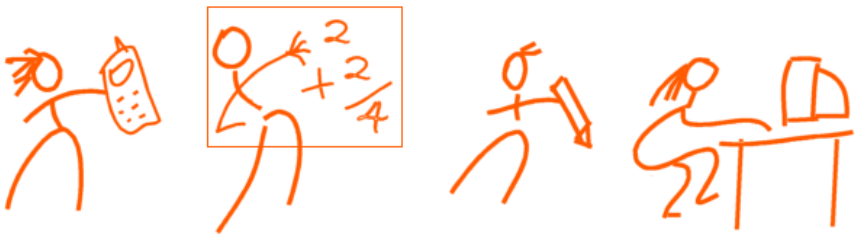
ETNA



The Enhanced Training Needs Analysis

A report on the training needs of staff in Scotland's Further Education Colleges
produced by the JISC Regional Support Centres

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This Training Needs Analysis has been prepared by Hugh Dailly, RSC Scotland North & East.

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Executive Summary

1 The Survey

This survey was carried out by the two Scottish Regional Support Centres to investigate training needs in the area of information and communication technology (ICT) in Scotland's Further Education Colleges. As such it was designed to build on the original survey carried out in 2001[1] and to provide the RSCs and other support agencies with a solid evidential base on which to plan training development for the sector in the short to medium term. The survey was designed to be completed entirely online and was carried out from 1st – 23rd May 2003, though provision was also made for hard copy versions of the survey forms to be added to the data later.

The survey, which can be found at http://www.rsc-ne-scotland.ac.uk/etna, was divided into five sections and designed to cover the training needs of all staff within the Colleges:

- Academic
- Administrative & Support
- Learning Resources
- Managers
- Technical & Networking

Extensive consultation with support agencies was carried out during the design phase of the survey and while there are common elements with the 2001 version to allow for comparison, new elements have been introduced to reflect the change agenda which has faced the sector over the intervening period.

2 The Sample

2,516 responses were received in total representing a significant proportion of the 12,500 full-time equivalent staff in Scotland's Colleges[2] – a 20% return – and though to a lesser extent than in 2001, there will still be a bias in the survey towards those most comfortable with the technology and with the easiest access to it.

3 Findings

Access to technology has improved though there are still areas – particularly among academic staff – where continuing investment is required to meet target ratios. The skills base has increased significantly since 2001, partly driven by the acceptance of ECDL as a de facto standard for IT applications training. The need to further develop these skills directly into the core business of teaching and learning is still very evident and there is still little evidence that any significant proportion of learning is taking place online.

VLEs have been adopted by the vast majority of Colleges but are still seen to be at the 'pilot' stage with relatively few staff in the Colleges having knowledge of them and very few, so far, being trained in their use. Intranets were used in nearly all Colleges but lack any overall standards. Video conferencing technology, though widely available, continues to be underused. However, new technology may have the potential to increase use.

There is a greater awareness of assistive technologies but still a pressing need to turn awareness into practical knowledge of how to apply the technologies.

[1] Scottish Further Education Training Needs Analysis 2001
[2] Association of Scottish Colleges – Key Facts 2003

Barriers to training exist – the most significant, as in 2001, being time – but there is a widespread desire to take part in training and an acceptance that the changing culture of the Colleges makes a different skill set a necessity. The traditional pattern of face-to-face delivery found most favour across the survey though there is an increasing acceptance of a 'blended' model.

There is also a need at all levels for a steady flow of reliable information. Managers require this to inform the strategic planning process, while staff require information on new materials becoming available, techniques and training. There is also a need for College managements to more clearly communicate their ICT strategies to all staff.

4 Key Recommendations

4.1 Access to Technology

Continued investment is required to provide academic staff with access to computers at the target ratio set by the funding council.

4.2 Training Needs

- Awareness raising of College ICT strategies and the potential of online learning
- VLE Training
- Creating online learning materials
- Sourcing and evaluating online learning materials
- ECDL
- An applications qualification to bring staff up to the level of ECDL entry
- Assistive technologies

More detailed recommendations appear at the close of each section and are aggregated at the end of this report.

4.3 Training Delivery

Significant barriers to training uptake need to be overcome and incentives need to be found to encourage staff. A blend of the traditional and online support has the greatest chance of meeting the needs of the population even if time remains at a premium.

4.4 Training Perception

Most staff value training and would welcome the chance to take part in new developments and develop skills in online learning. The successful model of ECDL should be examined closely with a view to using the elements which have made its uptake so high and transferring these to a new recognised qualification in online learning – elements from recent developments such as the Ferl Practitioners' Programme and the SQA PDA Awards should be incorporated into any such programme which is needed as a matter of urgency.

4.5 Information

There is a continuing demand reflected at all levels and in all sections of the survey for a supply of good quality information. The Regional Support Centres and other agencies must remain sensitive to those needs and ensure that information is targeted accurately and disseminated efficiently.

Introduction

ETNA, the Enhanced Training Needs Analysis, is an online survey of the training needs of Scottish Further Education in the particular area of ICT (Information and Communication Technology). It succeeds a similar survey carried out almost exactly two years previously in 2001 and seeks to build on the expertise and information gathered in that exercise.

In the two years between the surveys the pace of change in Scotland's Colleges, and particularly in the area of ICT, has been remarkable. Investment has continued in the infrastructure needed to make online learning a viable option: all Colleges now have high-speed connections to the JANET network and most Colleges are now making some use of VLEs (Virtual Learning Environments) and Intranets. Legislation has prompted an increased awareness of the need to ensure new learning technologies are accessible to all, while the pace of technological change in the world beyond the College walls has ensured that students have higher expectations of access to technology and a more sophisticated appreciation of its use and value than ever before.

Colleges have had to respond to this change agenda and part of the reason for repeating the Training Needs Analysis was to attempt to measure how far they had come in meeting the challenges. But the survey, and this report, is not intended to be backward looking.

The intention is to provide a snapshot of ICT development across the College and across the sector which will help College managers to appreciate the solid strengths of recent developments and to devise effective staff training where there appear to be weaknesses. The data is also designed to assist funding bodies, the RSCs and other support agencies to plan effective staff development and procurement to ensure that staff are adequately equipped and prepared for further challenges which lie ahead.

1 Data Collection

The survey was carried out in the three-week period of May 1st to 23rd of 2003. While questionnaires were designed to be completed entirely online, provision was made for staff who were more comfortable completing the exercise on paper. This represented the first significant difference between the new survey and the 2001 version which could only be completed electronically and therefore was open to the charge that results were obtained only from those familiar with the online environment. Paper-based versions, which accounted for less than 5% of all final returns, were then added to the data by RSC Staff. The electronic version, though more complex than that used in 2001, was still designed to take no more than 10 minutes to complete.

2 The Questionnaires

While we were keen to retain the structure used in the 2001 survey, thus allowing for valid comparisons between the two exercises, we were also keen to learn some lessons from the first TNA. The 2003 survey was 'enhanced' in a number of key areas. This time there were 5 questionnaires relating to discrete staff groups as opposed to the 4 previously used:

- Academic Staff
- Administration and Support Staff
- Learning Resources
- Managers
- Technical

With the inclusion of Administrative and Support staff the intention was to provide an accurate picture of IT use and potential development across the *whole* College. This section of staff, although omitted from the 2001 survey, accounts for 36% of the staffing complement of Scottish FE[3].

[3] Association of Scottish Colleges: Key Facts 2003

The other structural difference from 2001 was a change in name of one cohort from *Learning Support* to *Learning Resources*. The lack of a common nomenclature for posts in Colleges meant that this section had caused some confusion in the past. In 2003, it was intended solely for staff working in libraries and resource centres. Staff working in learning support were catered for under the Academic section of the survey.

Although there are common elements in all of the 5 questionnaires of the survey, and some questions which directly replicate those asked in 2001, every attempt was made to make the versions relevant to the role of the respondents and to reflect changes in the ICT environment since 2001. To this end, advice was sought at the design stage of the questionnaire from interested parties with specialist knowledge and we are grateful for their advice. The survey was also supported by the Scottish Further Education Funding Council (SFEFC) who wrote to Principals immediately before the survey went 'live' to encourage them to maximise the response rate in the Colleges.

The survey was accessed by clicking on www.e-tna.org.uk and copies of the survey forms can currently be accessed there for reference.

3 Data Analysis and Reporting

The questionnaire contained a mixture of multiple choice and free text supplementary questions to allow unconstrained expression of respondents' opinions. While the free comments allow for a more qualitative interpretation of the data, they can make for difficulties in both analysis and reporting, especially given the scale of the survey, and this has been treated in the following ways.

Firstly all comments (anonymised) made are available for scrutiny on the survey website. Secondly, where some comments seemed to sum up a commonly expressed view, then these are included in the body of the text. Finally, where a large number of comments have been recorded in response to a particular question, then some attempt has been made to identify common factors and present these statistically. This is clearly indicated in the analysis where it occurs.

This report considers each of the five areas covered by the survey in detail and highlights specific demands arising in each. Conclusions and recommendations are offered for each staff cohort at the end of the appropriate section. In the final part of the report, key threads emerging from all sections of the survey are drawn together and general conclusions and recommendations offered.

4 The Sample

4.1 Survey Returns

Table 1 illustrates the number of responses received from each College separated into the different cohorts covered by ETNA. A comprehensive publicity campaign preceded the opening day of the survey on 1st of May which ensured returns from every College in the country. 2516 responses were received in total, making this one of the largest surveys ever conducted into any aspect of Scottish Further Education and probably the single largest ever conducted into ICT.

Clearly, however, the number of returns varies widely between different Colleges – as indeed it did in 2001 – and the reasons for this can be assumed to be similar to those in the first report. The size of individual establishments, the level of access to networked PCs and the enthusiasm of relevant staff within the Colleges to further publicise the survey to colleagues may all have contributed to the final tallies.

The option to complete a hard copy of the survey may deflect the criticism that the survey would most likely have been completed by those with the easiest access to technology and who felt comfortable with it. However, such criticism still has some validity and therefore it should be conceded at the outset that the survey results could still reflect the fact that those most familiar with ICT and with easy access to a computer will be more likely to have completed it.

There are currently 22,607 staff in Scotland's Colleges, equating to 12,500 full-time equivalents[4]. Our total survey return of 2516 responses therefore indicates a crude 11.6% of the potential target audience. As the vast majority of the returns were received from full-time members of staff, however, then the actual percentage is far higher.

4.2 College Returns

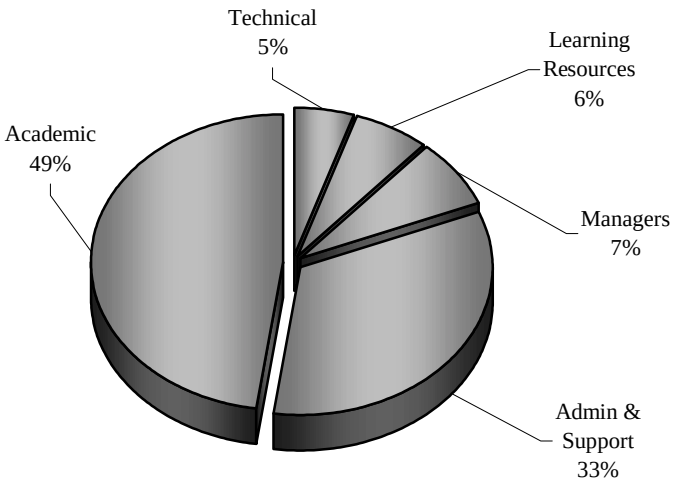
It had been hoped to use the survey returns in two distinct ways to provide a service to the FE community. The first, communicated through this report, is to provide an overview of the FE community and its ICT demands which would be useful to the funding body, support agencies and staff development officers. The second was to provide a service directly to the Colleges which would allow them to compare their own returns against national benchmarks and to plan staff development based on local as well as national data.

However, compliance with Data Protection Act required a clear statement at the beginning of the survey indicating that anonymised data would be returned to the Colleges for local analysis. Unfortunately, large numbers of staff declined to give their permission and meaningful returns to Colleges were only possible in 12 cases where a large overall return was recorded. We can only speculate at the reasons for such unwillingness and acknowledge that it has, in most cases, nullified a potentially useful part of the exercise.

4.3 Returns by Questionnaire Version

There were 5 different versions of the questionnaire available, each with a common core of questions but each also containing materials specific to the cohort of staff being targeted. The overall returns appear below in Figure 1:

Fig1: % ETNA Responses By Target Population



Each section of the survey produced significant numbers of responses which provide valid data for analysis. The analysis also allows us to make valid predictions of the training needs in each specific area.

[4] Association of Scottish Colleges: Key Facts 2003

Table 1: ETNA Returns by College and Section

College	Managers	Technical	LR	Admin	Teaching	Totals
Aberdeen College	4	5	8	63	58	**138**
Angus College	4	1	1	12	14	**32**
Anniesland College	3	1	1	22	34	**61**
Ayr College	1	5	1	14	41	**62**
Banff & Buchan College	5	2	4	21	52	**84**
Barony College	1	0	0	3	4	**8**
Borders College	3	4	1	14	14	**36**
Cardonald College	5	4	4	25	37	**75**
Central College of Commerce	0	1	2	8	7	**18**
Clackmannan College	3	0	9	12	21	**45**
Clydebank College	2	1	1	13	4	**21**
Coatbridge College	2	1	2	9	1	**15**
Cumberauld College	4	2	5	8	8	**27**
Dumfries & Galloway College	6	1	6	25	23	**61**
Dundee College	4	4	5	7	19	**39**
Edinburgh's Telford College	9	7	5	66	99	**186**
Elmwood College	7	1	6	21	27	**62**
Falkirk College	0	0	6	2	4	**12**
Fife College	16	6	5	64	59	**150**
Glasgow College of Building & Printing	4	1	1	5	8	**19**
Glasgow College of Food Technology	3	0	1	15	10	**29**
Glasgow College of Nautical Studies	5	3	6	30	19	**63**
Glenrothes College	3	5	3	6	22	**39**
Inverness College	0	0	0	10	21	**31**
James Watt College FHE	4	3	3	43	67	**120**
Jewel & Esk Valley College	4	1	9	15	22	**51**
John Wheatley College	1	4	5	4	0	**14**
Kilmarnock College	1	5	4	38	35	**83**
Langside College	8	3	2	25	40	**78**
Lauder College	17	15	5	40	39	**116**
Lews Castle College	2	4	3	18	18	**45**
Moray College	4	2	7	15	18	**46**
Motherwell College	15	7	10	43	74	**149**
Newbattle Abbey College	1	3	1	2	2	**9**
North Glasgow College	3	1	1	5	20	**30**
Oatridge Agricultural College	3	0	3	2	8	**16**
Orkney College	2	3	1	4	22	**32**
Perth College	7	6	3	28	26	**70**
Reid Kerr College	5	5	3	19	89	**121**
Sabhal Mor Ostaig	0	2	0	2	2	**6**
Shetland College	1	5	2	8	8	**24**
South Lanarkshire College	1	0	1	1	5	**8**
Stevenson College	4	2	3	3	28	**40**
Stow College	1	3	2	16	20	**42**
The North Highland College	3	0	3	0	1	**7**
West Lothian College	6	0	4	23	34	**67**
(College not identified by respondent)				11	18	**29**
Total Colleges (46) Total Responses	**187**	**129**	**158**	**840**	**1202**	**2516**

Section A: Academic Staff

1 Introduction

This was by far the largest of the groups analysed by the survey and yielded 1202 responses in total (almost double the number (642) who responded to the survey call in 2001).Given that the latest figures available[5] put the numbers of full-time permanent teaching staff in Scotland's Colleges at 4,877, the sample represents a very high return of the target population. A list of the returns per College can be viewed in Table 1.

The intervening period between the two surveys has been one of enormous changes for ILT and the FE sector. VLEs have appeared across Scotland, though as yet there is no widespread evidence that they have yet been brought into mainstream use for teaching and learning. The advent of the VLE has pointed up the urgent requirement for good-quality interactive materials and this demand has begun to be matched by initiatives like the National Learning Network (NLN). Finally, new legislation in areas such as accessibility and data protection has prompted a new openness and a fresh look at how all students interact with learning materials and the learning environment.

Change then seems to be a permanent feature of this landscape and the ETNA survey attempted to take a brief still of a fast-moving picture.

[5] Student and staff performance indicators for further education colleges in Scotland 2001-2 (SFEFC) : p17

2 The Sample

Returns sorted by Curricular Area:

Counselling	2
Pharmacy	2
Dental Technology	3
General Studies	9
Land-based Subjects	10
Languages	13
Agriculture and Horticulture	14
ESOL	15
Media	17
Motor Vehicles	18
Travel and Tourism	23
Built Environment	25
Hairdressing and Beauty Therapy	25
Other Health and Welfare	28
Maths and Statistics	31
Childcare and Administration	35
Building and Construction	37
Science	42
Learning Support	44
Catering and Hospitality Management	45
Communication	52
Art, Design and Performing Arts	62
Engineering	76
Business and Administration	142
Computing and IT	168
Other	178
No response	86
Total	**1202**
Table 2: Returns by Curricular Area	

The returns serve to illustrate how diverse teaching and learning activities are in Scotland's FE Colleges, a fact further emphasised by the large number of returns received under the 'other' option in this question. There were, in fact, over 300 returns in the open text question, indicating that many staff play more than one role in a College and do not fit neatly into a single category.

Major areas represented in the supplementary question were:

- Care/Social Care
- Marine Studies
- Social Science
- Special Needs
- Sports
- Support for Learning
- Training and Development

No attempt is made in this survey to analyse responses on the basis of academic discipline though the available data, in some areas, would support this.

High numbers of returns were received from Business and Administration staff and from those in Computing and IT, which at 310 responses contribute over a quarter of all returns received in the academic section of the survey. It is reasonable to assume that members of staff in these areas would

have more ready access to networked PCs and probably a greater facility with the technology than 'average' members of staff. As a result, this section of the survey may tend to overstate the capabilities of those average members of staff and it should be borne in mind that the levels of IT skills in the general College population may be lower than indicated here. To a degree the survey does contain an unavoidable element of self-selection, though to a lesser extent than in 2001.

As with other sections of the survey there were many opportunities for staff to include additional comments where the categories presented were not reflective of their experiences or aspirations. Also in common with other parts of the survey, but even more important here because of the large numbers involved, these comments have in places been generalised to highlight clear trends and where appropriate typical comments have been used in the body of the report.

An important point which should be stressed is that there are 44 returns from staff working in 'learning support'. This constitutes a major change from the 2001 survey in which learning support staff appeared in the section covering 'learning resources'. This time they take their place among the academic disciplines, reflecting the increasing emphasis on inclusiveness within the sector and society as a whole. This is further reflected by questions throughout the survey which probe the specific training and technology requirements of these members of staff.

Of the 1202 staff who responded to the Academic section of the survey 924 (77%) were full-time, permanent staff members. No attempt is made in the analysis of the data to differentiate between this group and the part-time staff surveyed who may have different needs.

Section A of the survey closed by asking some questions on the holding of specific qualifications. Almost exactly 10% of those surveyed claimed to hold a recognised qualification in learning support, while a rather larger number 171 (14.2%) either held or were studying for a qualification relating to online learning.

However, on closer examination there seems to be considerable uncertainty about what can actually be considered an online learning qualification. For example, 10 respondents had done the LETTOL course, while 11 had completed the SLN course, both of which offer qualifications in this area. However, 26 staff cited ECDL as a qualification in online learning despite the fact that ECDL confines itself narrowly to software applications training, not online learning as such. Many of the other qualifications cited were a mixture of in-house, vendor and short-term training leading to an impression of confusion concerning qualifications in this crucial area.

3 Access to and Use of Computers

The next section of the survey looked at the provision of computers in the workplace and the typical use made of that provision. Over the last few years the SFEFC had invested heavily in making sure all Colleges have high speed connection to JANET network and are equipped with the hardware and software necessary to take maximum advantage of this access. Individual Colleges have equally perceived the importance of the new technologies in administration and teaching and learning and have allocated extra funding to these areas. In the 2001 survey, 37% [6]of academic staff had exclusive use of a computer while 70% shared access. The 2003 figures appear in the table below:

Q8. Do you . . .	Yes%	No%
Have exclusive use of a computer (or workstation) at work?	48	46
Share a computer with others?	58	30
Have your own email address at work?	95	2
Have Internet access through the computer you use at work?	96	2
Have access to a room with computers for teaching?	77	19
Feel your capabilities are limited by the power of your computer?	31	64
Need more computer training to allow you to work more effectively?	62	34

Table 3: Access to Computers

[6] Scottish Further Education Training Needs Analysis 2001: p 34

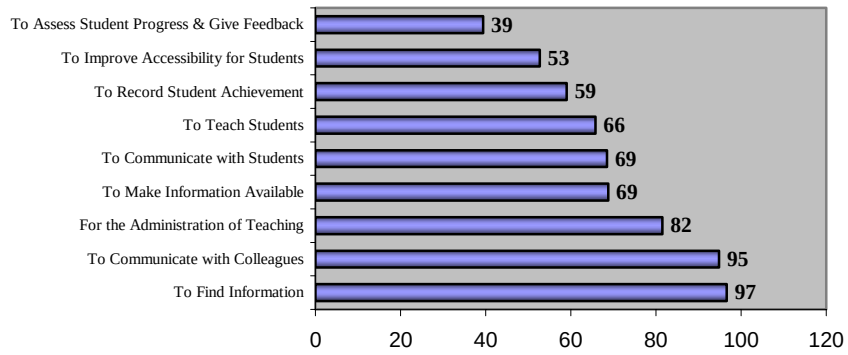
Comparisons with the 2001 returns, where almost the same questions were asked, are very informative. The increased investment is reflected in the increase in those with exclusive access to a computer from just over a third to nearly a half of all respondents. Correspondingly 12% fewer staff need to share a machine. Access to email and to the Internet is almost universal across the sector.

The spread of technology to the classroom has not been nearly so dramatic. 77% of staff have access to a room with computers for teaching, compared with 72% in 2001.

However, improvement is evident again in the final two questions of this section. Staff clearly, in most cases, have ample computer power at their disposal with less than a third responding that the computer was limiting their capabilities (this compares with 56% in 2001). What does seem to be restraining staff from working more effectively is the need for more computer training, reported by almost two thirds of the sample.

After considering access to the technology, the next question probed in detail how it was being used in Scotland's Colleges. While some questions in this section replicated those asked in 2001 and allow for comparison, some were new and reflect changes in technology and changing priorities in the sector since the earlier survey.

Fig 2: Uses of Computing Technology (%)



In broad terms, the responses here indicate a far higher use of technology in the core teaching and learning business of the Colleges than has previously been apparent. The almost universal application of network technology to the sourcing of information and communication with colleagues builds on trends already marked in 2001. An upward trend is also evident in communicating with students, up from 61% to 69% and in teaching students, up from 59% to 66%. However, a note of caution needs to be sounded here in that these figures are in no way qualitative. We have no means of knowing from the available data how regular a component this now is in learning and teaching in Scottish Colleges. Communicating with students via computer may mean sending out the odd reminder to prompt an overdue assignment or as the primary vehicle for teaching and learning. The scope of such usage is outside the range of this particular survey. However, it is still the case that more staff use the technology for administration (82%) than for teaching and learning (66%).

There is a similar problem in the area of assessment. Of all the areas of online learning this may well be the most difficult and the mixing of 'assessment' and 'feedback' to students here is unfortunate. It would be very useful to find out the level of use for assessment alone. However, the fact that it is being used in these contexts by over a third of respondents is in itself significant.

The final question turns to the area of accessibility. New technology has the potential to remove some of the barriers to learning which have existed in the past for students with disabilities. Once again it is positive that 52% of staff are using the technology to increase accessibility while highlighting the gap which still exists before online materials are accessible to all.

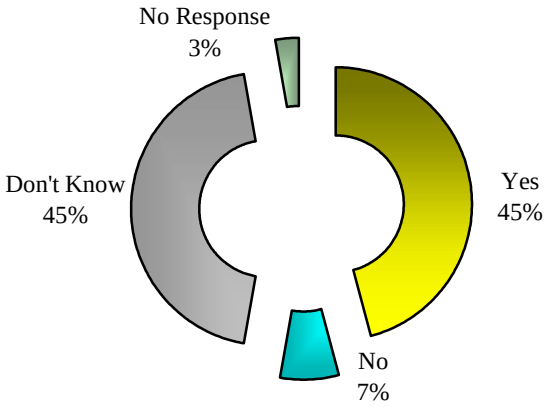
To close this section it may be illuminating to look at one or two of the comments supplied in the open response field which is supplementary to Question 9. Here staff were asked to describe the applications of the technology as they used it. As might be expected, responses run the gamut from creating learning materials (the word 'materials' is actually used in over a third of the comments recorded) to designing full-blown online teaching and assessment:

> *Handouts, schemes of work etc for students.*
> *I run entire courses online.*
> *Mainly used for the preparation of teaching and assessment materials.*

In common with other sections of the survey, the next section of Academic questions looked at the 'transmission' systems which comprise the electronic environment in Colleges through which learning and teaching can take place: Virtual Learning Environments (VLE), College Intranets and Video Conferencing. Most Colleges have access to this ILT infrastructure: the knowledge of it and its uses form the next section of the report.

A key technological change within the FE sector between the surveys of 2001 and ETNA has been the arrival of the Virtual Learning Environment (VLE). There has been major investment in the sector in this technology and all Colleges have been required to investigate the introduction of a VLE. At time of writing, most Colleges have selected a Virtual Learning Environment. The purpose of this section of the survey, then, was to try to gauge how far this new technology has penetrated the learning culture of Scotland's Colleges. Respondents were first asked whether their College had a VLE.

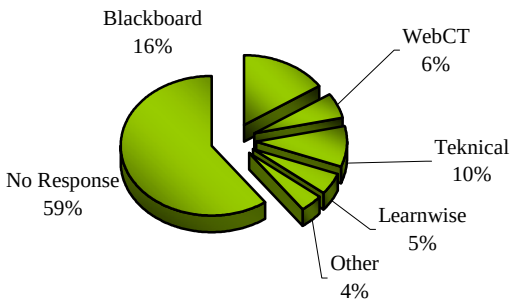
Fig3: Has Your College Purchased a VLE?



At first sight this diagram seems to indicate a degree of confusion across the sector. Given that most Colleges have already purchased a VLE, and that a few have been involved in VLE developments for a number of years, it is surprising that only a minority provide an affirmative response to this question.

Respondents were then asked which VLE their College used. The results were unsurprisingly dominated by the major vendors in the VLE market as Figure 4 below demonstrates:

Fig 4:VLE use in Scottish Colleges



Clearly no one vendor has achieved dominance in the marketplace and there are still a few Colleges experimenting with solutions outside the normal suppliers. Once again this is emphasised in the comments section of this question as is also the evident confusion regarding VLEs of some of those surveyed. Comments indicate that some Colleges may still be hesitating over which platform to choose, others are moving towards *Skillnet*, while still others are considering open-source solutions such as *Moodle*.

4 VLE Training and Use

Having established that VLEs were installed in Colleges the next part of the survey looked at staff training and how VLE technology was actually being used.

Q10. Have you. . . .	***Yes%***	***No%***
Received any training on how to use the VLE?	28	60
Used the College VLE to teach and support students?	12	75
Used the VLE to create learning materials of any kind?	14	73

Table 4: VLE Training and Use

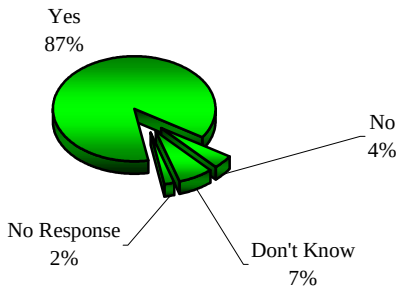
Clearly, VLE technology still has a long way to go before it fully pervades the culture of Scottish Colleges. Remembering that this sample of staff may not be entirely representative of the overall academic population of Scotland's Colleges and probably contains more than a representative number of 'early adopters' then the figures for VLE use are surprisingly low. However, this is a complex innovation which will make demands on both the technology in the Colleges and on the culture of learning and teaching. In that context, perhaps the speed of adoption is not so surprising.

Drawing from this, a key challenge for Colleges and ICT support agencies is to make sure that information about VLEs and their uses in teaching and learning are broadcast as widely as possible throughout the sector and that staff have the opportunity to be thoroughly trained in how to use the new technology.

5 College Intranets

Respondents were next asked to consider College intranets, their prevalence and usage.

Fig 5: Does your College have an Intranet?



Interestingly, College intranets, largely home-grown and in some cases possibly little more than extensions of the College network, seem far more accepted than the newer VLEs. This may be because the technology in most Colleges has been in place for far longer and requires little specialist, new knowledge to operate. Whatever the reason, nearly twice as many staff have some knowledge of College Intranets than of VLEs.

Q10. Have you. . . .	Yes%	No%
Received any training on how to use the College Intranet?	31	58
Used the Intranet to teach and support students?	18	72

Table 5: Intranet Training and Use

A slightly larger percentage of staff have received training in this technology, not surprising given its relative maturity, but once again the use of the Intranet in terms of the College's core business of teaching and learning is rather disappointing at just over 18%. Once again here we should register the fact that there is no way of assessing the content or the quality of that teaching and learning through this survey. The closest we can come is by looking at the supplementary question which ended this section and invited people to describe their Intranet usage. Of the 182 comments received, very few cite using the technology for teaching and learning. Intranets are by and large administrative, typically used for storing College procedures, reference materials from other bodies such as SQA descriptors and as a booking mechanism for rooms or audio-visual equipment.

6 Video Conferencing

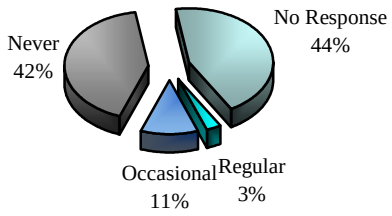
The third technology looked at in this section of the survey was video conferencing. In some form or another VC has been available as a tool in FE for close to a decade but in the 2001 survey it was clear it was an underused technology with fewer than 20% of the survey having used it. New developments in the technology promise to make video conferencing cheaper and more flexible and this is covered in the second part of the question.

Q12: Video Conferencing	Yes%	No%
Do you have access to VC via a video conferencing suite?	40	55
Do you have access to VC via desk-top video conferencing	12	80

Table 6: Access to Video Conferencing

Clearly the traditional VC infrastructure, based on expensively equipped VC suites, is still by far the most common method available. Whatever the delivery method, use of the technology is still severely limited:

Fig 6: Use of Video Conferencing



It should also be remembered that VC use is more common in some Colleges because of their geographical remoteness. This was reflected in the final supplementary in which respondents were invited to describe their uses of the technology. Of the 144 responses received over half described using VC in meetings. Clearly many of the comments were made by staff in remote Colleges. The proportion of responses which described use of the technology for teaching and learning was under 10%.

7 Online Learning Technology

Having surveyed the provision and use of enabling technologies which make online learning possible we now turned to look at the knowledge and skills of staff in online delivery.

Q12: Do you . . .	***Yes%***	***No%***
Know how to **identify** online learning?	65	32
Know how to **evaluate** online learning?	48	50
Have access to **facilities** to use online learning with students?	62	34
Have College **support** to use online learning effectively?	51	44
Have **time** to learn how to use online learning materials effectively?	14	83
Need **training** to help you use online learning effectively?	74	23
Know how to support students using **assistive** technologies in online learning?	22	75
Know how to make online learning more **accessible**?	21	75

Table 7: Online Learning Technologies

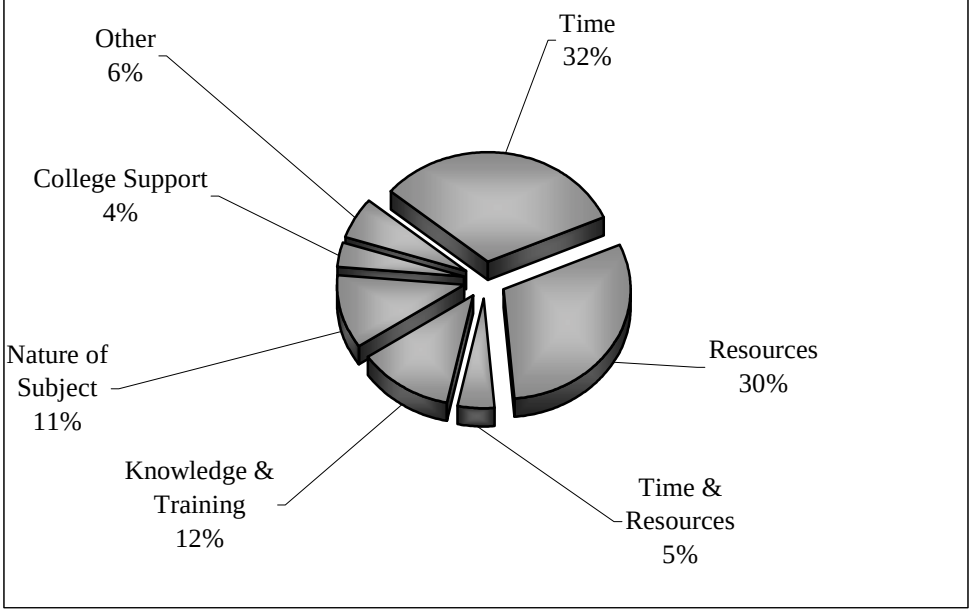
The key points to emerge here are that while two thirds of staff can identify online learning and have the facilities to use it with students there is a question mark over the general support for the activity offered by Colleges. Key requirements are for training to use the technology and time to take part in that training and to learn the new skills required to operate effectively in a new environment. These two areas mirror questions asked in the 2001 survey and reveal only slight changes in response levels: lacking in time 83% (2001:86%), lacking in training 74% (2001:83%).

The final two questions illustrated in the table return to the subject of assistive technologies and again highlight a serious training requirement. In both making sure that the learning environment is suitable to support all students, and that new online materials are accessible to all, three quarters of those surveyed expressed the need for training.

8 Factors which Limit Use of Online Learning

The final open response question which closed this section is a crucial one in the context of this report. If there are barriers to the increased use of online learning we need to know what they are before we can attempt to overcome them. 195 responses were received and at first sight the limiting factors seemed highly diverse. However on closer analysis some common factors did emerge and in order to aid analysis, comments were grouped under a series of headings:

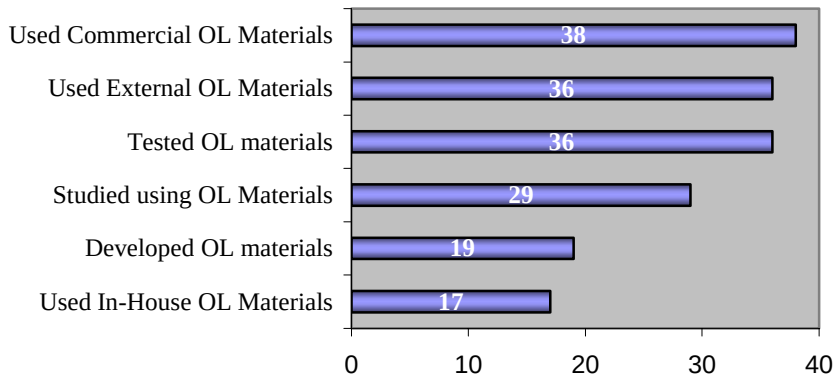
Fig 7: Factors which limit the use of online learning



Time	This was the most frequently identified barrier, accounting for more than a third of all comments made. There is a real desire to take part in developments in online learning but equally strongly a feeling that time is not being allocated to the development.
Resources	This covered a wide variety of perspectives from the development aspects of creating online learning where access to PCs still seemed to be a problem for some staff, to delivery of online learning where insufficient rooms were equipped for learning and teaching in the new medium.
Time and Resources	Comments which mixed both of the above.
Knowledge and Training	Some respondents did not feel their current level of knowledge equipped them to take a full part in the process of online learning. Interestingly, a number of comments also suggested that some students might be similarly ill-equipped to thrive in an electronic environment.
The Nature of the Subject	Some commented that because their subject was intensely practical or because the students they taught required high levels of support they found it difficult to see how online learning could be made relevant.
College Support	In some cases, Colleges were not seen as supportive of online learning development.
Other	This small category contained all comments which did not comfortably fit into any of the above.

The next set of questions in this section probed the respondents' actual experience of online learning:

Fig 8: Staff Experience of Online Learning Materials (%)



Clearly online learning has begun to permeate the FE sector in Scotland, but in this sample at best hardly more than a third of those who responded had any experience of it at all. It also might be the case that the same group of 'early adopters' is being reflected across all of the questions as staff were invited to tick as many boxes as applied to them. However, each of these questions was asked in a similar form in the 2001[7] survey. While the overall figure for testing OL materials has remained almost the same, other categories show increases in response of between 5 and 10%. Familiarity with Online Learning is growing, but growing slowly.

In the supplementary question, which probed other ways in which the sample had used online learning, no clear pattern emerged although many of the respondents refer to taking part in pilot schemes or initiatives sponsored by their Colleges and support agencies and perhaps the word 'pilot' is a key one to highlight. Little commonality emerges across the sector or indeed from the experiences described in a single College. Pilot studies and other initiatives are pushing the boundaries forwards incrementally but there is no sign yet of a critical mass behind online learning in the Colleges.

The next question looked in detail at the IT skills held by the sample and those they would like to acquire. Respondents were asked which skills they had and those they 'would like to learn' (wll):

[7] Scottish Further Education Training Needs Analysis 2001 p36

I Can . . .	*Yes*	*Wll*
Store files in folders and retrieve them from a computer	94	4
Create documents using Microsoft Word	96	2
Create tables using Microsoft Word	86	9
Create a spreadsheet using Microsoft Excel	71	16
Use functions in Microsoft Excel	65	18
Create databases using Microsoft Access	50	24
Create PowerPoint presentations	76	17
Insert images and graphics into Office documents	79	13
Link Office documents	50	25
Use email effectively	98	1
Attach files to an email message	91	6
Use email to give support to my students	66	6
Search the Web for information effectively	96	3
Design a webpage	26	36
Use electronic assessments with students	18	25
Design electronic assessments	19	36
Use online discussion forums	41	22
Use an electronic whiteboard for teaching	12	33
Use mobile technology to teach or support students	18	26

Table 8: Academic IT Skills Audit

This table clearly shows that the key skills of using the Internet, email and basic Office applications are firmly embedded in the FE population – Word, Excel and PowerPoint now seem to be part of the toolkit of most members of staff. Comparisons with the 2001 survey [8]show steady rises in all of these areas. The highest demand appears where the potential of standard applications is extended, such as in linking documents and in the final rows of the table where the skills promote interactivity with the student in an online context.

The supplementary question in this section produced a diverse range of responses from which the key emerging trends which seem to be the desire to extend the skills base into the area of online learning and a desire for further training in the range of assistive technologies available. Typical comments were:

Build effective online courses
Extending my knowledge of assistive software

The next set of questions focus on assistive software and reflect the emphasis on this type of provision which has emerged strongly since the 2001 survey. The first questions asked whether respondents were aware of the World Wide Web Consortium (W3C) Guidelines on Web Accessibility. Only 18% of those surveyed were aware of these. The response would appear to point to the need to make the key recommendations of the guidelines more widely known. The set of questions which followed focussed more narrowly on specific assistive technologies and again staff were asked to indicate their preferences for training in these areas:

I know about . . .	*Yes*	*No*	*Wll*
The accessibility options built into the Microsoft Windows environment	33	47	34
Adapted keyboards and the alternatives to the standard mouse	39	42	30
Alterative input methods (voice recognition, switches, infrared tools etc)	37	42	35
Screen magnification & screen reading software (Zoomtext, Jaws, Supernova)	30	48	35
Alternative output (tactile diagrams, text-to-speech, Braille transcription)	20	56	36
Specialist software to support learning (Texthelp, MindManager, Inspiration)	23	52	39

Table 9: Knowledge of Accessibility Features

[8] ibid p37

The fact that the positive answers here occur within a relatively narrow range across all the questions suggest that there is a subset of those surveyed with a keen interest in assistive technologies and some knowledge across the range of technologies available. However, the third column illustrates a widespread interest in learning about this set of technologies.

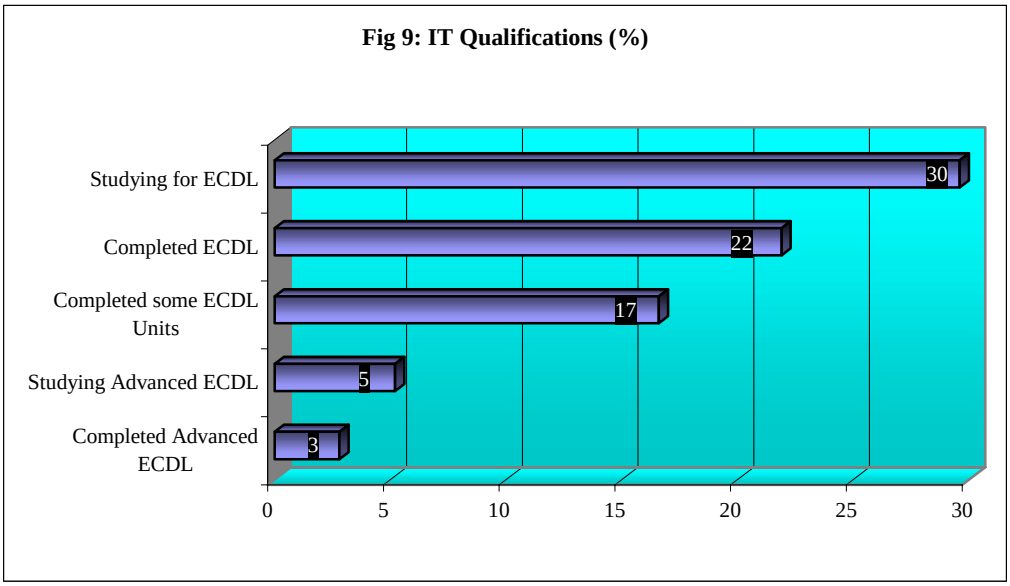
Once again a supplementary question followed and one clear message which emerges from the range of responses recorded there was that while large numbers of those responding 'knew about' the technology, they needed more detailed knowledge before they could actually 'use' it. The following comment was typical:

'I know about all of the above - I don't know how to use most of them and would like to learn.'

9 Staff Development and Support Needs

The final section of the survey turned to look at the whole area of staff development and started by trying to establish a snapshot of existing skillsets. We have earlier noted the steady increase in skills in application software and this is reflected in the responses to questions on ECDL training which has become a firmly established standard in this area across Scottish FE.

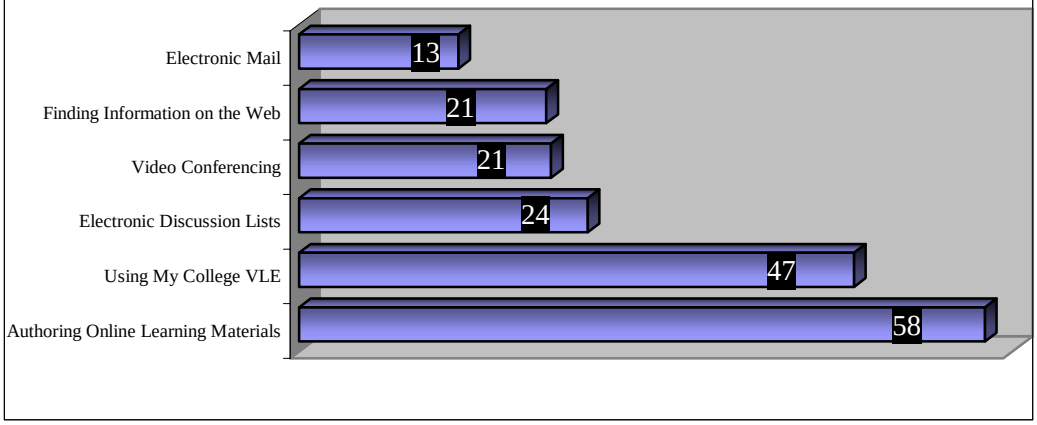
Fig 9: IT Qualifications (%)



Nearly 50% of all those surveyed were either studying for or had already achieved ECDL. This indicates the willingness of staff to undertake training in a context where the standard is clearly specified, the skillset defined and valuable and the College is supportive. The supplementary question in this section of the survey yielded nearly 200 highly varied responses. As well as degrees and diplomas in aspects of computing, ongoing training seemed to be represented by Cisco or Microsoft Professional qualifications in a minority of cases.

Having established the baseline we attempted to find out where staff wanted to go from here by sampling their preferences for further training in ICT. Respondents could select up to three options:

Fig 10:Areas of Training Which Would be of Most Benefit (%)

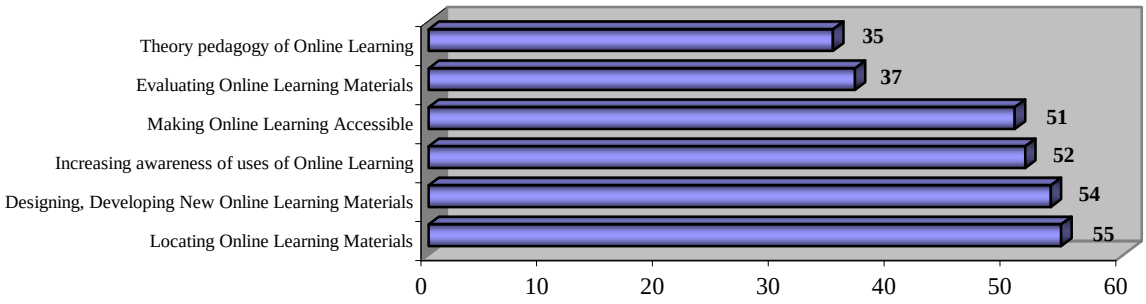


Some strong trends emerge from these responses. Staff clearly know the skills they require to operate effectively in an environment where online learning is becoming central. They need to master the medium of transmission, the VLE, and to be able to effectively create the materials to be transmitted through it. Other demands fall well behind in the current context.

A range of responses was gathered in the supplementary section, some of which were highly specialised and some of which are already covered in provision like ECDL.

The next set of questions turned to look at specific training needs in the area of online learning and once again fairly strong trends emerge:

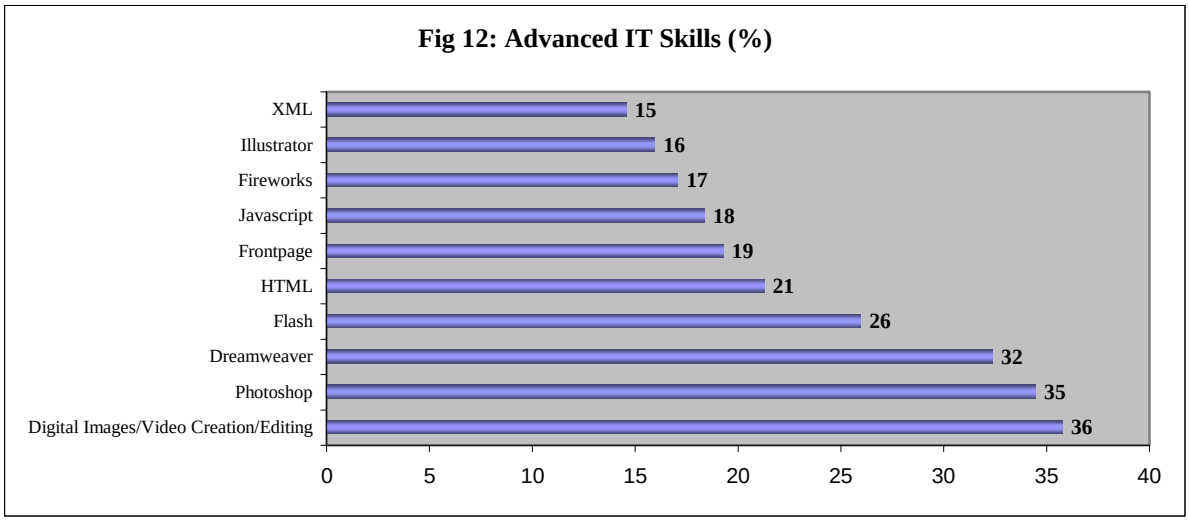
Fig 11: Demand for Online Learning Training (%)



There is a sense from these responses that we have moved beyond the primary stage of engagement with online learning and that for many the 'theory' stage is well understood. The greatest demand lies in finding effective online materials or knowing how to create your own and how to make them accessible to all students. Very few comments were added in the supplementary question here.

We now turned to look at advanced IT skills which might only apply to a minority of those being surveyed but which nevertheless need to be considered as part of staff development provision in the future. These are not skills every member of staff could be expected to have but some staff with such skills could prove very valuable to the sector going forward. Here respondents were invited to tick all

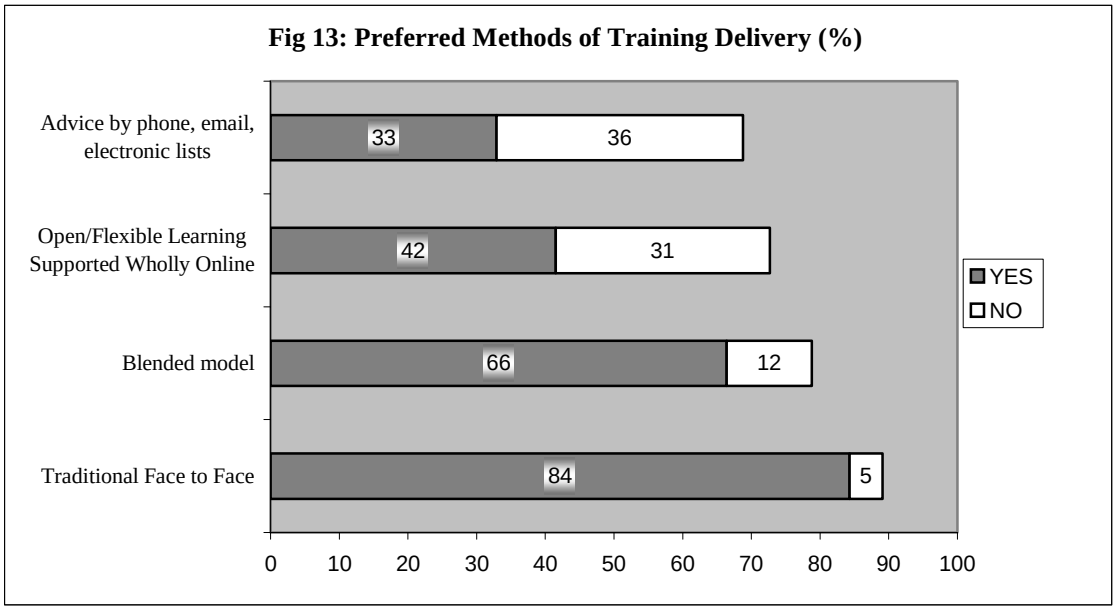
the options that applied and then in the supplementary question to suggest any alternatives. The results are illustrated in the following table and have been sorted by demand:



Perhaps the only narrative that can be added here is to highlight that the most popular skills selected are those concerned with the manipulation of images which in terms of the creation of attractive and effective online learning materials are highly important.

However, it should be noted that these packages and such advanced skills only apply to a small minority of those sampled. As evidence of this, though the supplementary question here produced in excess of a hundred responses, over 75% of these were complaints from staff who did not understand the original question.

In common with all other sections of the survey, respondents were finally asked to select the method of training delivery most suited to them.



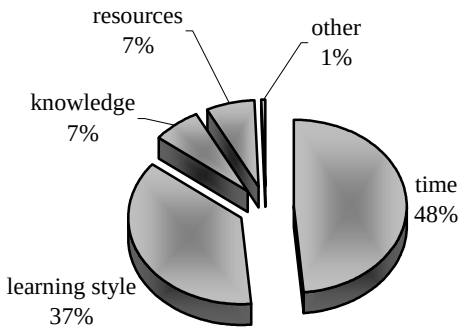
As with the 2001 results[9], traditional face-to-face methods were rated the most acceptable form of delivery. In fact, the proportion in favour had increased from 69% to 84%. There is, however, a growing acceptance of a 'blended' model which would see a mix of delivery styles and which emerges as acceptable to over two thirds of the survey. Reasons for these preferences emerge most clearly

[9] Scottish Further Education Training Needs Analysis 2001 P39

through an analysis of the huge number of responses to the penultimate question of the survey which asked respondents to describe any factors which influenced their choice of method.

The comments section here produced 525 individual responses which generate obvious difficulties in analysis. However, on close inspection comments made did display some common factors and these have been grouped together into a number of key categories which give some background to the reasons for the preferences expressed. The categories were as follows:

Fig 14: Factors Restricting Training Preferences



As with the 2001 survey and with comparable surveys carried out since across the UK, time emerges as the largest single barrier to uptake of staff development and is a problem which must be tackled if real progress is to be achieved in the promotion of a fuller understanding of online learning. The 'learning styles' section of the responses contained strong views on the efficacy of different methods and in a large number of instances cited a poor prior experience of online learning as a disincentive to welcoming that method again. Equally, there were some who welcomed online methods as removing barriers of time or geography and allowing the learner to move at an individual pace.

A long way behind these two, though still significant came 'resources' and 'knowledge'. These were cited as reasons by those who felt that their access to technology is still too inadequate or unreliable to make online learning comfortable or who felt their basic knowledge was not yet at an advanced enough stage to contemplate it.

The final question in the survey asked for any other training needs related to learning technology and as might have been expected, a large, eclectic and diverse set of responses was produced from which no general strands emerged. The full set of responses to this question and all the other open response questions can be viewed on the ETNA web site.

10 Conclusions

It should be remembered that this large cohort of responses will be to a degree self selecting and the picture of the overall skills, as well as access to hardware and software, in the FE teaching force may be a little exaggerated.

Access to computing technology is now good and the technology perceived generally as adequate for staff needs, however ongoing investment is required to improve ratios to the point where all staff have exclusive access to a computer. There is a strong demand for more training.

VLE technology is now present in most Colleges but there is as yet little general use of the technology in the core business of learning and teaching. A degree of confusion exists across the area with developments seen to be in a 'pilot' phase which needs to be rolled out to the whole College. ICT strategies needed to be more clearly communicated to all staff. There is a large demand for VLE training and for training in the production of online learning materials.

Video technology, including video conferencing, is still an under-used technology though new technological innovations may make it cheaper and more flexible to the point where it can become a valued tool in the delivery of teaching and learning.

In the area of online learning there is a willingness to adopt the new technologies but great need of support, time and resources to allow staff to participate in the process. This is particularly true when assistive technologies are considered.

The standard skillset among staff has considerably increased since the last survey, driven in part by the widespread acceptance of ECDL as defining a standard in ICT. However, the skillset has remained 'passive' rather than 'active' and there is now a need to build on the skills established through ECDL to extend them into ILT.

Familiarity with online learning techniques and materials is growing but growing slowly and across the country the improvement in technology and techniques has been incremental rather than fundamental. There is now a need to move beyond the 'pilot' stage of this activity perhaps as part of a national initiative in online learning.

There is clearly a particular need for training in the assistive technologies which will ensure accessibility for all. Awareness is not in itself enough and practical training in how to apply the technologies is urgently required.

Staff are willing and eager to take part in staff development and accept the change agenda that new technology will bring in its wake but training must be focused in particular areas and if possible leading to a recognized qualification to encourage maximum uptake. The core of this needs to be training in VLEs and in online learning materials.

There is a narrow preference for the traditional delivery model but a growing view that a blended solution would be acceptable. However, there are still formidable barriers to the uptake of such training, the most important of which is time.

11 Recommendations

Training programmes urgently need to be devised in key areas of the 'transmission technologies' of Virtual Learning Environments and Video Conferencing if the maximum potential of investment in these areas is to be exploited to the full. There is also a need to develop training programmes in the development of online learning materials to meet the demand from the sector.

More generally there is a need to build on the interest engendered by ECDL and to spread this enthusiasm into the area of online learning. Perhaps there are lessons to be learned from the strengths of ECDL – a recognised qualification, unitised construction, widespread acceptance of validity and a multiplicity of learning paths – to create a similar qualification which would cover online learning. New SQA PDA qualifications may fill this vacuum, as might access to the Ferl Practitioners' Programme, though blending elements of these into a new sector-wide qualification - an online learning passport - might provide the new incentive which training in this area requires.

Any such initiative would need to tackle the question of the major barrier of time which prevents staff from taking advantage of training opportunities. It would also need to recognise the still considerable bias towards face to face learning as well as the potential for providing a training programme in a blended format.

A training programme such as this would have the best chance of success if it was run in conjunction with a national initiative to ensure that online learning begins to play a significant part in the activity of all Colleges. Such an initiative is necessary to ensure that Virtual Learning Environments and online learning in general move beyond the current 'pilot' phase to embrace a wider population in the Colleges. A first step here would be to set up and support user groups for the main varieties of VLE, charged to interchange expertise and materials.

Assistive technology must continue to be a clear focus of attention. Much has been done recently to raise awareness of the sector's responsibilities in this area and to introduce the tools which can help to ensure accessibility, but further effort is needed to ensure that increased awareness is turned into the practical ability to assist students wherever necessary.

Section B: Administrative Staff

1 Introduction

The inclusion of an administrative section in the 2003 Training Needs Analysis represents a significant difference between this survey and the one carried out in 2001. This large segment of College staff, 36% of the current total [10]employed in the sector, need to be included if a holistic overview of training needs Scottish Further Education is to be presented and to allow staff development officers to plan effective whole-College provision of training. The focus in this section of the survey will be on the use of technology for College administration purposes rather than for teaching and learning.

2 The Sample

840 responses were received from this target population, 34% of total ETNA returns and very close to the percentage of staff in administrative or support roles reported by the Association of Scottish Colleges. Responses were received from all 46 Colleges and a breakdown can be viewed in Table 1 (p11).

As might be expected, the responses were spread across a wide range of job titles, though as table 10 shows, very large numbers of staff were in the category of 'administrative support'. The vast majority of those who responded to the survey were full-time, permanent members of staff.

Administrative Support	249
Finance	72
Human Resources	67
Student Records	55
Student Services	34
Secretarial Services	28
Marketing	24
Guidance	17
Quality Support	17
Bursaries	16
Community Development	16
Nursery Staff	14
Estates	11
Learner Support	11
College Company	10
Stores	9
Audio-Visual Support	7
Janitorial	4
Careers	3
Other	157
No response	19
Total surveyed	840

Table 10 : Administrative Responses by Role

[10] Association of Scottish Colleges: Key Facts 2003

3 Access to/Use of Computers

Among this group it is clearly the norm to have exclusive use of a computer, almost 90% reporting this, and equally clearly the computing power available is felt adequate to the demands made on it by nearly 75%, access to email and the Internet being now almost universal. In a more negative light, almost half of those surveyed felt that their computing knowledge needed updating, though this may be no real surprise in an environment where the dynamic of change in technology is so high.

Do you . . .	***Yes%***	***No%***
have exclusive use of a computer (or workstation) at work?	88	11
share a computer with others?	17	73
have your own email address at work?	96	2
have Internet access through the computer you use at work?	96	2
feel your capabilities are limited by the power of your computer?	22	75
feel your computing knowledge needs updating?	49	50

Table 11 : Administrative Staff Access to Computing Technology

Having probed the access to the technology the focus now turned to look at the uses to which it was put. Primarily, the technology was used to source information, to process it and to communicate it on down the chain to other members of staff. As elsewhere access to the Internet and to email is now universal. More specialist College systems such as finance or human resources were most likely restricted to staff working closely in those areas.

At work, have you used computers. . .	***Yes%***	***No%***
to communicate with other members of staff or Board members?	96	3
to find information or resources (eg Web pages, College intranet)?	95	3
to process information?	93	5
to use any other College information system?	61	34
to make information available (eg Web pages, College intranet)?	52	45
to use the College Admission System?	39	58
to use the College Finance System?	21	76
to use the College Human Resources System?	20	75

Table 12 : Administrative Staff Uses of Computing Technology

A supplementary question, predictably, recorded a huge range of responses for non-standard uses from which no hard conclusions can be drawn, apart from the fact that clearly some staff in this category were working directly with students.

We then went on to look at the proportion of staff whose work involved them in the development of College information systems, from specifying to implementation, almost 25% of the 840 returns falling into that category.

In your work are you involved in . . .	***Yes%***	***No%***
specifying new information systems or changes to existing systems?	22	73
procuring new information systems?	11	84
implementing new information systems?	24	72

Table 13 : Development Work on College Systems

4 Intranet

The College Intranet proved to be a major tool in the work of this section of the sample. The vast majority of Colleges did operate an Intranet which was in regular use by over two-thirds of administrative and support staff – despite the fact that less than a third of staff had received any training in how to use the system.

College Intranet . . .	***Yes%***	***No%***	***D/k%***
Does your College have an Intranet?	86	5	7
If you answered Yes to the above, have you received any training in using it?	30	58	
Have you used the Intranet?	67	23	

Table 14 : College Intranet

The question on the uses of the Intranet reveals that activity falls into two major categories: static /reference functions and interactive. The College intranet has clearly become the central repository of documents and policies, used to refer to everything from College telephone numbers to human resources policy documents. Major interactive uses include timetabling, room and audio-visual facilities booking and the logging of IT problems. The fact that this question prompted nearly 400 responses itself indicates the high frequency of Intranet use.

However, a significant number of the comments received indicate a degree of frustration with the level of development of this technology, the following being typical:

Yes, I have used the Intranet, but it has limited functionality

Most Intranets have been developed in-house and there is a lack of any specific standard or benchmark for the scope and performance of this integral piece of College technology.

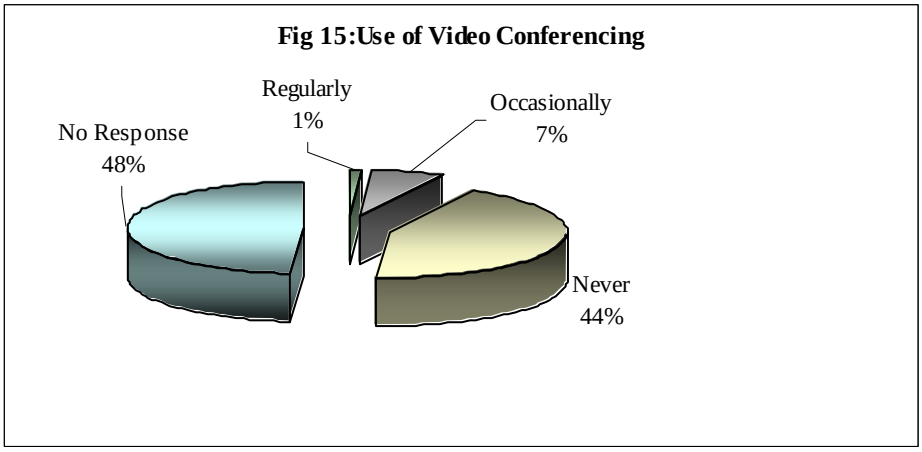
5 Video Conferencing

The next technology under review was access to video conferencing and its use. In common with the other samples reviewed in the survey, only around a third of staff claimed to have any access to video conferencing:

Do you have. . .	***Yes%***	***No%***
Access to video conferencing facilities through a VC suite?	36	61
Access to video conferencing facilities from your desktop?	10	83

Table 15 : Administrative Staff Access to Video Conferencing

And, once again sharing the pattern which emerges across the survey, very little use is made of the technology. Where it does exist, only 1% claim to be ‘regular’ users.



Further comments gathered indicate that the use of video conferencing may be even more restricted than the first glance at the figures implies and that there is heavier use of the technology in those Colleges most remote from the major centres of population and attached to the UHIMI partnership.

6 IT Skills Audit

The next section of the survey considered the ICT skills which already exist within this section of the College workforce and those which staff would like to acquire. The results here were broadly similar to those seen in the academic section, though with less familiarity with *PowerPoint* and fewer able to design a web-page. As the following table shows, the core skills of *Office* applications and the use of the Internet are almost universal:

I Can . . .	*Yes%*	*No%*	*Wll%*
Store files in folders and retrieve them from a computer	97	0	2
Use email effectively	97	0	2
Attach files to an email message	95	2	3
Create documents using Microsoft Word	97	1	1
Create tables using Microsoft Word	89	7	7
Create a spreadsheet using Microsoft Excel	86	9	9
Use functions in Microsoft Excel	81	11	14
Create databases using Microsoft Access	58	26	26
Create PowerPoint presentations	64	23	22
Search the Web for information effectively	92	3	6
Design a webpage	12	65	40
Use online discussion forums	31	55	24
Use a Virtual Learning Environment (VLE)	18	63	31

Table 16: Administrative Staff IT Skills Audit

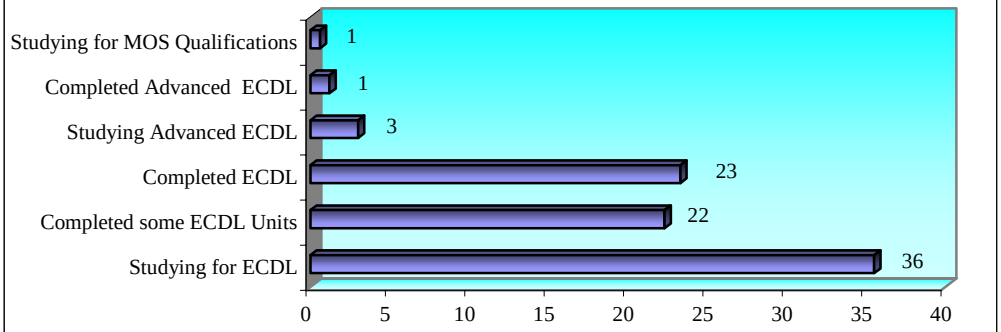
Demand exists most strongly in the area of web-page design, in using the VLE and in creating databases using *Access*. It may be important to highlight the demand here for VLE training. Across the survey there is as yet little systematic training of any group to use this technology. At this early stage of the development it might be useful to tap the latent demand for VLE training to make sure that the technology is understood across the College. This might have longer-term benefits in the future when knowledge of an integrated system will be required.

In the supplementary question which closed this section, the responses revealed a desire to extend knowledge in the areas of *Excel* and *Word* (which may be satisfied in the Advanced ECDL provision), in desktop publishing and web design.

7 IT Qualifications

This section of the survey demonstrated once again how ECDL has become the de facto standard qualification for applications training in Scotland's Colleges. Almost a quarter of those surveyed had already completed ECDL with at least as many again currently studying to achieve the full award. The Microsoft *Office* Specialist vendor qualification, by comparison, attracted less than 1% of the sample.

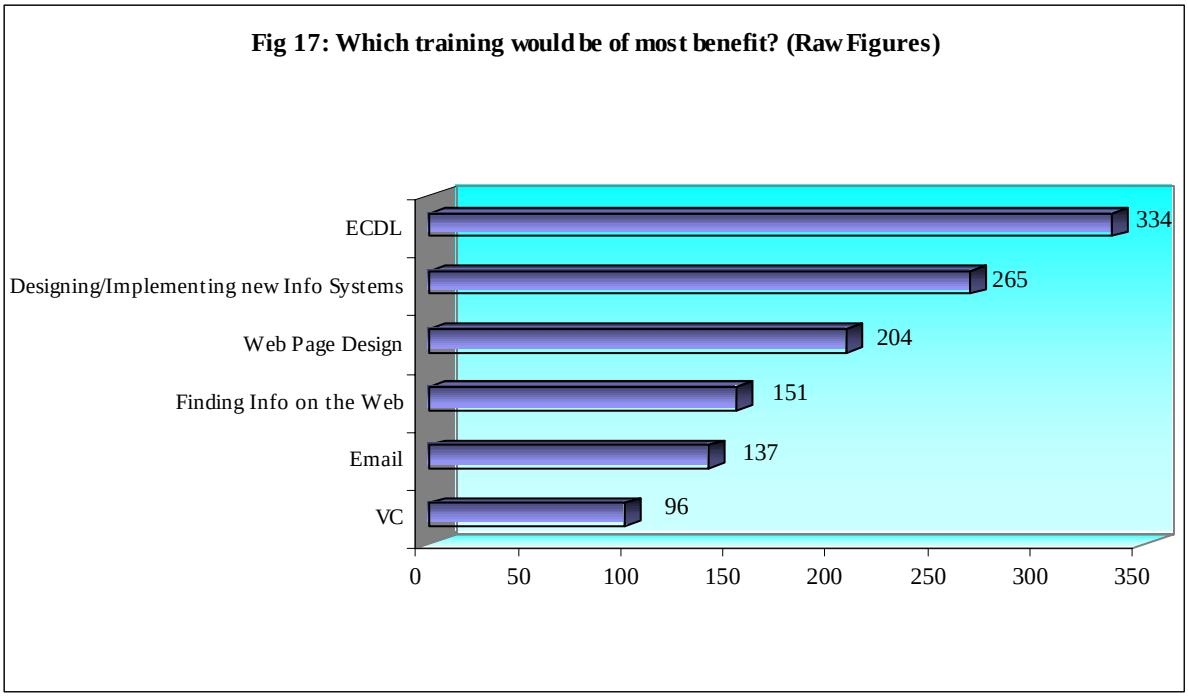
Fig 16: IT Qualifications %



A supplementary open text question here investigated any other IT qualifications already held or currently being studied. No particular pattern emerged in the hundred plus answers received.

We then asked the sample to identify the training they felt would be of most benefit to them, first with a range of likely options and then with a supplementary question. Once again ECDL tops the list.

Fig 17: Which training would be of most benefit? (Raw Figures)



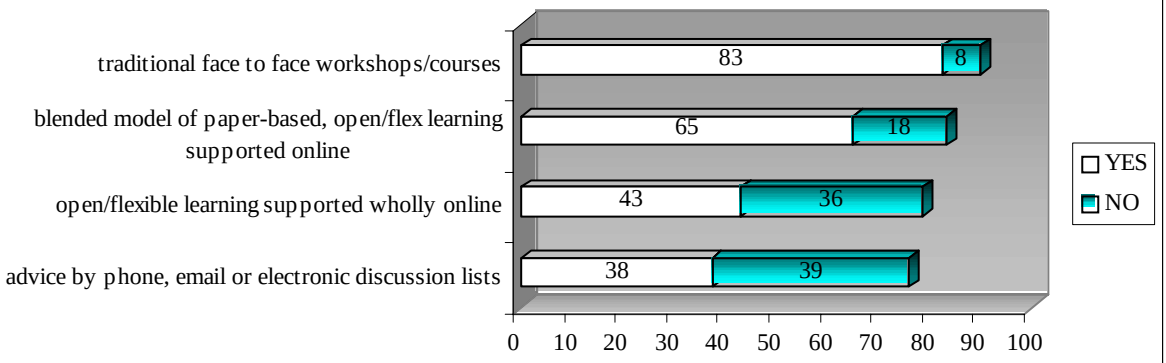
There were also few surprises among the small number of free comments received to this question: almost a third specified Advanced ECDL or further courses in the component parts of the *Office* suite as the most relevant training required.

8 Preferred Training Methods

The final questions in this section of the survey looked at staff preferences in methods of training delivery and sought to identify any barriers to the uptake of training. Respondents were asked to accept or reject a series of training delivery models and as elsewhere in the survey there is a clear preference for traditional face-to-face delivery methods. Only 8% would not find this method acceptable while over 80% would be happy with the option.

However, the blended model also attracted a high level of support with nearly two thirds identifying this as an acceptable means of training delivery. Other methods with less stress on the human interaction associated with teaching and learning attract less than half the available votes and are actively rejected as methods by a large percentage of the respondents. This final figure though may mask an element of the fear of the unknown as it is unlikely that many people in this group – or any other in the survey – will have had much experience of training wholly supported online.

Fig 18: Preferred Methods of Training & Support %



These then were the preferences expressed and the next Question (15) probed the reasons for these choices by asking respondents to describe the key factors which influenced their choice of training method. As with other areas of the survey where a similar question was asked, 'time' emerged as a key factor in many of the large number of free text responses received.

However, strong views were expressed on both sides of the debate between face-to-face and online delivery methods. Some respondents were well aware of their own learning styles and which method of delivery would therefore benefit them:

I am more motivated by face to face contact.
I learn better with a mix of face to face tuition and written instructions.
I prefer to learn what I want to know quickly and not spend a long time in a classroom setting.

What did clearly emerge from the comments was a strong desire to take part in staff development.

The final question surveyed other ICT training needs and drew responses from some 7% of the target population. There was little consensus among the responses though there were a number of requests for Advanced ECDL and one for a 'rounded programme of professional development for College MIS Managers' which made a plea for a more 'professional foundation for IT development in Colleges'.

9 Conclusions

This section of College staff is the largest within the ETNA survey with the exception of academic staff. Comprising 36% of the FE workforce and with an equipment/staff ratio of approaching 1:1 they form an important part of the College workforce and must be considered as part of a whole College staff development programme.

Many aspects of computer provision and use are similar to other sections of the survey in that computer access and use for finding and communicating information (internet access and email) is almost universal. In addition there is a range of specialist uses of the technology from finance to human resources which is outside the scope of this survey.

The Intranet is a key tool for this sample and has now become the standard repository for College documentation. However, the functionality of Intranets clearly varied widely across Colleges and there were some comments on the limited resources of some Intranets. Video conferencing was as poorly used here as among other samples in the survey.

Basic IT applications skills are now common, most probably reinforced by the take-up of ECDL which had been completed by a quarter of respondents, was under study by a further half and still regarded by a large percentage as the training from which they would derive the greatest benefit. However, this still leaves an element of the workforce without any IT skills training and although this specific area was not probed in the survey, ECDL may be too advanced for some element of the population or, with its seven units, present too heavy a commitment.

Other desires expressed were for skills in web page design and in the design and implementation of new information systems but the provision of training in these areas would be dependent on the individual post held and the College's development strategy and is therefore too precise to make any broad commentary on here.

There is an obvious perception amongst this group of the future importance of VLEs within Colleges and this is cited as a training priority by nearly a third. While the VLE is, of course, primarily a teaching and learning technology, it may be important for the future that administrative staff have some appreciation of the working of the system, particularly as a preparation for the day when the VLE will be one component in a more complex MLE system.

10 Recommendations

The functionality of College Intranets should continue to berefined and expanded. College Intranets and their use is an often ignored area of technology, yet is one used by a large proportion of all College staff. Colleges should seek to maximize this use and staff should be encouraged by the production of best practice guidelines for Intranet use.

The continued uptake of ECDL should be encouraged and shorter and simpler entry-level qualifications introduced to cover those members of staff for whom ECDL is inappropriate. Other applications-related training, currently in pilot, may show the potential to fill this gap.

Administrative staff should be included in VLE staff development, at least to the point where they are aware of the functionality of the new systems and how they will fit into existing and evolving College technologies.

Section C: Learning Resources Staff

1 Introduction

A significant change of methodology between ETNA and the Training Needs Analysis last carried out in 2001 occurs in this section of the survey. Across all aspects of work in FE in Scotland nomenclature is a problem. 'Learning Support' in one College will mean a specialist in assistive technology while in another it will refer to a member of the library staff or staff employed at an outreach centre.

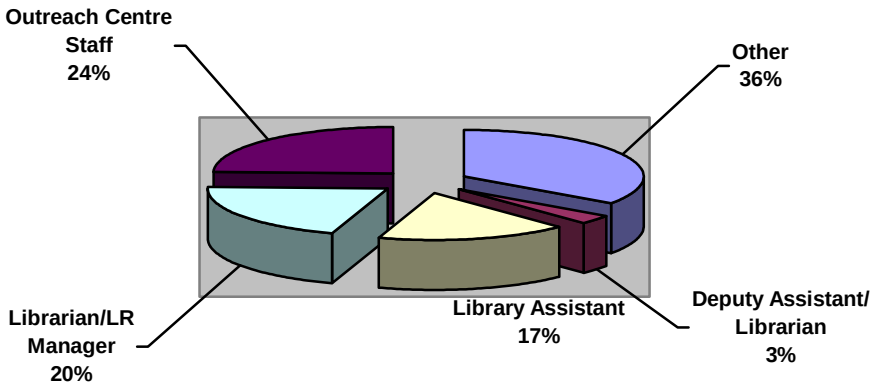
In the 2001 version of the survey all categories were included under the same heading (as were staff developers) This time the intention was to focus strictly on those staff who paved the way for learning by providing the background materials to foster it and the environment in which it could take place. Our target population here was restricted to staff in libraries and learning resource centres, a smaller group than in 2001, with the result that this section of the survey produced 157 returns as compared to 420 last time. Despite this apparent drop in response we are confident that the sharpening of focus will provide a more accurate picture of the specialised needs of this particular group of staff

Since 2001 learning resources staff have been at the forefront of the changes associated with online learning. As the focus expands from the classroom to the resource centre as a key environment for learning, so the role of staff in these areas has expanded. As well as the traditional 'librarian' skills, high degrees of technological skill and knowledge are now required. They also need to develop an in-depth knowledge not just of the books on their shelves but of the rich range of resources which can be accessed via the Internet from sources such as the JISC and the National Learning Network (NLN).

2 The Sample

This is the smallest of the five groups in the survey, the 157 responses received representing only 6.5% of the overall total. The vast majority of Colleges across the country responded, as can be seen from the detailed breakdown of responses in Fig 19. Of the sample, the vast majority, 125, were full-time permanent members of staff designated under the following categories:

Fig 19: Learning Resources Staff: Job Descriptions



As with elsewhere in the survey, job title has proved highly problematic and this accounts for over a third of the responses received here fitting into the 'other' category. However, it does seem more marked in this sample, perhaps reflecting changes in the culture which surrounds the whole area of learning resources and the support services supplied to learners. As the roles change, so do the job titles. The 'other' category here therefore covers a diverse range of responses from which no clear pattern can be discerned.

3 Using Computers in Your Work.

In common with other sections of the survey, we first attempted to establish the access to computers enjoyed by this group and then how they used the technology.

Do you . . .	*Yes%*	*No%*
Have exclusive use of a computer (or workstation)?	54	42
Share a computer with others?	62	31
Have your own email address?	98	2
Have Internet access through the computer you use?	99	1
Have access to rooms with computers for teaching?	73	19
Feel your capabilities are limited by the power of your computer?	22	75
Need more computer training to allow you to carry out your duties more effectively?	61	38

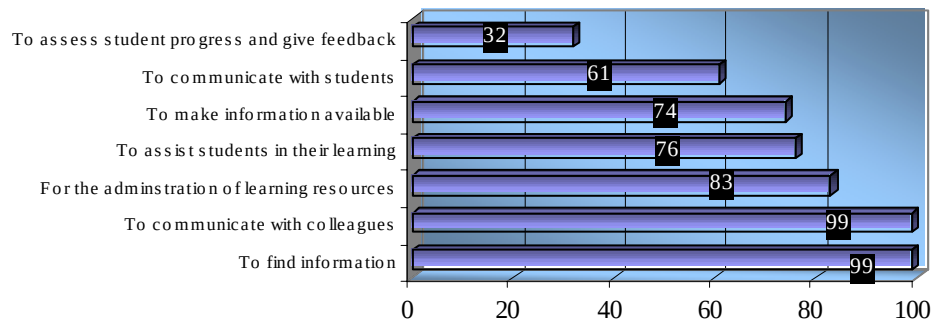
Table 17: Learning Resources Access to Computers

The differences in the sample make for difficulties in comparison to the 2001[11] returns. More staff now appear to be sharing computers which is the key anomaly between the two results, clearly caused by the difference in population.

However, certain trends which were apparent in the earlier figures have been strengthened here. Access to email and the Internet is now almost universal. There has also been a big increase in access to rooms with computers for teaching, rising from 50% to 73% in 2003. Computing power seems more than adequate to meet requirements in the opinion of 75% of those surveyed, but there is a strong demand for more computer training expressed by over two thirds of the sample.

4 Computer Use

Fig 20: Uses of Computing Technology %



[11] Scottish Further Education Training Needs Analysis 2001 p14

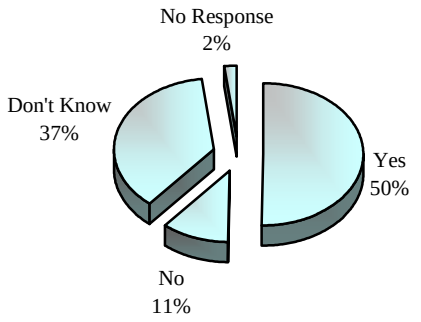
The diversity of roles within this group is graphically illustrated in Fig 20. The traditional librarian roles of finding and communicating information to students and colleagues are, not surprisingly, paramount but a greater direct involvement with teaching and learning is clearly evident. Resource centres and libraries have become focal points for learning in Colleges, reflected in the fact that over 80% of the sample use the technology to administer learning resources while 76% use it to 'assist students in their learning'.

22 comments were received in the supplementary question which closed this section inviting staff to outline 'other' uses of the technology. While some of these simply elaborated on activity covered by the categories above, some 25% mentioned the creation of learning materials as a common use of computers.

5 Virtual Learning Environments

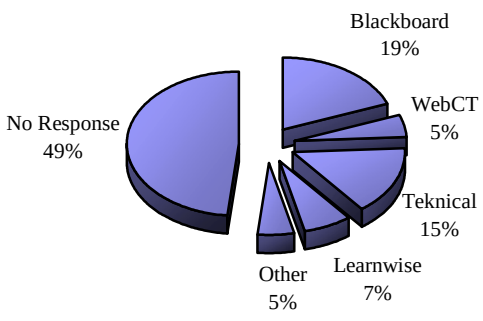
Learning resource centres might well be expected to be in the forefront as Colleges introduce VLEs. This section of the survey probed awareness of the technology, training in its use and applications of it.

Fig 21: Does Your College Have a VLE?



In a pattern which is evident right across the sample, there seems to be some confusion as to whether Colleges have actually installed a VLE, with only half of the sample giving a positive answer here. The next question sought to establish which variety of VLE had been installed.

Fig 22: VLE Chosen by College %



As in other sets of responses recorded, the data indicates that no one vendor has secured a dominant share in the VLE marketplace in Scottish FE and the figures here, not surprisingly, closely match those in other parts of the survey.

The next set of questions begins to probe the use made of this new technology and the links between it and other College systems.

Q9. VLE Training and Use. . .	Yes%	No%
Have you received any training on how to use the VLE?	23	64
Have you used the College VLE to teach and support students?	15	70
Have you used the VLE to create learning materials of any kind?	13	72
Is your resource centre or library linked in any way to the VLE?	23	54

Table 18: VLE Training and Use

Less than a quarter of the staff who responded have had any kind of VLE training which is slightly less than the ratio reported by the academic staff sample. This is another indication that VLE technology is still far from being established in Scotland's Colleges, a judgement reinforced by the very low returns in terms of the VLE's use as a teaching or authoring tool.

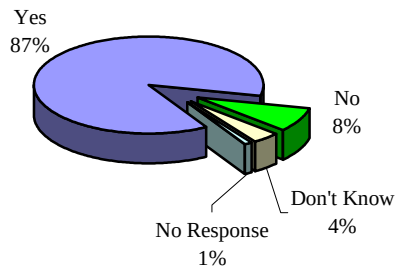
It is perhaps surprising then that 23% of the sample report that they have active links into the VLE and this was further probed in the open response question which closes this section. Once again little real activity is in evidence. In a few cases links had been established to the library catalogue and in one case to the subscription services accessed through the library. There also seemed to be a degree of confusion revealed between the College Intranet and the VLE. One comment perhaps describes the picture economically:

> *I should point out that it is a case of "early days" and that little has been done as of now.*

6 College Intranets

In turning to the use of Intranets among the sample then the take-up rate was significantly higher, reflecting the fact that Intranet technology has been relatively common in FE Colleges for a number of years.

Fig 23: College Intranets



Similar questions were then posed on Intranet usage and links.

Q10. College Intranet Training and Use. . .	*Yes%*	*No%*
Have you received any training on how to use the College Intranet?	32	61
Have you used the Intranet to support learning?	34	59
Is your resource centre or library linked in any way to the College Intranet?	57	30

Table 19: Intranet Training and Uses

Given that Intranets are a fairly mature technology in many of Scotland's Colleges it is surprising that less than a third of those surveyed had received any kind of formal training in their use, especially so given that a third of respondents report that the technology is used to support learning. The free response question which followed revealed that libraries tended to be linked into the wider College Intranet, allowing access for students to a wide variety of internal information, to the College subscription services and to some learning materials.

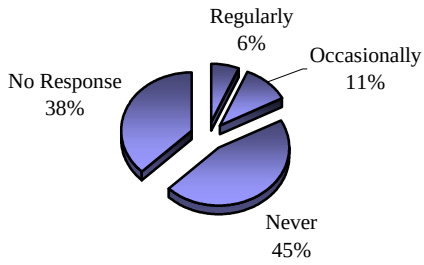
7 Video Conferencing

Finally in this section we reviewed access to video conferencing and its uses. In the 2001[12] survey, only 13% of staff had used this technology in any way and though new methods of enabling VC are beginning to be available to the market (including 'free' usage via internet protocols) usage remains stubbornly low.

Q11: Video Conferencing	Yes%	No%
Do you have access to VC via a video conferencing suite?	38	59
Do you have access to VC via desk-top video conferencing	10	82

Table 20: Access to Video Conferencing

Fig 24: Use of Video Conferencing



As Fig 24 reveals only 6% of the sample are regular users of video conferencing and it is likely that this minority is clustered in the Colleges which are part of the UHIMI community where greater emphasis is placed on the use of VC technology to overcome geographical remoteness. If this community was stripped out of the figures, then it is possible that there would be little or no use of video conferencing among this group.

The few open responses received tend to indicate that remotely attending meetings is the most common use, followed by staff development. Almost half the comments indicate that users are from Colleges linked to UHIMI.

[12] Scottish Further Education Training Needs Survey 2001:p15

8 Using Online Learning Technology

The survey now turned to examine the role of learning resources staff in relation to online learning, particularly looking at their key filtering role in locating and evaluating effective electronic resources which underpin the teaching and learning process. They were asked…

Q12: Do you . . .	**Yes%**	**No%**
Know how to **identify** relevant online learning resources?	76	20
Have College **support** to identify and promote online learning resources?	64	32
Have **time** to learn how to use online learning resources?	36	61
Need **training** to help you evaluate online learning resources?	67	30
Provide training for students/staff in the use of online learning resources?	46	50
Know how to support students using assistive technologies in online learning?	32	64
Know how to make online learning more accessible?	26	70

Table 21:Using Online Learning Technology

The first question here is a repeat of one asked in the 2001 TNA[13] and shows some significant advance. In the original survey only 40% of respondents claimed to know how to identify relevant materials compared to 76% in 2003. This may reflect the increased level of College support for this activity (up from 51% to 64%) reflected in the fact that more staff felt they had time to investigate resources (up from 20% to 36%). However, the need for training in evaluation has hardly changed at all, at two thirds of those surveyed.

The final questions above reflect the increased prominence of assistive technologies and clearly reveal a significant training need in this area. Staff in libraries and learning centres will often have to deal directly with students and may well be the first point of contact between the learner and the institution as well as an ongoing source of support to the learning process. It is therefore vital that they have some knowledge of the technologies available to open up resources to all learners.

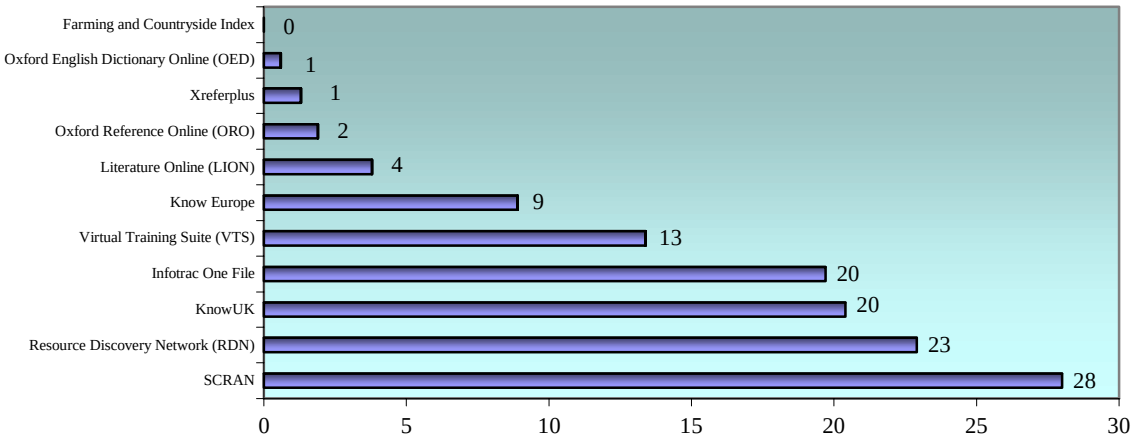
A concluding supplementary question in this section probed any factors which limited or restricted the use of online learning technologies. 30 responses were received where, lack of time and inadequate resources were cited as major barriers to greater use of the technology. Lack of training was also cited as a barrier by four respondents.

9 JISC Resources

One new area in this survey was an attempt to measure the use being made in Colleges of access to JISC resources. Some of these resources are subscription services (Lion, KnowUk etc) while others such as the Resource Discovery Network (RDN) and the Virtual Training Suite (VTS) are open access. From the following table it is clear that use of some of the resources is very restricted (possibly because of their specialised nature) but also that the need to subscribe to a service is not necessarily a barrier to uptake if that service is seen as relevant to the needs of the College and set at an appropriate price. Thus the two most popular service are respectively the RDN (free access) and SCRAN (subscription, though access is open to view the site). Another important point to make here is that SCRAN has invested considerable resources in developing contacts across tertiary education in Scotland, a fact which may well be reflected in their high usage rates.

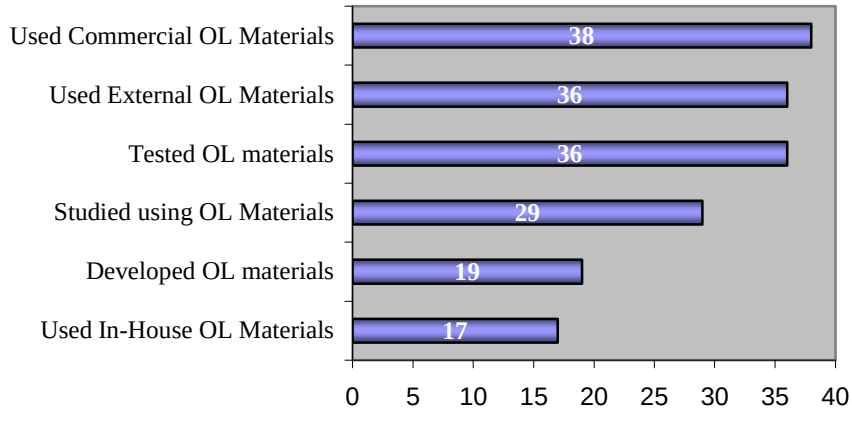
[13] Scottish Further Education Training Needs Analysis 2001 p16

Fig 25: Subscriptions to JISC Resources (% of sample)



The next set of questions was designed to provide some insight into how deeply online learning had penetrated into this section of College work. Some of the questions were retained from the 2001 survey to allow for comparison, though the difference between the sampled populations introduces some difficulties here.

Fig 26: Staff Experience of Online Learning Materials (%)



The results in Fig 26 have been sorted in terms of frequency and indicate that most Colleges currently look to outside providers to source and evaluate the bulk of their online materials. This is further emphasised if we compare returns from the 2001 and 2003 surveys, illustrated in Table 22:

Have you . . .	2001[14]	2003
Tested / Evaluated OL Materials	26	36
Developed OL Materials	11	19
Used In-House OL Materials	17	19
Used external OL Materials	23	36
Used Commercial OL Materials	21	38
Studied using OL Materials	19	29

Table 22: OL Materials Comparison 2001/2003

There is a clear trend across the board towards an increased engagement with online learning materials, the most dramatic rises being in those materials developed by external organisations or commercial suppliers. This may reflect the increased access to JISC resources and the appearance of assets like the NLN materials over the last two years. By contrast, the increased experience of developing materials or using in-house materials is far more modest. Finally, it is useful to note the increasing experience of the online environment as a student represented in the sample.

This lack of localised development may have many explanations, not the least being the lack of the specialised skills necessary to begin creating such materials. The next set of questions attempted to measure the extent of the IT skills base among the sample:

I Can . . .	*Yes%*	*No%*	*Wll%*
Store files in folders and retrieve them from a computer	96	4	6
Create documents using Microsoft Word	99	1	2
Create tables using Microsoft Word	91	7	11
Create a spreadsheet using Microsoft Excel	78	17	26
Use functions in Microsoft Excel	71	20	32
Create databases using Microsoft Access	61	26	41
Create PowerPoint presentations	79	15	24
Insert images and graphics into Office documents	85	12	18
Link Office documents	52	33	52
Use email	100	0	0
Attach files to an email message	94	5	8
Search the web for information effectively	99	1	2
Design a webpage	31	42	66
Use online discussion forums	51	26	41

Table 23: Learning Resources IT Skills Base

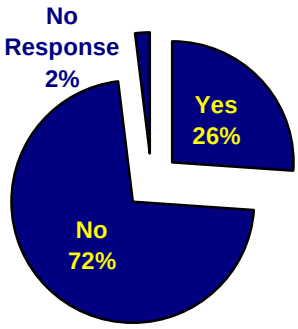
The returns here emphatically reflect trends which are apparent throughout the survey. The basic tools of information search, retrieval and transmission are now universal, though potential methods of enriching materials such as linking files remain underexploited. The key demand for training is in this area and in creating web pages, perhaps reflecting a desire to become more creative in the production of resources rather than simply being a passive consumer of them. This trend is further illustrated in the responses to the supplementary question set where staff were asked to name any other learning technology skills they would like to learn.

The 30 responses received here typically range across a broad area from golf course design software to advanced databases, but design for the web is mentioned in over a third of responses.

The linked set of questions which closes this section of the survey once again looked at the area of assistive technologies and began by probing the general awareness of good practice guidelines for the web as established by the World Wide Web Consortium. The returns illustrated in Figure 27 clearly indicate that there is further work necessary in disseminating this information among this section of FE staff.

[14] Scottish Further Education Training Needs Analysis 2001:p 16

Fig 27: Familiarity with W3C Guidelines on Web Accessibility



Further questions in this area set out to survey the practical application of assistive technologies in learning and teaching and while there does seem to be a level of familiarity with the specialist technologies available, there are equally gaps in provision, though these gaps are matched by a desire to acquire the necessary knowledge. As noted elsewhere in the survey, however, there may well be a significant difference between 'knowing about' the existence of certain assistive technologies and having the expertise and confidence to be able to apply the knowledge when assisting learners. While the insights gained here are valuable, further investigation is required to ensure that staff are fully equipped for this role.

I know about . . .	*Yes%*	*No%*	*Wll%*
The accessibility options built into the Microsoft Windows environment	46	27	45
Adapted keyboards and the alternatives to the standard mouse	64	17	32
Alterative input methods (voice recognition, switches, infrared tools etc)	52	22	46
Screen magnification & screen reading software (Zoomtext, Jaws, Supernova)	52	22	41
Alternative output (tactile diagrams, text-to-speech, Braille transcription)	33	31	56
Specialist software to support learning (Texthelp, MindManager, Inspiration)	30	35	55

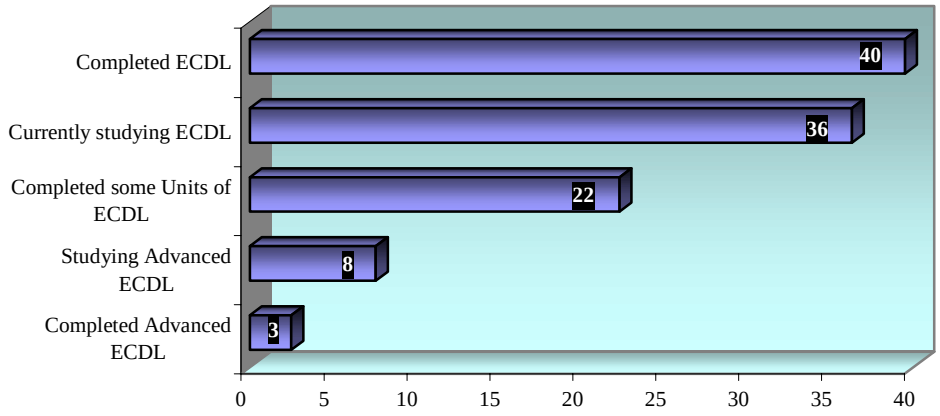
Table 24: Learning Resources Knowledge of Assistive Technologies

10 Staff Development and Support Needs

In common with other sections of the survey an attempt was first made to establish the level of qualifications already existing among the sample and once again ECDL emerges as the main qualification in this area. In the 2001 survey it had been noted that 14% of the sample had achieved a qualification equivalent to ECDL and that the qualification 'appeared to be defining a baseline for computer literacy across the FE sector in Scotland'[15]. Figure 28 illustrates the widespread takeup of ECDL training which seems to have been embraced by almost every person in the sample.

[15] Scottish Further Education Training Needs Analysis 2001: p16

Fig 28: ECDL Qualifications % of Responses

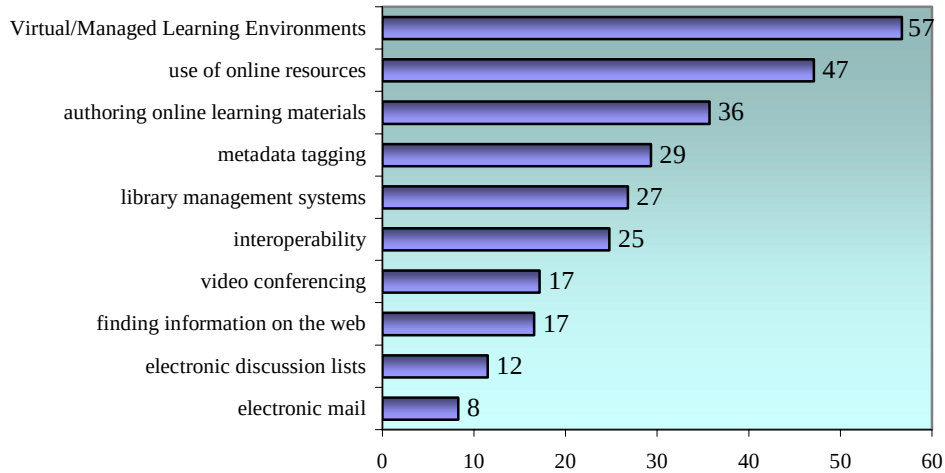


Comments received in a supplementary question on other IT qualifications revealed a diverse range including HN level qualification and some Microsoft Office Specialist awards. Among the responses however, was only one reference to an award, LETTOL, which looked at the application of technology to the teaching and learning process.

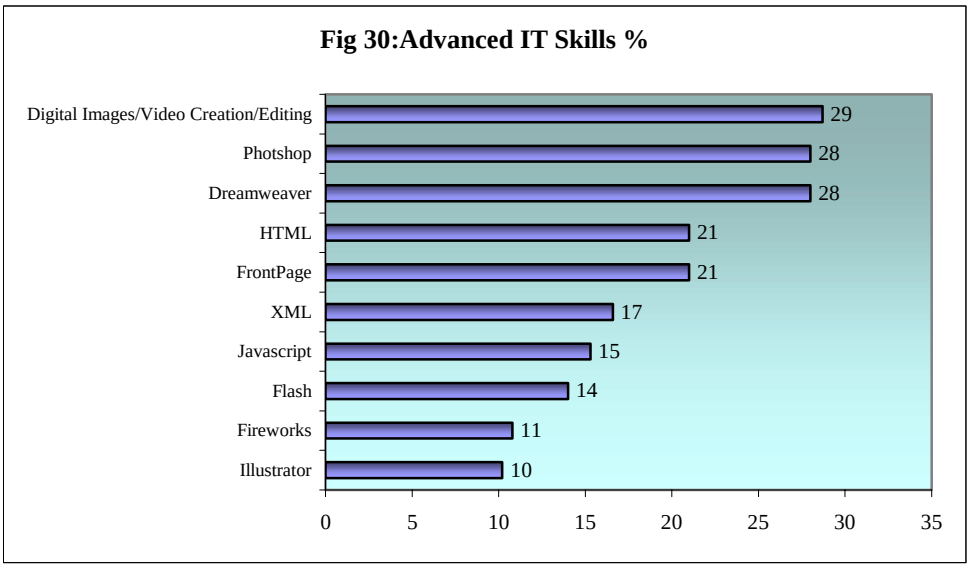
Turning from ECDL, which might be seen as representing a benchmark standard for IT applications training, we then investigated training needs in relation to online learning and the core business of the Colleges. Respondents were asked to identify areas of training which they felt would be of most benefit. The results are illustrated in Figure 29, sorted in terms of the most popular options.

The use of VLEs comes top of the list with the related areas of the use and creation of online resources not far behind. This indicates an appreciation of the central importance of the new technology to effective teaching and learning and the need to have quality materials to take full advantage of that technology. It also demonstrates a willingness to learn and to turn the energies which have been focussed on ICT in the recent past towards ILT.

Fig 29: Training Preferences in Online Learning %

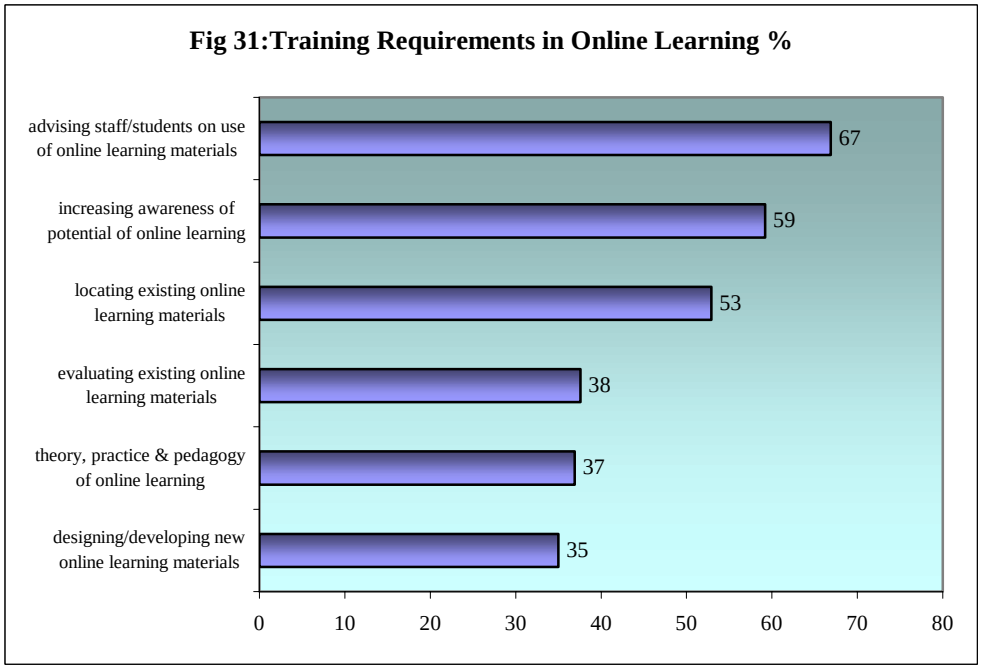


The next section probed the need for 'advanced' skills among the sample. Respondents were able to tick as many boxes as they liked in this area so it is difficult to establish anything other than the relative levels of demand, which are illustrated in Figure 30. Perhaps all we can draw from these figures in the central importance of image manipulation when dealing with an on-line environment.



11 Online Learning Training Requirements

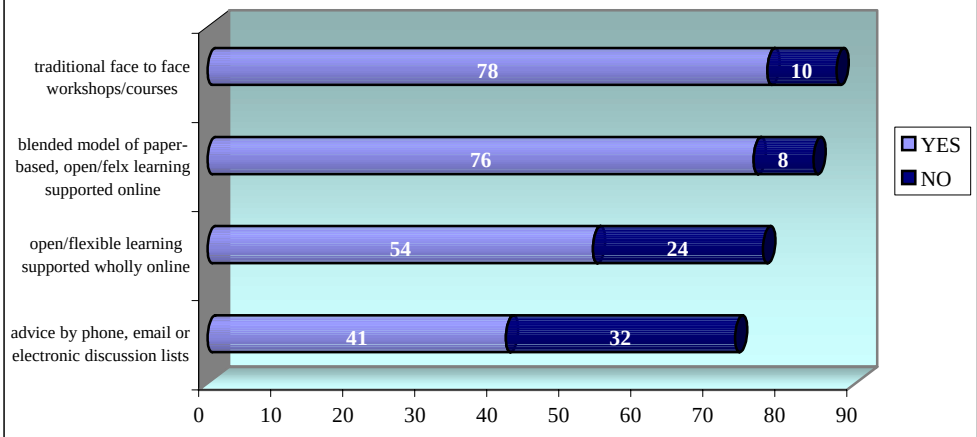
The final question on training needs looked in detail at training requirements with respect to online learning. Here respondents could choose three options from the list provided and the results – illustrated in Figure 31 - indicate the role of learning resources staff in relation to the technology. This role is one of facilitator and perhaps explains the emphasis on offering advice and increasing awareness of online learning and its potential. Practical aspects such as the creation of the materials themselves appear at the foot of the list reflecting the priorities of this cohort of staff.



Having tried to establish the demand for training we now looked at attitudes to training delivery. Here as elsewhere there is a preference for the traditional face-to-face model but a growing acceptance that a blended approach may offer a viable alternative training method. This is in sharp contrast to the responses in 2001 where the traditional model was the delivery mechanism of preference for the vast majority of those surveyed.

Once again, however, the resistance to delivery methods which do not contain some element of human contact is very strong.

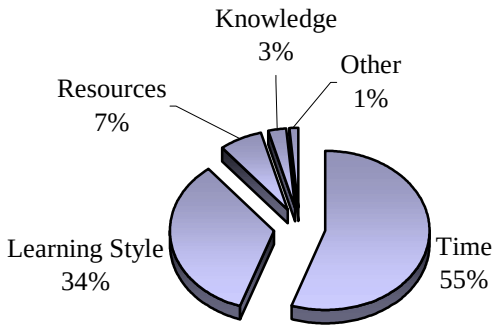
Fig 32:Most Suitable Methods of Training and Support % Responses



Almost half of those surveyed commented in the open response section which followed this question and strong preferences were expressed in favour of both face to face delivery and an element of online. Opinions seem to derive from personal circumstances, previous experience of either model, and individual learning style. Perhaps the lesson that can be drawn from this section is that all of these factors need to be taken into account when creating staff development programmes.

The follow-up question probed some of the reasons underlying these preferences and attracted responses from 75 respondents. As elsewhere, some attempt has been made to aggregate the comments using key word frequency to identify common factors. Again, as elsewhere, the most commonly mentioned barrier was ‘time’ as illustrated in Figure 33.

Fig 33: Factors which Influence Training Preferences



The final question which attempted to allow for any other training needs not already covered in the survey drew 20 diverse responses from which no discernible pattern emerges.

12 Conclusions

The learning resources role is at the centre of a major cultural shift in Colleges and in education more widely as the ways of accessing information multiply. There is therefore an increasing need for a new skillset as well as a knowledge base which encompasses both literal and virtual sources of information.

Though not all members of staff have exclusive use of a computer, all enjoy access to the technology and current equipment levels are judged to be no barrier to development by the vast majority of staff. Email and access to the Internet are universal but there is a need for more training to drive the use of the technology into more active and interactive areas.

Half of the sample is unaware of the College VLE and therefore of the changes this will introduce to the nature of the learning process in the College in general and to the role of the library and resource centre within this new architecture. Only a small percentage has received any training in the VLE. There is a wider recognition and understanding of College Intranets though again few have been formally trained. Finally, video conferencing is used by only a small minority of staff. A general conclusion which can be drawn here is that while the sector has invested heavily in the technical infrastructure to support new patterns of learning it has not invested in staff development which will ensure that the infrastructure is used efficiently.

Staff can readily identify relevant online resources and have increasing College support in this activity. However, both time and training are needed, particularly in the application of assistive technologies. Generally, there is a greater experience of online materials though it is still restricted to around a third of staff and even fewer are involved in any form of localised development. Uptake of JISC resources to support online learning has been varied though the need to subscribe does not appear to be a barrier to uptake. Services may need to become more proactive and focussed to maximise this uptake.

The basic skills of ICT are increasingly in place across the sector, helped in some part by the widespread uptake of ECDL training. The need now is to augment these ICT skills to begin to use them creatively in an online environment. There is a real enthusiasm for training, again evidenced by ECDL uptake, and the most urgent demand is for training in the use of VLEs and in the creation and use of online learning materials. Training is also required in how to facilitate access to quality online learning and how to give advice to staff and students. Demand for ‘advanced’ IT skills clusters round image manipulation. Some progress has been made in the acquisition of skills in assistive technologies but this knowledge can often be superficial

While the traditional model of workshop delivery is the most popular by a narrow margin, a blended model would now be equally acceptable, though training options without some element of interaction are rejected by a large percentage of the sample. As elsewhere, the single greatest barrier to the uptake of training is the lack of time.

13 Recommendations

A structured programme of staff development is necessary to support the introduction of VLEs and to help them move beyond the 'pilot' phase they are currently in in many Colleges. Information sessions need to be held urgently to ensure that all staff are aware of the technology and its implications. Similarly, if Video Conferencing is to have a chance of emerging as a mainstream transmission technology in Colleges then staff development must accompany any switch to new VC over IP technology.

The enthusiasm for training shown by staff needs to be recognized. Training is required to move the focus from ICT to ILT and to build on the impetus gained from ECDL programmes. As well as training in VLEs, training should be provided in the creation of online learning materials, in the effective use of online materials created by others and in the particular role of learning resources staff as facilitators to different models of learning for both students and academic staff.

The Regional Support Centres need to market JISC resources increasingly to individual Colleges to maximize uptake of the resources.

A programme of training in the use of assistive technologies which will move staff beyond the recognition stage should be introduced.

Lack of time is clearly a key barrier to the uptake of staff training and ways must be found to provide this if training programmes are to be successful. To some degree this has been done in the case of ECDL. Different Colleges offered incentives, including time, to staff to undertake the training. The same range of incentives should now be used to encourage staff to acquire meaningful qualifications in ILT.

Section D: Management Staff

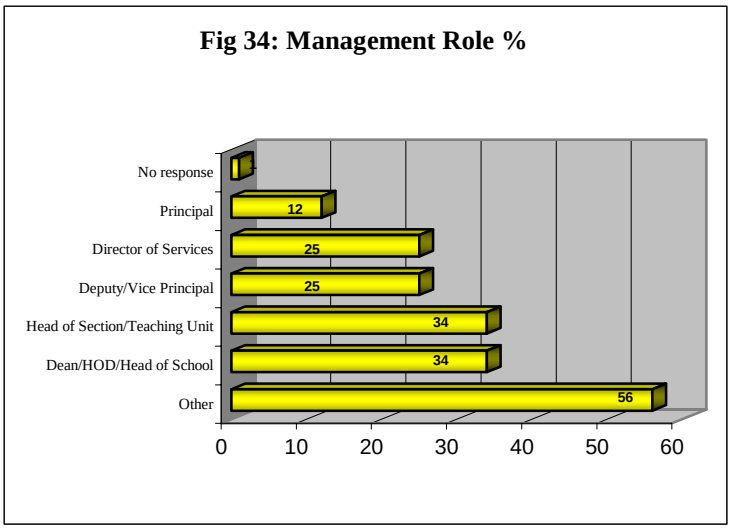
1 Introduction

This section was designed to reflect views of senior management in Scotland's Colleges but there are difficulties in defining exactly where this layer of management begins and ends. As a rough touchstone in this section we were hoping to highlight the training needs of those staff who had a responsibility for the 'strategic' planning of College development. This embraced every grade from Principal to Head of Section but the widely varying nomenclature used across the sector makes it very difficult to compare like with like.

2 The Sample

187 Senior Managers responded, representing practically every one of Scotland's Colleges and 8% of the total responses received. (This was slightly higher than the 170 responses achieved in 2001[16]) A full breakdown of responses by College can be seen in the introduction to this report and clearly there is a wide variation which cannot be accounted for by College size alone but may owe more to disparate factors such as the engagement the senior management team felt they wished to have with the survey or the support they were prepared to give it.

Fig 34: Management Role %



Again the large number of responses in the 'other' category, indicates the widely divergent naming conventions used across the Colleges. However, 48 respondents then used the next question to elaborate on their College role and here the word 'manager' was used over 30 times which, in conjunction with the increased use of the term 'Director of Services' (13% here compared to 6% in 2001), is in itself a small indicator of the cultural change currently under way in Further Education. These then were the strategic managers charged with the advanced planning of the Colleges' provision whose voice would be heard in this section of the survey.

The final introductory question probed qualifications in online learning held by the group. Only 26 affirmative responses were received and of these, when elaborated in the follow-up question, over 80% had either achieved or were studying for an ECDL qualification. Since ECDL is not itself a recognised qualification in 'online learning' this question perhaps reflects some measure of confusion among senior managers.

[16] Scottish Further Education Training Needs Survey 2001:p27

3 Use of Computers

Many of the results here were similar to those registered in 2001. The supremacy of the computer as a key management tool is almost complete, the 1.6% not using them representing only 2 respondents from the 187 total. As before also, the hardware currently in use on managerial desks seems suited to the task, with only a small minority reporting the power of their PC as a limitation. Similarly, respondents appear by and large satisfied with their knowledge of computing and its adequacy for the task.

Do you . . .	***Yes%***	***No%***	***Partly***
Use a computer to manage your area of responsibility	97	2	N/a
Feel the power of your computer limits your capabilities	8	79	10.2
Feel your knowledge of computing limits your capabilities	28	46	25
Feel computing skills need updating to help you manage effectively	49	51	N/a
Feel you need additional training in computing/ICT	66	33	N/a

Table 25: Management Computing Power and Skills

Yet there does appear to be a recognition that technology is moving forward rapidly. While skills are adequate, nearly half the managers surveyed report that current skills need updating while fully two thirds feel the need for additional ICT/Computing training.

The next question in this section probed further into the uses of technology made by managers and yielded few surprises. The computer is the key tool in the sourcing, creation and dissemination of information as can be clearly seen from the first three entries in the following table:

Do you use computers for…	***Yes%***	***No%***
Finding information or resources?	99	1
Creating information?	95	5
Disseminating information by e-mail?	99	1
Disseminating information through discussion groups?	41	57
Peer group communication?	89	10
Accessing your College's Human Resources systems?	44	55

Table 26: Management Use of Computers

Discussion groups seem even less frequently used than they were in 2001 (41% compared with 43% then) while use is made of the technology to access HR records in Colleges.

The supplementary question in this section tried to probe reasons behind negative returns in the table. 17% cited lack of resources as the primary reason for their negative response while 26% cited lack of training. A final open-text question concluded this section designed to probe yet further into these reasons and yielded over 70 returns. While time and access to systems was mentioned, the key response here seemed simply to be that such things as access to the HR system or the ability to use discussion groups were not seen as relevant to the respondent's job description, reflecting the growth of specialist technology in various management areas.

4 Video Conferencing

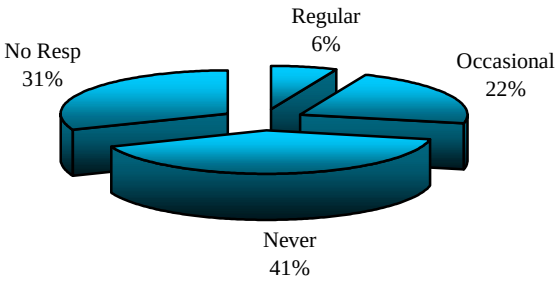
The next section of the survey looked at access to Video Conferencing facilities. In the 2001 survey it was clear that although most – if not all – Colleges were equipped with the technology, the use of it was very infrequent. We were keen to see if there had been a change in this pattern and also how far recent changes in technology, including Video Conferencing from the desktop, had penetrated the sector. Once again the results show that practically all Colleges have access to VC technology through dedicated video conferencing suites. However, video conferencing from the desktop has made little impression on the sector so far.

Do you have. . .	*Yes%*	*No%*	*unsure*
Access to video conferencing facilities through a VC suite?	97	2	N/a
Access to video Conferencing facilities from your desktop	8	77	10

Table 27: Management Access to Video Conferencing

Indeed video conferencing itself seems still to be something of a 'Cinderella' technology with only 6% of the sample reporting themselves as 'regular' users while 41% claim 'never' to use the technology. The situation might be even worse than these figures suggest, as there is more emphasis on the use of VC technology amongst those institutions which are part of the UHIMI (University of the Highlands and Islands Millennium Institute) due to the geographical distances between partner institutions. Many of the regular users of VC here may be staff of member Colleges.

Fig 35: Frequency of Use of VCR Facilites



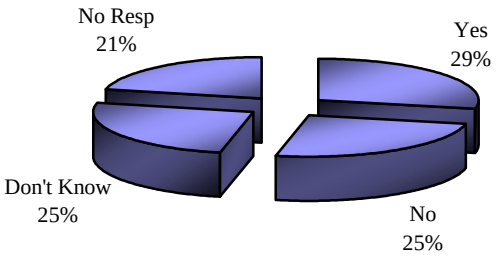
The emphasis in the table below on communicating with staff in other College locations and reducing the burden of travel would seem to emphasise this point. There are a few brighter notes in comparison to 2001, in that more Colleges now seem to have access to VC technology and there does seem to have been a marginal increase in its use among managers.

If you use Video Conferencing, do you use it to…	*Yes%*	*No%*
Communicate with staff in another College location?	23	11
Communicate with local external contacts/bodies?	13	20
Communicate with national external contacts/bodies?	19	15
Communicate with international external contacts/bodies?	5	27
Reduce travel to other venues?	24	9

Table 28: Management Uses of Video Conferencing

However, there still seems to be a generalised reluctance to use video conferencing as an integral part of College technology. This is reinforced in the final question in this section where staff were asked if training in VC would increase the uptake of the technology. Only 29% of management staff provided a positive response while 25% were negative. It therefore seems that if video conferencing is to become embedded in the FE scene then a major rethink of its potential uses and associated staff training is necessary.

Fig 36:Demand for Training in VCR Use



5 ICT/ILT Strategies

The next section of the survey looked at the strategic nature of decision making among College managers; who makes the decisions, the process of reaching them, what underpinning knowledge is required, and whether it is adequate to the task, especially in terms of ICT/ILT.

Q15. In the context of College strategy are you…	*Yes*	*No*	*Partly*
The primary decision maker for strategic development in ICT/ILT?	8	89	
If not, is this a shared responsibility?	64	19	
Are you sufficiently well-informed to allow correct decisions to be taken?	41	15	33

Table 29: Management Roles in ICT Strategies

Unsurprisingly, strategic development and decision making seem very much a team activity across the Colleges and while a sizeable proportion of the respondents (40%) feel they have enough information to carry out this task there is still a demand for further input from the majority of those surveyed.

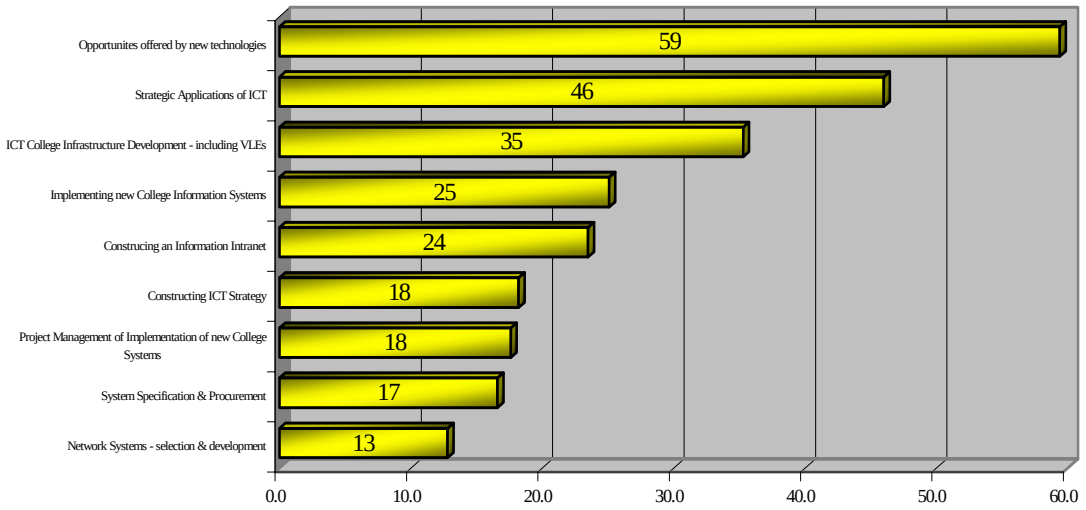
The next question narrowed the focus from a generic notion of 'strategic' decision-making to an emphasis on College information systems. Unsurprisingly, senior managers have less and less direct input as projects move from the planning stages to procurement and implementation.

Q16. Designing and Implementing College Information Systems……are you	*Yes*	*No*
Responsible for/involved in decisions on how to implement/upgrade College information systems?	60	39
Responsible for/involved in setting your College's information system strategy?	44	55
Involved in the specification/procurement of new College information systems?	40	59
Responsible for project managing implementation of new College information systems?	20	79

Table 30: Design of College Information Systems

In this context, and given the demand for further underpinning knowledge revealed in the earlier question, respondents were then asked to select key areas of ICT/ILT where staff development was required:

Fig 37: ICT Training Preferences (% Response)

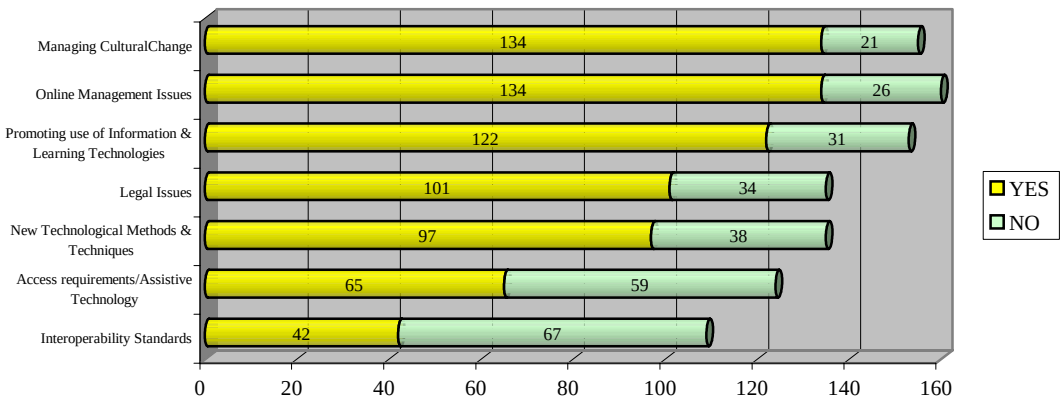


The highest demand appears in the area of what might be called 'blue sky' thinking, in explaining the potential of new technologies, what they are capable of doing and their ability to transform College activities. Then there is a logical demand to see how this thinking can be applied in more practical terms with the emphasis on the strategic application of the new technology and its effect on the College infrastructure. Once again, as the nature of the task becomes more practical, and projects move towards the implementation phase then the demand for training decreases, presumably as other specialist members of staff take over responsibility.

One perhaps surprising aspect of the returns here is the relatively low priority given to training in the construction of an ICT Strategy where the College ICT/ILT planning process is finally defined. It may be that such documentation has now become such a routine part of the planning cycle that the necessary skills are now available to College senior managers.

The last question here narrowed the scope to consider management training in relation to online learning and the results are presented in Fig 38.

Fig 38:Training Preference in Online Learning - Raw Figures



Once again there is a preference for the practical and the strategic – 'managing cultural change' - over the finer abstract details of 'interoperability standards'. Respondents were concerned about the changing legal frameworks within which Colleges are operating and the changing technical context. However, the relatively low response to training needs in access requirements and assistive technology is surprising given the prominence of the SENDA legislation. Perhaps this is once again seen as a 'specialist' area, outwith the 'strategic' remit of senior management, but the spirit of recent developments in the sector suggests that access for all should be considered at the core of College strategies and therefore, very clearly, has strategic implications for College development.

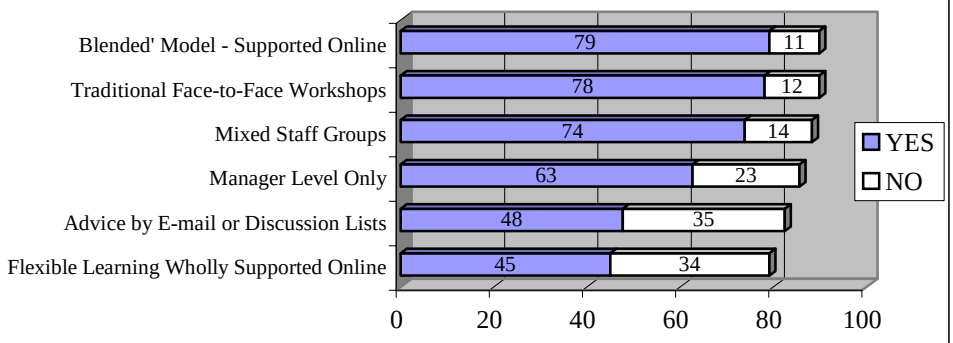
A supplementary open text question at the end of this section yielded few responses and no common thread emerges.

6 Preferred Training Methods

The final question in the senior management section of the survey, as with the final question in all the other ETNA survey versions, concerned preferred methods of staff development delivery.

A preference clearly emerges for a mixture of 'blended learning' and traditional face-to-face training, delivered to mixed staff groups. It is equally clear that many respondents – over a third – would not favour training delivered wholly electronically. These results are very similar to those recorded in the 2001[17] survey with, if anything, a more marked swing against fully electronic delivery.

Fig 39: Methods of Training & Support %



The final question in the survey invited open responses and suggestions for other training needs related to the management of ICT in Colleges. Only a small number of comments were received, some requesting quite individualised training requirements. However, some of the more 'strategic' or generic comments may be worth repeating here:

> *I want to be made aware of tomorrow's technologies and their potential.*
>
> *It is important to keep as up to date as possible.*
>
> *As a small College which cannot finance the employment of specialist ICT staff the greatest need is for continued access to free advice and support on an ongoing basis.*

[17] Scottish Further Education Training Needs Analysis 2001: p31

7 Conclusions

Clearly the computer is the key management tool in Scotland's Colleges. The overwhelming majority of managers felt that the computing power available to them was adequate to the task but a significant proportion of the sample needed additional training to maximise their use of the technology. The tool is used to source, analyse and communicate information though only a minority contribute to relevant electronic discussion groups. Increasingly specialised uses of the technology, such as human resources record systems demand specialised training.

Video conferencing is still a very underused technology even though the infrastructure is present in most Colleges and there is a resistance to further training in this area across a large element of the sample.

ICT/ILT strategies have become a key part of the College planning cycle involving all members of the management team but there is a concern that the quality of information informing these strategies could be improved. This is reflected in the training needs expressed which focus on the strategic applications of new technological innovations and the opportunities these offer for College development. Accessibility is given a surprisingly low priority in training demands.

In the area of online learning the notion of cultural change is to the forefront as are the specific management issues emerging from a technologically-driven approach to teaching and learning. A range of views was expressed here but there was a distinct preference for the cultural and strategic over the rather more abstract and detailed.

In training delivery, managers would be equally happy either with traditional face to face or blended delivery as part of mixed staff groups.

8 Recommendations

Further investigation is necessary into the technological skill set required by management in the modern College, but judging from the data produced by ETNA the priority areas of training and information are:

- Managing cultural change
- Issues of online management
- Legal issues

There is also a generalised need for high grade information on technological innovations which may impact on Colleges in the near future, reflecting the difficulties in trying to create strategies for the medium term while technology is evolving at high speed. Managers need to be well informed about 'tomorrow's technologies'. This is an area addressed by the JISC through management briefing papers and the JISC InfoNet service and in the local context through the work of the Regional Support Centres.

Video conferencing should be revisited in the light of recent technological innovations which may overcome substantial current resistance to its use.

Section E: Technical Staff

1 Introduction

This section of the survey analysed the training needs of technical and networking support staff. As expected, this part of the survey produced the smallest response, 129 replies, but although the numbers may be relatively small this group provides a service which more and more Colleges see as mission critical to their overall operations and which is increasingly required to be available, completely dependably, on a 24*7 basis. It is therefore of vital importance to provide this group with the type of training and support they need to do their jobs.

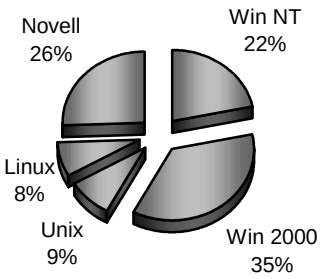
2 The Sample

The 129 staff who responded to ETNA (just over 5% of the overall total) were drawn from 37 of Scotland's 46 Colleges, representing establishments of all sizes and in all geographical locations from the heart of the inner city to the fringes of the highlands and islands. The vast majority were full-time, permanent staff who operated under a disparate array of job titles, including seven who described themselves as 'lecturers'.

3 The College Technical Environment

Before looking closely at the training needs of individual members of technical staff we tried to establish the kind of technical environments which could typically be found in Scottish Colleges. To this end, the next set of questions looked at the nature of College networks and activities supported by them. The first question examined the network platforms in use. Responses are illustrated in Figure 40 below:

Fig 40: Network Platforms Used in Scottish FE Colleges



The dominance of Windows technology is clear from this illustration, reported by almost 60% of those surveyed, but the actual picture seems more complex and it is worth examining the underlying data table of responses, presented as raw scores:

What type of network platform does your College currently run?	
Windows NT	51
Windows 2000	84
UNIX	21
LINUX	18
Novell	60

Table 31: College Network Platforms

The 129 staff who completed the survey provided 234 responses here which clearly indicates that the majority of Colleges currently run more than one Network platform. It is hard to be categorical on the reasons for this but it would appear that some Colleges may have been between network platforms at the time of the survey or that they are required to run different systems for different parts of the College or to cope with the demands of particular curricular groups. The supplementary question here further complicates the picture by mentioning XP, the next logical migration for many Colleges, and Mac networks needed to support some specialist provision. Finally, it is interesting to note the 18 mentions of Linux which appear in the table. Closer inspection of responses which cite this option reveal that in every instance at least one other network platform was also in use which may suggest some experimentation with the free open-source Linux platform.

Next we looked at how network central services are supported. Traditionally all network services have been supported in-house but recently there has been a marked trend towards outsourcing such support and we were keen to gauge the extent of this shift:

How are your network central services supported?	*In-house %*	*Outsourced %*
Email	93	2
Web Hosting	68	23
External DNS	53	29
Firewall	79	9

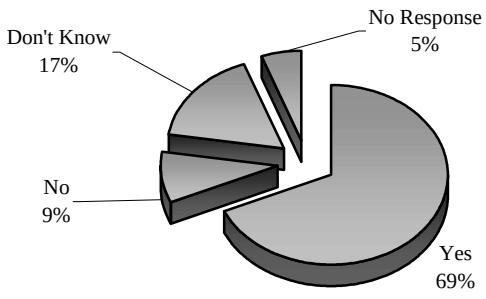
Table 32: Supporting College Network Services

Colleges may outsource web hosting and DNS because they are small and therefore don't have the local expertise available to provide the support or simply for reasons of increased reliability.

4 Virtual Learning Environments

In common with all other sections of staff surveyed a major change since the last Training Needs Analysis has been the advent of College VLEs and a similar question was posed in each section of the survey to establish familiarity with the system installed.

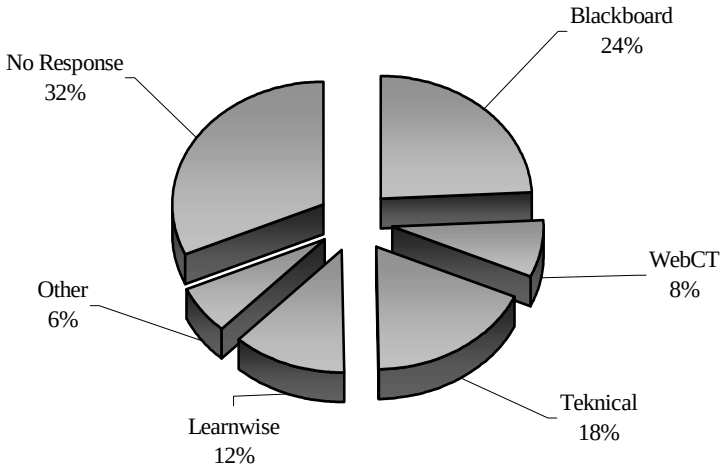
Fig 41: Has your College Purchased a VLE?



Even among technical support, where it might be expected that all staff would be aware of the College VLE, there seems be a strong element of confusion with only just under 70% of the sample responding to the question with an unequivocal 'yes'. However, the positive answer here was stronger than anywhere else in the survey where the same question was asked.

As elsewhere, the next question probed which VLE product the College has purchased. The diagram which follows takes account once again of all responses received:

Fig 42: Type of VLE Purchased



Clearly, no single VLE has come to dominate the marketplace in Scottish FE, though the market is distributed among four major vendors. A supplementary question here indicates one College experimenting with a 'home grown' system but no general pattern emerges. Once again, perhaps the most worrying aspect of these figures is the number of respondents, almost a third of the sample, who offered no response.

This might partly be explained by the fact that according to the next question only 16% of those surveyed had received any VLE training. Interestingly, this compares with 28% of academic staff and 23% of learning resources staff who have received VLE training and indicates, perhaps, that at this stage the technology is seen as being 'owned' by the academic rather than the technical staff.

At the beginning of what could be a new era in the delivery of learning and teaching within Colleges there is a great need for the ownership of the technology to be shared and understood by all if it is to be used to maximum advantage. Technical support will be particularly critical in this area in order to secure the necessary confidence in the technology among staff and students.

5 College Intranet

The next set of questions examined knowledge of the College intranet and its use and as might be expected of a more familiar technology, the response rate here was significantly higher:

College Intranets	*Yes %*	*No%*	*Nr%*
Does your College have an Intranet?	88	9	3
Is it in use for teaching and learning	58	34	8
Have you received training in how to support the Intranet?	26	66	8

Table 33: College Intranets

Most Colleges do have an Intranet and the majority use it, at least in part, for teaching and learning. A quarter of staff surveyed had received Intranet training and while this is a higher percentage than recorded for VLEs it is still perhaps surprising that so few have received training in this area given the amount of time that Intranets have now been a fixture of the College scene.

6 Video Conferencing

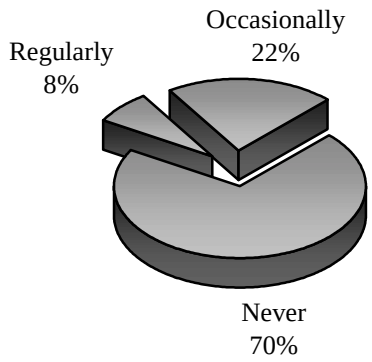
Respondents were then asked whether they supported video conferencing, both through the traditional platform of the dedicated VC suite and the newer, more flexible and cheaper VC over IP systems:

Video Conferencing	*Yes %*	*No%*	*Nr%*
Do you support access to VC via a video conferencing suite?	47	47	6
Do you support access to VC via desk-top video conferencing?	29	62	20

Table 34: Video Conferencing

Once again there are interesting trends in these figures if we compare them with results to the same questions asked elsewhere in the survey. 47% of technical staff know of their College VC suite as opposed to 40% of academics and 38% of learning resources staff, in relation to the newer VC over IP technology, the respective figures for the three groups are 29%, 12% and 10%. There is clearly a problem that some technologies, once purchased by a College, remain isolated and therefore underused in one corner of it. This is another area where technical staff have to be brought into the mainstream of development in order for the College to ensure the maximum return on investment.

Fig 43: Use of Video Conferencing



Despite a higher level of awareness of the technology than the average member of staff, use is no more frequent with only 8% of staff claiming to use the technology on a regular basis. The supplementary question which closed this section revealed a range of uses but few direct instances of using the technology to support learning and teaching.

7 Supporting Outreach Centres

One growth area of College activity in the recent past has been the establishment of outreach centres [18]which bring with them a series of challenges for the College Network Support team.

[18] Use of ICT in FE College Outreach Centres, RSC Scotland North & East, October 2002

Supporting Outreach Centres	*Yes %*	*No%*	*Nr%*
Do you provide technical support to outreach centres?	74	22	4
Do you require support/advice in carrying out this work?	12	77	11

Table 35: Supporting Outreach Centres

The table indicates that most technical staff are happy with the level and type of technical support they provide to outreach centres and do not require any further resources to help them carry out their role.

8 Professional Qualifications

The final question in this section of the survey was designed to produce a snapshot of the range of professional and vendor qualifications held by technical staff.

At first sight these figures seem confusing with no clear pattern emerging – for example, 37% of the sample are working towards CISCO qualifications while 47% dismiss these as 'not relevant'. With the exception of the ECDL column, the vendor/professional training on offer would only be relevant if the network supported came from the same vendor. There is a good correlation between this table and the table detailing network platforms earlier in the report.

The case of ECDL is a little more puzzling. Once again widely differing views are expressed. 28% of the sample have either achieved the standard award or are working towards it and yet, once again, the award is rejected as 'not relevant' by 20% of the sample. In the narrow focus of network support this impression of the value of ECDL is perhaps justified, but the fact that so many staff here have taken the time to achieve the qualification is another index of how much ECDL has become a generic qualification valued among all sections of staff surveyed.

A final open response question in this section invited the sample to give details of professional or IT qualifications held. The responses ranged from D units to Post Graduate diplomas with no clear pattern emerging to indicate the average qualifications profile of a member of staff in this section of the survey.

	Microsoft		**Novell**		**Cisco**		**ECDL**	
%	**MCP**	**MCSA/MCSE**	**CAN**	**CNE/MCNE**	**CCNA/CCDA**	**CCNP/CCDP**	**Standard**	**Advanced**
Yes	8	3	9	3	4	1	28	2
Working to	19	31	12	11	27	10	14	12
Not relevant	19	19	27	29	21	26	20	25
What is it?	5	6	5	5	5	6	1	2
No response	48	40	48	52	43	57	37	58

Table 36: Professional Qualifications

9 Using Computers in Your Work

As with other sections of the survey we sought to establish the access of this cohort of College staff to technology and their uses of it.

Do you. . .	***Yes %***	***No %***
Have exclusive use of a computer (or workstation) at work?	88	12
Share a computer with others?	22	64
Feel your capabilities are limited by the power of your computer?	26	68
Feel your technical knowledge needs updating to allow you to work effectively?	60	35

Table 37: IT Staff Use of Computers

The vast majority – nearly 90% - have sole access to a computer at work, only a marginal increase on the 2001 figure. Once again, as in other sections of the survey, computer power is seen as sufficient to the task by a large majority of the sample, however, training is required by nearly two thirds in order to work more effectively.

Demands of networking staff on the available technology will clearly be more specialised than those of other members of the staff and the next question probed how the technology was used for network development and fault diagnosis.

Do you have access to computers for. . .	***Yes %***	***No %***
Simulating user/network problems?	64	34
Systems development testing?	63	36
Are these computers . . .		
In addition to your 'office' workstation?	60	31

Table 38: College Network Platforms

The answers here highlight some of the main uses of the technology as employed by network support staff with in each case around two thirds responding positively to the question posed. The same proportionate response can be seen in the answers to the next set of questions.

Do you feel that your testing facilities are sufficient for . . .	***Yes %***	***No %***
Most diagnostic purposes?	62	30
Most network development purposes?	56	35

Table 39: Network Testing Facilities

While the majority here do feel their testing facilities are sufficient there is a large minority who disagree, particularly when the focus turns to network development.

The final questions show this group both as typical members of College staff (returns for accessing and communicating information were over 90% in all sections of the survey), and as specialists using the computer hardware to remotely administer systems and to a lesser extent to plan the future development of the actual network.

In the context of your work, have you used computers . . .	***Yes %***	***No %***
To access information?	98	2
To communicate with other members of staff or Board members?	93	5
To remotely administer systems?	73	25
To plan or manage a network?	59	39

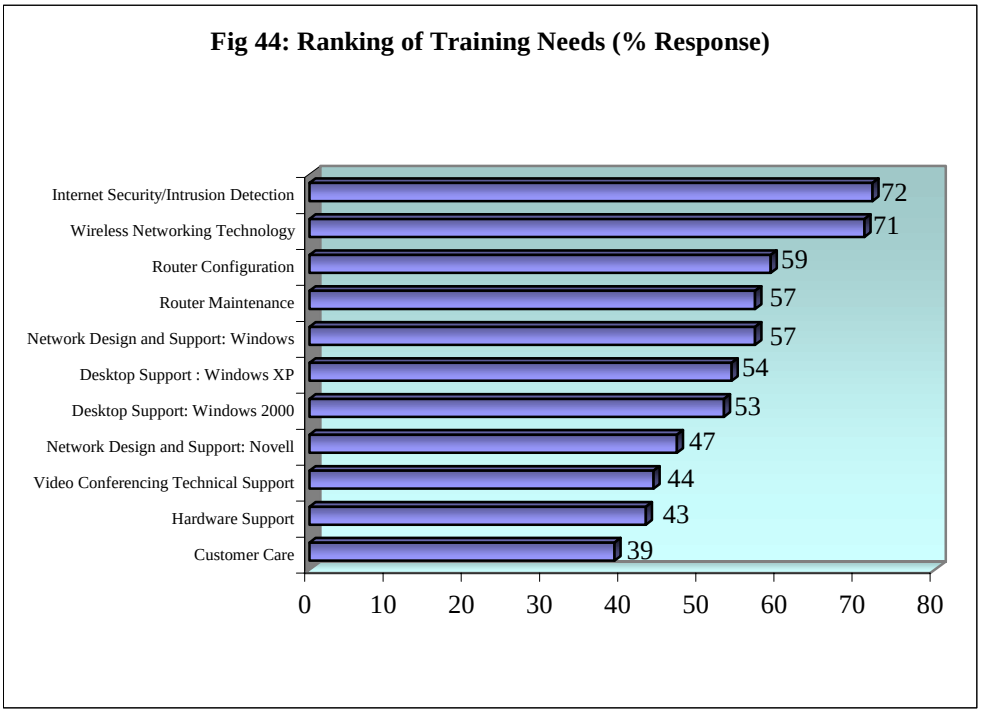
Table 40:Computer Use

10 Staff Development and Support Needs

The next set of questions was designed to probe the training needs of the sample in detail. As noted earlier, this section of the survey produced the smallest return of all, unsurprisingly, as technical and networking staff probably form the smallest of our target populations. As there are so few staff in this category, and as technical training can be very specialised and therefore highly expensive, it is vital that any training provided is both timely and perceived as worthwhile.

The graphic in Figure 44 has been sorted to reflect demand and as with the 2001[19] survey, network security appears at the top of the list. Interestingly, this is closely followed by wireless technology which reflects the greater acceptance of this technology since the last survey and the potential benefits it would appear to offer to Colleges. Demand for training in video conferencing is down from 53% in 2001 to 44% today, despite the advent of new delivery technologies which may make VC more practical for everyday use.

Fig 44: Ranking of Training Needs (% Response)



11 Ongoing Technical Training

We then looked at the different types of qualifications available to technical staff and how they are valued within the sector. There is a distinction which separates this cohort of staff from most others. Technical courses are offered on a regular basis by vendors of IT and networking software, complete with their own testing and certification arrangements. There are also specific SQA Professional Development Awards (PDAs) targeted at this section of the workforce.

[19] Scottish Further Education Training Needs Analysis 2001 P23, Table 14

Fig 45: Attitudes to PDAs

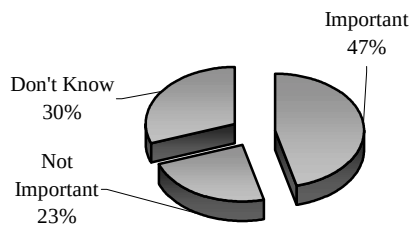
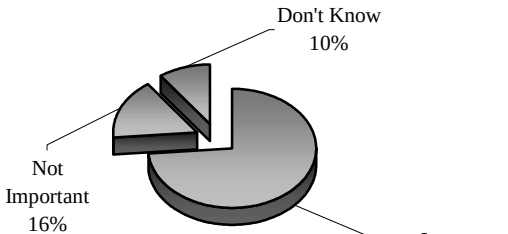
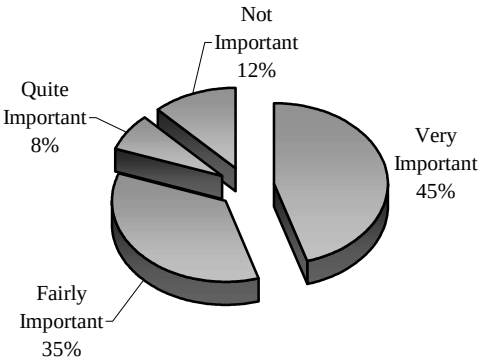


Fig 46: Attitudes to Vendor Certification



Clearly, while the PDA route is seen as important by nearly half of those surveyed, vendor certification is rated even more highly by three quarters. This perception of importance carries over into the responses to vendor exams where only 12% felt that the examination was 'Not Important'.

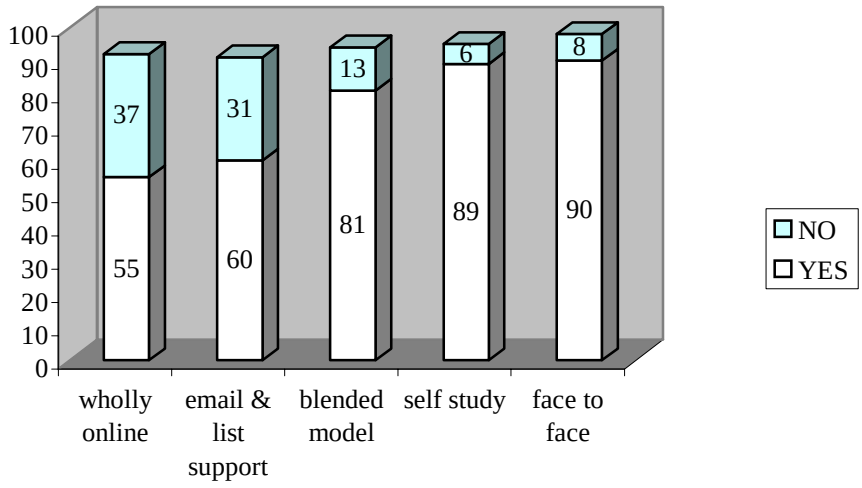
Fig 47: Attitudes to Vendor Exams



12 Most Suitable forms of Training

Having looked at *what* the sample wanted to learn we now probed *how* it should be delivered. While some trends here are common to all parts of the survey, technical and networking personnel seemed more keen than most to supplement the traditional face-to-face model with new variations.

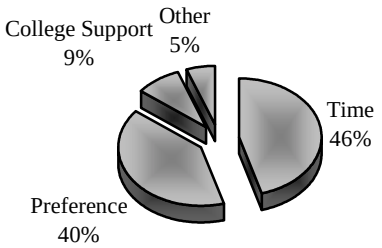
Fig 48: Methods of Training & Support



While wholly online and courses supported by email and discussion groups were still rejected by large numbers of staff – even more forcefully than in the past[20] - strong support was registered for all three of the other options. This group seem particularly keen on self study which bucks the trend seen elsewhere in the survey where a similar question set was used.

The final two questions – both open response type – continued on the theme of training and began by looking at the factors which might explain the preferences for training methods illustrated in the table. Over 50 responses were received here and after some preliminary analysis, the comments were grouped into the following categories to make interpretation practical: time, preference and College support.

Fig 49: Factors Influencing Choice of Training Method



[20] Scottish Further Education Training Needs Analysis 2001 P24, Table 16

While time is clearly a major inhibiting factor in the choice of staff development method it is not as strongly marked among this group than in all of the others surveyed. Learning style and the preferences for the form of learning which flow from this are almost equally important.

The last question prompted for other training needs in relation to IT which we might have missed. Only 22 responses were recorded here and no discernible trends could be determined from the range of answers lodged.

13 Conclusions

The number of responses here represents a very high return across the sector where all but the largest Colleges might have only two to three technical or networking staff. Those who responded work with a variety of network platforms, among which Windows products are not surprisingly dominant. There is also some evidence of experimentation with other non-mainstream platforms such as Linux. As yet there is little evidence of any major move towards the outsourcing of College networking functions.

Among this group there is a greater awareness of the fact that Colleges have acquired a Virtual Learning Environment. However, fewer technical staff have received VLE training. While this is understandable, there is a need for all sections of College staff to be aware of the functioning of the VLE and to take some part of the 'ownership' of it if the initiative is to maximise its potential.

Similarly, in Video Conferencing a greater proportion of those surveyed here were aware that VC systems were owned by their Colleges and that new, more flexible systems were being introduced. There is a need for this awareness to be spread as widely as possible outside the technical support department to ensure that the technology is actually used in Colleges.

A majority of technical staff provide support to outreach centres and need little or no additional help to carry out this function.

The mix of qualifications available to this group – with the exception of ECDL – is a highly specialised blend of vendor and professional qualifications and there seems little conformity of provision across the sector. There is a conflict in this area between personal and professional development of technical skills which might explain some of the apparently contradictory evidence gathered in this section of the survey. Vendor qualifications, while obviously extending the capabilities of staff, will inevitably have the effect of making them more attractive to the economy more generally. This may explain the higher perceived value of these qualifications among the sample.

As expected, this sample have almost universal access to exclusive computer use and do not feel restricted by the technology available to them, though there may still be a requirement for additional hardware for network monitoring and diagnostics.

Staff development and support needs reflect concerns over managing existing network provision and the arrival of new technologies which may impact on the Colleges in the near future such as wireless networking. As elsewhere, time is still the biggest single influence in the choice of training but there is a far greater emphasis among this group on self study than is exhibited elsewhere

14 Recommendations

High quality, reliable information on technical developments is clearly important to this group and there should be a continuing flow of information from the JISC services towards them – particularly from UKERNA and the new JISC Advisory Service on Open Source Software.

Technical input from this group should be incorporated in all College developments which will impact in any way on network provision. This is particularly important in the case of VLEs where buy-in from technical staff is important to the efficient roll out of new systems which will have a radical effect on the core business of the College. Technical input is also vital if new Video Conferencing technology is to galvanise the use of this facility with Colleges.

The qualification structure available to this section of staff requires careful thought to balance professional and wider career needs.

Agencies should monitor relevant technical developments carefully to ensure that the menu of courses available continues to meet the requirements of the sector, as it seems to do at present. They should also ensure that technical advice and paper-based training materials are high quality and widely available to technical staff.

Conclusions

1 Access to Hardware/Software

While access to technology for many staff in the Colleges is excellent, with ratios almost at 1:1, there is still room for improvement in providing the tools of the job to staff in other areas which will require ongoing investment to reach target ratios. However, the large majority of those surveyed did not see computing power as a significant barrier to development.

2 Storage and transmission technologies

These can be defined as the main components of the College infrastructure contributing to the delivery of online facilities.

Virtual Learning Environments

Programmes to introduce VLEs are under way in nearly every College across the country but at the moment knowledge of these developments is often confined to a small number of staff. As a result developments, with a few exceptions, have hardly moved beyond the 'pilot' stage. This is despite the evident willingness of staff to be involved. There is a need to share ICT strategies clearly with staff and to ensure that all staff are aware of development plans for the new technologies.

College Intranets

These are now the major repositories of administrative information across the sector though establishment of the technology has been piecemeal and largely unplanned and training has been erratic.

Video Conferencing

Currently deployed VC infrastructure, technically complex, requiring specialist support and incurring high running costs, has resulted in very low use of the technology. However, Video Conferencing over Internet Protocol (VC over IP) addresses all of these problems and may prove more attractive.

Technical Staff need to be closely involved in the roll-out of these technologies.

3 Strategies and Information

There is a strong demand for information on technologies which may impact on Colleges in the near future to allow for the preparation of effective ICT strategies. Such information, should be timely, direct and of high quality. There is also a need to communicate strategies effectively within Colleges if cultural change is to be achieved.

4 Training

Skill levels in 2003 are appreciably higher than those found in the first survey and at least some part of the reason for this is the uptake, across all sections, of ECDL. This proves the willingness of Colleges to provide training and for staff to take the training opportunity if the prospective skills are perceived as valuable. It also proves the value of the ECDL model as a template for future developments which move beyond application software to the application of technology to teaching and learning.

There is an urgent need to introduce new skills in the academic cohort in the application of technology to the process of teaching and learning. This is currently hampered by the lack of a recognised standard qualification though new training frameworks and qualifications seem set to rectify this situation.

Strong barriers do exist which inhibit the uptake of training opportunities and the most common of these – as it was in 2001 – is time.

The traditional face-to-face model is still marginally the most favoured across all sections of the survey but there is a growing recognition that some mix of traditional and online or distance learning – a blended approach – would be acceptable.

5 Assistive Technologies

Some general awareness-raising of obligations imposed by recent legislation and guidelines seems to be necessary. While more staff are aware of assistive technologies, there is a need to move beyond recognition to practical application of them. However, given the general level of familiarity with the technology it may be some time before the majority of staff are equipped to deal even with standard online learning situations.

6 Learning Resources

There is a growing level of familiarity with online learning resources, though staff who have used these as part of teaching and learning are still very much in the minority.

Recommendations

1 Access to Hardware/Software

Ongoing infrastructure investment is necessary to continue to make progress towards a 1:1 ration of staff to computers, particularly among teaching staff.

2 Storage and Transmission Technologies

Virtual Learning Environments

VLE programmes in Colleges need to move out beyond the pilot stage to embrace all staff affected by the development. Increased clarity and communication of strategies from senior management is necessary to involve staff and Colleges should be encouraged to form consortia, where a common platform has been chosen, to share expertise and materials.

College Intranets

Further, more detailed investigation of how this technology is currently used may be necessary to ensure the establishment of benchmarks for Intranet use and the spread of best practice.

Video Conferencing

VC strategy and technologies employed in the Colleges should be revisited. New technology matched with a renewed programme of staff development can revitalise and revolutionise the use of video conferencing - especially in outreach / distance deliveries and in servicing the social inclusion agenda.

3 Strategies and Information

The role of the JISC in providing information which informs College ICT strategies is vital. Reliable information, particularly on those technologies which are new, or nascent should continue to be provided through briefing papers and specialised services.

4 Training

ECDL should continue to be promoted as it is valued across all sections of the survey. The model of ECDL should also be examined carefully as a template for the creation of a new qualification designed to extend the skillset of academic staff to include the application of information and learning technology. This new qualification could be based on recently- released SQA Professional Development Awards and incorporate the materials from the Ferl Practitioners' Programme (FPP), but however the award and the learning materials are constructed, such a course is needed urgently to begin to equip staff with the necessary skills. FPP would also lend itself to use in the blended model which is increasingly acceptable to staff.

There is also a need for an entry level ICT qualification for those not yet ready to embark on the full ECDL course and the new SQA PC Passport should be considered in this context.

The barriers to uptake of training need to be overcome – particularly the barrier of time – if staff are to be given the incentive to acquire new skills and the feeling that Colleges are supporting them in this activity.

5 Assistive Technologies

Further awareness raising is necessary and this should be carried out by the specialist agencies such as the BRITE Initiative or the JISC assistive technology service, TechDis, who could be in a position to offer staff development in assistive technologies to the significant percentage of staff indicating a willingness to learn more.

6 Learning Resources

Continuing efforts are necessary by agencies to ensure that all staff are aware of developing resources like the NLN materials and the assets available via the JISC.

Glossary

ASC	Association of Scottish Colleges
BRITE	Beattie Resources for Inclusiveness in Technology and Education
DPA	Data Protection Act
ECDL	European Computer Driving Licence
ETNA	The Enhanced Training Needs Analysis
FPP	The Ferl Practitioners Programme
HR	Human Resources
HTML	Hypertext mark-up language
ICT	Information and Communication Technology
ILT	Information and Learning Technology
JANET	The Joint Academic Network
JISC	The Joint Information Systems Committee
LETTOL	Learning to Teach Online
MLE	Managed Learning Environment
NLN	National Learning Network
PDA	Personal Digital Assistant or Professional Development Award
RDN	Resource Discovery Network
RSC	Regional Support Centre
SENDA	The Special Educational Needs and Disability Act
SFEFC	The Scottish Further Education Funding Council
SFEU	Scottish Further Education Unit
SLN	Scottish Learning Network
SQA	The Scottish Qualifications Agency
UHIMI	The UHI Millennium Institute
UKERNA	United Kingdom Education and Research Networking Association
VLE	Virtual Learning Environment
VTS	Virtual Training Suite
W3C	The World Wide Web Consortium
XML	Extensible mark-up language

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