Harnessing Technology survey of technology use and adoption in FE colleges 2009-10

Contents

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This report records technology use and adoption in English FE sector colleges during the year 2009-10. It contains five chapters:

1. **Introduction**: the context for the survey; the survey samples; overview of the survey instruments; overview of data analysis.

2. **Key findings** related to technology adoption and use in colleges; infrastructure, hardware and software; leadership and management; staff skills and training; teaching and learning; relationships with suppliers and supporting organisations.

3. **Overview of findings** related to Harnessing Technology system outcomes: overall progress towards HT goals; Confident system leadership and innovation; Technology confident effective providers; Engaged and empowered learners; Enabling infrastructure and processes; trends, developments and continuing challenges.

4. **Acknowledgements:** contributing colleges and staff; reviewers and advisers.

5. **References**.

The Technical Appendix [published separately] gives full details of the survey instruments, the methodology used in the analysis and the names of the individual colleges that participated in the 2009-10 survey.

Throughout this report, diagrams in the report which relate to data from a specific question, or questions, from the College and Staff surveys have the survey relevant question numbers included in the title of the diagram.

1 Introduction

1.1 Context for the survey

This is one of five studies commissioned by Becta to assess progress towards the targets in *Harnessing Technology* across all education sectors. A sample of colleges has been surveyed each year since 2001 and separate contractors are conducting parallel surveys across schools, adult and community learning, offender learning and work based learning.

1.2 Respondents

119 colleges and 604 teaching staff from these colleges responded to the survey. The table below shows the numbers of colleges submitting completed survey returns:

	Number	% of sub-sector
General FE & Tertiary colleges	80	34%
Sixth Form Colleges	23	25%
Other FE sector colleges*	8	27%
Independent NATSPEC colleges	8	-
Totals	119	31%**
***includes SDIs, land-based and Art & Design Colleges**		****excludes NATSPEC colleges**

This represents an increase of 10 FE sector colleges from the 2008-09 survey and, for the first time, it has been possible to invite a number of NATSPEC colleges to participate. Excluding the 8 NATSPEC colleges, which had not been invited in previous years, 75 of the contributing colleges had participated in the 2008 survey, and 36 were newly recruited.

1.2.1 College sample

The sample of colleges is reasonably well distributed across the nine LSC regions. Previous surveys have not shown any regional differences in the technology performance of colleges.

Almost two thirds of the sample colleges now have more than one main site of provision:

A5 - How many main sites of provision does your college have?	
One	37%
Two to five	52%
Five to ten	9%
More than 10	2%

In 2007 almost 60% of colleges responding to the survey only operated on one main site; the substantial reduction in the 2009 sample reflects the numbers of college mergers that have taken place in the past two and a half years.

1.2.2 Staff sample

604 teaching staff completed the on-line staff survey. Just under 500 answered all questions; however, the analysis was able to include partial responses.

1.3 How the survey was conducted

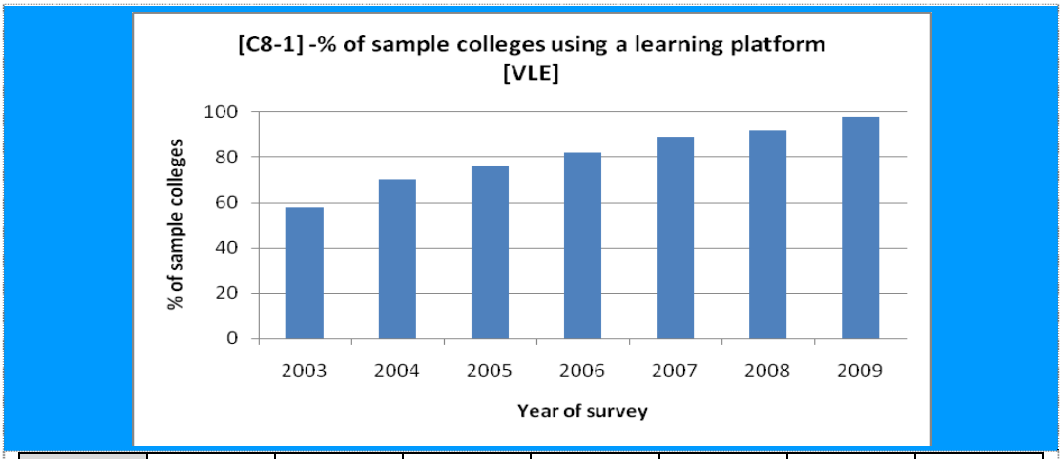
Between June and October 2009 colleges were recruited and questionnaires were drafted, reviewed and trialled. Separate questionnaires were developed for colleges [providers] and teaching and teaching support staff [practitioners]. Questionnaires were completed on-line during November and early December 2009. Following a preliminary analysis of the survey data 5 senior managers and 25 staff from selected colleges were interviewed individually, either by telephone or face to face. Focus groups of staff were also conducted in 4 of the selected colleges.

Full details of the college and staff samples, questionnaire development, interviews and focus groups and data analysis are given in the Technical Appendix.

2 Key findings

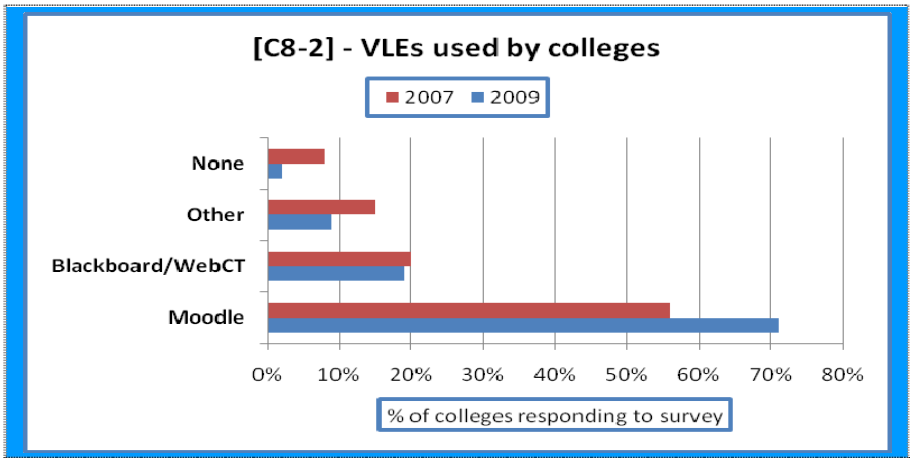
2.1 Technology infrastructure in colleges

Colleges have continued to make steady progress in developing their technology infrastructure and the deployment of VLEs [Learning Platforms] is now almost universal, even in the smallest colleges. The diagram below shows how the adoption of VLEs has increased from under 60% of colleges in 2003 to virtually 100% over seven years [C8]:



Year	2003	2004	2005	2006	2007	2008	2009
With VLE	58%	70%	76%	82%	89%	92%	98%

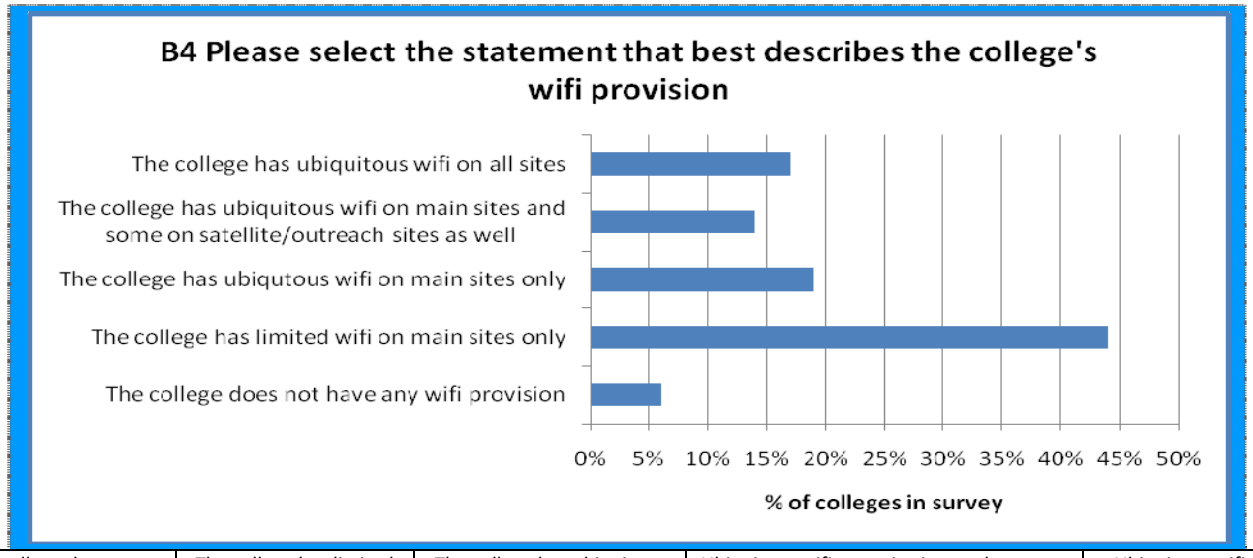
Moodle is the dominant learning platform, having increased its market share by around 15%, to over 70% at the expense of colleges' own constructions and other brands:



VLE	Moodle	Blackboard	Other	None
2009	71%	19%	9%	2%
2007	56%	20%	15%	8%

Networks continue to perform effectively in the large majority of colleges. Only 4% of colleges suffer from unreliability or slowness; only 12% of networks cannot easily handle large multi-media files and only 6% of colleges judge that their network cannot cope effectively with current learning and teaching demands.

A more detailed question on wifi coverage was included for the first time in 2009 [B4]. The diagrams below shows that half of the colleges surveyed either have no wireless network or limited wifi on main site[s] only:



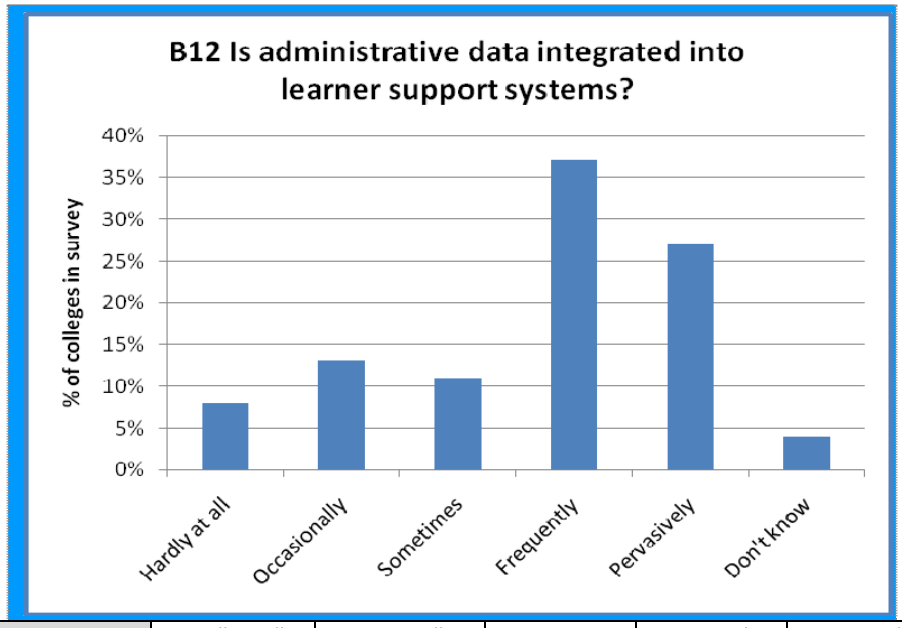
The college does not have any wifi provision	The college has limited wifi on main sites only	The college has ubiquitous wifi on main sites only	Ubiquitous wifi on main sites and some on satellite/outreach sites as well	Ubiquitous wifi on all sites
6%	44%	19%	14%	17%

The presence of extensive wifi shows strong positive correlation [≥ +0.5] with 19 other questions in the college survey:

- Effective content filtering [B5b]
- Specific aspects of the use of e-learning: blended learning [C1c]; learners learning at their own pace [C1d]; the creation of individual learning programmes [C1f]; remote access to learning [C1g]; the creation of individual learning plans [C1h]
- Initial assessment of learners' ICT skills [C3]
- Using ICT to improve the viability of courses [C4]
- Use of ICT for subject induction [C6d]
- Extensive use of varied e-learning materials [C9-C11]
- Staff sharing e-learning materials [C12/C13]
- Encouraging learner comments on e-learning materials [C14]
- The use of ICT for aspects of assessment [C22-C25]

Almost all of these cross-correlations are with questions that explore the flexibility of college ICT provision and use; and the engagement and empowerment of learners.

Almost two thirds of colleges have now successfully integrated registry data into their VLE [B12]:

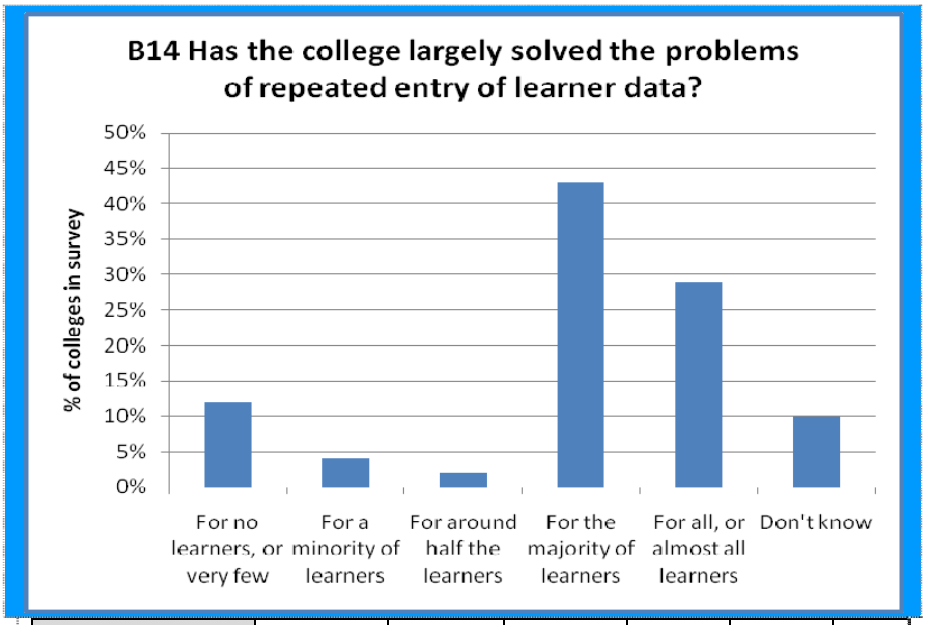


Is administrative data integrated into learner support systems?	Hardly at all	Occasionally	Sometimes	Frequently	Pervasively	Don't know
	8%	13%	11%	37%	27%	4%

Effective data integration also shows strong positive cross-correlation with 19 other questions:

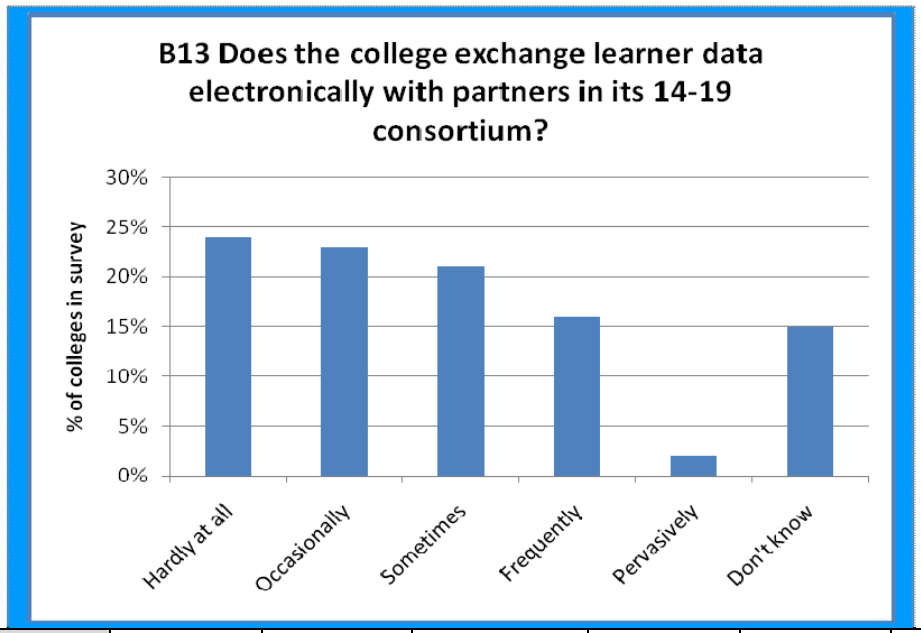
- The provision of internet-enabled computers for staff [B11]
- Solving the problem of repeated entry of learner data [B14]
- Single sign-on for staff [B15] and learners [B16]
- Good remote access to ICT services for both staff [B17] and learners [B18]
- Most aspects of the use of e-learning [C1]
- Aspects of learner induction [C6]
- Processes for systematic improvement of general staff ICT skills [D3] and staff skills for delivering e-learning [D4]
- Effective leadership of college technology strategy [E1-E3]
- Encouraging a climate of innovation in technology use [E4]
- Encouraging staff [E5] and learner [E6] feedback on college ICT services and performance
- Effective dialogue with technology suppliers [E7].

Colleges have now largely solved the problems of repeated entry of learner data [B14]:



Has the college largely solved the problems of repeated entry of learner data?	For no learners, or very few	For a minority of learners	For around half the learners	For the majority of learners	For all, or almost all learners	Don't know
	12%	4%	2%	43%	29%	10%

However, there are still substantial problems in exchanging learner data electronically across 14-19 consortia:



Does the college exchange learner data electronically with partners in its	Hardly at all	Occasionally	Sometimes	Frequently	Pervasively	Don't know
	24%	23%	21%	16%	2%	15%

14-19 consortium?						

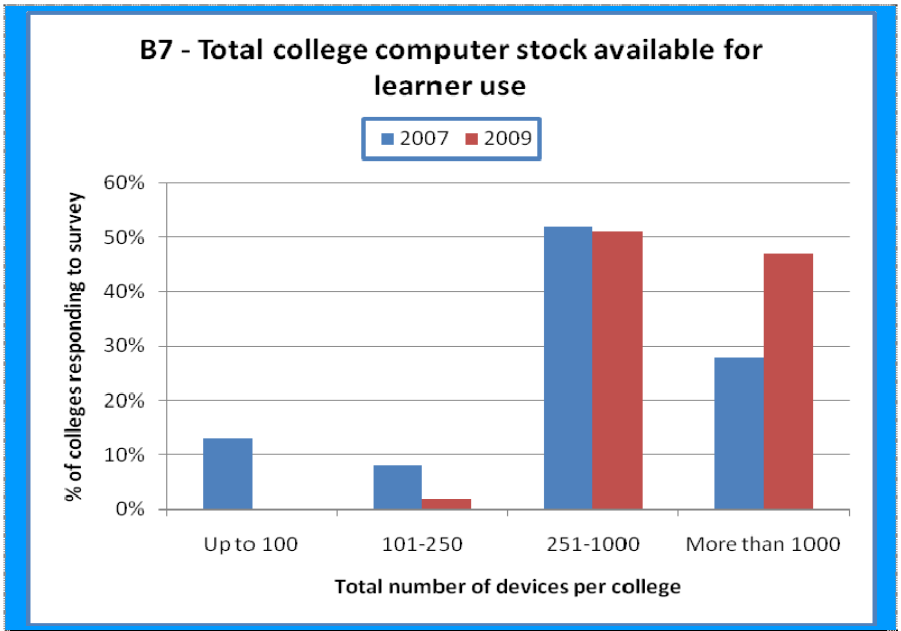
The implications of the continuing incompatibility of school and college management information systems are discussed in section 3 of this report.

Single sign on is now the norm in colleges, with 94% of staff and 84% of learners able to access most or all on-line services once logged on.

Remote access is rapidly improving, with 60% of staff and over 50% of learners now able to access most or all college ICT services from outside the college.

2.2 Hardware and software

The total number of devices available in colleges for learner use appears to have increased over the past two years:



		2007	2009
Total college computer stock available for learners	Up to 100	13%	0%
	101-250	8%	2%
	251-1000	52%	51%
	More than 1000	28%	47%

The increase in the numbers of devices in each college may be a function of the increased size of many colleges, as a result of mergers over the past two years: it is difficult to tell whether the figures represent a real increase in computer stock.

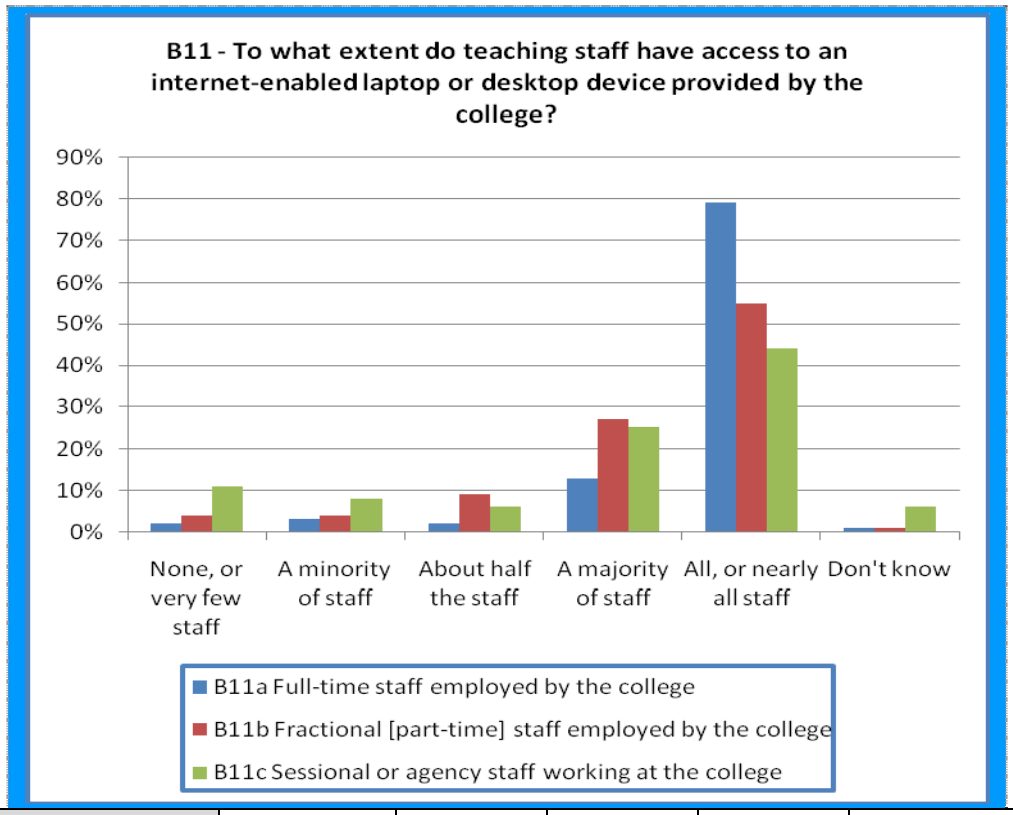
There has been little change since 2007 in the extent to which colleges meet learner demands for computers and internet access:

B6 - How well does the college meet learner demand for computers and internet access?			
	The college has difficulty meeting demand	The college has sufficient capacity to meet demand	The college has sufficient capacity to meet a greater level of demand
B6a Learner demand for computers	39%	55%	7%
B6b Learner demand for internet access	22%	55%	22%

There has been similarly little change in the ability of colleges to meet staff demand for technology and ICT resources, with teaching and learning demands still lagging behind management and administration demands:

B10 - How well does the college meet staff demand for technology and ICT resources?			
	The college has difficulty meeting demand	The college has sufficient capacity to meet demand	The college has sufficient capacity to meet a greater level of demand
B10a Management and administration demands	17%	67%	16%
B10b Teaching and learning demands	36%	53%	11%

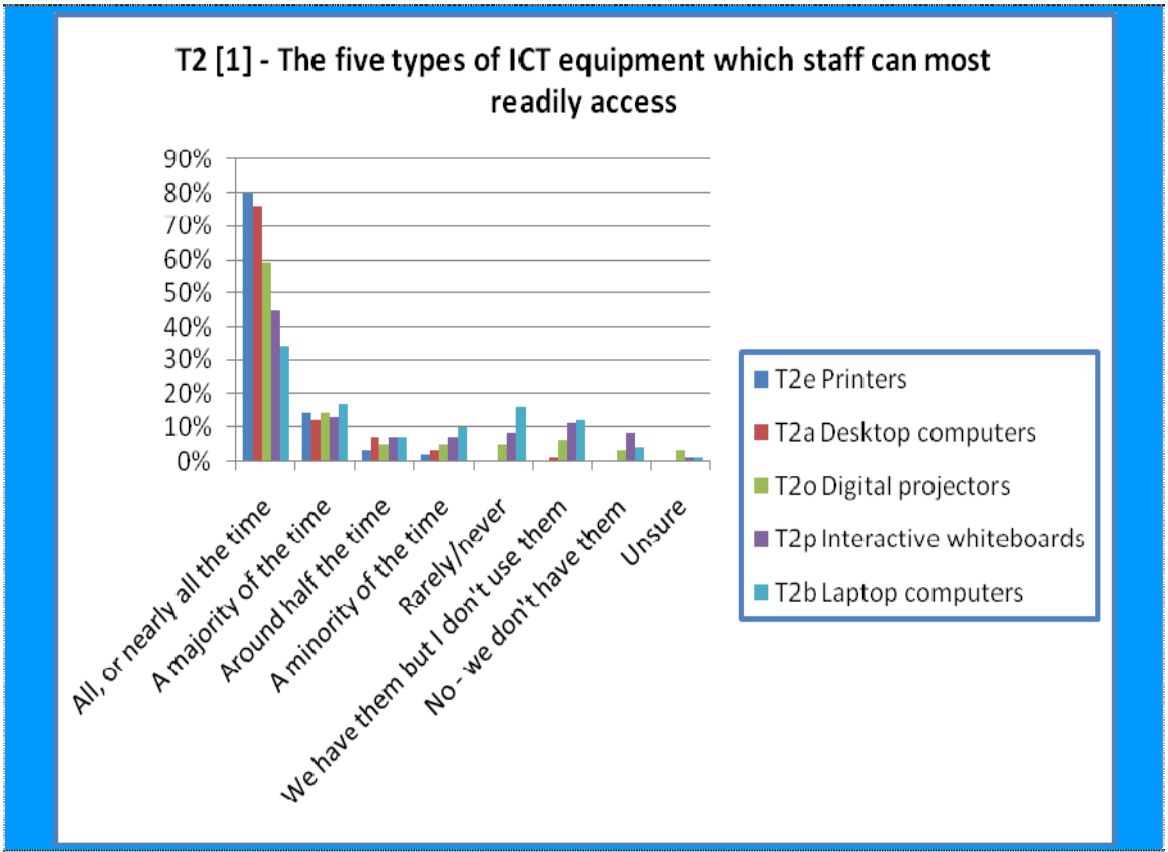
In almost 80% of colleges all, or nearly all teaching staff have access to an internet-enabled college computer, but part-time [fractional] and Sessional or agency staff have more restricted access:



Staff access to an internet-enabled computer	None, or very few staff	A minority of staff	About half the staff	A majority of staff	All, or nearly all staff	Don't know
B11a Full-time staff employed by the college	2%	3%	2%	13%	79%	1%
B11b Fractional [part-time] staff employed by the college	4%	4%	9%	27%	55%	1%
B11c Sessional or agency staff working at the college	11%	8%	6%	25%	44%	6%

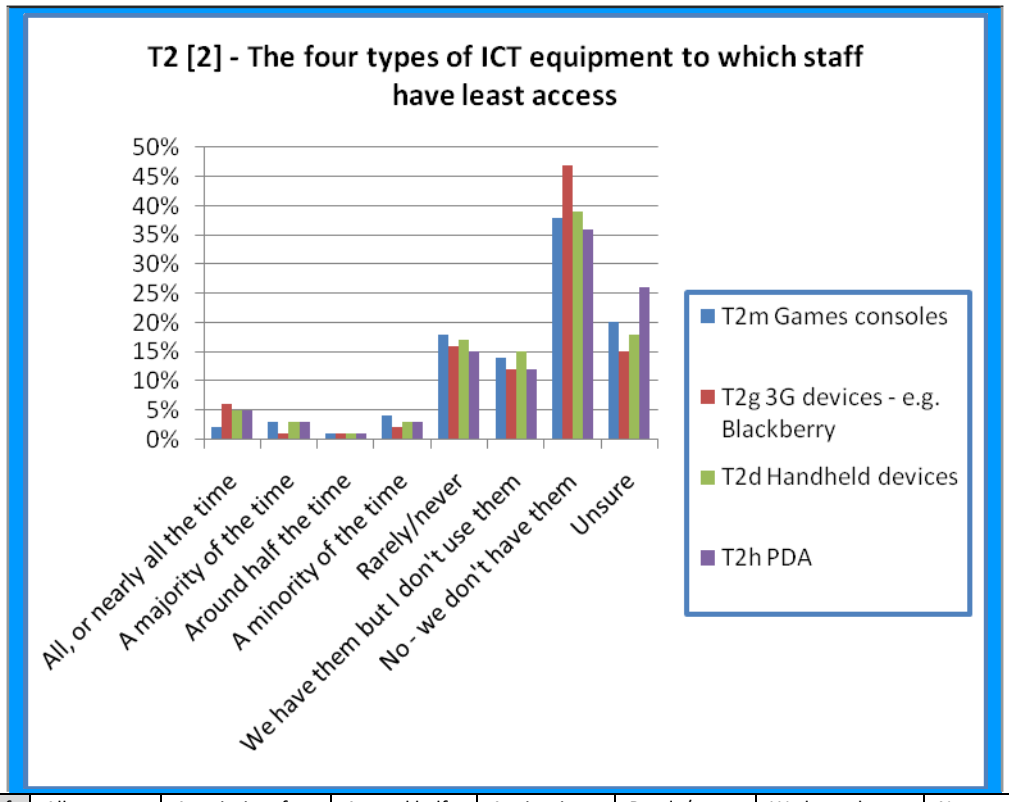
Content filtering is used by almost all colleges and a large majority find this to be both effective and proportionate.

Teaching staff were asked to say how good their access was to 19 different types of ICT equipment. The five types of equipment which more than half the teaching staff could routinely access at college are shown in diagram T2 [1]:



Staff access to ICT equipment	T2e Printers	T2a Desktop computers	T2o Digital projectors	T2p Interactive whiteboards	T2b Laptop computers
All, or nearly all the time	80%	76%	59%	45%	34%
A majority of the time	14%	12%	14%	13%	17%
Around half the time	3%	7%	5%	7%	7%
A minority of the time	2%	3%	5%	7%	10%
Rarely/never	0%	0%	5%	8%	16%
We have them but I don't use them	0%	1%	6%	11%	12%
No - we don't have them	0%	0%	3%	8%	4%
Unsure	0%	0%	3%	1%	1%

There are four types of equipment to which less than 10% of teaching staff had routine access are shown in diagram T2[2]:

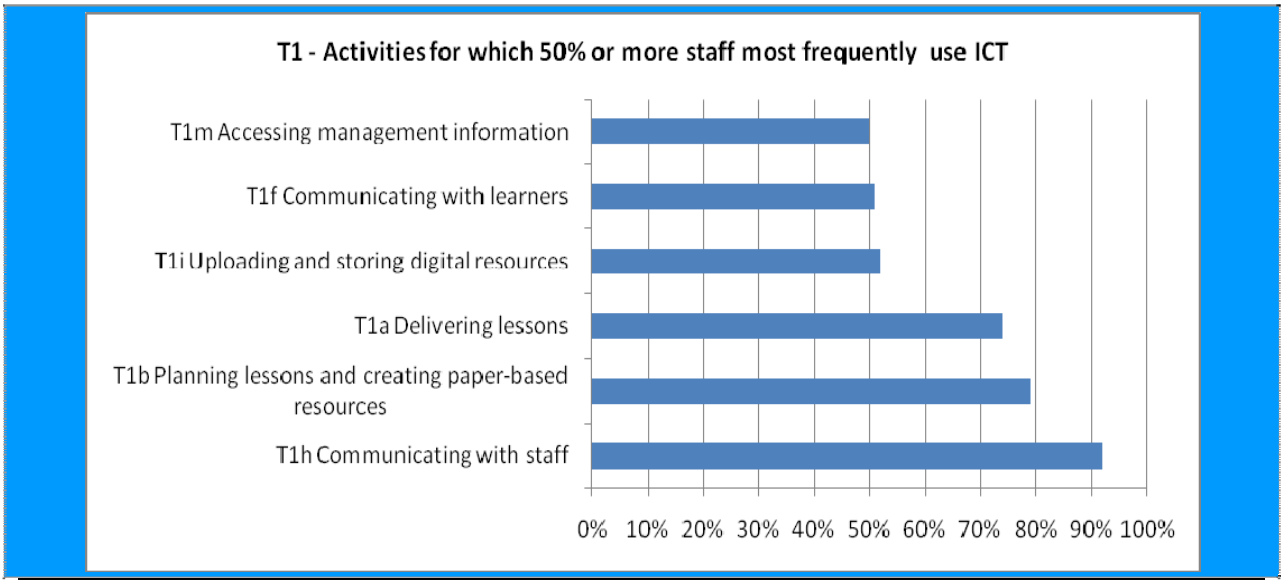


The four types of equipment to which staff have least access	All, or nearly all the time	A majority of the time	Around half the time	A minority of the time	Rarely/never	We have them but I don't use them	No - we don't have them	Unsure
T2m Games consoles	2%	3%	1%	4%	18%	14%	38%	20%
T2g 3G devices - e.g. Blackberry	6%	1%	1%	2%	16%	12%	47%	15%
T2d Handheld devices	5%	3%	1%	3%	17%	15%	39%	18%
T2h PDA	5%	3%	1%	3%	15%	12%	36%	26%

In all four instances, over half the staff in the survey said that the college did not possess this equipment, or they were unsure if it was present.

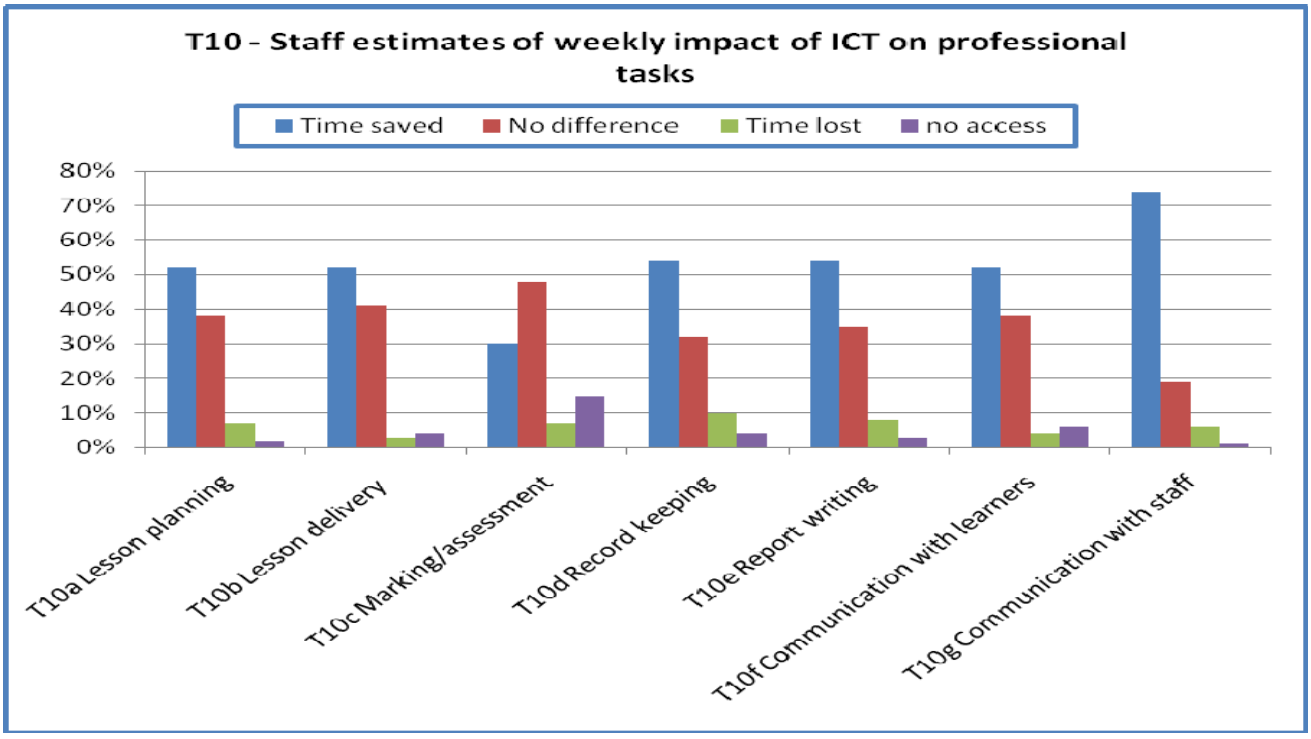
2.3 The impact of technology

There are six activities for which 50% or more teaching staff frequently use ICT, with communication with other staff [92%] the most common. Planning lessons and creating paper-based resources are the next two most common activities:



Activities for which staff most frequently use ICT	Most days each week
T1h Communicating with staff	92%
T1b Planning lessons and creating paper-based resources	79%
T1a Delivering lessons	74%
T1i Uploading and storing digital resources	52%
T1f Communicating with learners	51%
T1m Accessing management information	50%

Technology has a significant impact on staff productivity in a number of areas



Staff time saved and lost on various tasks	Save more than 2 hours	Save between 1 & 2 hours	Save up to 1 hour	Does not make any difference	Lose up to 1 hour	Lose between1 & 2 hours	Lose more than 2 hours	Don't have access to ICT to support this
T10a Lesson planning	19%	14%	19%	38%	4%	2%	1%	2%
T10b Lesson delivery	18%	14%	20%	41%	1%	1%	1%	4%
T10c Marking/assessment	8%	6%	16%	48%	4%	2%	1%	15%
T10d Record keeping	14%	12%	28%	32%	7%	2%	1%	4%
T10e Report writing	13%	17%	24%	35%	4%	2%	2%	3%
T10f Communication with learners	15%	13%	24%	38%	3%	1%	0%	6%
T10g Communication with staff	32%	18%	24%	19%	4%	1%	1%	1%

Staff save most time in communicating with their colleagues and are most likely to lose time in using ICT for marking and assessment.

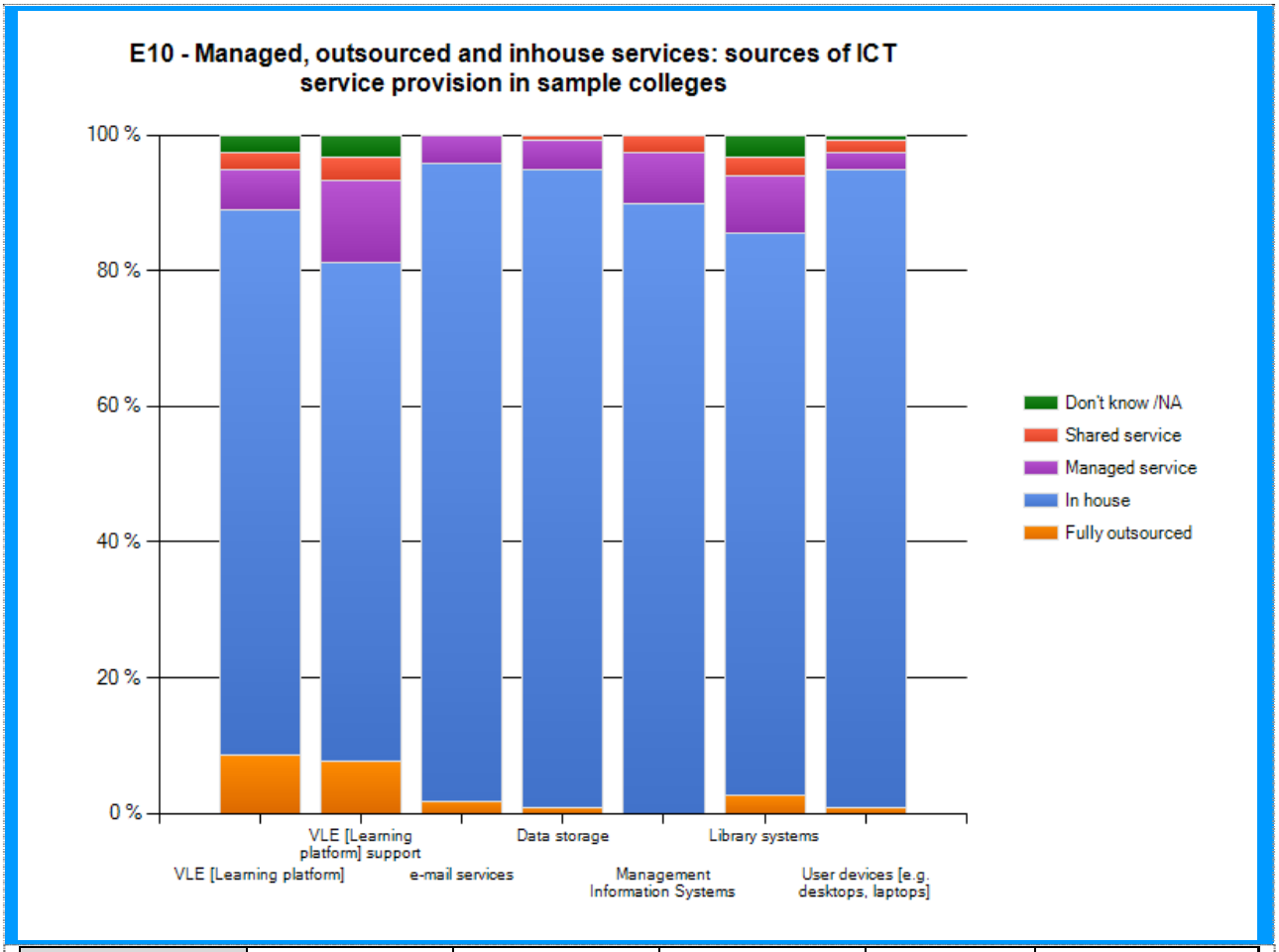
There are three areas where technology has still had relatively little impact on college provision:

- The use of e-portfolios [C24]. This is highlighted in section 3.3 and has changed little in the past two years
- The use of ICT for distance learning [C2]. This is commented on in sections 3.3 and 3.6.3
- Using ICT to improve the viability of courses [C4].

2.4 Leadership and management of technology

In 8% of colleges, no member of the SMT has overall responsibility for ICT [A6]. In the remaining 92% of colleges, there is an almost even split between colleges where a single member of SMT has overall responsibility for all aspects of ICT [47%] and where different members of SMT have responsibility for ICT systems and infrastructure and for ILT. The national carpet [Section 3.1] indicates that the two different management structures do not, in themselves, impact on the effectiveness of colleges' technology adoption and use, but the small number of colleges where there is no overall responsibility all belong to the Beginning and Developing categories – none of these are yet in the Performing category.

Almost all college ICT services are managed in-house [E10]. There is still very little outsourcing, or use of managed services:



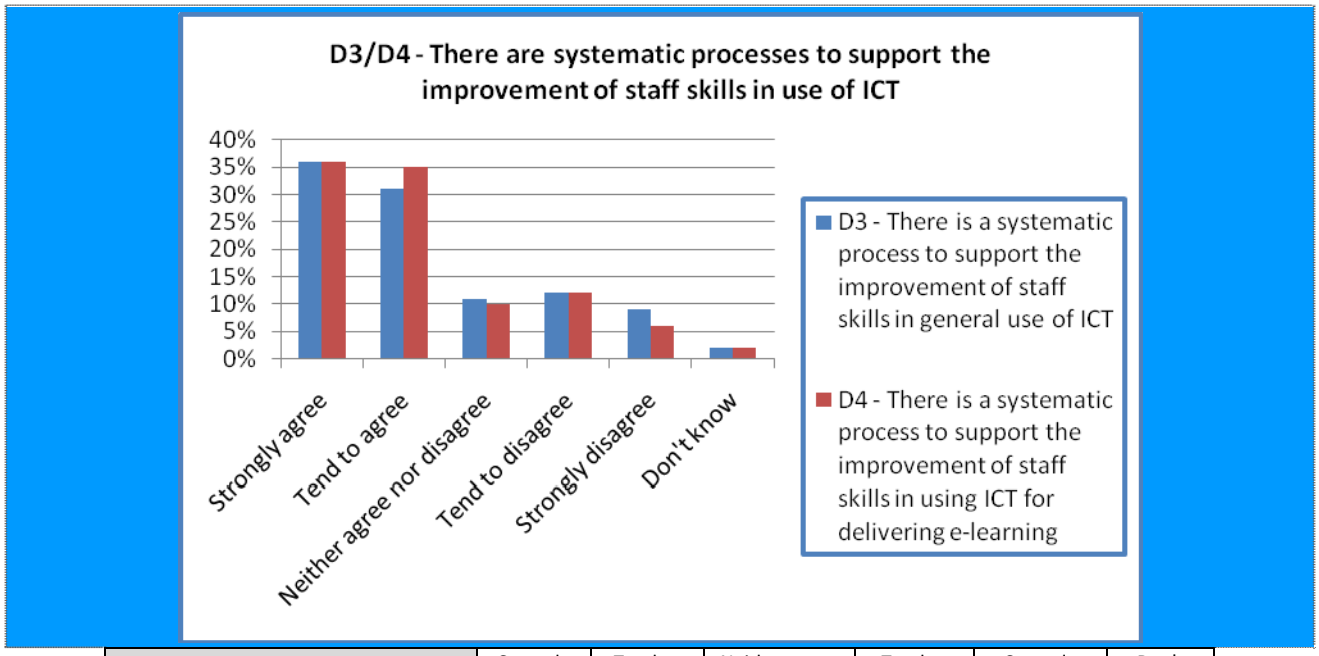
College ICT services	Fully outsourced	In house	Managed service	Shared service	Don't know
E10a VLE	9%	80%	6%	3%	2%
E10b VLE support	8%	74%	12%	3%	3%
E10c email services	2%	94%	4%	0%	0%
E10d Data storage	1%	94%	4%	1%	0%
E10e MIS	0%	90%	8%	2%	0%
E10f Library systems	3%	83%	9%	2%	3%
E10g User devices	1%	94%	3%	2%	0%

At 74% in-house provision, VLE support [E10b] is the only service which less than three quarters of colleges provide themselves. Other aspects of leadership and management of technology are highlighted in section 3.4 of this report.

2.5 Staff skills and training

Two thirds of college teaching and teaching support staff are beyond beginner level in their ability to use ICT for e-learning [D2]. This shows little change on the figures for 2007-08 and 2008-09.

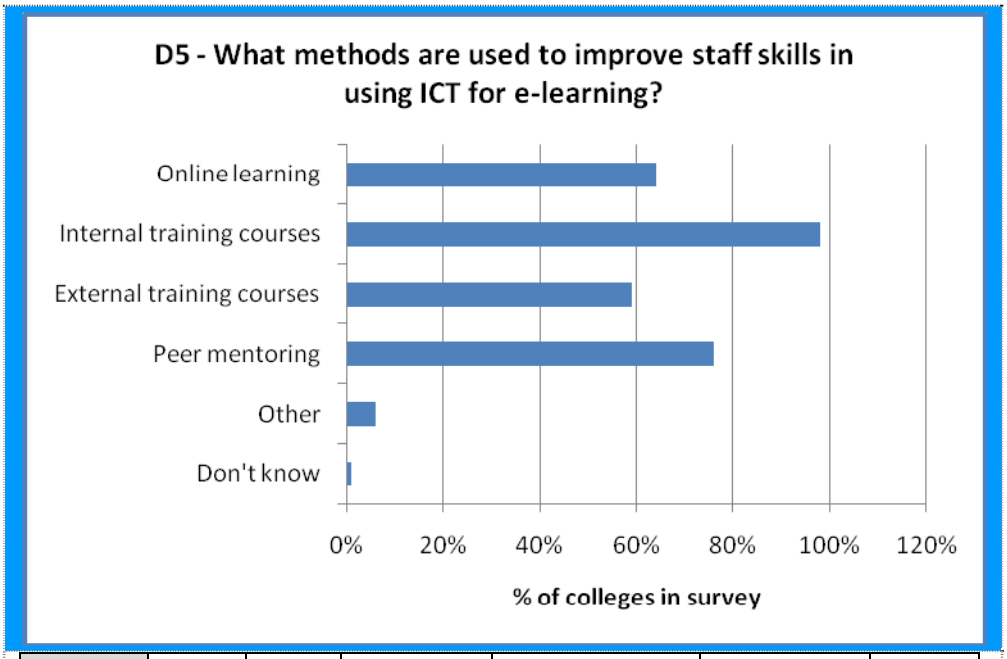
Over two thirds of colleges have systematic processes in place for supporting the improvement of staff skills in using ICT for delivering e-learning [D4]:



Processes for improving staff ICT skills	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know
D3 - There is a systematic process to support the improvement of staff skills in general use of ICT	36%	31%	11%	12%	9%	2%
D4 - There is a systematic process to support the improvement of staff skills in using ICT for delivering e-learning	36%	35%	10%	12%	6%	2%

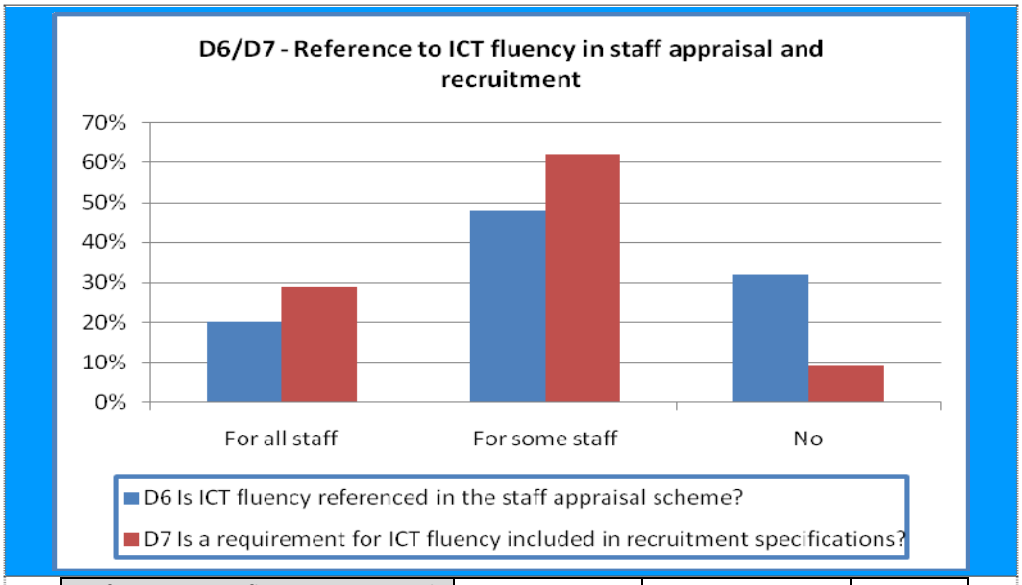
One area in which some teaching staff feel they need further training is in making the most of the college VLE [T3c], with 32% of staff identifying a need for more training and a further 11% unsure that they have received enough.

Colleges use a variety of strategies for improving staff skills [D5], with the most frequently used being internal training courses and peer mentoring:



Methods of staff training	Don't know	Other	Peer mentoring	External training courses	Internal training courses	Online learning
	1%	6%	76%	59%	98%	64%

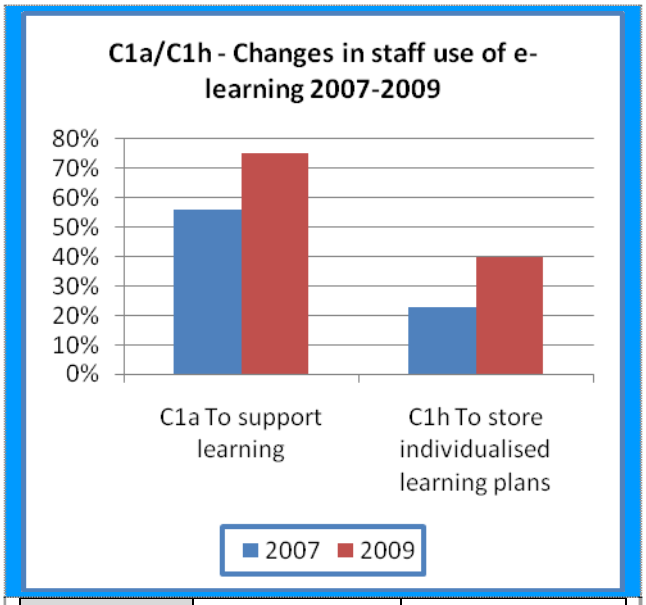
Under a third of colleges reference ICT fluency (capacity to use technology competently and flexibly) for all staff in staff appraisal templates and recruitment specifications:



Reference to ICT fluency in appraisal and recruitment	For all staff	For some staff	No
D6 Is ICT fluency referenced in the staff appraisal scheme?	20%	48%	32%
D7 Is a requirement for ICT fluency included in recruitment specifications?	29%	62%	9%

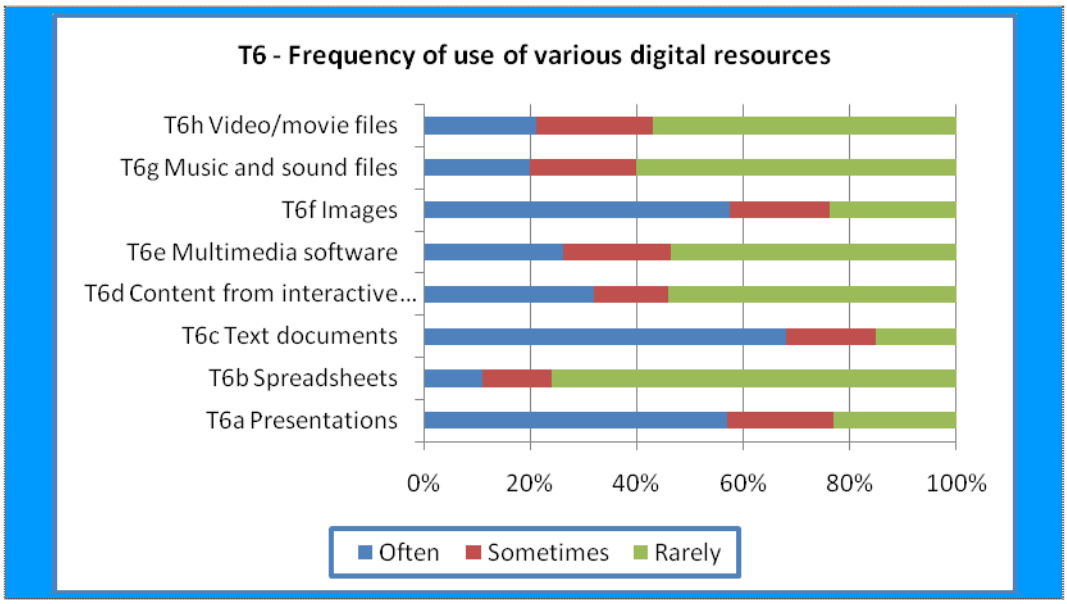
2.6 Technology in teaching and learning

There have been increases in the staff use of e-learning to support learning [C1a]: and for storing individualised learning plans [C1h] since 2007, but there are no other significant uses of e-learning recorded by the respondents.



Changes in staff use of e-learning	C1a To support learning	C1h To store individualised learning plans
2007	56%	23%
2009	75%	40%

Frequency of staff use of various digital resources [T6] is shown below:

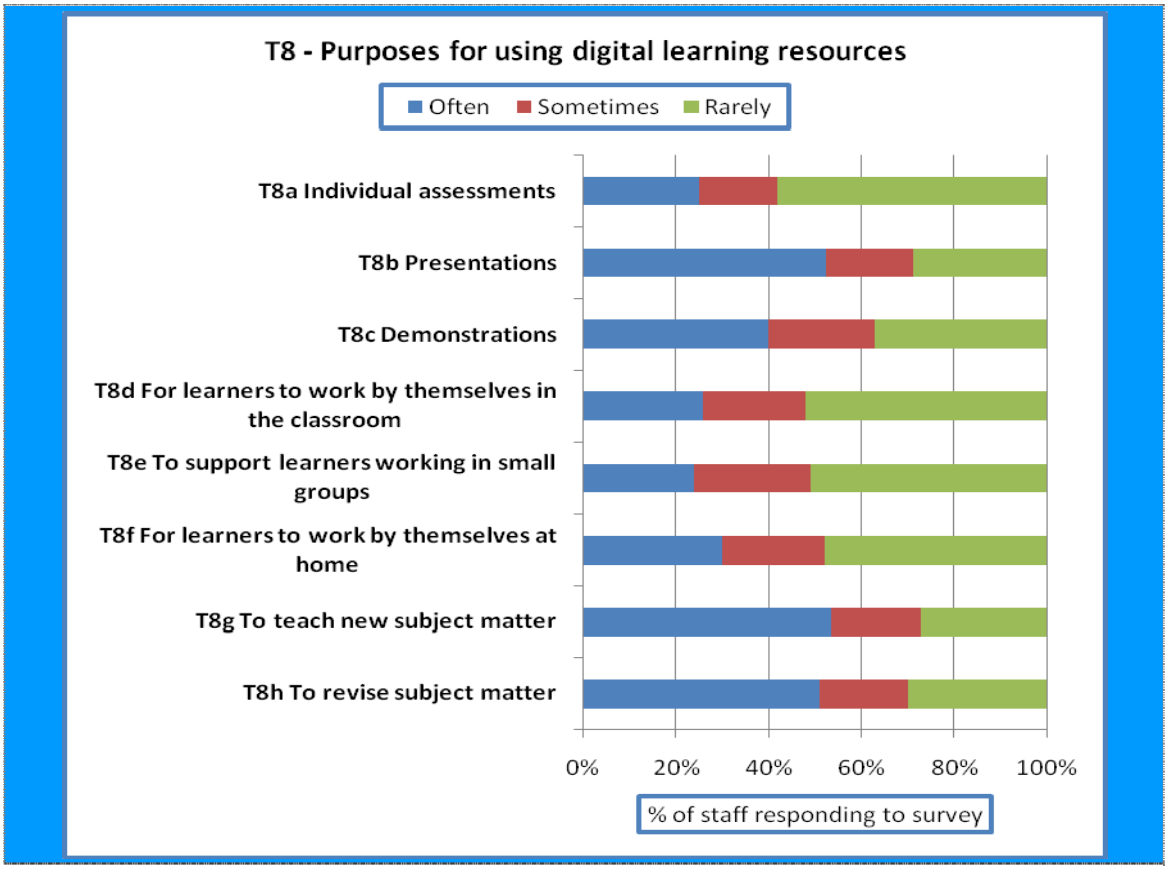


Frequency of staff use of digital learning materials	All, or nearly all lessons	The majority of lessons	Around half of lessons	In a minority of lessons	Rarely/never
T6a Presentations	38%	19%	20%	16%	7%
T6b Spreadsheets	5%	6%	13%	34%	42%
T6c Text documents	38%	30%	17%	9%	6%
T6d Content from interactive whiteboard tools	18%	14%	14%	18%	36%
T6e Multimedia software	13%	13%	20%	26%	27%
T6f Images	33%	25%	19%	15%	9%
T6g Music and sound files	10%	10%	20%	30%	30%
T6h Video/movie files	9%	12%	22%	35%	22%

In the diagram above [and in the diagram for T8 below], 'all, or nearly all lessons' and 'the majority of lessons' have been combined into 'often'; 'around half of lessons' is shown as 'sometimes' and 'in a minority of lessons' and 'rarely/never' have been combined into 'rarely'.

Text documents [T6c], images [T6f] and presentations [T6a] are the most frequently used resources.

The purposes for which staff use digital resources [T8] are shown below:

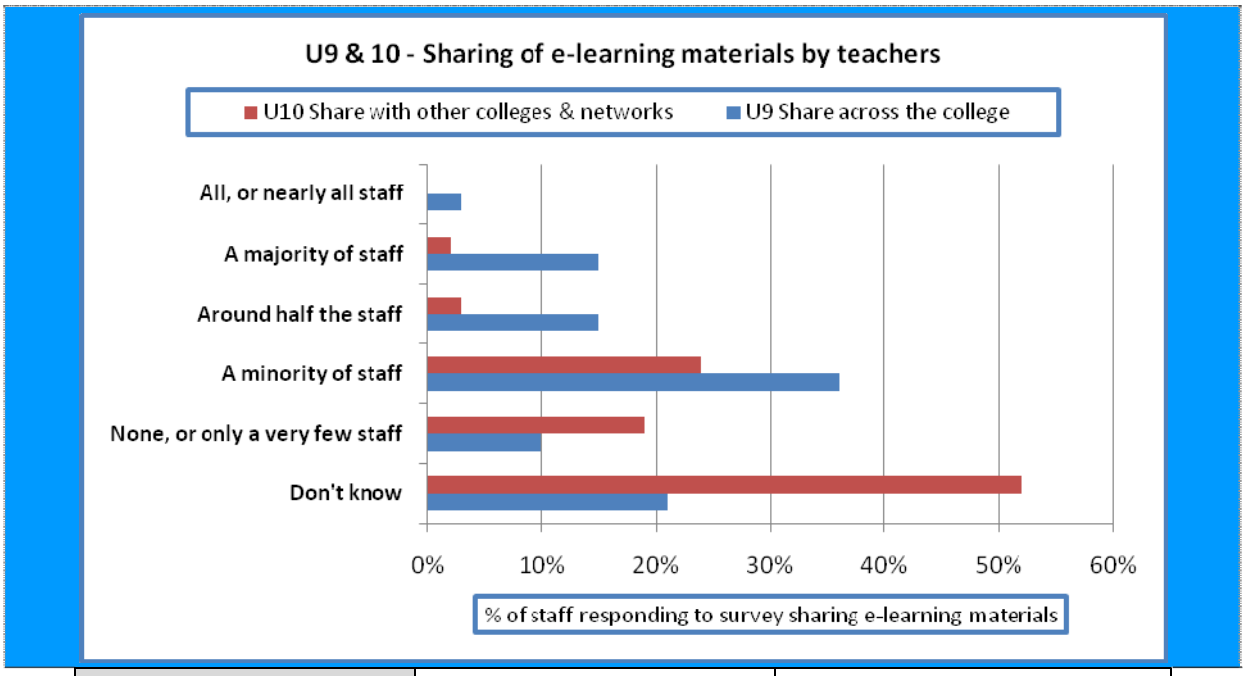


Purposes for staff use of digital resources	All, or nearly all lessons	The majority of lessons	Around half of lessons	In a minority of lessons	Rarely/never
T8a Individual assessments	11%	14%	17%	27%	31%
T8b Presentations	34%	19%	19%	18%	11%
T8c Demonstrations	23%	17%	23%	22%	15%
T8d For learners to work by themselves in the classroom	12%	14%	22%	29%	23%
T8e To support learners working in small groups	10%	14%	25%	28%	23%
T8f For learners to work by themselves at home	13%	17%	22%	22%	26%
T8g To teach new subject matter	33%	20%	19%	15%	12%
T8h To revise subject matter	27%	24%	19%	17%	13%

Teaching subject matter, both new [T8g] and for revision [T8h] and presentations [T8b] are the most frequent purposes for staff use of digital resources. Around half the staff surveyed rarely use digital resources for learners to work by themselves, either in the classroom [T8d] or at home [T8f].

Overall, only a minority of teaching staff currently use digital learning materials, whether these are free or open source [U6], commercial or bought in [U7] or developed in-house [U8].

There is also little sharing of e-learning materials by staff, either across their own college [U9], or with other colleges or across regional and national networks [U10]:



Staff sharing of e-learning materials	Share across the college	Share with other colleges & networks
Don't know	21%	52%
None, or only a very few staff	10%	19%
A minority of staff	36%	24%
Around half the staff	15%	3%
A majority of staff	15%	2%
All, or nearly all staff	3%	0%

Widespread sharing of e-learning materials shows strong positive correlation with 11 questions from the college survey:

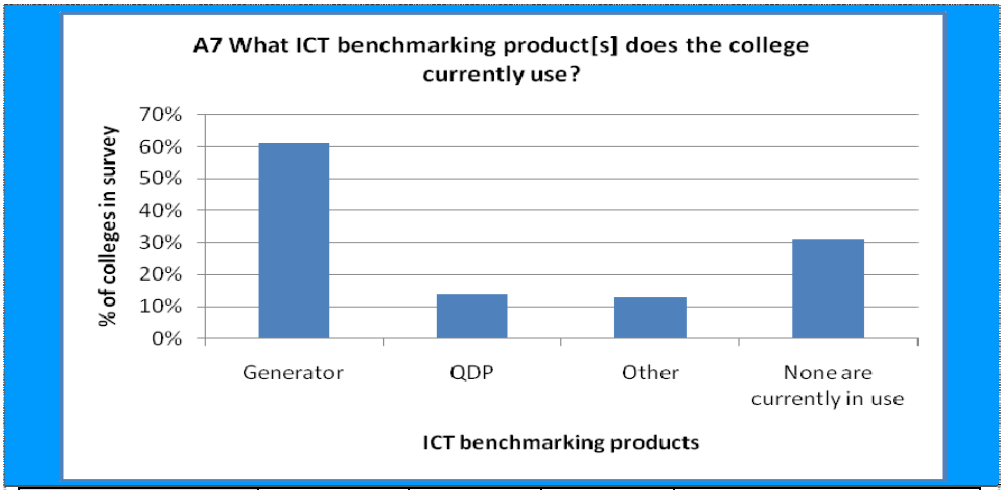
- Various aspects of the use of e-learning: blended learning [C1c]; encouraging learners to learn at their own pace [C1d]; developing individual learner programmes [C1f]; storing individual learning plans [C1h]
- Using ICT for distance learning [C2]
- Initial assessment of learner ICT skills [C3]
- Improving the viability of courses using ICT [C4]
- Using ICT for subject induction [C6d]
- Using e-learning materials from a variety of sources [C9-11]
- Encouraging learner comments on e-learning materials [C14]
- Using ICT for aspects of assessment [C22-24]
- The use of a variety of methods for staff training [D5]

Encouraging learner comments on e-learning materials [C14] also cross-correlates positively with the extent of wifi coverage [B4].

Both staff and learners involved in college-based HEFCE provision have as good access to on-line resources as if they were located in a local university [C17/18 and U16/17], but although HEIs insist on the use of plagiarism detection software for learner work, this is little used in FE provision [C25].

2.7 Suppliers and supporting organisations

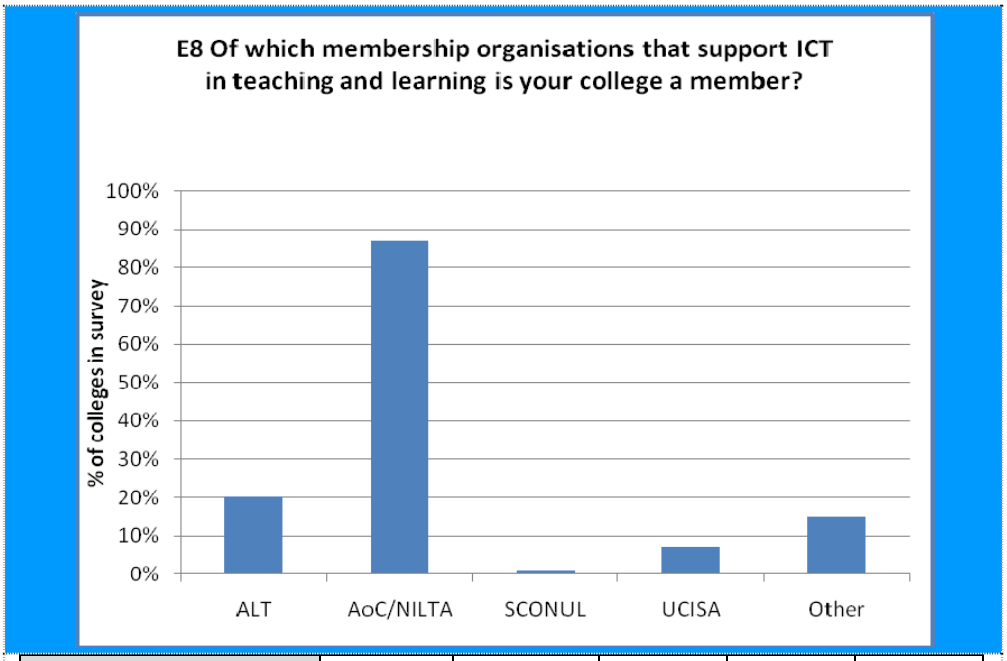
61% of colleges responding recorded using the Becta Generator [A7]. Interviews with college managers suggest that their use tends to be exploratory, at present. QDP is used in a minority of colleges for learner surveys and almost a third of colleges are not currently using any ICT benchmarking products:



ICT benchmarking products in use	Generator	QDP	Other	None are currently in use
	61%	14%	13%	31%

The majority of colleges report effective dialogue with technology suppliers [E7]. This is highlighted in section 3.4 and will be further investigated in the 2010-11 survey.

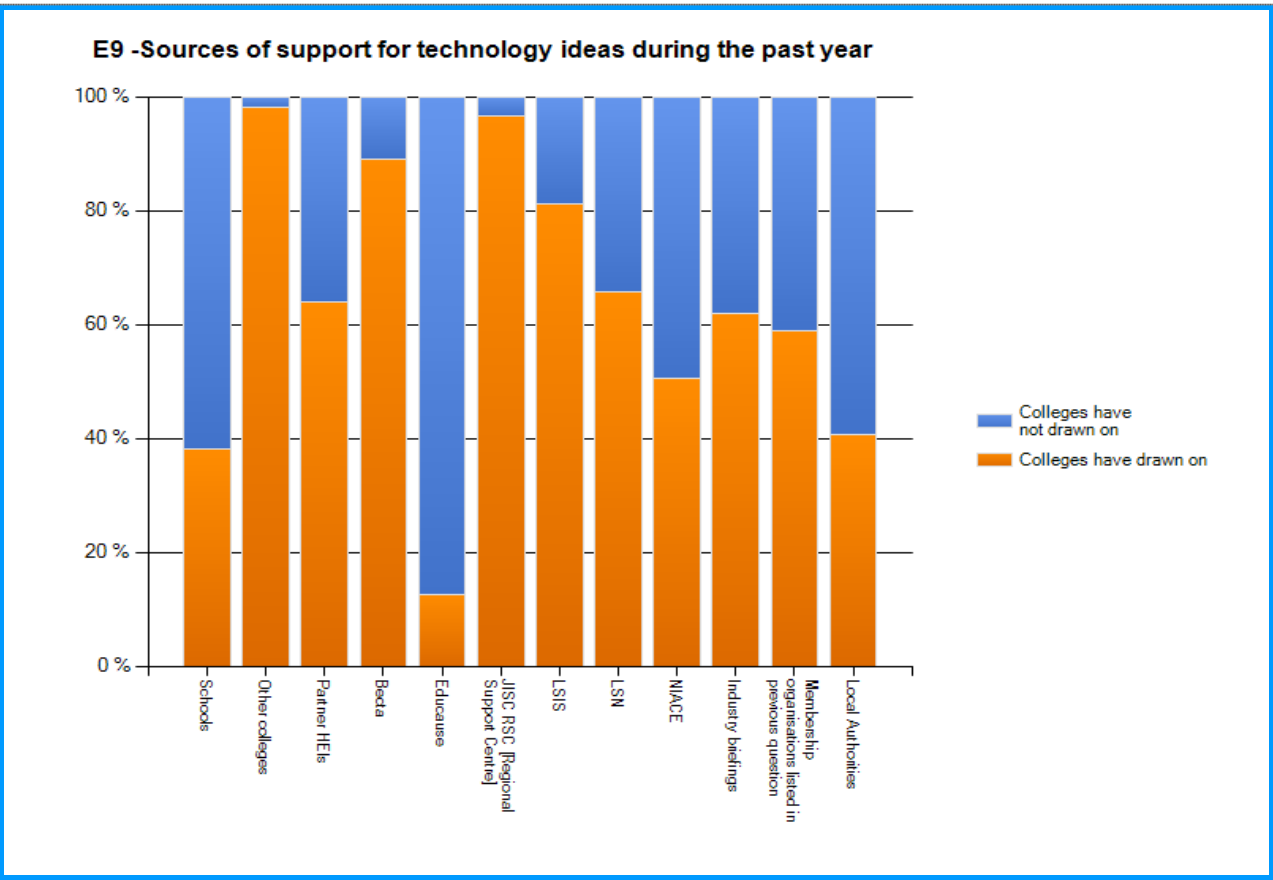
With most colleges belonging to AoC, it is not surprising that AoC/NILTA is the most frequently recorded membership organisation supporting ICT in teaching and learning [E8]. A significant minority are also members of ALT, but neither of the other organisations listed in the question [UCISA and SCONUL] achieve more than 7% sector coverage:



Membership of ICT support organisations	ALT	AoC/NILTA	SCONUL	UCISA	Other
	20%	87%	1%	7%	15%

Almost all colleges [98%] have drawn on other colleges for technology ideas during the past year [E9]. In several interviews, colleges highlighted the value of the Becta Technology Exemplar Network as being of particular value.

The three main national sector support organisations are also highly valued for supportive dialogue, with JISC RSCs [97%], Becta [89%] and LSIS [81%] all being drawn on for ideas by more than four out of five colleges:



		Colleges have drawn on	Colleges have not drawn on
Sources of technology support during the past year	E9a Schools	38%	62%
	E9b Other colleges	98%	2%
	E9c Partner HEIs	64%	36%
	E9d Becta	89%	11%
	E9e Educause	12%	88%
	E9f JISC RSC	97%	3%
	E9g LSIS	81%	19%
	E9h LSN	66%	34%
	E9i NIACE	51%	49%
	E9j Industry briefings	62%	38%
	E9k Membership organisations listed in E8 above	59%	41%
	E9l Local Authorities	41%	59%

3 Acknowledgements

3.1 Contributing colleges and staff

We are very grateful to the 119 colleges and their 604 teaching staff who participated in the survey. The contributing colleges are listed in the Technical Appendix.

Follow up telephone interviews were conducted with 30 staff in six of these colleges, and focus groups with staff and managers were held in four colleges. We are very grateful to the staff concerned for their time and commitment.

3.2 Reviewers

We are very grateful to the following for their help in reviewing and commenting on iterations of the survey questionnaires:

- Professor Paul Bacsich – Sero Consulting Ltd
- Mike McConigley – St Dominic's Sixth Form College
- Marion Miller – JISC RSC, Yorkshire & The Humber
- George Trow – Principal, Rotherham College of Arts & Technology
- Staff at Becta in the Research and FER Directorates

An early draft of the college questionnaire was trialled by four colleges:

- Abingdon & Witney College
- Ashton-under-Lyne Sixth Form College
- Myerscough College
- Wiltshire College.

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