- Provision of general IT support, suitable hardware, software and space for development is necessary for module developers to make effective use of time
- Where provision of support is through an SLA, mechanisms should be in place to ensure that the SLA is honoured
- Time is required for thorough research into existing resources so that materials are not developed when there are already useful and accessible learning materials in existence
- A more explicit approach to the development of transferable skills or personal and professional capabilities needs to be developed
- Issues of copyright were problematic and may have prevented the developers from using certain types of material
- Training for mentors may improve their ability to help the developers.

3.8.3 Recommendations for future development of online modules

It seems that from the evidence from the module developers, the co-ordinators and mentors the following should be considered when starting any new development

- Module developers are recruited with the required IT skills, or are given an opportunity to acquire these before starting work on creating online resources
- An audit of relevant skills is carried out to ensure that individuals receive appropriate and timely support and development
- A team approach to development is considered, with teams covering subject, pedagogic, technical and design skills
- A focused approach to the pedagogy of online learning is required to ensure that the real potential of interaction between learners (and learners and tutors) is realised
- There should be sufficient time allowed before the writing process starts to carry out a search for, and evaluation of, existing learning materials before new materials are developed
- The complexity of copyright issues requires a specialist(s) within UHI Millennium Institute to facilitate access to the high quality alternative materials published elsewhere
- A house style should be developed which enables consistency across modules, adheres to best practice in terms of design, navigation and online pedagogy

- An editorial process should be provided to ensure that materials are quality checked from a production point of view
- The development of online resources must adhere to UHI Millennium Institute's quality systems
- Online resources should be evaluated by peers, external experts and, time permitting, by a group of test students, to ensure that the materials are of an appropriate standard and quality prior to use
- Resources to support development, both equipment and human resources, must be available and easily accessible by the developers

In addition to developing online resources, tutors also need to become effective e-moderators to ensure that their students can learn how to learn online (Salmon 2000). Section 4 considers the issue of e-moderating and training for e-moderating in greater depth.

Recent evidence suggests that the true costs of producing resources and supporting students online are much greater than the resources made available in LINC (Bacsich et al 1999, 2001, Bonk & Wisner 2000).

Section 4 Supporting Networked Students

4.1 Introduction

This section examines the support provided for students during phase 2 and phase 3 of the project. It draws on feedback from students, LLC staff, LINC co-ordinators, Learning Environment co-ordinators and module tutors. This feedback was collected using a range of methods and modes including semi-structured interviews and questionnaires. Interviews were carried out either by telephone or face to face. Questionnaires were posted online but backed up by standard post.

There are three strands to student support; academic, pastoral and technical, which must be inter-related and properly co-ordinated in order to support online students. The intention within the project was that induction and pastoral support would be carried out by the LINC co-ordinators and LLC staff, academic support would be provided by the module tutors and technical support (in relation to technical administration) would be provided by the VLE administrator.

4.2 Induction

Resources for student induction were produced by one of the Academic Partners and were available for co-ordinators and LLC staff in late August 2000. These resources included the official LINC information pack and the induction pack as well as College Handbooks and Learning Resource Packs. LINC co-ordinators and some LLC staff carried out the induction. The aim was to provide induction to the technology, the learning environment and IT, and also to offer general administrative and financial guidance. However, the range of different types of LLC within the project meant there was variability in the skills, time and availability of LLC staff carrying out the induction. This meant that the service for beneficiaries at different centres varied. As a consequence some co-ordinators invariably had a heavier workload than others in terms of student support and guidance. It became apparent that some LLCs provided excellent induction, others were more limited. This led to an induction process that was very varied across the network. Feedback on induction during semester 1 led to modifications for semester 2.

The evaluation of the induction process for the first cohort of students identified the following strengths:

- The resource pack
- Paper-based support material for students to keep
- Opportunity for one to one and face to face contact with students
- Opportunity to clarify logon procedures

The following issues were raised by staff as being problematic

- Variability in induction across the project
- Lack of time to plan a thorough induction programme
- Tutors were not involved in the induction (and therefore developed inaccurate assumptions about what was covered and what they needed to include in their own induction)
- Technical problems with UHI's email system, GroupWise
- Late enrolment of students (no clear cut-off date)
- Need to include basic IT induction for students with few IT skills
- Staff carrying out the induction did not all have access to all the learning materials
- Difficulties for those using unstaffed learning centres

Video conference workshops were held in January which sought to make the induction more standardised, improve familiarity with the learning resources and make arrangements for people studying at unstaffed centres. There is evidence from tutors involved in tutoring both semesters that the induction had improved for the second cohort of students. This is supported by the feedback from the students (see below).

Tutor feedback emphasised the valuable input by Learning Centre managers in terms of their input into induction. However, there was a request from tutors that they should be involved in the induction process. This was to enable them to be aware of the students' skills and knowledge at the beginning of the course. A clear message from both the tutors and the LINC co-ordinators was that there was a need for increased communication between all of those involved in this aspect of student support.

The tutors' impression that induction had improved between cohorts 1 and 2 is supported by the feedback from the student groups themselves. The remainder of the discussion of induction focuses on the feedback from the student questionnaire (for the rest of the student feedback, see Section 5).

Students found the most useful aspects of the induction were (% of total responses in brackets):

- Introduction to the course and the VLE (42%)
- Meeting others (both staff and fellow students) (26%)
- Technical information (19%)
- Student support information (7%)
- All aspects (7%)

There were no significant differences in the types of response from the two cohorts. Students clearly found the course introduction and 'guided tour' of the VLE very valuable. Interestingly a quarter appreciated the opportunity to meet both learning centre staff and other students implying that although they had signed up for online courses the face to face contact was still seen as important.

Whilst 30% of the participants said that all aspects of the induction were useful, students found some things problematic, mainly:

- Inadequate information (27%)
- Technical problems (27%)
- Forms (7%)

The fact that a third of responses indicated that everything in the induction was useful is very positive. There were interesting differences between the two cohorts in the relation to the next two aspects; with 37% of cohort 1 commenting about inadequate information in comparison with only 9% in cohort 2. The work to improve the quality of induction by the LINC co-ordinators seems to have been successful. However several of the cohort 2 induction sessions in learning centres suffered from technical problems preventing access to the UHI network. This led to the suggestion from two students that detailed hard copy technical instruction should be provided so that unavoidable problems like this would not impede the induction process. The complexity of the forms needed for the LINC project was an issue for some respondents, but this was largely outwith the control of the organisers and reflected the needs to comply with Adapt funding regulations.

Students were asked to identify what could have been included to improve the induction; whilst there was considerable individual variety in suggestions the most frequent suggestions were:

- More time for hands on learning (40%)
- Face to face meeting with the tutor (12%)
- More accurate/precise information (12%)
- IT Audit/assessment of students (12%)
(in order to target IT help appropriately)
- Written technical instructions (8%)
- IT troubleshooting techniques (4%)

The request for more time for hands on learning fits with the fact that students found the introduction to the online module and the VLE the most useful part of induction. They would clearly have liked to take this further in order to feel prepared for the module start. One person also suggested a greater time lag between induction and the start of the module to enable people to practice at home or come into the learning centre again. Informal feedback from other institutions suggests that the time for student self-orientation to online learning after induction may have a positive effect on retention. Face to face meetings with all module tutors is not feasible, but it might be worth exploring the possibility of having VC meetings through the learning centres. The issue of improved written communication was only mentioned by cohort 1 students which suggests that this need had been met for cohort 2. The use of diagnostic IT audits or assessments was a recommendation from the interim evaluation report. The request for some basic help on troubleshooting is a useful suggestion and one that will help the students to become more effective independent learners. Other positive suggestions made by individuals include more on the networked library system, instruction on how to multi-task using different computer applications and having core textbooks available for purchase.

Overall the student and tutor feedback on the pre-course information and induction shows that the quality improved from cohort 1 to 2. These suggestions from participants are valuable and will inform ongoing and future developments of online degree modules for UHI.

4.3 Pastoral and Administrative support

4.3.1 LLC co-ordinators and LLC staff

LLC staff provided the critical face to face links in the project. They gave pastoral support and study skills advice, and in some centres they were able to provide technical support. The resources available to them included CD ROMS and Web-based systems, College Handbooks and a Learner Resource Pack. Co-ordinators helped to complement the skills of the LLC through offering appropriate training opportunities and by supporting the LLC staff. Additionally, the LLC staff provided a conduit for students' views and problems (to the Co-ordinator).

However, as has been noted in relation to induction, there was variability in this support due to the variability in the LLCs. Some tutors therefore found themselves providing pastoral support. This perceived ambiguity in the roles was compounded by tutors not being aware of the pastoral, and particularly study-skills, support that was available for students and from whom.

Whilst there were some very clear achievements in supporting students the following issues were identified as being more problematic:

- Varying abilities of the students producing different levels of need for support
- Differing availability of support in different areas
- Lack of clarity about who provides what support
- Lack of knowledge about the VLEs and the learning resources
- Problems of providing support in unstaffed centres

Suggestions to enhance the student support included:

- Greater communication between those involved in supporting student learning to enable each group to know what role the others are performing and to enable them to advise students appropriately
- Student access to support information – a helpline or online resources
- Clearer definition of roles for those involved with student support
- Early meetings with students, face to face or via video-conferencing, to establish contact
- Personalised training in supporting students for all those involved

An issue that impacted on the level of pastoral support provided was that the modules were perceived by the APs as UHI modules. This meant that the College support structure, normally available to campus based and Open Learning students were not made available to

Adapt students. This led to Adapt beneficiaries not being made aware of the student support facilities that were available within the institution where they were enrolled. Tutors therefore felt that they were left in a situation where they were providing support once the student had progressed onto the course. It is interesting to note here, that although some of the tutors had been involved in supporting Open Learning students they did not seem to see the possible similarity in terms of availability of institutional support between Open Learning and online supported learning. These kinds of issues are not unusual in other institutions using online learning. In a survey of 222 online tutors in the United States the lack of incentives from the administration and lack of system support for delivery of online courses is highlighted (Bonk, 2001)

An administrative issue which impacted on student support, induction and academic support were late admissions to the modules. Late admissions to online learning are emerging as even more problematic than late admissions to face to face courses, and in some institutions all late starts on similar online modules have been early leavers (personal communication, Open University in Scotland). Technical competence and induction into the online material may not be dealt with as comprehensively for late entrants, often leaving them bemused by the new environment and unable to take part effectively and therefore they are more likely to withdraw. The experience in LINC was that people starting late were at a serious disadvantage and usually left. The issue was compounded by the difficulties some tutors experienced in monitoring student progress online, particularly those using the Fretwell Downing learning environment.

To sum up, the overall theme in relation to providing pastoral support suggests that there was some confusion about where the boundaries lay in terms of who provides what support, especially during Phase 2 (cohort 1). All parties expressed a need to have clearer guidelines on good practice for student support, and to know what duties each other would carry out. This was clarified towards the end of phase two and a series of briefing sessions, (attended by tutors and LINC co-ordinators) with written guidelines, took place before the start of the final phase.

There was also uncertainty about what should be included within the module in terms of information on support and guidance. If students are part of a course programme (e.g. a diploma or a degree consisting of a number of modules) then the student will receive guidance and information based on the overall programme, e.g. in their course handbook. Tutors for that reason did not necessarily include this kind of information within their modules. There is therefore a need to agree on a house style (as suggested by the module developers, see section 3.7) which identifies what type of information will be available in links to modules and what must be included within the module itself. At a different level it is interesting to note the role of LLC staff to provide study skill support. There is an ongoing debate about the most effective means of developing study skills and it could be argued that this should be included in this modules in order to contextualise these skills. This is an issue that needs to be considered UHI wide in relation to fundamental issues on teaching, learning and the development of transferable skills.

Finally, it is clear that there needs to be robust administrative procedures for registering students in a timely fashion and for monitoring progress in relation to online learning.

4.4 Academic support

This section covers four areas:

- General tutor support for students
- Learning materials and learning activities
- Assessment
- Staff development and support for tutors

4.5 General tutor support for students

Tutors main expectations in terms of the online teaching role was that it would involve monitoring, feedback and support of students, though one also anticipated a traditional academic role. Other expectations included contact with Learning Centre managers and that students would initiate contact. The expectations about monitoring, feedback and support were realised but tutors also commented on having to take on roles beyond subject tutoring such as dealing with personal problems and exam arrangements. These findings reflect the ambiguity about the roles of pastoral and academic support, and indicate that more formal action was needed to ensure administrative support for students. It is also clear that these issues were identified as important and problematic by some of the cohort 1 students. The feedback from the students indicated:

- Lack of clear guidelines on how to access academic support
- Lack of information from tutors to students setting out contact details and expectations regarding online support and interaction
- Conflicting information on assessment and the accreditation status of the modules
- Slow responses from tutors (in some cases this was because of severe disruption to UHI's email system)

There were variations in the level of support provided by tutors as they developed their own skills in supporting online learners. Phone based support set up by some tutors worked well and it was clear that some individuals took a very professional attitude to developing appropriate mechanisms to support learners. However, it is clear that there is further need for staff development in terms of supporting online learners and also a need for the institution to develop systems that provide students with generic information. Students, possibly more so in distance education, often treat tutors as the 'personal face' of the institution and are likely to direct all queries to the tutors unless there is clear guidance on where to find general information.

On the whole tutors had to take the initiative in terms of encouraging student-to-student contact in establishing self help groups. The problems of creating effective self help groups is well known to those working with distance education students, and became evident in LINC also. Interestingly, research in other institutions suggests that when effective, online peer support is established, it is perceived by students to be very valuable (Joyes 2000).

Like the problems identified with the induction process these issues were addressed at the end of semester 1 and systems put in place to improve academic support. The need for clear guidance on the level of online support available to students has been well documented, see for example McAteer (1998) who defines these as the 'terms of engagement' necessary to create the shared perceptions of what for many is a new mode of learning. Feedback from students indicates that some of these issues had been resolved for cohort 2, particularly to do with accessing academic support, assessment and accreditation. However other issues, including slow response from some tutors, remained a problem for cohort 2 (see Section 5).

Responses from the 2nd cohort tutors identified the following as positive aspects of providing academic support for students in the online environment:

- Flexibility and accessibility and the fact that the asynchronous delivery encourages student independence
- Students can return to the materials as often as they wish
- There is 'thinking time' before responding to questions
- Availability of a wide range of resources, mainly via the internet
- Discussion points being available automatically to whole group
- Being able to track students (Web CT Learning Environment)

They noted the following as being problematic:

- Not being able to track students (Fretwell Downing Learning Environment)
- Students being enrolled at different dates and therefore being at different stages which made using discussion boards difficult
- Problems with encouraging use of discussion boards, especially with very small or very large numbers of students

- Variations in induction
- Issues about students' abilities to make full use of the learning environment
- Lack of face to face contact and the inability to develop relationships
- Time problems – for tutors in terms of having sufficient time to support students and also the possibility in delays in answering
- The tendency in some modules for students to avoid contact with other students and to respond individually to the tutor
- The inability to pick up on the student who simply skims the materials and is generally not understanding the content

The recommendations for future improved delivery from the tutors were to:

- Ensure that there are effective channels of communication and that the roles of all those involved are clarified
- Ensure that all the administrative and procedural aspects of delivery are in place (e.g. assessment dates, exam boards, information on general aspects of studying)
- Ensure that tracking can be done within the Learning Environment
- Allow time for updating of module, and for familiarisation with the materials in the case of new tutors
- Ensure that there is a recognition of the time requirements for effective online delivery – it is a time consuming option
- Provide a hard copy of the handbook to the students
- Use additional means (e.g. phone/vc) to communicate with students where necessary
- Develop students' skill in communicating via bulletin board by including an activity for this during the induction

Some of the concerns expressed by cohort 1 tutors were still impacting on the second semester delivery, however two of the tutors who had tutored during both semesters stated that improvements were noticeable in Semester 2. The main improvement was in relation to more effective induction and better selection of students. This suggests that there was a greater understanding by those responsible for admission about the demands of the modules. These views are supported by the characteristics of the students (section 5.3 and student feedback on induction (section 4.2).

4.6 The learning materials and learning activities

Tutors reported that they had included a range of individual activities such as quizzes, multiple choice tests, case studies and online seminars or discussions. These had been reasonably successful – interestingly though one tutor reported seminars as being total disasters whilst another tutor commented on them being 'really good'. This seems to reflect students' evaluations of the activities – online discussions were rated by some as the most useful type of activity and by others as the least useful.

Although some tutors had included group activities they all reported that either the students had not completed these or that they had not worked. The problems identified by the tutors included;

- staggered start dates for students so the students were not at the same stage of the course at the same time – this prevented effective interaction between students
- technical problems which prevented access to bulletin boards

The second cohort of tutors identified similar problems but overall the feedback suggests that the problems were not as severe as for the first cohort. Selection had been more effective so students who were enrolled on a module were generally able to cope, though not entirely. It was also stated that the numbers were manageable.

There was still concern that group activities were difficult to organise effectively (see suggestion above that some group communication is included in induction). The lack of synchronicity does pose a problem, as does general reticence on the part of the students to becoming involved in discussions. Problems of technology were also noted in relation to one of the learning environments. In Fretwell Downing there was no access to the discussion

board at the beginning of the modules and when it was available it required a separate password. The positive aspects were noted though, particularly, when students did get involved they were positive about it and claimed that it enabled them to feel part of a community of students. Recommendations for making this aspect of the module more effective were to:

- Rationalise the technology
- Hold regular online meetings to generate a sense of group cohesion
- Emphasise in the introduction that online activity is part of the course

It appears that there was a reticence by tutors to use group activities, perhaps because they felt that it was too complex to manage in an online environment. Feedback from students indicated that they would welcome more group interaction. The social constructivist approach to teaching emphasises a vital role for group learning activities, and suggests that these experiences can help to develop more independent learners. (Curtis and Bonk 1998, Duffy et al 1998). This is one area which future training needs to address. Whilst there had been some staff development input in terms of pedagogy, it could be argued that there was a lack of practical advice on how to make group work activities work effectively in an online environment. There were comments from some tutors that they were aware of the need for a more effective structure in relation to group activities, which supports the suggestions that this is a potential training need. There is documented research available about this issue (Kirkley et al 1998, Salmon 2000) which sets out ways to structure activities to encourage students to engage with each other. (One suggestion from this research is to allocate roles to students within the group activities. This has been tried and tested and can work effectively and it helps to decrease the work load of tutors required to moderate online discussions). However, other factors, such as low numbers, staggered starts and technical problems impacted on student participation.

4.7 Assessing students in an online environment

The online environment was only used for formative assessments and the self assessment quizzes, which students commented on favourably (see section 5.4).

The summative assessments were not online and there was generally a suggestion that summative assessment online would not be acceptable due to the lack of control in terms of who was actually submitting the work. This is problematic in a number of ways – the main ones being:

- The need for the student to access the Academic Partner institution to undertake the exam – there were some issues here about Learning Centres not being approved as examination centres. This seems problematic as it could cause problems in terms of accessibility for a number of students
- The need for co-ordination between Course Teams who are responsible for the modules and the tutors so timings of assessments, changes to assessments and dates of Exam Boards can be communicated to the students
- There is also a further problem if summative assessments occur only under exam conditions. Important skills such as drawing on a range of sources and effective referencing are better developed in course work. In addition critical thinking skills tend to be underplayed in standard types of examinations (Brown 1999).

One respondent stressed the need for communication between Course Teams and module tutors in relation to assessments but also added that there was a need for greater clarity within several modules in terms of distinguishing between formative and summative assessments. Students had been confused in some instances.

It is also worth noting that traditional distance education (e.g. OUUK) allows for summative assessments to be completed by students in their own home. The same problems with authenticity can therefore occur here. Generally these continuous assessments are supplemented by an exam but this is not always the case and tutor verification is used to help

to ascertain the work is the student's own. It therefore seems feasible to suggest that some of the summative assessments could be submitted online.

4.8 Personal and Professional Capabilities

The need to include development of capabilities was discussed in section 3.2. The majority of the tutors were aware of the PPC framework and some could list the ones that were included in the module. However, there was no attempt to identify PPCs in the assessments for the students and generally the PPCs were listed because they formed part of a module descriptor developed for a degree programme. The main issues that were raised in discussion with tutors were as follows:

- Is it appropriate to identify PPCs in stand-alone modules as the rationale behind PPCs is that they should be developed over a period of time and this is difficult to achieve if a student is taking a one-off module?
- How does it fit in with Personal Development Planning (PDP) which will become a mandatory aspect of Higher Education?
- What is the role of Student Advisors in relation to PPCs and how can a student doing a stand-alone module be integrated into this system?
- There is a need for clarity in terms of advice and guidance on PPCs, PDP and QAA requirements

There are issues which UHI needs to address outwith the LINC project about the development of PPCs in online modules and the integration for potential part time and Continual Professional Development (CPD) students. The issues highlighted by LINC should be of concern given that all under-graduate programmes will be required by the QAA to demonstrate that capabilities are developed and assessed within degree programmes. It is important that attention is given to capabilities and their integration into many assessments.

4.9 Support and training for tutors

The main message from the tutors in both semesters was that support was variable. What was most valuable was the contact with other colleagues who were also tutoring online modules. The staff development input on e-moderating provided in semester one gave some useful information in terms of books and references, but did not succeed in meeting tutor requirements. To rectify this a number of the tutors in semester two were involved in an e-moderating course provided online by an external organisation. The feedback about this course was mixed. One tutor had started twice and found it extremely useful once she got involved with it the second time round. However, she noted that it was essential to be involved from the beginning as the course revolved around using computer conferencing. The course was very time sensitive, tutors who could not participate at the right time were unlikely to gain from the course. There was some feeling that the course was too theoretical and the approach of the course leaders not entirely appropriate for the needs of LINC tutors.

However, the support provided by colleagues also involved with online development and tutoring was good. One tutor thus commented that it had provided *'an excellent sense of community/comradeship for those who were directly involved'*. Another found the experience of a colleague who had tutored in both semesters invaluable. This suggests that future staff development should focus on practitioner led training using the expertise gained by the present tutors to support others. It is built on a model of staff development that is increasingly supported within the institution, rather than depending on external experts. It would also be helpful to facilitate tutor 'self-help' groups, perhaps through GroupWise folders.

Several of the mentors were singled out for having provided excellent support. However, on some occasions, support had not been as prompt as the tutors felt it was needed, mainly because of conflicting demands on the mentors' time. It is important that time is allocated to support staff in such a way that tutors and developers can access support easily at critical points.

At the end of cohort one tutors felt that there was a lack of both a structured programme and information about the overall running of the programme. The issue of communication and clear guidelines emerges here as it did for other parts of the project. Interestingly, in spite of the problems, four of the five tutors reported that it had been a good learning experience for them. The fifth tutor found it difficult to identify anything positive. This tutor had been swamped at the beginning of the programme with students many of whom were not suited to this level of study.

By the end of the project some of the issues highlighted in cohort one had been addressed and new ones had arisen. When asked for their final recommendations the tutors felt the following would be of benefit:

- Ensure that the training is suited to the person. Effective training is likely to be best achieved with small groups of 2/3 'learners' working with one tutor/mentor
- Ensure that e-tutoring is included in work on the development of modules as knowledge of tutoring will impact on module writing
- Ensure that staff have sufficient IT skills
- Ensure that there is enough time for development and tutoring
- Become an online student as that will help to further understanding about student needs more effectively

An essential requirement for these recommendations to be met is giving tutors adequate time for their professional development. A difficulty for the tutor group in this project was that several staff had to refuse staff development opportunities because their work loads were too demanding to enable them to attend training sessions. As an institution which wants to make full use of the flexibility that online delivery offers, UHI should examine ways in which staff development can be supported in a timely fashion. The issues of providing time for staff development are not confined to UHI. Bonk (op.cit) noted in his survey of online teaching that time was needed for staff support and formal training (in both technical skills and pedagogy).

4.10 Technical Support

Technical support for the Fretwell Downing learning environment, student registration and user accounts was provided through the LEARN LET Unit, technical support for WebCT through one of the Academic Partners. The late delivery of the Fretwell Downing learning environment caused problems for testing materials and had a knock-on effect on other aspects of technical support. This was compounded by the fact the environment was dependent on external email and discussion board software to provide communications and interactivity. In September and October 2000 there were major difficulties with the reliability of UHI's email system GroupWise, which made electronic contact in the project for those studying the modules housed in Fretwell Downing extremely unpredictable. Both of these events were outwith the control of the Unit involved and staff there made considerable efforts to compensate for these difficulties¹⁴.

As a consequence of these problems there were:

- Major delays in receiving username / passwords for the students
- Difficulties in communication between tutors and students for support
- Limited participation in the interactive activities included in the online resources
- Delay in rectifying technical problems identified in the learning materials (for example, links not working)

From the tutors' perspective the greatest difficulties seem to have been with emails and email addresses. For example, one tutor noted that many of the students used non-GroupWise accounts to contact him. However, the email addresses did not, in some cases, clearly identify the student (especially if the student was using a friend's account) and it was impossible for the tutor to track this student in the system. The way in which the Fretwell

¹⁴ These difficulties had less impact on the WebCT site, which has integrated communication facilities.

Downing learning environment had been implemented did not allow for easy tracking of students so monitoring progress became very difficult. Given the access issues mentioned above, contact between student and tutor has mainly been on a one-to-one basis. The experience of the tutors using Fretwell Downing corresponded with that of students (see section 5.7); students found this learning environment significantly more difficult to use than WebCT.

Variations between Academic Partners in the provision of technical equipment to tutors impacted on the level of support tutors were able to give their students. In one institution the tutors were required to tutor from their own home computers because they were not provided with a dedicated work-based computer. Some tutors did not have access to an outside phone line from their place of work which meant that students found it difficult to get in touch with their tutors by phone. Students perceived this lack of technical infrastructure for the tutors as lack of tutor support for them (see section 5.9). It is critical for an institution that takes online learning seriously to provide its staff with the means to support online students.

Many of the technical problems were reduced for the second cohort of students in the third and final phase of the project (see section 5.7). However, technical difficulties create a situation where the technology becomes a barrier to participation in learning rather than a means of wider access, particularly with those who are apprehensive about the technology and their ability to use it. Some LINC students were critical of the technical problems they encountered, but others found they were able to work around the technology glitches. For part time students however, inability to access learning materials or tutors at the right time can make it difficult to complete the module.

The level of technical support for online learning is increasing within UHI and now includes a telephone help desk and online help resources. One area where tutors may benefit is from help in using the more interactive aspects of the learning environment, which will in turn help to increase student interactivity (see sections 5.6 and 5.8). Such developments are part of continuing professional development of staff designing and moderating online learning resources.

4.11 Lessons for the future

As with all forms of flexible learning, students need support to enable them meet the time and discipline requirements of the course if they are to be successful. If educational institutions are to use online learning to widen access to higher education effectively we need to do more than simply create the opportunities to learn (Gladieux Swail, 1998). Already there is evidence that online courses have greater dropout rates (Bonk & Wisner *ibid*, Bonk *ibid*). Therefore, we need to consider the following recommendations for the use of online facilities carefully to make it an effective wider access mode.

Recommendations to improve the induction procedure include:

- Establish a clear standardised induction process across the network and ensure that all relevant staff, tutors, student advisors, local learning centre staff, co-ordinators etc, are given training in, and are involved in, the induction process
- Ensure that students are given clear contact details for pastoral, academic and technical support
- Develop materials which can be adapted to individual need (particularly with regard to IT skills)
- Develop learner agreements/contracts
- Make both paper-based and online information packs available for students

UHI's policy on equal opportunities requires equality in provision of learning experiences. This means that it is essential that students accessing learning opportunities through LLCs should be able to expect a similar quality of support to those in central campuses, even if this support is provided differently. To achieve this equality in pastoral student support the following is required:

- Give clear guidelines regarding referrals for LC staff

- Agree clear standard levels of support across the network of LLCs (with appropriate arrangements made for unstaffed sites)
- Provide a safety net to deal with 'exceptions'
- Provide a helpline which can be accessed by students for information that is not part of the actual academic content of the module
- Provide Information to tutors on the pastoral support processes so that they are aware of what to expect (and not to expect) when students start on the course
- Ensure that all staff involved have been trained to provide pastoral support

To facilitate academic support the following recommendations are made:

- Ensure an early contact from the tutor welcoming students online and outlining the academic support they can expect, contact details, activities, assessment and feedback arrangements.
- Provide a tutor handbook setting out what is expected by way of academic support and when. (This has already been developed by one of the UHI Course Teams and this might provide a useful model for others.)
- Provide a clear contract (SLA) for tutoring online, indicating turn around times for queries and feedback, student-staff ratios for online support, marking times for formative and summative assessments
- Encourage the establishment of student self-help groups
- Encourage the establishment of tutor self-help groups
- Develop / identify a suitable course or develop suitable staff development for online tutoring to develop tutors' abilities in structuring group activities
- Provide tutor time for updating modules
- Ensure links exist between all those engaged in supporting students, especially LC managers and tutors
- Create clear guidelines on quality mechanisms
- Ensure that there are effective systems for tracking and monitoring student progress

Technical support requires:

- A telephone help desk
- Online help resources (including FAQs)
- A speedy way of rectifying technical problems with the online resources
- Diagnostic support software for students to help them acquire the appropriate IT skills
- Technical infrastructure in place for tutors

Finally, networked online learning requires that students be given user names and passwords before the start of the course, so that they can log in during the induction. This has implications for the final date for accepting enrolments onto courses. It is far more difficult to join an online course late and have a successful learning outcome. Experience in the LINC project, as with other online programmes, suggests that late entrants are early leavers.

Section 5 Student experience of online learning

5.1 Introduction

The purpose of this section is to examine the experiences of students studying online through LINC and to draw out lessons for future development and tutoring of online modules by UHI. The material in this section is based on student feedback obtained through a detailed questionnaire sent to all students at the end of the module (see Appendix 4).

In order to build a detailed picture of student experiences this section examines:

- The characteristics of the students
- Pre-course information and induction
- Module content
- Interactivity and contacts with others
- Learning Environments and Technical Issues
- Students' comments on completing the module
- Retention and withdrawals

5.2 Questionnaire Data

The questionnaire was made available in two formats, an online version and a paper based version. Using two formats helped to ensure that students could use the method they most preferred, and that there would be feedback both from those who felt comfortable with web tools and those who did not (Taylor et al 2000). A total of 73 students completed questionnaires, which gave a 25% response rate. As in any evaluation of this type those who complete questionnaires are those with the spare time and energy to do so, and those with a specific point of view (either positive or negative) they want heard (Taylor, *ibid*). Therefore, although the following discussion is based on evidence obtained from students, it cannot be assumed that these are the only views of people who took part in these online modules. However the sample who returned questionnaires showed similar profiles to the total population on age and sex distribution.

The questionnaire included both open and closed questions. The qualitative data from the open questions was analysed into concepts or categories of response while the numerical data have been used to give both descriptive statistics and to test for significance (using Chi-square test). (Unless stated otherwise the level for accepting a statistically significant difference is 0.05, which means that there is a 95% probability that observed differences did not occur by chance.)

5.3 Characteristics of LINC students

In order to build up a picture of the students studying through LINC, data were collected on age, sex, qualifications, hopes and expectations, and IT confidence.

5.3.1 Age/sex/qualifications

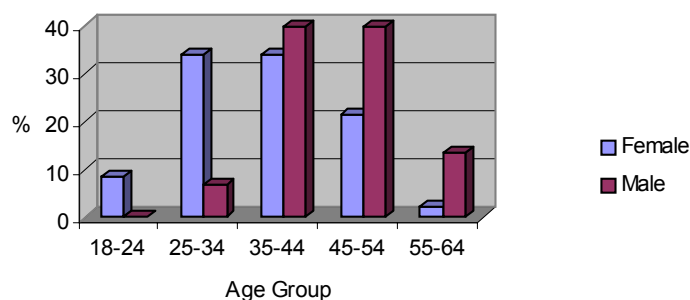
These three characteristics help to identify the basic profile of LINC students. The age distribution of respondents is given in Table 5. 1.

Table 5. 1: Age distribution

Age group	% of LINC students
18 – 24	6
25 – 34	27
35 – 44	35
45 – 54	26
55 – 64	5

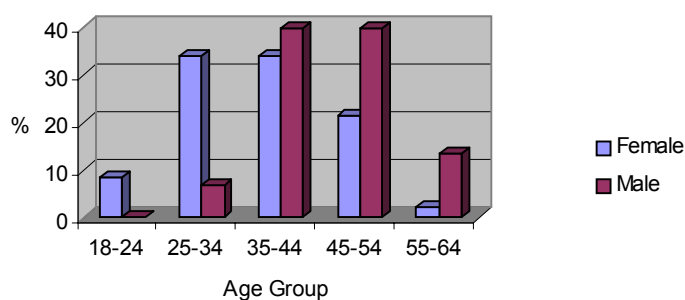
This age distribution suggests that the programme had been successful in recruiting students outwith the standard 18 – 24 age group for degree study and had attracted a spread of mature learners. There is some difference between the age distributions between cohort 1 and cohort 2, as is shown in Diagram 5. 1, suggesting that the second cohort were overall an older group

Diagram 5. 1: Percentage age distribution by cohort



Seventy five percent of the respondents were female, 25% male. The distribution across age groups shows that the male respondents as a group were older than the females, as shown in Diagram 5. 2.

Diagram 5. 2: Age/Sex distribution



The pattern of educational experience of the respondents shows a spread across all categories, Table 5. 2.

Table 5. 2: Highest previous qualification

Highest qualification	% of LINC students
None	6
Standard grade or equivalent	27
Higher or equivalent	23
Higher National level or equivalent	15
Undergraduate degree or equivalent	15
Postgraduate degree or equivalent	11
Did not say	3

Overall 33% of the LINC students had entry qualifications below those normally accepted for the first year of a degree and just over a quarter were already graduates. This suggests that

the project had recruited from at least two quite separate groups, those interested in improving their qualifications (including some for whom HE had not previously been available) and those using LINC for continual professional development (CPD). This was reflected in the tutors' comments about the diversity of the student group and the wide variation in preparedness of the students for degree study, see section 4.3.

When the two cohorts were compared there was some indication that cohort 2 had higher qualifications overall than cohort one, but not significantly so. However cohort 2 did have a smaller percentage of students who did not have the traditional degree level entry qualifications (30% in cohort 2 compared with 37% in the first group) and a greater percentage of people with postgraduate degrees (19% in comparison with 6%¹⁵). The difference between the two cohorts possibly results from feedback from tutors' impacting on recruitment, and a move away from open access recruitment towards those who have already some experience of HE level learning (see Section 3 & Section 4).

When qualifications were compared by age (Diagram 5. 3) the 25 -34 age group were the most likely to be educated to standard grade level, while the 35 - 44 and 45 - 54 age groups made up the majority of the graduates. The comparison of qualifications of men and women showed that the males had significantly higher qualifications than the females (see Diagram 5. 4 for percentage distribution). This could reflect the fact that a greater proportion of the men were in the 35-54 age group which was the group most likely to have higher qualifications.

Diagram 5. 3: Qualification by Age group

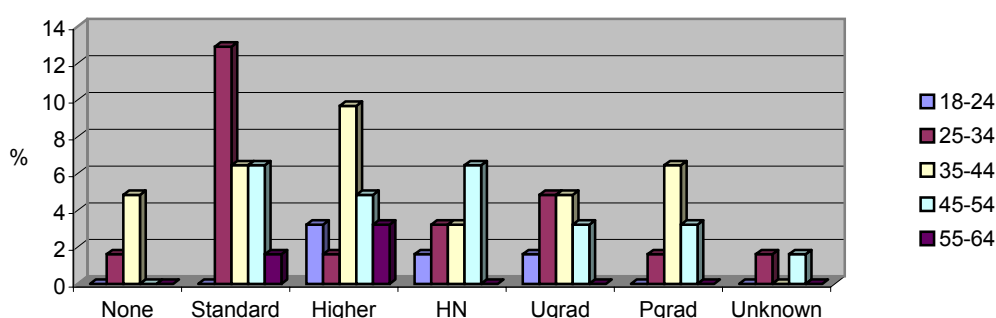
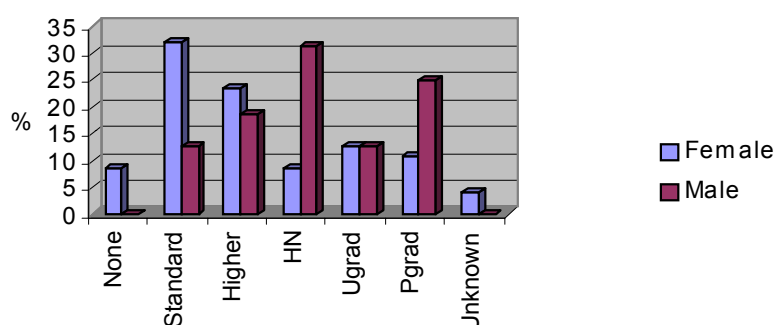


Diagram 5. 4: Qualification by sex



It would appear from the biographical data that different client groups had been recruited onto the programme. This may have been unintentional, or may have been as a result of feedback from tutors during cohort 1. Overall, approximately one third of students were open access students who came into the programme without the normal degree entry requirements; just

¹⁵ These percentages are based on small numbers.

over a quarter were postgraduate CPD students. This mix of students presented some challenges for tutors. However, mixed ability student groups are likely to become more common as UHI develops and the LINC project has demonstrated the need to cater for greater student diversity.

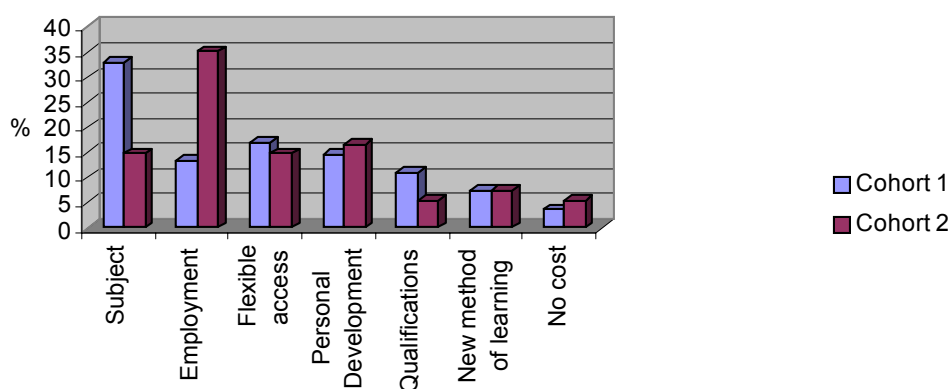
5.4 Reasons for taking the LINC modules

Student diversity was also reflected in the answers to qualitative questions about the reasons for study, and hopes and expectations of the modules. When asked to list the three most important reasons for deciding to enrol on the module the most frequently cited categories of motives were (in order of frequency):

- Employment related
- Interest in computing
- Flexible access
- Personal development
- Qualifications
- General interest in the subject
- New methods of learning
- No cost

There were interesting differences between the two cohorts of students in their reasons for study, illustrated in Diagram 5. 5, which shows the percentage in each cohort citing the reasons listed above. There is a significant difference between the two cohorts in the importance attached to employment and computing as the reason for enrolling. The importance of computing for cohort 1 is perhaps not surprising given that 84% of the cohort one students were studying Applications of IT, and that in comparison with cohort 2 they were less confident about their IT skills (see below). The difference between the cohorts in the frequency with which employment related issues were mentioned may be because computing skills are seen as important workplace skills, so acquiring these would automatically improve work skills.

Diagram 5. 5: Reasons for study - comparison of cohorts



Respondents gave a range of employment-related reasons for their enrolment, including suggestion from their employer, improving employment prospects, developing skills for their current job, combating redundancy/unemployment and relevance for setting up their own business.

The opportunity to study flexibly was seen as a benefit by 16% of the respondents. People cited the ability to study in one's own time, to study at home or in the local learning centre and to study at one's own pace as reasons for participating. Almost as many were attracted by

the potential for personal development, citing the challenge, improving knowledge, enhancing confidence and "wanting to keep the brain working" as reasons for participation.

Improving qualifications (including continuous professional development, CPD) was mentioned by 11% of cohort one and 6% of cohort two. This difference may reflect the fact that the second cohort were more highly qualified than the first and therefore additional qualifications *per se* were less important to them. Interestingly several respondents mentioned wanting to experience online learning as a reason for studying. The fact that there was no charge for participation was important for a small group.

5.4.1 Hopes and expectations

In order to identify students' expectations for studying the module they were asked what they hoped completion of the module would mean for them in relation to their work prospects, future studies and personal development. As with reasons for enrolment their responses were grouped into broad categories. The hopes for job prospects are given in Table 5. 3.

Table 5. 3: Hopes for work prospects

	Percentage
New work (including more responsibility)	20
IT related skills	16
More opportunities	15
Help with specific (work) tasks	15
No impact	13
Enhance prospects generally	7
Improve efficiency in current job	7
Personal skills	4
Prove something to new employer	4

The types of answer show an interesting divergence between broad categories, such as lead to new work or more opportunities, and very specific hopes such as improvement in IT skills and help with specific work tasks. Interestingly 13% did not think their studies would have any impact on their work prospects.

Table 5. 4: Hopes for future studies

	Percentage
Lead to other (named) courses	24
LINC as return to study	24
None	18
Future degree	9
Tutor training	9
CPD	4
Specific work related	4
Other	7

Almost a quarter of the students said that they hoped that studying on a LINC module would lead to other modules or courses (more than half suggesting other LINC modules with others suggesting specific Open University courses). A similar proportion reported their hope that the LINC module would be a useful return to study experience for them. However almost one in five reported having no particular expectations about going on to future studies. A small proportion of the students were interested in future degree studies or training in tutoring, with

a few mentioning CPD or specific work-related study. For over eighty percent of the LINC students there was some hope or expectation that studying the LINC modules would lead to future studies. These responses suggest that there is a very positive market for this type of learning opportunity across the Highlands and Islands; a view that is reinforced by the responses to one of the final questions in the survey about future studies, where 90% of respondents indicated they would study again.

When asked about their hopes of the module for their own personal development, the largest group felt that the module would enhance their personal skills and almost a quarter cited developing computer skills (Table 5. 5). There was some indication that personal skills in computing would enhance job prospects but others were interested in keeping up to date with modern technology or even doing the module in order not to be left behind by children/other family members. Some of the respondents felt that study on the modules would lead to personal development through opening up new job choices. Developing a taste for learning and with it the potential for future study was important along with the personal satisfaction of learning something new.

Table 5. 5: Hopes for Personal Development

	Percentage
Personal Skills	32
Computing	26
Job Choices	15
Taste for learning	9
Personal satisfaction	9
Other skills	4
Child/family	4
None	2

Overall these expectations about participation in the module indicate that the opportunity to access online degree modules can be attractive to different market segments. These include learners who:

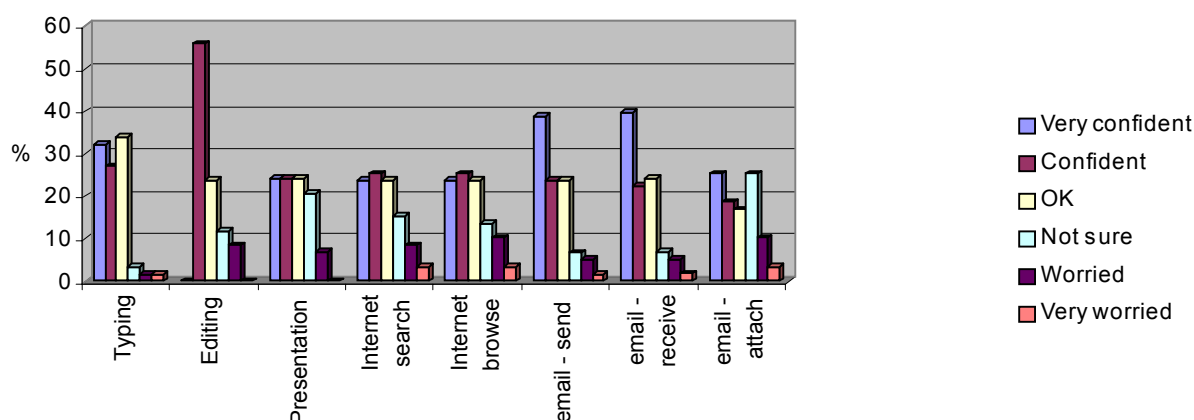
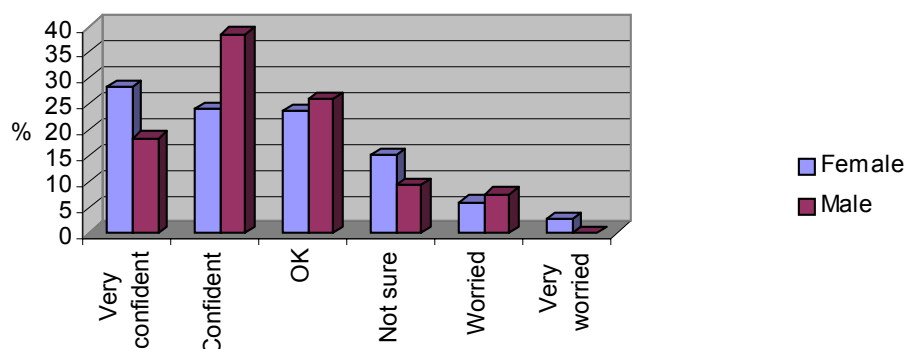
- are already well qualified and wish to extend their skills through CPD
- want specific job related skills
- are interested in a longer term commitment to part time study for a degree
- initially might be motivated by personal development but may see this development as leading to longer term job opportunities
- want to study purely for personal satisfaction

The potential of this wide market is valuable for UHI, but it does mean that tutors will face increasingly diverse student groups and that online resources and support have to meet their varying needs.

5.5 Student IT skills

Although there was no formal assessment for pre-entry IT skills students were asked to rate how confident they felt at the start of the module in carrying out a range of IT tasks which they would be required to perform during the module. The pattern of responses can be seen in Diagram 5. 6 and Diagram 5. 7.

The majority of students reported confidence in typing and editing documents and in sending and receiving emails. Use of the internet, attachment to emails and presentation were reported as more problematic. Cohort two overall were significantly more confident in their IT skills than cohort 1, but the pattern of confidence was the same for both groups (ie, cohort 2 were less confident on the same tasks as cohort 1). When a comparison is made by sex there is a significant difference between the confidence of women and men (see Diagram 5. 7).

Diagram 5. 6: IT Confidence**Diagram 5. 7: Overall comparison of female and male IT confidence**

Closer analysis shows that the pattern of responses was different for the two groups across the eight tasks which suggests that the women were a much less homogeneous group than the men. Women were more likely to say they felt very confident, not sure or were very worried than were the men. The pattern of responses on individual tasks suggests that some of the female students had good IT skills in word processing, internet use and sending and receiving email – but others were unsure of their internet skills and worried about email. In contrast the men were confident about word processing and internet skills, but were more likely to be worried about sending email and using email attachments.

The existence of different patterns of IT confidence amongst the students reinforces the need to have some form of pre-course diagnostic testing which will identify skills requiring development and lead on to individualised pre-course training.

5.6 Pre-course information

The LINC students were asked about four areas relating to pre-course information. These were:

1. Where did they find out about the modules?
2. How useful was the information they received?
3. Who carried out the induction?
4. How useful was the induction?

The first question was dealt with in section 2 (marketing), the third and fourth in section 4 (supporting students).

In order to assess the quality of information students were asked to rate (as 'very good', 'adequate', 'poor' or 'none') the information they received on the following topics:

- Academic level of the module
- Time needed to study
- Duration of the module
- Support given
- Preparation needed
- IT skills needed
- LLC access
- Computer access

Feedback from cohort one students indicated that additional information was needed from the outset so the student responses were compared by cohort to see if there was any change. Diagram 5. 8 shows the results for cohort 1, Diagram 5. 9 for cohort 2.

Diagram 5. 8: Quality of pre-course information – Cohort 1

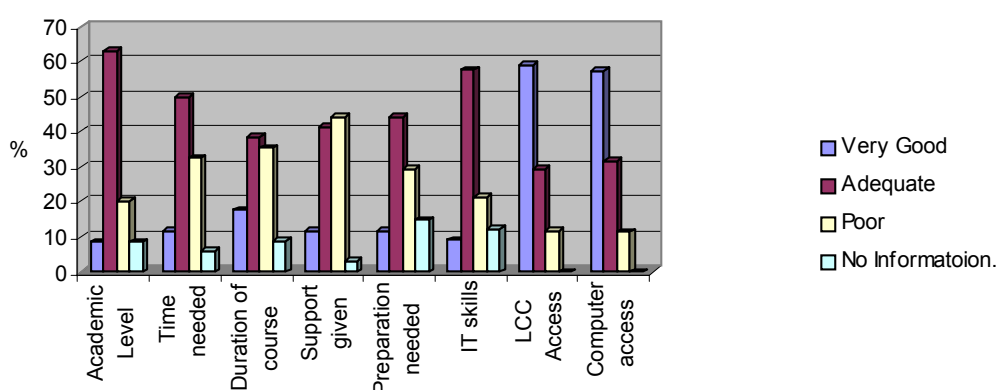
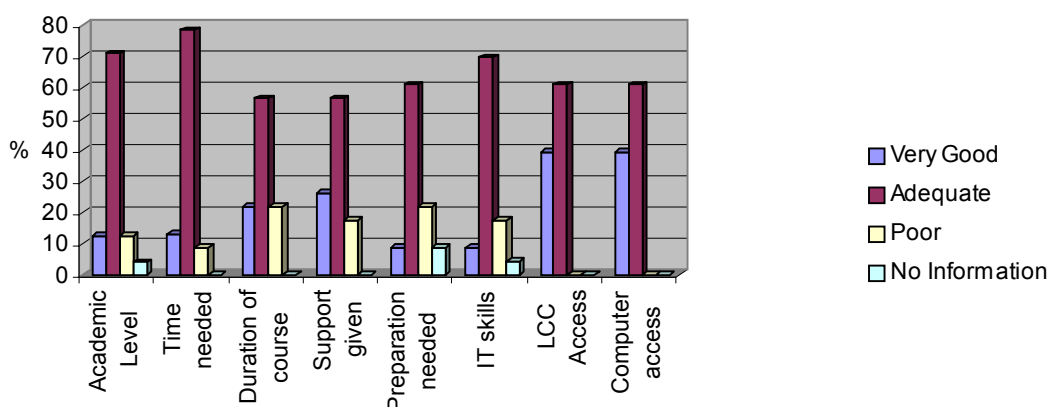


Diagram 5. 9: Quality of pre-course information – Cohort 2



A comparison of these results shows a marked improvement in the quality of information given to the participants prior to the start of the modules, with far more of the information being ranked as adequate or better by cohort 2 than was the case with cohort 1. Similarly there were far fewer rankings of poor by the second group and fewer topics that weren't covered. Statistical analysis showed significant improvements in the quality of information for the two cohorts in the cases of time needed for study, support given, LLC access and computer access. Clearly those giving information had taken note of the early feedback from

cohort one to make improvements for the second group, although there are some topics (such as the duration of the course and preparation needed) where information could be developed further for any future students.

Overall the student feedback on the pre-course information and induction (see Section 4.2) shows that the quality of both improved from cohort 1 to 2. The suggestions from participants are useful for ongoing and future developments of online degree modules for UHI, and are reflected in the recommendations at the end of this section.

5.7 Module Content

In order to assess students' views about the modules they were asked about the clarity of the material, ease of navigation around the online resources, learning activities embedded in the modules, the time they spent studying and their assessments. From their responses it is possible to build up a picture of their experiences in using the learning resources. Section 5.6 develops this theme further by examining the interactivity online and Section 5.7 looks at the learning environments and technical issues.

5.7.1 Clarity of the learning materials

Student feedback indicates that the module objectives and content was clear and readily understood, that the materials were reasonably well presented but that students were not always clear about the advice on how to use the materials (Table 5.6). The issue about advice on using online resources is something some students referred to in the open-ended questions at the end of the questionnaire (see section 5.8)

Table 5.6: Clarity of the learning materials (%)¹⁶

	Clear and easy to understand	Reasonably clear	Adequate	Difficult to understand
Aims and objectives of module	32	44	18	7
Advice on how to use materials	19	36	31	14
Presentation of materials	13	75	13	0
Materials themselves	63	25	13	0

Overall the module developers have done well to receive such a high rating for the clarity of the resources they created, particularly in the short time period given for the development of materials.

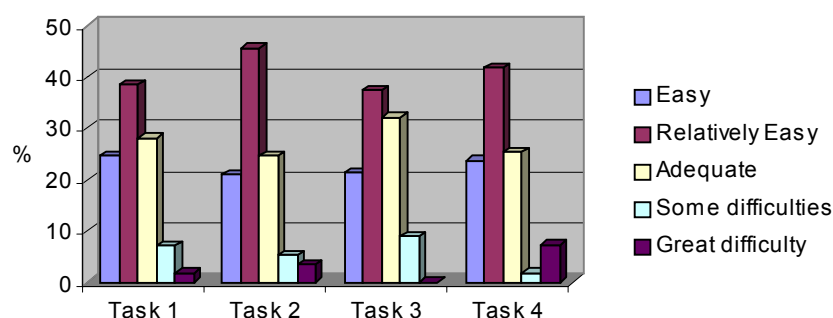
5.7.2 Ease of navigation

Students were asked to rate how easy they found it to complete four tasks in the Learning Environment:

- Move from a web page to a link within the learning environment (Task 1)
- Move from a web page within the learning environment to an external link and back (Task 2)
- Move from a web page to e-mail and back (Task 3)
- Move from a web page to the bulletin board and back (Task 4)

Diagram 5.10 shows the results (for both cohorts of students) on each of the four tasks.

¹⁶ The numbers are percentages for each of the four parts to the question; each row gives 100%.

Diagram 5. 10: Overall ease of navigation

Tasks two and four appear to be the easiest for navigation, although this hides a significant difference for students using different learning environments (see Section 5.6 below). Approximately one third of students found these two tasks easy or relatively easy. Task three - moving from web pages to email caused the most problems with only 59% finding it easy or relatively easy, although again this is related to the learning environment being used. Nine percent of students found some difficulty with all tasks. There was a significant difference between the two cohorts in terms of overall ease of use but the pattern of differences is complex. Cohort 2 students were more likely to find operations easy or adequate and less likely to find them very difficult; cohort 1 being more likely to find things relatively easy or very difficult.

Issues about the ease of use of the materials could be dealt with via an online help facility and by improving prior instruction about the use of the learning materials. In the light of feedback relating to such advice (above), it is suggested that modifications to online advice/help would be beneficial.

5.7.3 Learning Activities

The modules had been designed to encourage active participation with the learning materials through a range of activities including quizzes, self-assessment questions (SAQs), case studies and practical exercises. These activities were not part of the formal assessment, although some attracted feedback from the tutor. Students were asked about their completion of these activities and invited to say which they found most useful, least useful and to make suggestions for other types of activity that they would have found helpful. They were also asked whether there were sufficient activities and whether they were satisfied with the feedback they received. Activity completion rates are given in Table 5. 7. In total 78% of students completed all or most of the activities.

Table 5. 7: Activity completion rates (%)

Level of completion	Percentage
All	29
Most	49
Approximately half	6
Less than half	8
None	8

The activities reported as being most useful were (in order of frequency):

- Practical activities
- SAQs (with answers)
- Quizzes / Multiple Choice Questionnaires
- Group discussions
- All activities

In addition individuals found case studies, psychology tests, exercises related to assignments and essays useful.

The least useful activities were (again in order of frequency):

- None
- Group discussions (when very few people took part or for some people taking the accountancy module)
- Activities with no feedback
- Quizzes / Multiple Choice Questionnaires
- SAQs (totally self assessed questions were not taken seriously)

In addition individuals commented on the need for more contact with other students, a dislike of activities on parts of the course they were not interested in (not something a tutor has control over!), activities with instructions they found difficult to understand and a need for activities to allow repeated practice.

The suggestions for additional activities included:

- More practice in specific skills
- More interaction with other students, both 'icebreakers' at the start of the module and more moderated group discussions
- More tutor feedback on activities
- More Quizzes / Multiple Choice Questionnaires
- Use of audio or video conferencing
- Face to face meetings
- Exam practice with feedback

This feedback indicates that in designing activities module writers do need to ensure that they give sufficient feedback. In this way, the student could directly benefit from the activity and it could ensure that the activities are seen as relevant to the subject. The fact that some activities (eg. Quizzes / Multiple Choice Questionnaires and SAQs) were found both useful and not useful suggests that using a variety of activities is likely to ensure that all students will experience some activities they find help their learning.

A clear indication from the suggestions is that students would like more interactive activities with others studying the same module. One way of meeting the requests for more feedback is by designing this into the module itself, although giving feedback through the online group activities is also important. Some consideration could be given to using audio or video conferencing to support students, but face to face meetings would prove too expensive in an area like the Highlands and Islands. The request for face to face support is not unreasonable as it is what most people are used to in any learning situation, and is an important reason for using learning centres as a focus for groups of learners. However as UHI develops more online learning resources it needs to ensure that tutors develop the skills of e-tutoring to ensure that the online environment provides the level of personal and academic support that students need. The online interaction could be supplemented with access through audio and / or video conferencing, giving mixed media for interaction.

When asked about the number of activities 93% of students felt there were enough and 80% were satisfied with the feedback they received. These figures suggest that in considering adding activities it might useful to concentrate on adding group activities that encourage interaction between students rather than more individual work.

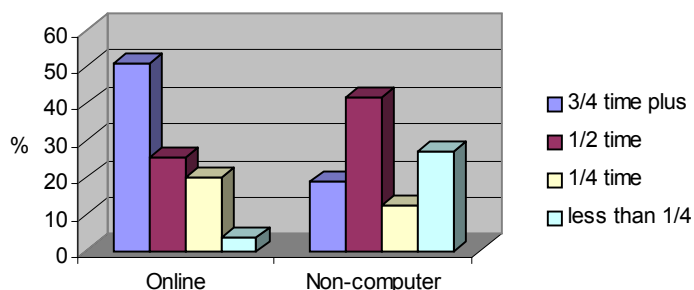
5.7.4 Time spent studying

When asked about the amount of time they spent studying, the majority (58%) of students claimed to spend between 4 and 6 hours per week studying, 24% worked for 7 – 9 hours with the rest split evenly between 10 –12 hours and over 15. The modules were designed to be completed in approximately 10 hours per week of study, however some LINC students were able to complete the work much more quickly, perhaps reflecting their previous level of education.

A significant proportion of students reported spending over ¾ of their time studying using the online materials (51%) with a further 25% spending about half their time online. Diagram 5. 11 shows the proportion of time spent in online study and non-computer based activities. Some

modules were designed to make use of set texts therefore the online work was less and the non-computer work was greater. Given the cost of connectivity it may be worth considering forms of access to electronic resources that do not demand constant connections, but do allow links to be made when required.

Diagram 5. 11: Time spent in different study activities



5.8 Assessments

Students gave feedback on several issues to do with assessment, including how many pieces of assessment they submitted, how easy it was to understand what was expected in assignments, how quickly they received feedback and the value they placed on the feedback. Approximately 16% of students who completed the questionnaire had withdrawn from the module before completing any assignments, 2% had only completed one assignment, 16% completed 2 and 65% completed three or more. The second cohort was significantly more likely to have only completed two assignments rather than three or more. The modules varied in the types and number of assessments they required. Some required fewer but more substantial pieces of work, others required shorter and more frequent assessments. It is essential for quality assurance that the assessment in online modules is consistent with the assessment required for face-to-face students. For the students themselves it was essential that they received feedback on their work in time to use that information effectively in the next assignment.

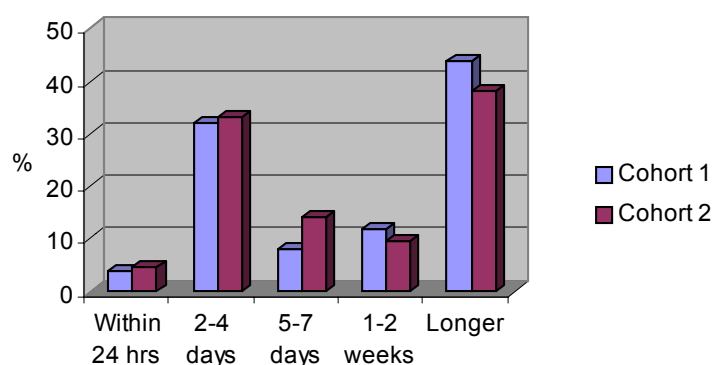
In the main students found the assignments easy or relatively easy to understand (89%) with only 9% saying they found the instructions quite difficult and 2% very difficult to understand. This suggests that the assignments were well designed from the point of view of ease of understanding, only a few students needed additional clarification from the tutors.

Students were asked how long it had been before they had received feedback on assessments. Their responses are shown in Diagram 5. 12.

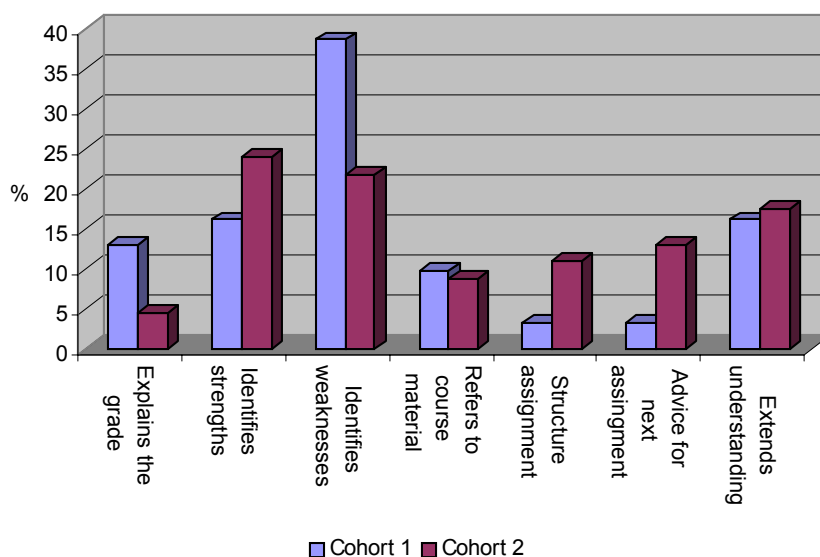
While 48% of assignments were marked within one week only 59% were returned to students within two weeks¹⁷. The fact that 41% of students were claiming that their assignments had taken more than two weeks to mark (and some had still not received feedback when they completed their questionnaires) suggests that this aspect of UHI quality assurance requires attention. Although there was some improvement in the speed of feedback to students in cohort two this improvement was not statistically significant. These findings suggest that clear guidelines are needed for tutors regarding assessment turnaround, and that tutors need to have sufficient time to give detailed feedback to online students.

Students were asked how useful they found the feedback from tutors by choosing as many options as they felt relevant to them from a list of eight. The pattern of responses can be seen in Diagram 5. 13.

¹⁷ Two weeks is used here as a benchmark as that is the time other Course Team allows for marking of student assignments.

Diagram 5. 12: Time taken to give student feedback on assessments

There appears to be a difference between the two cohorts in terms of the features of feedback that the students found useful, although the differences are not significant. However the second cohort were more likely to identify a wider range of uses of feedback than the first cohort, who found the most useful aspect of feedback was correcting mistakes or weak points. Clearly the type of feedback given by tutors will vary and the different patterns between the cohorts may reflect differences in the type of comments made rather than student preference. In face-to-face classes tutors usually provide the types of feedback listed above and it is important to ensure that similar opportunities are given to distance learners, both to ensure that the distant students are treated equitably and to ensure that they benefit fully from assessed work. This may be an area where some additional staff development is required.

Diagram 5. 13: Usefulness of feedback

5.9 Interactivity and contact with others

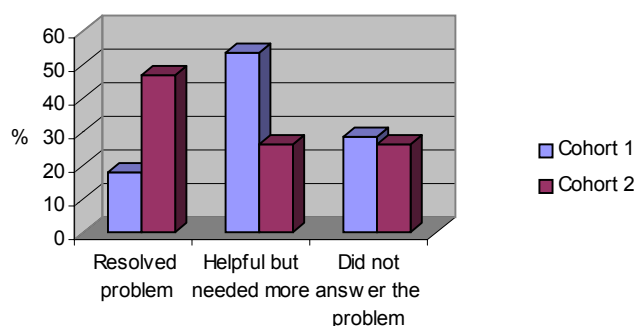
In order to assess students' experiences of the interactivity that online learning resources afford and the support provided by both tutors and learning centre staff, they were asked about their contact with their tutor, contact with other students and contact with the local learning centre.

5.9.1 Contact with tutors

Students reported that they contacted the tutors on a one to one basis once or twice a week (82%) with 8% saying they never contacted the tutor and 3% claiming they made contact five or more times per week. The pattern of contact was the same for both cohorts. Sixty eight percent of these contacts were by email, 23% by phone and 9% through the Local learning Centre. Again there was no significant difference between cohorts 1 and 2, but cohort 2 were more likely to use the phone than the LLC as a means of contact than cohort 1 was. (This reflects informal feedback from cohort 1 that students needed to have a contact phone number for their tutors as well as email addresses to enable them to make contact when email was not available.)

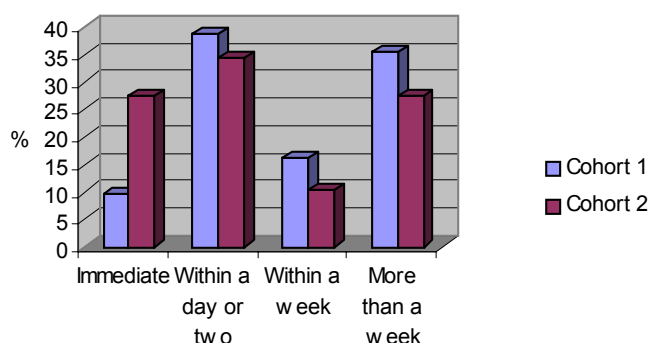
The commonest reason for contacting the tutor was about the course content (46%) although 30% of queries were about technical issues and 19% were about course administration. There was no difference between the two cohorts in the reasons they gave for contacting the tutor. When they were asked about whether the tutor's response resolved the issue there was a significant difference between the cohorts, with cohort 2 being far more likely to say that the tutor's response resolved the problem. Diagram 5. 14 shows the comparison.

Diagram 5. 14: Usefulness of tutors' responses to student queries



Another indicator of tutor responsiveness was the time taken to respond to a student query, which also showed a change between cohorts 1 and 2, although not statistically significant. As Diagram 5. 15 shows the speed of tutors' responses improved between cohorts one and two with a much greater proportion of queries being answered immediately or within 2 days. However the fact that over a quarter of queries went unanswered for a more than a week even in cohort 2 suggests that there are still issues of tutor responsiveness which need to be addressed.

Diagram 5. 15: Speed of tutor response to student query



The improvements in tutors' responses possibly reflects the feedback from students in cohort one to both LINC co-ordinators and Local Learning Centre staff about their need for more information and quicker responses from staff. The fact that 26% of students had to wait more than a week for a response, even in cohort two, shows that a further improvement in response times is desirable.

A higher level of interaction with tutors was one of the most frequently recommended improvements suggested by the students, many of whom felt rather frustrated by the delays in getting answers to their queries. Modern technology can create an expectation of instant service, which needs to be tempered with clear guidelines to students about when staff will be available and how quickly they should expect responses. In order to implement agreements on tutor availability, and other aspects of student support, the tutors themselves must have ready access to computers in their workplace so that they can respond to students and tutor online effectively.

5.10 Contact with other students

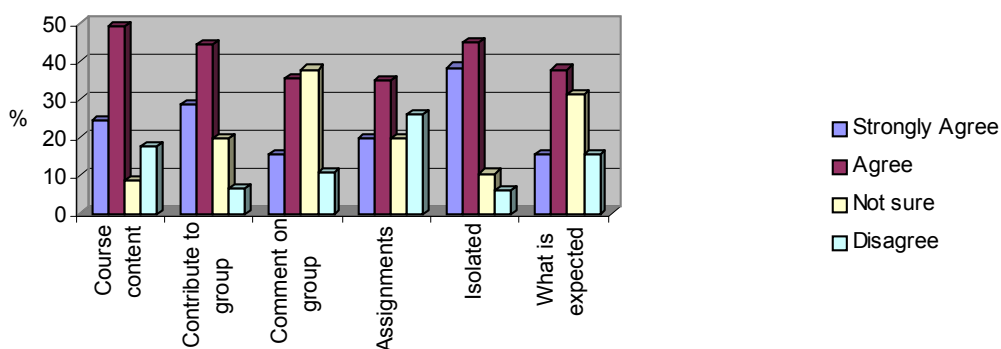
The feedback from students also indicated a clear desire for a higher level of interaction with other students online. While the materials themselves provided activities for learning, the students felt that opportunities for group work, discussion and collaboration could be enhanced. There was a certain amount of interaction between students and several modules did make use of discussion facilities. The pattern of this interaction shows that 29% of the contacts between students were informal (outwith the module activities), that 25% were email contact outwith the discussion groups and 46% were through group discussions using the Learning Environment. Of this last group 32% of these discussions were initiated and led by the tutor, 14% were initiated by the tutor and led by the students. The first cohort of students were more likely to take part in informal discussions or discussions outwith the learning environment than the second group, but not significantly so.

In order to find out how useful students thought the group activities were, they were asked to state the extent to which they agreed with the following statements:

- They help you develop and improve your understanding of the course content
- They help your ability to contribute to group discussions
- They help to develop your ability to comment on the contributions of other people
- They help with your assignments
- They help by making you feel less isolated
- They make clear what is expected of you

The results are shown in Diagram 5. 16.

Diagram 5. 16: Attitudes to usefulness of group activities



The three aspects of group activities that students found most helpful were: they made them feel less isolated; they improved understanding of course content and they helped to develop abilities in contributing to group work. The perception of the usefulness of the activities for assignments was less clear (this is affected by both the nature of the activities and the assignments). Students were also less sure about the role of group activities in helping them comment on each others' work. As the last is an important skill for online collaboration it may be worth considering this more explicitly in course design.

5.10.1 Contact with the Local Learning Centre

The use of local learning centres was only one way students could access the learning materials. It was also possible to work from home or from their place of employment. However the learning centres have been a pivotal part of the LINC project, and this is reflected in the fact that 53% of the students who took part in the evaluation had used the learning centres on a regular basis (once to twice per week). Twenty two percent of students did not use the learning centres and others used them occasionally.

In addition to using the centres to get access to the learning materials the learning centre staff were contacted with queries about course administration, course content, IT and technical issues as well as access to the centres themselves. With improvements in course information between cohort 1 and 2, fewer students in the second group needed to contact the learning centre about course content queries than was the case with the first group, otherwise the pattern of queries was similar for both groups. Technical queries were the commonest type of query. Where the learning centre staff had good technical skills themselves this was not a problem, but it does suggest a need to examine other means of providing technical support as not all learning centre staff were comfortable dealing with technical issues.

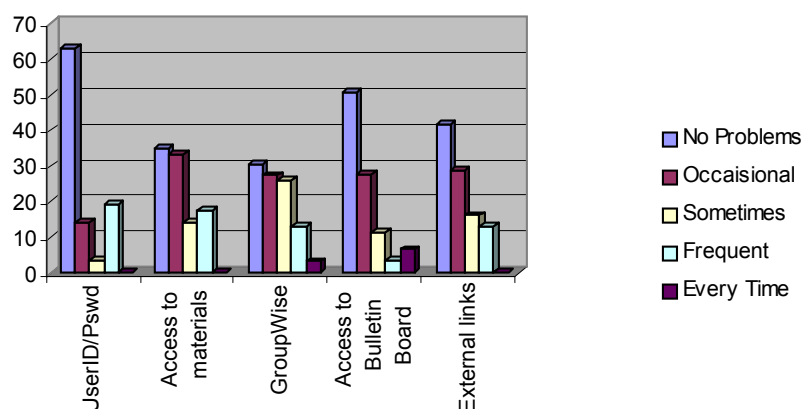
5.11 Technical Issues and Learning Environments

The LINC project provided UHI with the first opportunity to test online materials for a large group of students and this test enabled an examination of the technical support and two different Virtual Learning Environments (VLEs). Given the short time period for implementing the project technical difficulties were, to some extent, anticipated. Students were asked about their experiences carrying out the following activities:

- Using their username and password
- Access to the module materials
- Access GroupWise email
- Access to the bulletin board
- Access to external links from the course materials

Diagram 5. 17 shows frequency of, and the types of technical difficulties faced by students.

Diagram 5. 17: Technical problems experienced by students



Statistically there was no significant difference in the experiences of students in cohort 1 and cohort 2, although cohort 2 did report fewer technical problems. Use of user ID and password was the most reliable of these five activities, and what difficulties students in cohort 1 experienced were rectified for cohort 2. Cohort 1 did experience problems with GroupWise

but again these had been rectified by the time the second cohort started. Issues with GroupWise had affected the whole of UHI during semester 1 in 2000. The exception was the use of the bulletin board which was reported to be slightly more difficult for cohort 2 students which tended to result in low usage of that facility.

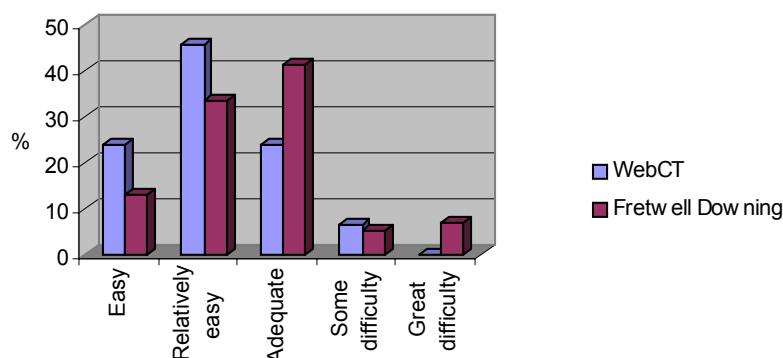
The overall improvement of technical services for the online students reflects the professionalism and responsiveness of those providing technical support.

5.11.1 Comparison of two Virtual Learning Environments (VLEs): WebCT and Fretwell Downing LE

Students were assigned to one of two learning environments according to which module they were studying; all the business studies modules were in Fretwell Downing LE, the rest in WebCT. Section 3.6 outlines the two environments and examines their robustness from a technical point of view; this section reports on the student experience of these two VLEs.

The students' experiences navigating through the VLEs (comparison of the same four tasks reported in section 5.4) and the technical problems reported were compared by VLE. Combined results for all tasks are given in Diagram 5. 18.

Diagram 5. 18: Comparative ease of navigation in two Learning Environments



The diagram illustrates a distinct difference between the two learning environments. It was significantly (0.01 level) easier for students to use WebCT than Fretwell Downing across all four navigation tasks.

The tasks investigated were to:

- Move from a web page to a link within the learning environment (Task 1)
- Move from a web page within the learning environment to an external link and back (Task 2)
- Move from a web page to e-mail and back (Task 3)
- Move from a web page to the bulletin board and back (Task 4)

When asked about these specific tasks within the learning environments, only when moving from a web page to a link within the environment (Task 1) did as many as half the Fretwell Downing find the operation easy or relatively easy. For all other operations less than half reported finding it easy and Fretwell Downing students were more likely to report difficulties. In comparison, two thirds of the WebCT students found all operations easy or relatively easy. In particular Tasks 2 and 4 were significantly more difficult for the Fretwell Downing students. The manufacturers of Fretwell Downing have intimated that these findings reflect the

experience of other users and that their decision not to include communications tools in their VLE has created difficulties for users¹⁸.

There was also an overall significant difference in the number of technical problems reported by the two groups, the Fretwell Downing group experiencing significantly more difficulties. When the technical problems are compared by cohort an interesting pattern emerges, the WebCT group show no difference between cohort 1 and 2, but there is a big (and statistically significant at 0.01) difference for the Fretwell Downing group.

Just to check that these problems didn't arise from difference in the students themselves they were compared for qualifications and their reported IT confidence. Interestingly the Fretwell Downing group were better qualified (although not quite statistically significant) and were significantly more confident on the range of 8 IT tasks discussed in section 5.2. In summary, the experience of the two environments is that the more confident and better-qualified students experienced more technical problems and reported the Fretwell Downing VLE significantly more difficult to use than WebCT.

5.12 Comments on module completion

The final section of the questionnaire asked some open-ended questions in order to let students give their views more freely and more reflectively. They were asked to list the three most important things they had learned from studying these online modules, whether or not the experience had lived up to their expectations and what advice they would give to improve the module for future students. In addition they were given the opportunity to make any other comments and they were asked whether, with hindsight, they would study again.

5.12.1 The most important things learnt

The most important things learnt from studying the modules grouped into five main areas (in order of frequency):

- Subject related
- Learning skills
- Personal skills
- Employment related
- Advice for UHI

Many of the students commented on the opportunity to learn a new subject and to acquire subject specific skills. Computing and accounting skills were the ones most frequently commented on, which reflects the large percentage of responses from people studying these subjects. In addition several people commented on the opportunity to improve their Internet skills. Improvements in learning skills were the next most frequently mentioned benefit of studying. These included the value of the experience as a 'back to study' route, improvements in specific skills such as planning, time management, completion of assignments and use of tutor feedback. Several of the respondents commented on the value of online distance learning for their own circumstances. Others felt more confident to continue learning and more informed about local learning opportunities. The improvement in learning skills also affected personal skills/development with several people reporting improved confidence as a result of completing the modules, as well as developing skills in computer mediated communication (CMC) and time management.

Feedback on the relation of the modules to employment was mixed. Several people commented on the difficulty of combining work and study, particularly in the tight timescale of one semester. Others found the study material relevant for their jobs or prospective job opportunities although one person commented that the material was not really suitable to SMEs as all the examples were from large companies. Several respondents commented on the administrative lessons for online learning. These included the need to have resources in

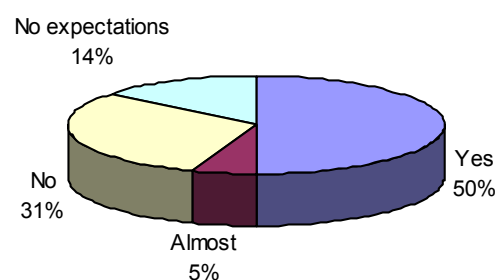
¹⁸ Personal communication from a senior member of staff at Fretwell Downing, September 2001

place at the start of the programme, the need for clear timetabling, both for assessments and as a study guide, implications for the design of online learning and the need for an active tutor.

5.12.2 Did the module live up to expectations?

The overall pattern of responses to this question is given in Diagram 5. 19.

Diagram 5. 19: Did the module live up to expectations



While fifty percent of respondents felt that the experience of studying online had lived up to their expectations (and another 5% felt it almost had) there is a large minority who thought the experience could have been improved. Interestingly 14% of respondents did not have any clear expectations and therefore did not feel able to answer the question. Those who felt that the experience had lived up to expectations commented on the variety in the course materials and the wide range of examples and, in some cases, good tutor support. Those who were disappointed with the experience highlighted the lack of tutor contact/feedback, lack of contact with other students, mistakes in the content, inappropriateness for their own needs and inability to access the materials from home. The final two points, although clearly disappointing to the individuals concerned, are not specific to the LINC modules. The course teams and the validation process for the degree programme determined the module content and this cannot be redesigned for individuals. The ability to use a home computer to access the materials depended on having a computer with the appropriate specification; students who tried to access the learning resources with lower specification machines did experience problems.

The issue about lack of tutor contact arose in response to several questions (discussed above) and is clearly an important one for the success of any future UHI online learning. There is a need to ensure that both staff and students have a realistic expectation of the level of support for online learning, which provides equity of support for remote learners in comparison with face-to-face learners. There is increasing evidence that online tutoring is very time expensive for tutors and that, at least initially, some students often have unrealistic expectations of the level of support they will receive (Mason & Wheeler 2000, Taylor et al ibid). The LINC project did not really address the issue of the amount of time tutors would devote to their online students, although a 'working estimate' of 3 hours per week for a group of up to 20 students was used by one college. The student feedback indicates that this was not always sufficient.

5.12.3 What changes would you recommend?

The recommendations made by students can be grouped into three areas (the numbers in brackets indicate the percentage of respondents commenting on this topic):

- Interaction (47%)
- Course administration (30%)
- Quality issues (23%)

Pleas for more interaction were the most frequent recommendations made by students. These included more and faster contact with the tutors, more and faster feedback on assignments and more student to student interaction, with the first two points being overwhelmingly the most popular.

A variety of issues arose from course administration, the key ones (in order of frequency) were:

- Clearer information about the course structure and assignments/assessment
- Better timetabling from the start of the module
- Easily downloadable versions of the course material (CD ROM or HTML)
- Rectify the IT problems
- Make printed versions of the materials available
- Use of a standard text book

The first two requests are readily achievable and important in ensuring that students have a clear understanding of the programme of study. Some thought should be given to the third request to enable students to control the cost of online access, particularly when they have to focus on content rather than interactivity. The availability of downloadable materials would also help students when the UHI network is not available. The final request depends on the individual module. Some tutors did choose to develop online 'wrap around' materials for a standard text while others developed their own content from scratch because a single suitable text wasn't available.

There was considerable variety in the quality issues raised, including:

- Correct all the errors in the content materials
- Ensure that all the learning outcomes are covered by the content
- Test to make sure that all external links are still extant
- Give students a clear path through the materials
- Arrange the assessment schedule to ensure that there is time to learn from feedback before the next assignment
- Put in place clearer student support mechanisms
- Develop more examples that are relevant to SMEs

These recommendations are all valid and constructive points and acting on them will only benefit UHI's online resources and reputation. The penultimate recommendation was recognised early, some steps were taken to improve student support between cohorts 1 and 2 and the recommendation was included in the interim evaluation.

5.12.4 Other comments

An open-ended section for other comments was included in the questionnaire which 67% of respondents used to give additional information. This feedback can be divided into seven main areas:

- Tutor contact and support
- Student discussion groups
- Technical problems
- Online learning issues
- Course design
- Course administration
- Personal development

The feedback suggests that students recognised the importance of tutor contact and support, ranging from the value of good e-tutoring to issues about tutor presence online and the need for feedback on assignments. Tutor presence online is critical to the success of this mode of study and whilst well written course content can start to create a tutor presence, there is a need for active tutors to support the students as they work online. Tutor support starts with welcoming students to the online environment and providing opportunities for the group to get to know each other and work together in their virtual study group. Good e-moderating then builds on structured and moderated discussion to group work and knowledge construction

online (Salmon 2000). These activities need to be designed into the course materials and online tutoring activities - simply giving people the potential to discuss issues online will not automatically create a valuable discussion. Successful online discussions and other forms of interactivity need to be part of both the design of materials and the active tutoring. Online tutoring is not a cheap option (Bonk 2001, Bacish 2001), but without it we risk alienating, and ultimately losing, our students. As an institution UHI needs to ensure that tutors are given adequate time to carry out the e-moderating role effectively and adequate guidance on their role as e-tutors.

An essential aspect of the tutor support through the programme is marking and giving feedback to students. In distance learning this can be one of the main contact points between tutors and students and must give the distance student sufficient feedback to enable them to identify their strengths and weaknesses and therefore help them improve their work for the next assignment (Rowntree 1990). Feedback from the LINC students suggests that a proportion of assignments were not marked and returned within a realistic and useful timescale, and some students therefore claimed they were unable to benefit from their tutor's comments before they had to submit the next assignment or take a final exam. An institutional solution would be an agreed quality standard for the return of marked scripts, which would cover both the timescale and give indicative guidance on the type of feedback tutors should consider. This is common practice in other institutions that have a large distance learning operation. In addition assessment schedules need to ensure that there is a realistic amount of time for marking and feedback on assignments before the next assessment.

Several respondents felt that more could have been done to develop the student discussions making them more focused and easier to navigate. These are skills that UHI needs to develop in both tutors and students to enable them to be effective e-communicators. Once the tutors feel confident in moderating conference discussions they can encourage students to take greater responsibility for contributing to and moderating the groups themselves. Greater proactive learning by students is the only realistic way that the connectivity afforded by online learning can be exploited to develop active learning communities.

A robust technical infrastructure is a pre-requisite for successful e-learning. Unfortunately several technical issues outwith the control of the LINC team did impact badly on the LINC students, particularly during cohort 1, although this did improve for cohort 2. Server downtime has a knock on effect for part-time learners who have to fit studying around work and family commitments and several students commented that they did not have time to complete the modules because of time lost when the system was down. Those people using the Fretwell Downing Learning Environment had a more complex technical infrastructure because of that company's decision not to integrate email and discussion facilities into their VLE and this meant that some were unable to take part in the online discussions that were taking place. Some students found the range of communications systems confusing and web access to UHI's email system, GroupWise, very unreliable. (Steps have been taken since January 2001 to improve the reliability of GroupWise.)

The issues raised on course design suggested that students would appreciate being given clear logical paths through the materials and guidance on assignment marking schemes. Some commented on errors found in the materials and that external links were no longer working, which reflects the module developers' concern that they be given time to check and update materials. One of the benefits of using web-based learning resources is the ease of modifying and updating materials, but time to do that must be built into a writer/tutor's work schedule. Given the dynamic nature of the web all external links do need to be checked regularly.

As part of the course administration details about required textbooks, assignment and exam timetables should be made available from the start of the course, along with an indicative timetable for progress through the materials. Learning materials must be made available on time in order to allow students to manage their time effectively. There was some incompatibility between allowing students to work at their own pace and ensuring that a cohort work through the materials at a similar pace in order to complete group activities.

These tensions can be alleviated by using a time guide to help students see what is expected of them each week, but this must be flexible enough to allow someone to work 2-3 weeks ahead of or behind the schedule in order to fit with other commitments. Allowing students to start late, which happened in cohort 1, was not helpful either for the students or the tutors. Statistical evidence from other organisations indicates that late entrants are often early leavers. Several students did say that they would have appreciated more information on how to progress with their online learning careers. Finally, thought needs to be given to supporting the learning centres with library materials required for the modules as inter-library loans were both slow and costly.

There were some interesting issues raised about the nature of online learning itself including this quote from one learner:

'This type of learning opportunity is exactly what we need for people living in very rural communities. Face to face learning is great, if we can get it. More realistically though it's likely to be distance or on-line - with hopefully tutorial support within reach. This type of opportunity is vital if we are to provide rural communities with learning opportunities thus giving them better job prospects, or the ability to manage their own businesses. If everyone could study, near enough, the same type of subjects in the country as those living in the city, this would hopefully encourage people to seek work in the country, and prevent young people having to leave their communities to seek work and a decent wage.'

Others found the flexibility the modules offered them fitted well into their own schedules. However some would have appreciated more guidance on how to learn online to avoid getting 'deeper and deeper' into links on the web and spending vast amounts of time on non-module materials. Enabling people to work through the materials 'off-line' would decrease connectivity costs and help to avoid frustration when the technical infrastructure isn't available. There was a plea from one student for more informative feedback to the online quizzes to enable the learner to understand why an answer was incorrect.

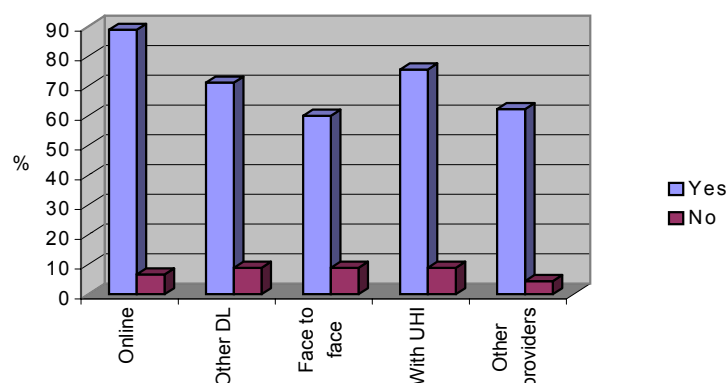
The personal comments ranged from finding the online learning experience very positive to very frustrating with several people commenting that they felt they had gained from the opportunity and were looking for more online courses. Even the frustrations were not always negative as the following quote suggests:

'After initial misgivings and a serious thought of withdrawing from the course, I continued and now I am glad that I did. The whole experience had been beneficial and I am glad that I was given the opportunity.'

Overall there was a feeling that the idea behind the LINC project was good, but the implementation needs to be modified for future students.

5.12.5 Plans for further study

Students were asked whether they would study further modules online, by other distance learning modes or through face to face classes and whether they would study again with UHI or with other course providers. Sixty three percent of the sample answered this question, of whom 98% said they would study further, only 1 person said they would not consider doing further study. The pattern of responses to the options can be seen in Diagram 5. 20 (shown as a percentage of those who answered the question).

Diagram 5. 20: Plans for further study

Of the respondents 36% would consider using all the modes of study and providers listed in future, 62% would consider one or more of the options but not all. Of this last group three people would not want to study in conventional face to face classes, three would not want to study online again (three others did not choose online but did not reject it) and three would not want to study with UHI again. Among those who answered this question there was an overwhelming support for further learning and considerable support for online learning and a strong potential market for UHI's future modules.

5.13 Reasons for withdrawing from the module

Of the sample who returned their questionnaires 19 had withdrawn from the modules, giving a 26% drop out rate amongst this group. The decision to withdraw from a course of study can be complex and is often influenced by a variety of factors. The respondents were asked to indicate their reasons for leaving from a list and to indicate any additional reasons. The pattern of responses is given in Table 5. 8, which shows the percentage of leavers selecting each reason (the total adds up to more than 100% as each person could select more than one reason).

Table 5. 8: Reasons for withdrawing from the module

Reason for withdrawing	%
Personal life - not enough time	42
Isolated from tutor and students	32
Work - not enough time	26
Problems contacting tutor	26
Course too difficult	16
Lack of access to computer	16
Not enough IT skills	16
Course too easy	11
Problems contacting LLC staff	5
Lack of access to LLC	0

In addition students also mentioned the following factors which influenced their decision (in order of frequency):

- Disliked the course materials
- Lack of support/contact/feedback from tutor
- Lack of interaction with others
- Course material not available on time
- Materials difficult to access and not downloadable
- Problems accessing from home
- Technical difficulties
- Very late issue of userID and password

Some of the reasons for leaving cited above, particularly time demands, are common reasons for students to leave part time study of any mode and reflect conditions in the students' lives which the learning provider has no control over. Guidance before someone enrolls on a module may help but conditions can and do change during the course of study. Reasons such as being isolated from tutor and student and problems contacting tutor are issues that UHI could tackle directly through agreement about the tutor support available online and designing learning materials to make use of the interactivity that online learning affords. These feelings affected 32% and 26% of leavers respectively, a significant proportion of the total leavers, and people who may have completed their studies had the interactivity and support been there. Issues such as lack of access to computers, the course being too easy or too difficult should be addressed through a pre-enrolment interview. The lack of appropriate IT skills could be identified with a diagnostic test and personalised training in the relevant skills, perhaps by using parts of the ECDL programme. Again this depends on appropriate pre-course guidance being given in time to acquire the IT skills.

What is very clear from the comments of those who withdrew is that the lack of interactivity was a factor in losing students. This is something that UHI must address in future work if it seriously intends to build on the experiences of LINC in terms of online learning opportunities.

5.14 Summary of lessons learnt

The LINC students have provided very valuable insights into online learning that UHI can use in future developments. These are summarised here under the following headings:

- Potential for online development
- Design of resources: Quality
- Design of resources: Pedagogy
- Online tutoring
- Technical Issues
- Staffing
- Administrative issues

5.14.1 Potential for online development

This evaluation has not sought to carry out a market survey, but the feedback from students indicates that these online opportunities appealed to a wide audience, including access students (ie those without entry qualifications for degree level modules) and CPD students. There was uptake across a wide age spectrum of people looking for both work-related study and personal development. Given the positive feedback on further study online from these students, a formal investigation of the potential demand for part time study of degree modules for CDP amongst those who already have degrees may be worthwhile. Similarly there could be consideration of online access courses for those who would be interested in taking a formal qualification.

5.14.2 Design of resources: Quality

There was positive feedback about the clarity of the materials overall, although several issues do need to be addressed, some of which correspond to issues raised by others in the evaluation and appeared in the interim report. Key issues are to:

- Establish quality standards for online resources covering both resource production and online student support from tutors.
- Establish a 'housestyle' and publication process, which will provide editorial advice to writers and ensure that materials are proof read and tested for functionality.
- Set up a robust process for evaluating new online resources using both peer evaluators and externals. (To work effectively there must be sufficient time for the evaluation process and any subsequent modifications of the materials.)
- Agree a set of common resources for all students covering: course documentation, student induction, online help, assessment and examinations process, and student support.

5.14.3 Design of resources: Pedagogy

Again there was some positive feedback about the design of the learning resources from a pedagogic viewpoint, particularly on the design of activities. Student feedback indicated that the following issues should be addressed:

- Design materials for interactivity; students were very keen to make use of the connectivity online learning affords and would benefit from a range of different interactive activities being designed into the modules and used at regular intervals during the module.
- Create well thought-out feedback for activities, which gives more than the basic, 'right / wrong' answers to quizzes and other activities. There is a need to give students developmental feedback for non-assessed formative activities.
- Design for transferable skills development, as these are an essential component of UHI degree modules.
- Consider using a wider range of assessment types, including online assessment where appropriate, and within quality standards.

5.14.4 Online tutoring

- There were some very good examples of online tutoring during the project
- Tutors need to create a presence online through regular and reasonably frequent posting to discussion groups and online activities
- There needs to be clarity about how often a tutor is online so that students have a realistic expectation of how quickly queries will be answered.
- Agreement is needed on acceptable 'turnaround' times for student queries and feedback on assessments. This should also be part of the quality assurance process.
- Prompt feedback from tutors is essential for a quality learning experience.

5.14.5 Technical Issues

- Some students would have welcomed a 'downloadable' version of the online resources, which would have enabled them to continue studying when connectivity was lost.
- Online help resources and a telephone help desk would be welcome.
- The robustness of the technical systems did improve over the project, although there were some unresolved issues with the Fretwell Downing LE.

5.14.6 Staffing

- Agreement is needed within the Academic Partners and across the UHI network on the amount of time staff need to tutor online and on the provision of the resources they need to support their students effectively.
- There is a need for more staff development in online tutoring.

5.14.7 Administration

- Student IDs and passwords must be ready in time for student induction process, which has an implication for enrolment.
- Many of the students who started late did not complete the modules.
- Arrangements for assessment and exams should be in place at the start of the module.
- Students should be made aware of the college support facilities they can call on in addition to their online support.

These findings are complemented to some extent by those in the next section, the experiences of employers involved in the LINC project.

Section 6 Feedback from Employers

6.1 Introduction

The involvement of Small and Medium-sized Enterprises (SMEs) was critical to the success of the LINC project therefore it was essential that the evaluation considered their experiences and views of the project and the online learning that was offered. At the end of semesters one and two, questionnaires were sent to the employers whose staff had been students on the LINC modules (see appendix 5). The purpose of these questionnaires was to:

- Develop a brief profile of the employers
- Identify their current uses of IT
- Find out how they had learnt about the project
- Identify the modules which their employees had studied and why
- Assess their attitudes to LINC
- Collect feedback on the modules on offer
- Identify other topics for future online delivery

6.2 Profile of employers

A total of 21 employees responded out of a total of 59 who were contacted, a response rate of 36%. The range of business types these represented is given in Table 6. 1

Table 6. 1: Economic activities of employers

Economic Activity	Number
Construction/Engineering	2
Careers Guidance	1
Charity	1
Conference Centre	1
Fishing related	2
Financial/economic services	3
LLC/Telecottage/Community centre	2
Personal Care	1
Pharmaceuticals	1
Publishing	1
Retail	1
Tourism related	1
Veterinary	4

The location pattern of the respondents is given in Table 6. 2

Table 6. 2: Location of employers

Location	Number
Dingwall	3
Inverness	5
Isle of Lewis	3
Newtonmore	1
Skye	1
Shetland	8
Ullapool	1

In size the businesses ranged from micro businesses with one or two employees to organisations with almost 140 employees. The sizes of organisations, by number of employees can be seen in Table 6. 3.

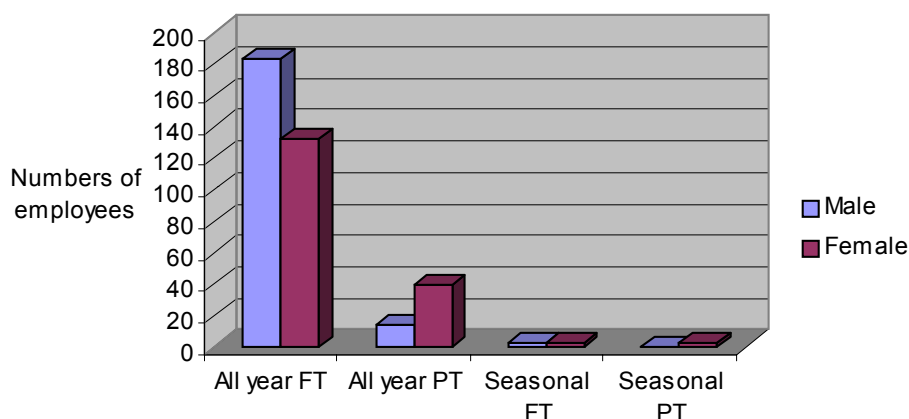
Table 6. 3: Size of businesses (by number of employees)

	1 – 10	11 – 25	26 – 50	51 – 100	101 – 250
Number of SMEs	11	6	2	1	1

The table shows that the majority of employers were very small. More than half of the businesses employed fewer than ten people, with further six employing up to 25 people.

In total this group of businesses employed 377 people (201 males and 176 females). Forty-four of these employees took part in the LINC project. The majority of employees were employed full-time year-round. Although seasonal workers were eligible for inclusion in the project, in practice very few of these employers had seasonal workers. The pattern of employment between full- and part-time, female and male, and year-round and seasonal can be seen in Diagram 6. 1. The numbers of seasonal workers are too small to comment on. The distribution of full- and part-time employment shows a statistically significant gender difference. A greater proportion of the part-time employees are female, while conversely women make up a smaller proportion of the full-time employees.

Diagram 6. 1: Employment patterns



6.3 Uses of Information Technology

In order to build up a picture of the level of IT and internet use in the workplace, a series of questions relating to IT training and use was included in the questionnaire. The reason for exploring this issue is that beneficiaries with some level of previous IT skills were more likely to benefit from online learning opportunities and that organisations which invest in IT equipment and training might be more interested in online learning in the future. The profile which emerged relating to internet access showed that 85% of employers had internet access and 80% had their own websites. The most common uses of the internet identified by employers were:

- Information gathering
- Email
- Banking
- Research

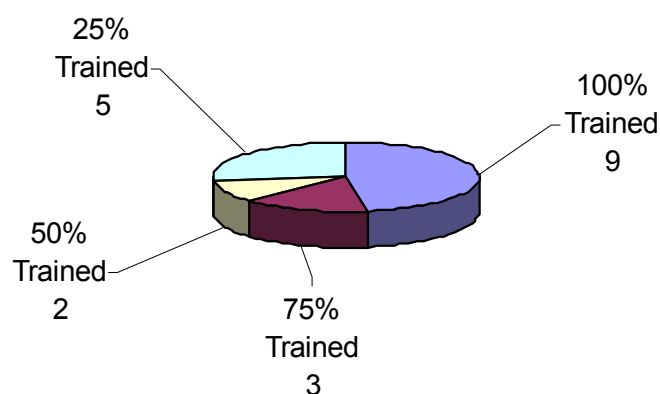
- Administration

Individual respondents also reported using the internet for training purposes, IT problem solving and accessing the company website.

Only one company which had internet access did not have its own website. The major purpose of a company website was the provision of information to customers and advertising (15 respondents). Three companies used their website for processing online booking / sales. One organisation had three websites, two for promotion and one for bookings.

Given the widespread use of the internet by the businesses, it was not surprising to find that all businesses had at least 25% of their staff trained in IT use. The extent of IT training can be seen in Diagram 6. 2. Each section shows the number of SMEs reporting a particular % of staff trained in IT use.

Diagram 6. 2: IT Training



The pattern of IT training did not show any clear relationship to the size of the business. Clearly, IT use is an important aspect of these businesses, and it is important to have staff trained in such skills, irrespective of the nature of the business.

The methods used for training employees in IT were (number of companies in brackets):

- Courses away from work (10)
- Courses or course materials used at work (5)
- Online courses (3)
- Informal training by other members of staff (1)
- In-house training by external trainers (1)

Although some organisations have already started to use online training for their workforce, the most common method of IT training is to send staff on an external training course. While an organisation may lose the employee for the length of the training programme, being away from work does ensure that the employee can concentrate on the training without being interrupted by work issues. For small employers, however, online training can offer a more flexible solution. Like other in-house training methods, it allows the staff member to remain in the business while undergoing training.

When asked about the barriers to training, the most frequently mentioned were *expense* and *lack of resources* (10 and 9 respectively) with three people adding that *time* was a significant barrier to staff training.

Businesses used IT for a range of different activities as can be seen from Table 6. 4.

Table 6. 4: Uses of IT in the workplace

Uses of IT	Number of employers
Word processing	17
Management Information Systems	15
Financial Packages	15
Purchasing/Invoicing	12
Bookings	9

In addition, specific SMEs used IT for training, client records, databases, graphics, GIS (geographical information systems), staff location and internet access.

In summary, it appears that the businesses participating in LINC demonstrated a high degree of IT and internet use, and a high level of staff training in such skills. It follows then, that such businesses may make good use of online learning opportunities.

6.4 Modules

The range of modules that employees studied is shown in Table 6. 5. A total of 44 employees took part in these modules.

Table 6. 5: Module choices by employers

Module	Employers
Accounts	1
Applications of IT	12
Child Development	1
Economics	0
Health and Society	0
Managing People	1
Marketing	5
Organisational Behaviour	2
Problem Solving	2
Rural Development	0
Small Businesses	0
Tourism	1

Applications of IT was by far the most popular module among this group of employers. This is perhaps not surprising in view of the high level of interest in IT by the businesses that employed them. It was noted that five businesses who reported that 100% of their staff had received IT training had staff who undertook this module. It may be that this module was perceived as offering an advanced level of IT training. Of those businesses who did not have any employees studying *Applications of IT* four had 100% staff IT trained and two had 75% IT trained.

The reasons for choosing the particular module(s) were as follows:

- Immediate relevance / met specific needs (8)
- Relevant for future developments (2)
- To improve the use of IT in the workplace (3)
- Employee's own choice (4)
- To gain more knowledge on a specific topic (2)
- It was what was available (1)

The benefits the employees hoped that participating in LINC would bring included:

- Personal value for employee (including improved confidence, motivation, satisfaction, knowledge, willingness to undertake more learning) (16)
- To improve use of computers / understanding of IT (8)
- To develop skills / knowledge / understanding that would benefit the company (5)
- To improve efficiency / customer service (4)
- To assist in marketing (4)
- To develop experience of online learning (2)
- To provide a qualification (1)

These benefits fall into two broad groups: personal development and improved workplace performance. The responses of the employers indicate that they perceive a significant value in investing in people as part of the business development process (16). Twenty-one of the benefits hoped for are related to improvements in workplace performance.

When asked if they thought their employees had gained these benefits 7 of the employers thought they had, 9 thought that they had gained some of the benefits and 3 did not think they had achieved any of the hoped for benefits. Several respondents commented that their employees were now using their improved IT skills in the workplace, and were showing greater self confidence. Those who felt they had not benefited from LINC cited technical difficulties and poor student support (both academic and pastoral) as the main failings. Those who thought they had experienced some benefits also cited technical problems and slow tutor support as important issues. In addition they also mentioned difficulties in fitting the required study time into working hours

6.5 Attitudes to LINC

Employers were also asked about their own attitudes to the LINC project. These included the use of Local Learning Centres, the appropriateness of the modules on offer, online learning and the relevance of the modules for the local community. The details of the responses are given in Table 6. 6.

Overall, the attitudes of employers to the LINC project were highly favourable, with over two thirds agreeing or strongly agreeing with the statements and just over 5% expressing disagreement. The positive responses indicated that:

- There was a high level of awareness of the modules offered by the project, implying that for this group at least the marketing of the project had been successful.
- Offering modules locally through the Local Learning Centres, or through the workplace, was seen as a positive way to increase the uptake of the modules and to stimulate the demand for more online learning.
- LINC modules were seen as a good way of improving the skills base and encouraging people into higher education.

Those areas where employers were less enthusiastic in their responses included:

- The relevance of the modules to local people and local employers.
- The extent to which the modules complemented employer training
- The relevance of the modules for the company's own business plan

However, even regarding these issues almost half of the respondents were positive about the impact the Adapt modules have had.

Table 6. 6: Employers' attitudes to the LINC project

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
1. I am aware of the range of modules being offered through the LINC project to Local Learning Centres	1	1	3	10	6	
2. I feel that the range of modules offered is relevant to local people	1		7	9	2	2
3. I feel that the range of modules offered is relevant to local employers	1		5	11	2	1
4. The LINC modules complement other training opportunities that my company uses			9	9	2	
5. The LINC modules offer a good route for existing learners to higher levels of study		1	6	11	3	
6. I feel the LINC modules are a good way of improving the skills base of SME employees		2	4	13	2	
7. I feel that offering the LINC modules locally will result in a greater level of take up		1	3	13	4	
8. I feel that offering the LINC modules locally will stimulate demand of more online learning		1	4	9	6	1
9. Participation in the LINC project allows my company to develop in line with our proposed business plan		1	7	8	4	

6.6 Future online developments

In order to identify demand for additional online courses employers were asked what subjects they would like to see developed for online delivery, both for the local labour market in general and for their own companies in particular. Only about 25% of the sample answered these questions so it is not possible to generalise from these suggestions. The topics that were identified for the local labour market were:

- Computing for small businesses
- Use of excel, accounting and personnel software
- Web design

The subjects which were identified for their own companies included:

- Computing for small businesses
- Web design
- Accounting
- Communications skills
- Evaluating and reflecting on own work

6.7 General Discussion of LINC experiences

The concluding comments from employers echoed some of those made above. Three main themes emerged:

- The potential of online learning for communities in the Highlands and Islands
- The need for UHI to have all the student support systems in place before the online learning begins, this includes technical, academic and pastoral support
- The challenges to making time for learning when online learning is accessed via the workplace – this issue is one that can only be addressed by the SMEs themselves

The feedback gathered from employers in this part of the evaluation echoes many of the comments made and issues raised by both students and staff in previous sections. Essentially, there are certain critical issues that have been highlighted by the LINC project which must be addressed by UHI if online learning is to be offered on a larger scale and to a wider audience. The most important of these are:

- Student Support Infrastructure; which requires staff time to be allocated for the provision of effective academic support online, technical support systems including online and telephone help systems, and pastoral support through LLC staff and / or student advisers
- Virtual Learning Environment: online learners need a robust technical system with realistic alternative forms of access when there is unavoidable down time. The use of a learning environment, which did not have an integral email and discussion forum, created additional problems for LINC students and employers
- Potential for Online Learning: There is tremendous potential in online learning and the use of degree modules as part of Continuing Professional Development if these are marketed well and supported with an appropriate infrastructure

The employers who took part in this survey showed they were willing to invest in the development of their employees. It might be worth considering a wider market research survey covering the business community in the Highlands and Islands to investigate the potential for online learning at Higher Education level, at CPD level and possibly as part of an investigation of wider access to HE through part time study.

Section 7 Summary and conclusions

7.1 Introduction

The LINC project was an ambitious and complex project, which operated under very tight timescales. The achievements of, and the lessons learned from, the project will be invaluable to UHI in its ongoing development of networked online degree provision and are relevant to other institutions seeking to make similar provision. Section 1 listed the key questions for the evaluation of LINC, these questions form the basis of this final section. The issues addressed are:

1. Were the objectives of the programme met?
2. To what extent did the LINC project meet the expectations and requirements of stakeholders?
3. To what extent did the learning centres meet the expectations of stakeholders?
4. What are the lessons for developing online resources?
5. What was the student experience of using online resources?
6. How effective was the support for learners?
7. What was the experience of staff tutoring online?
8. What were the differences (if any) between the two learning environments?
9. What systems must be put in place to support networked degrees?
10. What are the lessons for future developments?

7.2 Were the objectives of the programme met?

The eight original objectives of the LINC project are listed in full in Section 1 and included:

1. Establishing community learning networks in the eleven UHIIMI/HEI areas
2. Develop systems, process and skills to support delivery of online learning through Local Learning Centres
3. Undertake market research in each area to identify demand for learning in local communities and businesses
4. Carry out marketing activities to stimulate demand and raise awareness of learning opportunities through UHI
5. Enhance and develop a database of learning opportunities, to be integrated with the careers service and SUfl
6. Trial a range of online delivery mechanisms for learning programmes in each of the local learning centres for a target of 530 beneficiaries
7. Develop online learning resources for a range of existing modules from UHI degree programmes
8. Evaluate and disseminate the findings from the programme

Of these, objective 5 became part of the work of SUfl, and therefore was not duplicated here. Of the remaining 7 objectives all were achieved to a greater or lesser extent. Community learning networks (objective 1) have been created or strengthened in all areas, and in some places these have led to additional funding for projects beyond LINC. Not surprisingly the gains were greatest in those areas where the local Academic Partner of UHI had not had particularly strong contacts with the local community in the past. Systems and processes to support Local Learning Centres (objective 2) in the provision of online learning have been developed, with a view to how these might be strengthened in future. The LLCs were not used by all the students involved in the project but for those who could not access the learning resources at home or through the workplace they are vital to UHI's remit to provide wider access to learning. Given the timescales involved it is not surprising that detailed market research (objective 3) was not possible as part of the project. However some progress has been made with the local labour market surveys carried out by each of the LINC co-ordinators. Similarly, timing constrained the marketing activities (objective 4), but these did succeed in attracting employers and beneficiaries, although not enough to satisfy the recruitment target in objective six. Two different Virtual Learning Environments were tested as part of the project, although only 288 students were involved (of whom 192 were Adapt

beneficiaries) (objective 6). Several suggestions have been put forward to explain the under-recruitment, of which the very tight Adapt criteria for beneficiaries was possibly the single greatest factor. Certainly there was demand for the learning opportunities from those outwith the Adapt categories. In addition a wider range of learning opportunities, not all at undergraduate level, may have resulted in higher recruitment. In February 2001 short courses were added to the programme, which attracted a further 438 beneficiaries on half-day or one-day courses. Twelve level one degree modules from existing degree programmes (objective 7) were developed for online delivery, and five of these were delivered twice in the course of the project. The fact that the modules were offered twice provided evidence that the project team responded positively to problems encountered with the first presentation. The production of this final evaluation report completes the last of the eight objectives.

7.3 To what extent did the LINC project meet the expectations and requirements of stakeholders?

Feedback from the stakeholders in LINC gives a picture of some expectations and requirements being met in full and others either partially or not at all. From the perspective of the LINC co-ordinators the project did meet many of their expectations, particularly in establishing networks with Local Learning Centres and creating opportunities for wider access to learning. Their expectations and needs in terms of management and administration were not always satisfied, particularly with respect to fitting Adapt criteria to local needs, and in the development of network-wide administrative solutions to recording and monitoring participation in the project. Feedback from LLCs indicates that the learning opportunities offered through LINC were a useful complement to their existing provision, although not all LLC staff thought they were appropriate for the local community. Delays in getting funding to the LLCs suggest the infrastructure of the project did not meet all their needs.

Amongst staff developing resources and tutoring online there was a very strong view that more time was needed for development work and with it more technical and design support in local colleges. The development of resources by individual tutors working alone is possible, but a team approach, where the team comprises subject, pedagogic, technical and design skills, could be more productive and produce better quality materials. The tight timescales meant that there was little time for staff development in some of the skills required, and little time for the type of online tutoring that was needed to make the e-learning experience really successful. All of the staff involved in the project commented on the difficulties of communication across the project and the lack of an integrated infrastructure needed to ensure student recruitment, record keeping and assessment was carried out to the required quality standards. Much of this infrastructure was outwith the control of the project and needs to be put in place by UHI as part of its delivery of networked degrees.

Feedback from both students and their employers indicated that while there were many positive aspects to the online resources, the lack of a robust technical infrastructure and very slow student support from their some online tutors meant that the learning experience did not always live up to expectations. Significant technical difficulties were experienced during cohort one, although UHI has since taken steps to improve the level of technical support available to current online students, including a telephone help desk. Overall, the integration of academic, pastoral and technical support was unclear for both students and staff in cohort one. This situation improved significantly for cohort 2. The level of academic support, including specific guidelines for those doing e-tutoring, needs to be far greater if students are to find e-learning an acceptable alternative to conventional study.

7.4 To what extent did the learning centres meet the expectations of stakeholders?

The Learning Centres were not used by all the online students. Some preferred to study from home, others from work. The centres themselves varied in the facilities and amount of support that was available. Students who used centres where the staff were skilled in IT found the support very valuable and the opportunities for some face to face contact an important element in feeling part of a learning community. For some, this support was critical

to their own success. However, given the range of different learning centres involved in the project this wasn't always the case; some centres were unstaffed and others had staff who were not skilled in supporting online learners. If the model of LLC participation is to be used in future it will be necessary to produce more online self-help material for students, particularly those working in un-staffed centres. In addition, it is necessary to consider how staff development can be provided for LLC staff, possibly using SQA units, to ensure that there is equity of support for UHI students - no matter where in the network they are studying.

Although not all LINC students needed to use the LLCs, for those who didn't have access to computers at home or work the LLCs were essential to bridge the digital divide that can exist within wealthy countries like Scotland, just as it can exist between rich and poor nations. Given UHI's remit to widen access to higher education, continued successful collaboration with LLCs is important.

7.5 What are the lessons for developing online resources?

The development of good quality materials for online learning takes more time than was available in this project. To ensure that quality standards are maintained, it is important to work to an agreed 'house style', to have an evaluation process which includes subject and pedagogic reviewers, to test students working through the materials and to allow time for any evaluation feedback to be implemented. Quality procedures also need to be integrated into existing modules and course reviews.

Ideally, developers would be part of a team, which would comprise a range of skills (not necessarily in different individuals). These might include subject knowledge, online pedagogy, technical and design skills. Feedback from students suggested that not enough opportunities were made available to use the interactivity that learning online provides. Therefore, more attention needs to be given to the pedagogy of online learning and to incorporate opportunities to use interactive activities. Technical support for those developing resources needs to be widely available, not just in some academic partner colleges, and staff need their own dedicated computer equipment. Sharing communal facilities is not a realistic option for staff developing online learning resources, an issue that UHI and the partner colleges will need to take on board for the successful future development of online learning resources.

The resources in LINC did not make much use of suitable material developed elsewhere. Time to research and evaluate online materials created by others should be a starting point for the development of resources. The use of externally produced materials often requires some re-development to fit them to the requirements of individual modules and they may need to incorporate interactive work. The UHI degrees have specific requirements for transferable skills that need to be addressed more explicitly than was possible in LINC. Specific expertise is necessary in complex areas like copyright, and developers must be aware of the time needed to ensure that material has the necessary copyright permissions before it goes online.

7.6 What was the student experience of using online resources?

The detailed feedback from students gave some very good insights into their experiences online, covering a range of issues from quality to staffing and administration of online courses. There was positive comment on the quality of the online resources overall but several issues emerged which need addressing. These include proof reading and production editing of resources, robust evaluation by readers and 'test' students before resources are used and adequate course documentation.

Students had expected significantly more interaction through studying online, but in some modules this interaction was missing. Whilst the online materials included plenty of activities for individual students, little use was made of the discussion facilities or of group activities. The result was students feeling isolated, as the potential of the technology to create learning communities was not utilised. For some, the feeling of isolation was deepened by very slow feedback from their online tutors. Over half the students reported that assignments took over

two weeks to mark and that online queries were often not answered for several weeks. The speed of electronic communications can sometimes lead to unrealistic expectations of tutor feedback, but clearly the response times here are an issue. Other establishments have required response times of 3 days for emails and two weeks to mark and comment on assessments.

The robustness of the technical infrastructure and support did seriously impact on the student experience. However, there was improvement during the project. The need for a telephone help line has been recognised and addressed, and the less satisfactory of the two learning environments has been abandoned. The need to ensure that students can access their course materials even when the network is not available still needs to be addressed within UHI. For the students in this project, the majority of whom were working, the inability to reliably access learning resources as and when they needed to was a major issue.

The administration of online learning also impacts on the students' experiences. Late issue of userIDs and passwords eats into the students' time for study. It can also create a situation where latecomers are excluded from a group because they miss out on initial contact time, when learners and tutors are introduced to one another and online relationships become established. The missed contact can easily overwhelm the late comer. Details such as assignment due dates and exam dates must be available at the start of the module. Similarly the arrangements for remote students to take exams need to be in place.

7.7 How effective was the support for learners?

There are three distinct strands that need to be in place for effective support online; academic, pastoral and technical support. The LINC project had elements of all of these strands. However, feedback from staff, students and employers has highlighted aspects of this provision which need strengthening. With regard to academic support, the majority of students would have appreciated far more interaction with other students as part of the learning experience. In addition, much faster response times to student queries and faster feedback on assessed work are necessary. The time necessary to give this support must be made available to online tutors, together with the equipment required to access the learning environment. If UHI is to expand the use of learning centres using the model seen in this project, then more attention needs to be given to the provision of library services to the LLCs. Online students should not be disadvantaged by their remoteness from the college itself.

Pastoral support was provided through LLCs, LINC co-ordinators and, to a lesser extent, course tutors. It is necessary to ensure that this support is well informed and co-ordinated so that the staff and students know who is responsible for what aspect of support. This entails a level of communication and co-ordination which was not always apparent in the project, although there is very clear evidence that when problems were encountered these were addressed and rectified.

In the early stages of delivery there were problems with the technical infrastructure, some of which proved overwhelming for some students. As some of the problems resulted from lack of time to test one of the learning environments in situ, the level of reported problems fell as the project progressed. The provision of online and telephone help systems, which were recommended in the interim evaluation report of this project, have now been put in place. Some thought needs to be given to systems for giving students access to course materials when the IT network is unavailable. When there are unavoidable periods of planned down time then it is essential that staff and students be informed in advance so that they can plan the use of their time effectively.

7.8 What was the experience of staff tutoring online?

Feedback from staff indicated that more appropriate staff development was needed for effective online tutoring. Clearly there was some very effective peer support from some groups of staff members, but this did not enable all online tutors to work effectively. Although formal staff development was provided both internally from within UHI and externally,

feedback from staff and students indicated that other online tutoring needs remained. Critical to providing students with timely and effective feedback is the need for staff to have fast and reliable access to dedicated computer equipment. The use of communal facilities for online tutoring creates issues of confidentiality, access and reliability that all impinge on the tutor's ability to give effective support.

The large recruitment to one module raised issues of the staff student ratio for online tutoring. Good practice in other institutions suggests a level of about 1:20, This gives a group that is large enough for group activities yet manageable for the tutor when it comes to responding to emails and assessments. In order to support online learners, tutors must be given sufficient time-tabled time. Increasingly, there is international evidence that online tutoring is more time consuming than face to face tutoring. When staff are not given the time to provide adequate support, student retention drops dramatically.

Tutors on the LINC project recognised the need for their activities to be integrated with those providing technical and pastoral support, in order to ensure that students queries were dealt with appropriately and that services were neither duplicated nor omitted.

7.9 What were the differences (if any) between the two learning environments?

Comparison of both staff and student experiences of the two learning environments suggests that the integrated system provided by WebCT was easier to use and less prone to technical problems than the use of the Fretwell Downing LE in conjunction with WebBoard. WebCT allows course materials, discussion groups, assessment and email to be carried out in the same environment. Fretwell Downing requires the use of different discussion and email software. In addition, staff found it easier to mount and edit resources in WebCT than with Fretwell Downing. Student logging was provided in both systems. However, the design and functionality of the Fretwell Downing system seemed to be focused on course administration and student tracking, rather than creating an environment in which several different types of learning interaction can take place. Given that UHI has advocated a constructivist approach to learning and teaching (UHI1999) it would seem important that the virtual learning environment it uses should allow easy interaction and discussion between students and tutors. The findings of this project suggest that this approach is more readily achieved with WebCT than Fretwell Downing, although this does not preclude the suitability of other learning environments.

7.10 What systems must be put in place to support networked degrees?

The experience of the LINC project suggests that in order to support networked delivery of degrees online through both Academic Partners and Local Learning Centres, some development of the UHI-wide infrastructure is needed. An institutional approach to student application and enrolment, administration of Virtual Learning Environments, student support, assessment and examination is required. These systems need to integrate with a common Student Information System. An equitable funding model is also required which will ensure that those providing the different types of student support (academic, pastoral and technical) are funded or reimbursed for their work. Support provided through learning centres will require a funding model that incorporates external as well as internal partners.

The online resources must be integrated into the UHI quality assurance system, which requires the resources to be monitored through the course monitoring structure. This will require ongoing evaluation of learning resources with students. The modification / updating of online material must be costed into the degree provision, with a clear responsibility for carrying out the work required to keep the resources up to date.

The people who developed the online resources for LINC managed extremely well under very tight time constraints. The experiences of LINC make it clear that more time is required for the development and evaluation of online resources; this time should include time to research existing resources as well as develop new ones. Time for development must also include

time for evaluation of resources. A model of evaluation that UHI might consider adopting is a threefold one: expert reading for subject content, pedagogic reading for learning and teaching, and student testing to give a student perspective on the resources. If such an approach were implemented then it would need to be standardised for all online resource development within UHI.

To enable staff to give the level of academic support required for good quality online learning, UHI-wide agreement is needed about the time allocation for online tutoring and the provision of dedicated equipment to enable staff to carry out this role. Quality guidelines for tutor support, covering issues such as responding to student queries and returning assessed work, will help to avoid some of the negative experiences of the LINC students in this respect.

7.11 What are the lessons for future developments?

The LINC project has enabled UHI to learn many useful lessons with regard to enhancing opportunities for learning in networked communities. Some of the difficulties experienced in the project, including staff and student preparedness for e-learning, as well as the technical and quality control issues, are not unique to UHI; they have confounded many first attempts at online degree provision (see for example Sharpe and Taylor 2001). Interestingly, some organisations now regard going through a process like the LINC project as an essential part of becoming an effective e-learning institution. However, to become effective requires learning from past mistakes. Encouragingly, within UHI there are signs that some of the lessons of LINC are being used to inform ongoing developments.

The project has provided a very valuable route into closer working with the local community in some of the UHI areas. What the feedback suggests is that there is demand for learning over the full FE / HE spectrum, which needs to be provided flexibly, offering both online provision (possibly supported with audio and video conferencing) and face to face provision. The Adapt criteria did exclude some potential learners in this project who are part of the broader UHI market. The feedback from students suggests that demand for UHI courses at degree level could come from graduates seeking individual modules as part of their own continuing professional development, as well as those seeking a first degree. There is also potential demand for access to HE provision from those who do not have the normal entry qualifications for a degree. These findings might merit more focused market research into the demand for learning in the area.

The relationship with the Local Learning Centres has demonstrated a viable method of widening access to online learning and providing student support. There are issues of variability between learning centres and staff skills, as well as the need to provide equity of access, support for students and quality assurance. These issues do need to be addressed if this model is to continue and develop. However, the learning centres are an important resource in both overcoming the digital divide and helping to develop strong learning communities.

The lessons on both the development of online learning resources and the support of online students are already being put into practice, although some of the fundamental issues of development teams and wider access to technical support for developers have yet to be addressed. It is clear that more time is needed for development work, staff development and the ongoing evaluation of learning resources. Different approaches to staff development are being used, combining internal and external courses and online provisions. New resources for student support are being developed and the level of technical support has been increased through a telephone help desk. As new developments are implemented these too need to be evaluated with the relevant stakeholders to ensure that they continue to meet evolving needs.

The LINC project gave UHI the opportunity to trial a range of systems and processes to support learning in networked communities. Within a very tight time scale the project created new networks, recruited students, developed learning resources and tutored online. The experiences of those involved have provided feedback, which UHI can use in developing its

provision for online learning and widening access to quality higher education in the Highlands and Islands of Scotland.

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Appendices

1. Map of UHI Millennium Institute Academic partners and Learning Centres
2. Evaluation questionnaire for short courses
3. Staff development provided for LINC staff
4. Student Feedback Questionnaire
5. SME Feedback Questionnaire

Appendix 1 Map of UHI Millennium Institute Academic Partners and Local Learning Centres

Diagram A1. 1: Map of UHI Millennium Institute Academic Partners and Local Learning Centres



Appendix 2 Evaluation questionnaire for short courses

SHORT COURSE – EVALUATION FEEDBACK FORM

In order to help us assess the usefulness of the courses being offered through the LINC project we would be very grateful if you would spend a few minutes to complete this short questionnaire.

Name of the course you have just finished:

Place of study (Local Learning Centre, College, Work etc)

Please rate the course on a scale of 1 to 4: (1 = very good, 2 = Good, 3 = Satisfactory, 4 = Poor)

How well did the course meeting its objectives? 1 2 3 4

How relevant did you find the course for:

Your current job? 1 2 3 4

Your job prospects with your current employer? 1 2 3 4

How easy do you think it will be to apply what you have learnt in your job? 1 2 3 4

What other short courses (relevant to your job) would you be interested in taking?

Would you be interested in taking training courses over the internet? Yes No Don't Know

If yes, please list any training topics you are interested in:

And finally, a little bit about yourself:

Are you: Male Female

Age Range: 18–24 25-34 35-44 45-54 55-64

Previous academic qualifications: please tick the one that represents your highest level of qualification:

None	Standard Grades / GCE or equivalent	Highers / A Levels / ONC/D or equivalent	HNC/D or equivalent	Under-graduate	Post-graduate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 3 Staff development provided for LINC staff

ADAPT-LINC Programme – Staff Development

LEARN Reflective Practice Unit

Date	Event	Target Group	No. days	No attend	Location
27-29 March 2000	Module developers Workshop 1	Module developers LEMs	3	16	Inverness
2-3 May	ADAPT-LINC Coordinators, Workshop 1	ADAPT-LINC Coordinators	2	12	Dingwall
10-11 May	Module developers Workshop 2	Module developers LEMs	2	16	Stornoway
30-31 May	ADAPT-LINC Coordinators, Workshop 2	ADAPT-LINC Coordinators	2	12	Pitlochry
5-6 June	Learning Centre Managers and learning support advisors Workshop 1	Learning Centre Staff Western Isles	2	6	Uist
13-14 June	Learning Centre Managers and learning support advisors Workshop 1	Learning Centre Staff Orkney, Shetland and North Highland	2	11	Orkney
14-15 June	Learning Centre Managers and learning support advisors Workshop 1	Learning Centre Staff Lochaber, Argyll	2	8	Dunstaffnage
15-16 June	Learning Centre Managers and learning support advisors Workshop 1	Learning Centre Staff Perth, Inverness, SMO, HTC, Moray	2	27	Dingwall
29-30 June	Module developers Workshop 1	Module developers LEMs	2	16	Perth
25-26 July	ADAPT-LINC Coordinators, Workshop 3	ADAPT-LINC Coordinators	2	14	Lochaber
22-23 August	Learning Centre staff, Workshop 2	Learning Centre Managers and Student Advisors (MC, HTC, PC, IC)	2	16	Moray College
23-24 August	Learning Centre staff, Workshop 2	Learning Centre Managers and Student Advisors (SMO, LCC, AC, Lochaber)	2	28	SMO
29-30 August	Learning Centre staff, Workshop 2	Learning Centre Managers and Student Advisors (SC, NHC, OC)	2	8	Moray College
2-3 October	ADAPT-LINC Coordinators Workshop 4	ADAPT-LINC Coordinators	2	6	Inverness
Oct – Dec	E-Tutoring online line	Module developers	NA	5	(Provided by

Date	Event	Target Group	No. days	No attend	Location
	support, VC meetings				LET Unit)
30 Nov / 1 Dec	Learning Centre Staff composite workshop	Learning Centre Staff (new LC Staff)	2	3	Inverness
9 Jan 2001	Learning Centre Staff composite workshop	Learning Centre Staff (New SMO staff)	1	10	SMO
16-17 Jan 2001	ADAPT-LINC Coordinators, Workshop 5 Module developers workshop 4	ADAPT-LINC Coordinators and module developers	2	26	Inverness
March	E-Tutoring online line support, VC meetings	Module developers	NA	10	(Provided by Centrinity and the OU)

Appendix 4 Student Feedback Questionnaire

Dear Student,

As you know the module that you are studying has been developed as part of a new project - the Adapt-LINC project. Because this is a new project we are carrying out a thorough evaluation of all aspects of the project. This evaluation includes interviews and/or questionnaires with all the people who have been involved in making the project a reality. These include the people who have developed the materials, the tutors, the staff in the learning centres and, most importantly, yourself as someone who is using, or has attempted to use the learning materials. The kinds of things that we want to find out from you are:

- Why you decided to study this module, a little about your previous education, the induction you were given and your IT skills at the start of the module;
- How you have coped with the demands of the course and also the demands of studying in an online environment, or what the problems were if you decided to give up;
- What you have gained from the course when you get to the end of the course or why you decided not to continue with the course.

You will note from these questions that we are aware that some students decided not to complete the course. It is important for us to get the views of *all* of those who have attempted this course. We have therefore included sections in this questionnaire that are relevant to all of those who started the module, sections which are relevant only to those who completed the module and sections for those who decided to withdraw from the module. The relevant sections for you to complete have been indicated throughout the questionnaire, if you do not need to fill in a section it will be indicated, for example, as follows:

“If you withdrew before attempting any of the course materials please go to question 34”

We are aware that your tutor may already have contacted you for your views on the course. However, the evaluation that we are undertaking here is far more wide ranging and covers all the students on all the modules so we would be grateful if you would take the time to complete it. We will be using the information that you provide to further improve the modules that we are developing therefore your responses on this questionnaire are extremely important to us and you will be helping to improve the experiences of future students.

All the information that you provide will be confidential. Your name will not appear in any reports nor will personal details of your responses be made available to any of the people involved in delivering the course or any external person such as your employer. We do need to know your User ID so that we can link up your responses to the two different questionnaires but once the analysis is complete the User ID will be removed.

Please answer the questions by ticking the relevant box (or boxes when you are asked to make more than one choice).

If you have any queries about this evaluation or issues about confidentiality please contact:
Dr Liz Broumley, telephone: 01738 87 77 61 e-mail: Liz.Broumley@perth.uhi.ac.uk or Dr
Elisabet Weedon e-mail: Elisabet.Weedon@perth.uhi.ac.uk

ADAPT-LINC BENEFICIARIES: QUESTIONNAIRE

February 2001

Module Identifier:

User ID:

--

Age – please select the appropriate age range:

18-24	25-34	35-44	45-54	55-64

Are you:

Male	Female

1. Previous academic qualifications: please tick the one that represents your highest level of qualification.

None	Standard Grades/GCE or equivalent	Highers A levels ONC/D or equivalent	HNC/D or equivalent	Under-graduate	Post-graduate

INFORMATION ABOUT THE MODULE BEFORE STARTING

2. Where did you find out about the module? Please tick all sources of information that you noticed in the left-hand column and the tick the single most important one in the right hand column.

	All sources consulted	Most important source
Local Learning Centre		
Advertisement in local paper		
Poster in local shop		
Poster in local library		
Poster in Community Centre		
Letter via child's school		
Employer		
Job shop		
Leaflets		
Other – please specify:		

3. How useful did you find the information (either printed or verbal information) you received about the module in explaining the following?

	Very good	Adequate	Poor	No information
Level of difficulty of the course				
Amount of time you would need to spend every week on your studies				
The duration of the course				
The kind of support you would get				
The preparation that you needed to undertake				
The IT skills required				
Access to Learning Centres				
Access to computers				

PRE COURSE ISSUES

4. What were the three most important reasons for you deciding to enrol on this module?
(If you cannot think of three then give as many as you can)

a)	
b)	
c)	

5. What are you hoping that completion of this module would mean for you in terms of :

a) your work prospects

--

b) any future studies that you may be considering

--

c) your own personal development

--

6. Before starting this module you were given an induction on how to use computers and an introduction to online learning. Could you please tell us:

a) Who provided you with this induction – was it:

Staff at the Learning Centre	
Staff from the local College	
Another student	
Don't know	
No induction was provided	

b) What was, for you, the **most** useful aspect of the induction?

--

c) And what was the **least** useful aspect of the induction?

--

d) is there anything you think should be included in future induction that was not included this time?

--

7. In order to study on this module you need some IT skills. Could you please state how you felt about your own IT skills at the start of the module by selecting the most appropriate description from the six given here:

IT Skills	Very confident	Confident	OK	Not sure	Worried	Very worried
General word-processing:						
• typing skills						
• editing skills						
• presentation skills						
Internet use:						
• searching						
• browsing						
E-mail use:						
• sending						
• receiving						
• using attachments						

ABOUT THE CONTENT OF THE MODULE AND THE LEARNING ENVIRONMENT

If you withdrew before attempting any of the course materials please go to question 34

8. How clear were the:

	Clearly set out and easy to understand	Reasonably clear	Adequate	Difficult to understand
Aims and the objectives of the course				
The advice on how to use the course materials				

9. To access all the different parts of the module you need to be able to move from one part of the material to another and also to move from the module material to links outwith the module material. Please indicate how easy (or not) it was to:

	Easily – with no difficulties	Relatively easily	Adequately	With some difficulty	With great difficulty
Move from a web page to a link within the learning environment					
Move from the web page to an external link and back to the learning environment					
Move from the web page to e-mail and back					
Move from web page to bulletin board and back					

10. How frequently did you encounter technical difficulties with any of the following?

	No problems	Occasional problems	Sometimes	Frequent problems	Every time
Using your username and password					
Getting access the course material					
Getting into GroupWise e-mail					
Getting access to the bulletin board					
Getting access to external links from the course material					

11. The module has a number of activities intended to help you with your learning. Some of these are ones that you respond to on your own, for example self assessed questions and questionnaires, others are group activities. Have you completed:

all of these activities	most of these activities	approximately half of them	less than half	none of these activities

12. If you have completed at least some of these activities could you please state

a) Which you found the most useful type of activities and why

--

b) Which you found the least useful type of activities and why

--

c) What other kind of activities (that are not in the module) you feel might be useful and why

--

**CONTACT WITH OTHERS:
TUTOR – ON A ONE TO ONE BASIS**

13. Approximately how many times did you contact your tutor?

Not at all	1 – 2 times per week	3 - 4 times per week	5 or more times per week

14. How did you contact your tutor? Please indicate all methods used.

e-mail	Telephone	Through Learning Centre staff	Other – please specify:

15. Please indicate **all** the reasons why you contacted your tutor, was it to ask about:

Administration of course	Content of the course	IT/technical issues	Access to the Learning Centre	Other – please specify:

16. When you contacted your tutor – how useful was that contact? Did it:

Resolve the problem completely	Help – but further help would have been useful	Not really resolve the problem/answer the query

17. How prompt was the response from your tutor? Was it:

Immediate	Within a day or two	Within a week	More than a week after initial contact

--	--	--	--

OTHER STUDENTS

18. What type of contact have you had with other students on this module? Please choose all options you have experienced.

Tutor initiated and led discussions – e.g. on bulletin board	Tutor initiated but then student led	e-mail with other students	Video-conferencing with tutor and other students	Audio conferencing with tutor and other students	Informal contact with other students

19. To what extent do you agree or disagree with the following statements about the usefulness of these group activities? (Please tick only one box per statement.)

	Agree strongly	Agree	Not sure	Disagree	Disagree strongly
They help develop and improve your understanding of the course content					
They help develop your ability to contribute to group discussions					
They help develop your ability to comment on others' contributions					
They help you with your assignments					
They help by making you feel less isolated					
They help to make clear what is expected of you					

LEARNING CENTRE STAFF

20. The Learning Centre staff are there to offer general support – that is support that is not subject specific. Please tell us how often you contacted the Learning Centre staff.

Not at all	1 – 2 times/week	3 - 4 times/week	5 or more times/week

If you did not contact the learning centre staff please go to question 22

21. If you have contacted the Learning Centre staff what was your query about?
(You may choose more than one option).

Administration of course	Content of the course	IT/technical issues and/or difficulties – please specify:	Access to the Learning Centre	Other – please specify:

ASSESSMENTS AND FEEDBACK

22. How many assessments have you completed?

None	One	Two	Three or more

If none please go to question 26

23. How easy has it been for you to understand what is expected of you in the assessments?

The guidelines are clearly set out and easy to follow	The guidelines are reasonably clear	I am finding it quite difficult to work out what is expected of me in the assignment	I find it extremely difficult to work out what is expected of me in the assignments

24. How quickly did you receive feedback on your assignments, was it?

within 24 hours	2-4 days	5-7 days	1 – 2 weeks	Longer

25. Please tick any of these that are relevant to you to show us how useful the feedback that you get from your tutor has been to you. It:

explains the grade	
tells you what is good about your assignment and why	
tells you where you have made mistakes and why	
refers you to relevant course content	
explains how to structure your assignment effectively	
tells you how to improve your writing skills or graphics/numerical skills	
gives you advice that will help you with the next assignment	

offers comments that extends your understanding	
---	--

TIME SPENT STUDYING AND COMPLETING ASSIGNMENTS.

26. Approximately how long did you spend studying per week?

4 – 6 hours/week	7 – 9 hours/week	10 – 12 hours/week	12 – 15 hours/week	More than 15 hours

27. Approximately how much of your study time did you spend on the different parts of the module?

	Approximately $\frac{3}{4}$ of the time or more	About half the time	Approximately $\frac{1}{4}$ of the time or more	Less than a $\frac{1}{4}$ of the time
Accessing and using online materials				
Accessing and using textbook or materials that do not rely on computer access				

28. Approximately how long did it take you to complete an assignment?

Less than 2 hours	2-4 hours	5-7 hours	7-9 hours	More than 9 hours

COMPLETING THE MODULE

If you did not complete the module please go to question 33

29. What are the three most important things you have learnt from studying this online module?

--

30. Has the course lived up to your expectations? Could you please explain why.

--

31. What changes would you advise us to make to this module to make it better for future students?

--

32. Having completed the course would you study further modules:

	Yes	No
Online		
Other distance learning		
Conventional face to face		
With the UHI		
With other course providers		

33. Any other comment that you would like to make about studying this module:

REASONS FOR WITHDRAWING

34. What were the main reason(s) for you withdrawing? If there were several reasons could you please number them in order of importance, for example, if you did not have enough time for your study because of work put 1 against this. If you also had difficulties with not being able to access the Learning Centre put 2 against that.

Please indicate your reasons for withdrawing from the course by ticking the relevant box.
Was it due to:

Your personal life – not leaving you with enough time to study	
Work – not allowing enough time for you to study	
The level of the course – it was too difficult and I did not have enough previous knowledge	
The level of the course – it was too easy – I already knew the material	
Problems with contacting the tutor	
Problems with contacting Learning Centre staff	
Lack of access to a suitable computer	
Lack of access to Learning Centre	
Not having sufficient IT skills to access the course material	
To feeling isolated from your tutor and other students	
Other – please specify:	

We would like to contact students who have studied on or attempted to study on Adapt modules in order to explore some of the issues from this questionnaire in greater depth through focus group interviews. Would you agree to be contacted by us for this purpose:

Yes

No

Please note:

- Agreeing to be contacted at this stage **does not** commit you to actually participating at a later stage
- We may not contact all those that agree to participate as we would want to speak to students who study on different modules and in different parts of Scotland

Thank you for completing the questionnaire.

Appendix 5 Questionnaire to employers

QUESTIONNAIRE TO SME'S TAKING PART IN LINC

About you and your company:

- 1. Where is your company based?
- 2. What does it do?
- 3. How many people do you employ?

Male	All year	Seasonal
Full time		
Part time		

Female	All year	Seasonal
Full time		
Part time		

- 4. Do you have Internet access? Yes No
- 5.

If **yes**, what is it used for?

- 6. Do you have a company website? Yes No

If **yes**, what is it used for?

- Information/advertising
- Interactive/purchasing/booking
- Other, please specify.....

- 7. Approximately what proportion of your staff are trained in the use of Information Technology (IT)?

None	25%	50%	75%	All

(If none of your staff are trained in IT please go straight to question 8)

- 7. Which approach do you employ for IT training?

Formal
 Informal (ie by other members of staff)

If **Formal** –what methods have/do you use:

- Courses away from work

- Course/course materials in work
- Online courses
- Other (please specify)

If **Informal** – would you consider formal training? Yes No

If **yes**, which method would you wish to employ?

- Courses away from work
- Course/course materials in work
- Online courses
- Other (please specify)

What are the barriers to formal training?

- Limited resources
- Too expensive
- Don't know how to access suitable training
- Other (please specify)

8. What do you use your IT for (tick appropriate boxes):

- Management information system
- Word processing
- Financial packages
- Purchase/invoicing
- Booking
- Do not use IT
- Other (please specify)

About taking part in LINC

9. How did you find out about the LINC project? (Please tick all sources of information that you noticed in the left hand column and the tick the single most important one in the right hand column.)

	All sources	Most important source
Local Learning Centre		
LINC Co-ordinator		
Local Enterprise Company (LEC)		
Local Learning Partnership		
Advertisement in local paper		
Poster/ leaflets in local shop		
Poster/ leaflets in local library		
Poster/ leaflets in Community Centre		
Letter via child's school		
Employer		
Job shop		
Other – please specify:		

10. How many employees did you have studying a LINC module?

11. Which module(s) did they study?

Application of Information Technology	<input type="text"/>
Fundamental Principles and Practice of Marketing	<input type="text"/>
Organisational Behaviour	<input type="text"/>
Problem Solving and Learning Skills	<input type="text"/>
Managing People	<input type="text"/>

12. Why did you choose this/these module(s)?

13. Please list three benefits you hoped that your company and your employees would gain from participating in LINC?

14. Do you think you/your employees gained these benefits?

Yes	<input type="text"/>
No	<input type="text"/>
Some	<input type="text"/>

15. Why?

16. On a scale of 1 to 5, please indicate your level of agreement with the following statements about the Adapt project. (1 = disagree strongly, 2 = disagree, 3 = neutral, 4 = agree, 5 = agree strongly). (*Tick relevant boxes*)

	1	2	3	4	5	Don't know
1. I am aware of the range of modules being offered through the LINC project to Local Learning Centres						
2. I feel that the range of modules offered is relevant to local people.						
3. I feel that the range of modules offered is relevant to local employers.						
4. The LINC modules complement other training opportunities that my company uses.						
5. The LINC modules offer a good route for existing learners to higher levels of study.						
6. I feel the LINC modules are a good way of improving the skills base of SME employees.						
7. I feel that offering the LINC modules locally will result in a greater level of take-up.						
8. I feel that offering the LINC modules locally will stimulate demand for more online learning.						
9. Participation in the LINC project allows my company to develop in line with our proposed business plan.						

17. What topics/subjects would you like to see being developed as online courses that would be useful for:

The local labour market

Your company

Yourself

18. Is there anything else you would like to tell us about your participation in the LINC project?

--

Thank you for completing this questionnaire.