
Student Views of E-Learning

A Survey of University of Edinburgh WebCT Users 2004

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As part of our on-going project to maintain an understanding of the views of students at the University of Edinburgh about the use of ICT in education we organised a survey of a sample of students who were taking courses that had a 'presence' in the centrally-supported virtual learning environment, WebCT (www.malts.ed.ac.uk). As this group of students were known to be using various forms of e-learning in their courses, we felt that they were a good place to begin a deeper exploration of their views, expectation and experiences. Clearly such a survey does not reach a representative sample of the undergraduate population but if large enough it would give us a solid basis of evidence about the student perspective to add to the debate about the issues involved in the implementation of e-learning in Edinburgh. We have recently been involved in funded projects investigating the student view and further reading can be found at: www.flp.ed.ac.uk/ALTC2004/studentviews.pdf

Methodology

The sample was defined by selecting the matriculation numbers of students enrolled on courses in February 2004 that appeared from activity logs and filesize to be in active use of WebCT. MALTS does not have mechanisms to inspect the contents of courses to assess the actual extent of use, leaving them as the 'private domain' of the course teams. This reduces our ability to find active users, but maintains comparability with the 'privacy' of the lecture or tutorial in traditional teaching. We also wished to minimise the burden on academic staff by requests from us for information as to what use they were making of the system. The courses came from a variety of Schools. A major exception was those in Medicine which does not use WebCT for the MBChB programme.

The sample of 4049 students were emailed at their sms accounts, using a method that hid the addresses of the other students being emailed. A small number of messages were undelivered and these were ignored. Each student was given information as to why we wished to collect information from them and who 'we' were with a reply-to email address in case of query. They were invited to complete the on-line survey at a specific URL with a 2-week deadline (a PDF version is now available at www.flp.ed.ac.uk/webct/survey2004.pdf). To minimise completion time we chose to ask few demographic questions and to focus on what they were actually using ICT for in their studies, the level of equipment and skills they possessed and their views of the advantages and disadvantages of using ICT and e-learning.

As an incentive to take part, we offered the students the option of entering a random draw to win one of twenty £10 library photocopy cards, which we felt was a suitable level of incentive and an academically-appropriate reward. EUSA agreed to supervise the random draw. Very few students failed to enter their matriculation numbers. Of the c4000 student sample, 576 completed the survey (14%), and twenty winners were informed by individual email how to collect their prizes. All respondents were thanked by email and told that the results would be made available to all students in the university as soon as the report (this document) had been released. Data were held securely and treated in line with data protection and normal ethical practice standards.

Demographics of the respondents

The response rate of 14% is much lower than we achieve in our surveys of Freshers, but as these are rather a 'captive audience' as they queue for matriculation and can be approached personally by our assistants this is not a surprising difference. For unsolicited on-line surveys without chase-up procedures, this is not an unreasonable completion rate and gave us an acceptable sample size.

The gender distribution was male 41% and female 59% and the age distribution is shown in Figure 1. These are in good correspondence with those of the whole undergraduate population in AY2003-4.

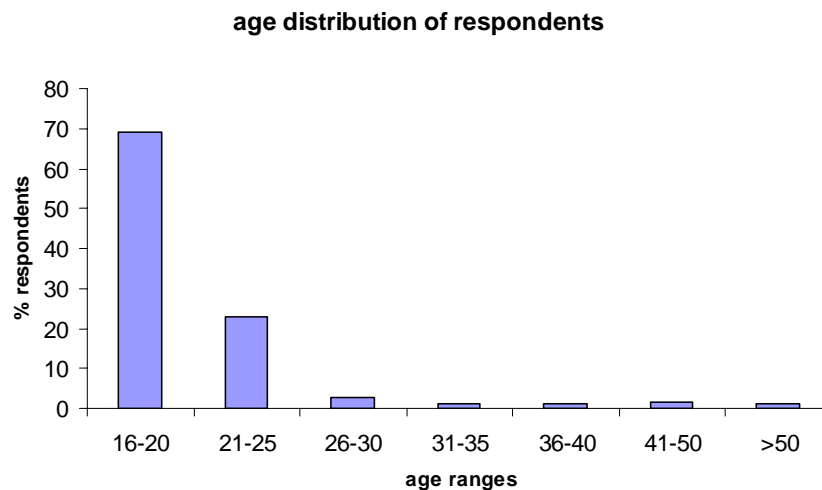


Figure 1. age distribution of respondents to the WebCT survey

The valid matriculation numbers submitted were from 1999 to 2003 (Figure 2). Assuming the great majority are not repeating years, this equates to 46% in their 1st year, 34% in their 2nd year and 20% in 3rd year or later.

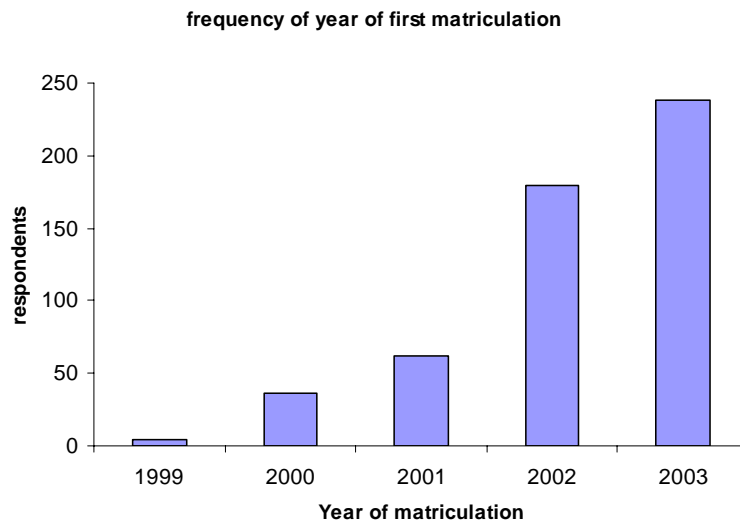


Figure 2. student respondents versus year of first matriculation

How often do students use ICT in their studies?

Students were asked to indicate on a 6-part scale the scale of their weekly use of a computer for their university studies, whether on-line or off-line. The distribution is shown in Table 1.

	All students %	By gender %	
		female	male
0 hours	0.7	1.2	0.0
1 - 2 hours	12.2	11.2	14.0
3 - 4 hours	26.0	21.3	30.3
5 - 6 hours	22.4	23.4	21.5
6 - 9 hours	17.1	19.1	15.4
10 or more hours	21.5	23.7	18.9

Table 1. Weekly use of a computer, on- or off-line, for studies

Use is clearly high for many students, with almost one-third spending at least an hour per day on average at a PC. Care has to be taken with these data for recollection of duration on average is quite difficult and hence somewhat unreliable, but at worst is likely to give a broad indication of high, medium or low use. Rather few students in this group report low use (2 hours per week or less). One driver on them will be the presence of materials in WebCT.

This is one of the few gender differences found in these data that approaches significance, showing more women reporting high levels of computer use than men. The difference is small and probably of low importance in a day-to-day context.

To measure the approximate extent of use of WebCT as opposed to all ICT, students were asked to indicate the number of times that they logged on to WebCT (which can only be done through ESP). The responses are shown in Table 2.

	Percent
every day	16.1
2 - 3 times per week	49.7
once per week	17.0
once or twice per term	9.1
very rarely or never	3.1
never heard of WebCT	5.1

Table 2. Frequency of login to WebCT

Sixty-five percent of the respondents report logins of at least 2-3 per week, and very few less than once per week. The numbers may be higher than in other weeks of term as the data were collected quite soon after the start of some second half of year modules, when interest in the course and need for information might be of greater importance. One in twenty respondents stated that they had not heard of WebCT. As we did not approach them through the VLE but through their sms email this may indicate students who had only second half of year modules in WebCT and had not heard of it yet, or did not remember or recognize the name.

Amongst the student sample using WebCT in February 2004, the distribution of hours of study using ICT in the form of WebCT is shown in Fig 3.

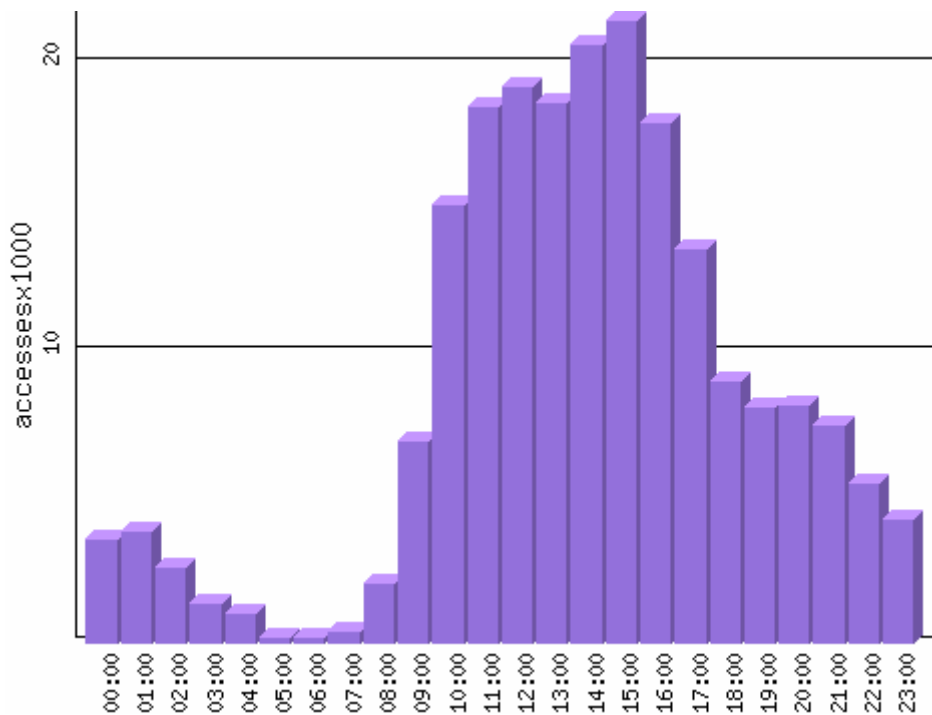


Fig 3 : 24 hour Pattern of usage of WebCT server

It is clear that there is substantial, and rising, use beyond the scheduled university teaching day – a finding which did not cause us surprise but has significant implications for our maintenance of quality of service.

What is the balance between choice and demand in use ICT?

There are probably two main reasons for students to use ICT in their studies – their courses require them to do so (for example in the form of word-processed assignments or use of websites for further reading) or they choose to use ICT because it makes their assignments better or it offers them access to digital information sources (for example e-journals in the Library and via internet searches). We were interested in the balance between these two uses of ICT and so asked respondents to indicate their own proportion of use that was ‘expected’ or ‘compelled’ and that which was of their own choice. The results are shown in Figure 4.

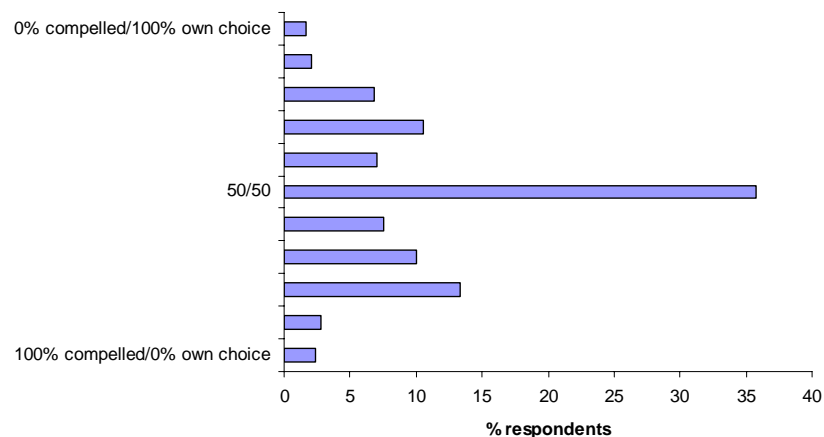


Figure 4. Proportions of respondents' ICT use that are compelled or free choice

It is clear that for most students that they choose to use ICT as much as they are compelled, although for some the demands of their course are higher than their own free use. As we shall see, much of this is related to assignments.

To explore in more depth the sorts of things the respondents were using ICT for, we asked them to tell us in their own words up to three things they **chose to do** with ICT, and up to three that they were **expected or compelled to do** by their courses in this academic year. Their answers were coded into a set of categories (Fig 5).

(It is interesting to note here that the proportion of students who responded to all the open-ended questions was very much higher than is normally seen, giving us excellent depth of understanding about their views and experiences. This high response rate may be due to their ability to type directly into text boxes in the web-form rather than writing on paper. Something we are finding generally in on-line vs. paper questionnaires.)

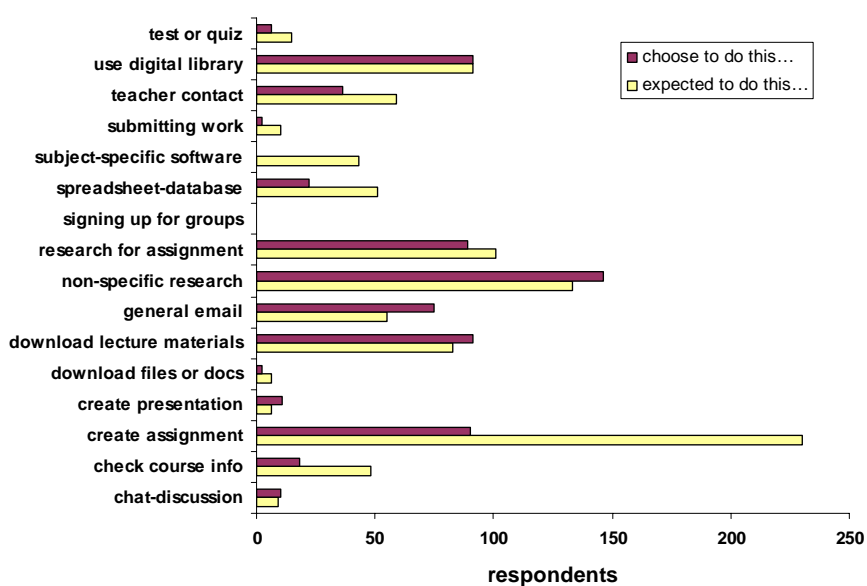


Figure 5. free choice and compelled uses of ICT in studies

The major single compelled use was to create assignments, with other expectations being distributed across a wide range of uses, depending upon the course and its way of working through ICT. Students' own choice was similarly wide ranging, with research and library use being the most frequent activities. Very few students were expected to or choose to create presentations, and this links back to our finding that Freshers are generally not very confident with use of presentation managers such as PowerPoint.

What do students use ICT for?

To gain another perspective on the use of ICT within courses we offered students a list of twelve common and less-common ICT-based activities, and asked them to indicate which were being used in their courses this academic year. They could also write activities we had failed to list, although all of these turned out to be subject specific software or applications, such as Maple for maths. The percentage of respondents who had experienced use of each of these twelve activities this year is shown in Table 3.

Type of application	percent
Lecture notes online	95.3
Past exam papers	76.3
Web links	73.7
PowerPoint presentations online	58.1
Collection & submission of assignments	45.6
Signing up for tutorial groups or essays	43.7
Online discussions	41.7
Online tests & quizzes	36.2
Online still images of useful materials	28.0
Digital readings (eReserve)	19.5
Online movies or audio clips	10.6

Online labs / simulations / role-play	6.1
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Table 3. use of different ICT-based activities in courses taken by respondents

The simpler uses of ICT in learning and teaching are most common, with complex uses such as rich media and games being much less used. This ranking is very similar to that obtained in a survey of academic staff in early 2003 (Fig 6). Despite the predominance of information over process, there are several interactive activities such as discussions and tests/quizzes that suggest staff are using the wider range of e-learning tools now available through the VLEs.

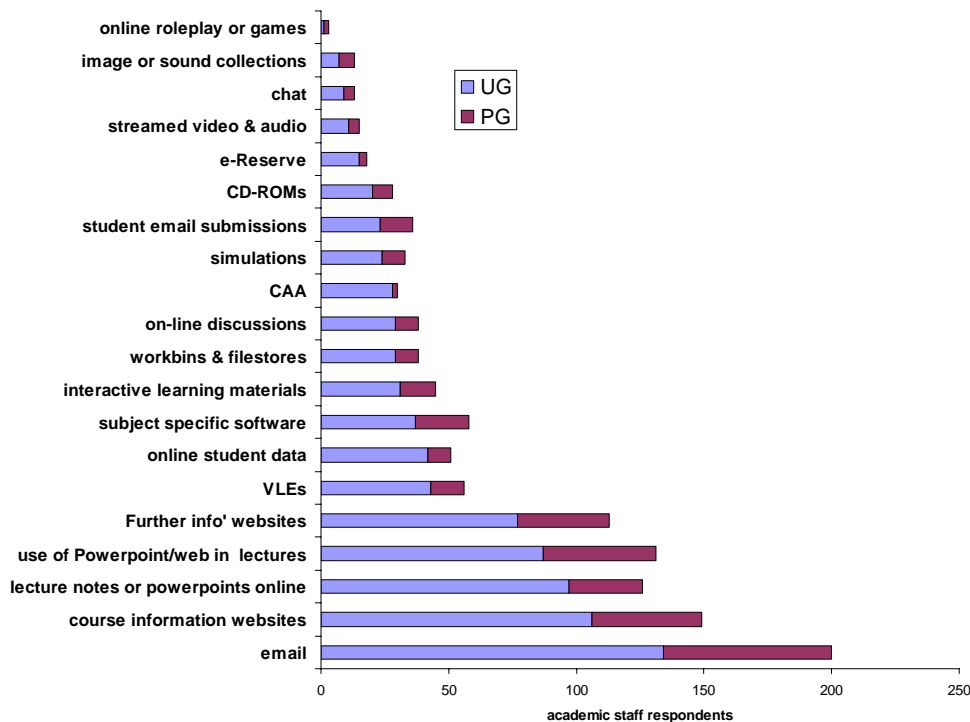


Figure 6. Academic staff use of different ICT-based teaching and learning options 2003

To check to what extent what is being offered (or imposed!) on students in their courses corresponds with what they would like to have, we asked our respondents to indicate the ICT-based activities and resources s they would like more or and those they would like less of. Their preferences are shown graphically in Figure 7. The free-text responses were coded into common categories using qualitative data analysis software (QSR NVivo).

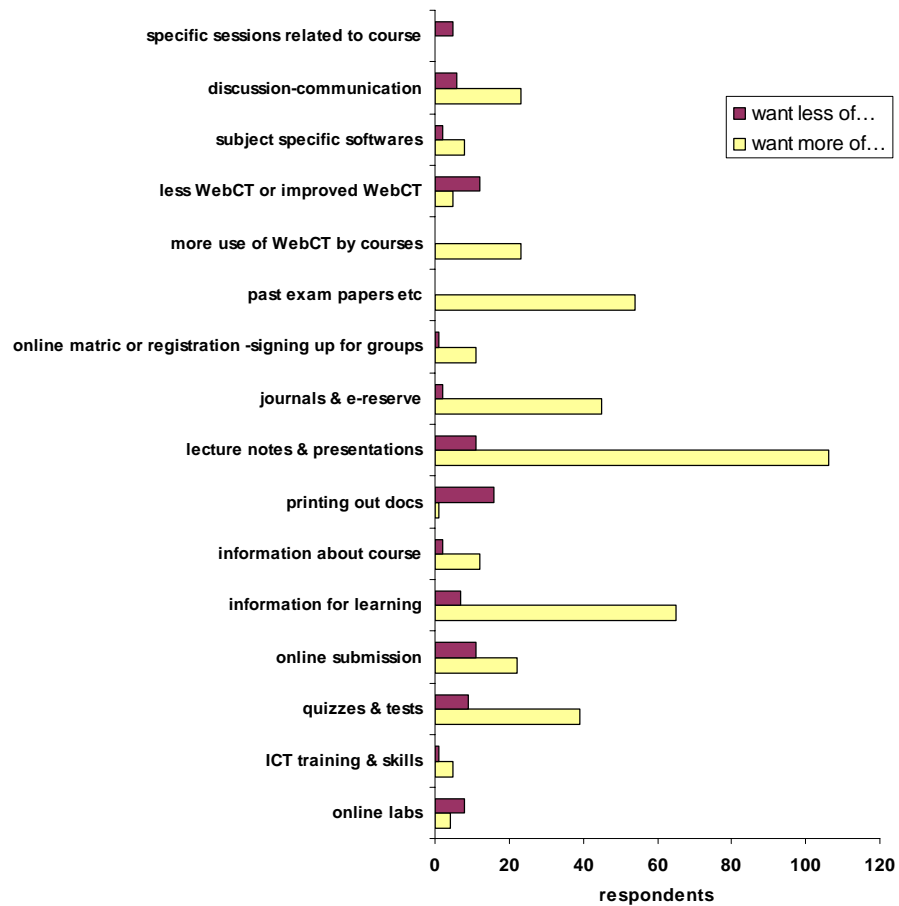


Figure 7. Student wishes for more or less of different ICT-based educational opportunities

It is clear that the students in our sample would like more information sources on-line, more ability to test themselves (the responses were mostly for self-test rather than exams) and for courses not using WebCT to use it. The major ‘want less of’ items related to having to print out materials themselves at cost rather than having them provided by the course, some problems with on-line submission processes and problems with accessing WebCT (and ESP) from off-campus. The overall message is a wish for more rather than less on-line provision.

Do students view ICT as a benefit to their studies?

We know from past surveys that the great majority of students view ICT positively with respect to their education, and so the responses to our question as to whether our respondents viewed use of the internet and computers in their studies as a benefit or a distraction was expected to favour the former. Table 4 shows a very large majority stating that ICT is a benefit to their studies, and remarkably few seeing it as a distraction. This emphasizes the degree to which students have taken ICT into the mainstream of their educational approach.

	Percent		
	total	female	male
a very considerable benefit	78.9	78.4	79.4
something of a benefit	19.3	19.2	19.7
something of a distraction	1.6	2.1	0.9
a very considerable distraction	0.2	0.3	0.0

Table 4. Student views of ICT as a benefit or a distraction for studies

The absence of any difference between the men and the women is also reassuring. One must accept that those who responded to an email request to complete a Web-based questionnaire may not be typical, but then again, they may be when they are drawn from students who we know are very ICT literate and confident. There is no sign from the demographic measures (for example, gender, and age group) that we have distributions other than those that we have seen in the paper questionnaires through matriculation. The photocopy card incentive might also have acted to expand response to a wider audience.

What do they see as other issues for them?

No closed questionnaire covers all the ground that respondents would like to respond to, and so we included a closing question that offered them the opportunity to give us additional comments on their view of ICT in education. Around 15% did so, many making more than one point. Although, as is common, most comments were critical, not all were and some contained praise to things we know work reasonably well in addition to criticism, giving credence to these views. Figure 8 represents these data graphically, with the free-text comments grouped into common categories. The dominant themes are the positive view of ICT but problems with access to services and systems, particularly from off-campus. Printing costs again featured as a problem for students.

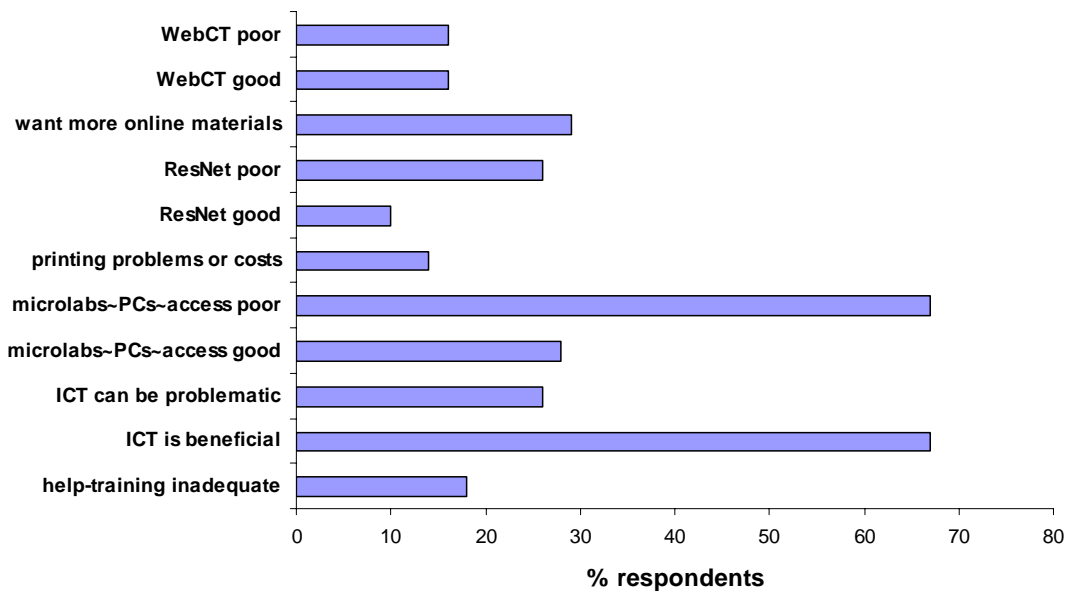


Figure 8. Open comments on ICT in university education

Where do students get access to computers & internet?

Earlier surveys have shown that Freshers' access to PCs and the internet are rising quickly, but with this group of students we also wished to measure the extent to which they actually used university equipment as well as their own, and the balance between these uses. We asked our respondents to give us their first and second choice of computer for work related to their studies, and results are shown in Table 5.

computer access route	rank of importance for studies	percentage of students	Rank
own computer	placed 1st	61.7	1
	placed 2nd	16.5	
family computer	placed 1st	3.0	
	placed 2nd	4.7	
friend's computer	placed 1st	2.8	
	placed 2nd	9.6	
University computer	placed 1st	29.9	3
	placed 2nd	58.4	2
other computer	placed 1st	.2	
	placed 2nd	2.4	

Table 5. Preferred access to a PC

It would seem that a personally owned machine is the first point of access for most of our students (1), with a University-provided computer being the most frequent "backup" (2) (ranked as the second choice point of access). A University-provided machine is still the first point of access for nearly 30% of the student group (3).

The type of PC that our respondents owned is shown in Table 6, with laptops clearly outstripping desktops as the machine of choice (for the first time since we began collecting these data in 1990), and this dominance being due to the laptop being PC of first choice for female students. These data are similar to those in the Freshers survey from October 2003.

PC type	Percent		
	total	female	male
laptop	56.8	63.0	47.9
desktop	35.5	29.6	43.8
both	7.7	7.4	8.3

Table 6. Ownership of desktop and laptop PCs by students

The PC owners are mostly connected to the internet, although women are significantly less likely than to be connected than are men, particularly through cable (Table 7).

	Percent		
	total	female	male
via phone	28.5	27.9	29.2
via cable	47.9	43.8	54.2
via both phone & cable	6.5	6.2	6.9
not on Internet	17.1	22.1	9.7

Table 7. Access routes to the internet of PC owners

The phrasing of this question probably precludes accurate analysis of narrow-band and broadband as some respondents may have ADSL broadband via a phone line. It does however give a conservative indication as to the broadband users, which must be at least 50%.

Conclusions

Our respondents view ICT as important to their studies, and have invested in large numbers in PCs and internet access to enable this, and probably also the social and family benefits this ownership brings. As we have commented in our Freshers survey report (www.flp.ed.ac.uk/freshers/surveyresults2003.pdf), one conclusion one can draw is that we need to find ways to make this ownership of greater value by better network access, safe storage and a wider range of academic uses of ICT.

Our students spend much of their time using ICT for creating assignments and in research for them and their general studies. The more valuable information that they can access and the better the guidance on how to find, evaluate and use the digital Library, the more advantage will accrue in our research-oriented education.

Having good digital services available is of reduced value if they cannot be accessed effectively and efficiently from on- and off-campus. The level of comment about problems with this access indicates that we need to review this area and identify then remove as many of the obstacles as possible.

Placing student information and resources on-line is a laudable action, but if this actually results in increased need for students to print these materials out because they are no longer available in hardcopy, then the value is reduced, both due to cost to the student but also due to the ecological cost of the high level of inefficient inkjet etc printing. To minimise the extent to which this is necessary it would be helpful to consider printing guidelines for courses making on-line provision.

The respondents to this survey indicated clearly that they would like to see the development of more on-line course materials and especially those that support the types of academic activities we wish to promote such as research and investigation plus self-assessment. It is clear from the pattern of user logins that substantial flexibility is offered in time and place of study to those students who are taking courses that use e-learning. This may help the widening access agenda too. The e-learning fund will support some of the expansion needed, but all Schools could now be encouraged to review the extent of their on-line provision to reach a systematic level of provision across all courses and to spread good practice in use of a variety of on-line tasks and resources.

We have planned further studies to extend our understanding of what our students are doing and what they would like to be doing with e-learning. In the summer term we shall be using focus groups and in the next academic session collecting logs and diaries of work patterns, as well as re-running some of our surveys with a wider sample of students.

