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Teaching with Technology in Higher Education

Exploring how lecturers at the University of
Huddersfield use technology in teaching

March 2011

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Image created using wordle.net

1. Introduction

The survey “Teaching with Technology in Higher Education” is part of a PhD being undertaken by Chris Shelton at the University of Chichester and 26 Higher Education Institutions took part. The survey was distributed to Huddersfield staff by Dr Cath Ellis in November 2010.

The survey asks about thoughts and opinions on undergraduate teaching, the use of technology and explores how university lecturers use technology when teaching.

In this report¹, Sue Folley (Computing and Library Services) and Kathrine Jensen (Teaching and Learning Institute) present the analysis of some of the main survey findings. However, not all parts of the questionnaire have been included in the analysis presented in this report and anyone with an interest in exploring further the full set of questions can contact the Teaching and Learning Institute at tali@hud.ac.uk.

2. Demographics

- University of Huddersfield had 86 respondents² (56% women, 44% men)
- 83% senior lecturer and 7% lecturer³
- 87% full time permanent, 12% part-time permanent
- 80% said they hold teaching qualifications

Top 5 subject disciplines represented⁴:

- Business and administrative studies 19%
- Subjects allied to medicine 16%
- Creative arts and design 13%
- Social studies 8%
- Education and Engineering, both 5%

The majority (40%) of respondents are aged between 50 and 59. Around a third (32%) are aged between 40-49, 18% between 30-39, 7% over 60 and 4% under 30 years of age.

The survey also asked staff about the University focus and 51% said it was teaching-focused, 44% that teaching and research were equal priorities and 4% that it was research-focused.

Throughout the report the acronym ICT is used, which is short for information and communications technology (ICT).

¹ Please note, all percentages are rounded up and will therefore not always add up to a 100%.

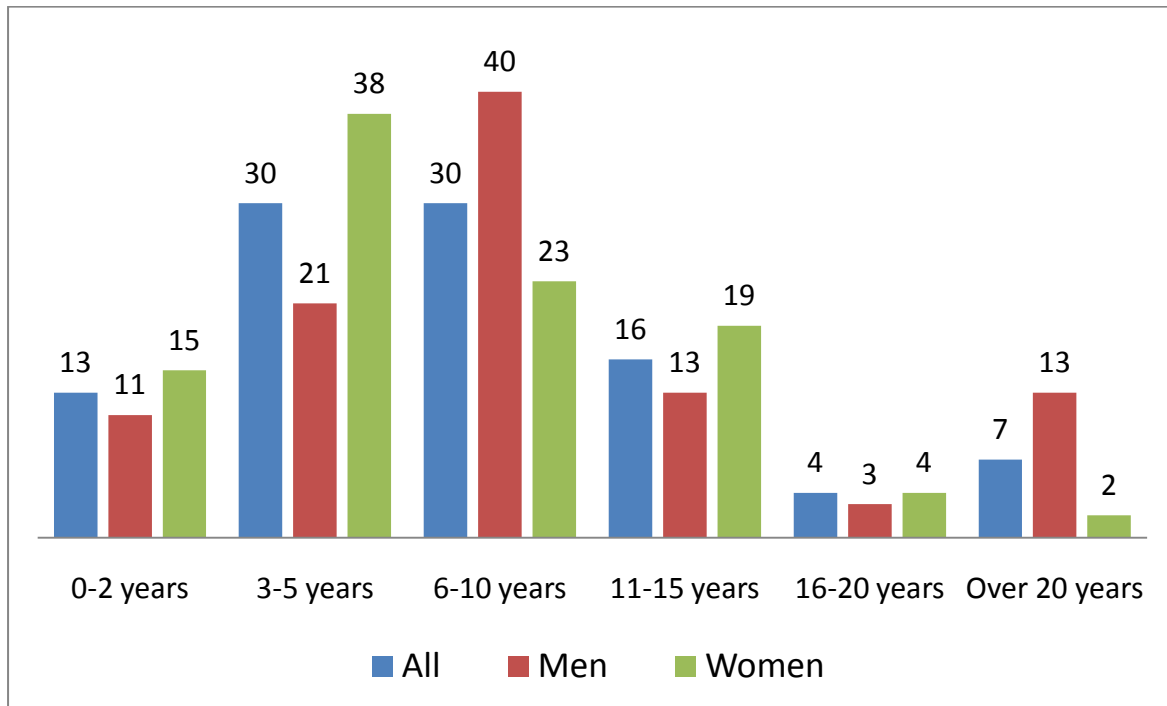
² There were 88 responses, however, only 86 were valid.

³ 10% classified as “Other” (includes Reader and Professor).

⁴ There were 76 respondents who gave information about their subject discipline
Teaching and Learning Institute Working Paper No.1, University of Huddersfield

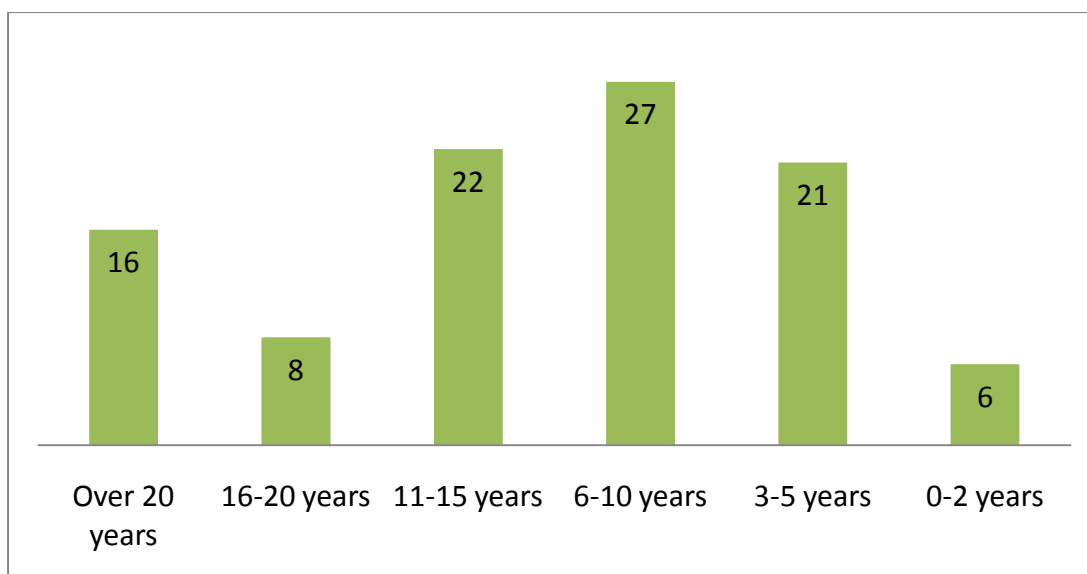
The survey responses indicate some gender differences in how long the respondents have worked at the University. Of the 86 respondents, a higher proportion of men have worked at the University over 20 years as well as between 6-10 years whereas a higher proportion of women have worked at the University between 3-5 years and 11-15 years.

Fig 1: How long have you worked at the University of Huddersfield? (%)



Between them respondents had many years experience of teaching in HE, which probably reflects the age profile of the respondents.

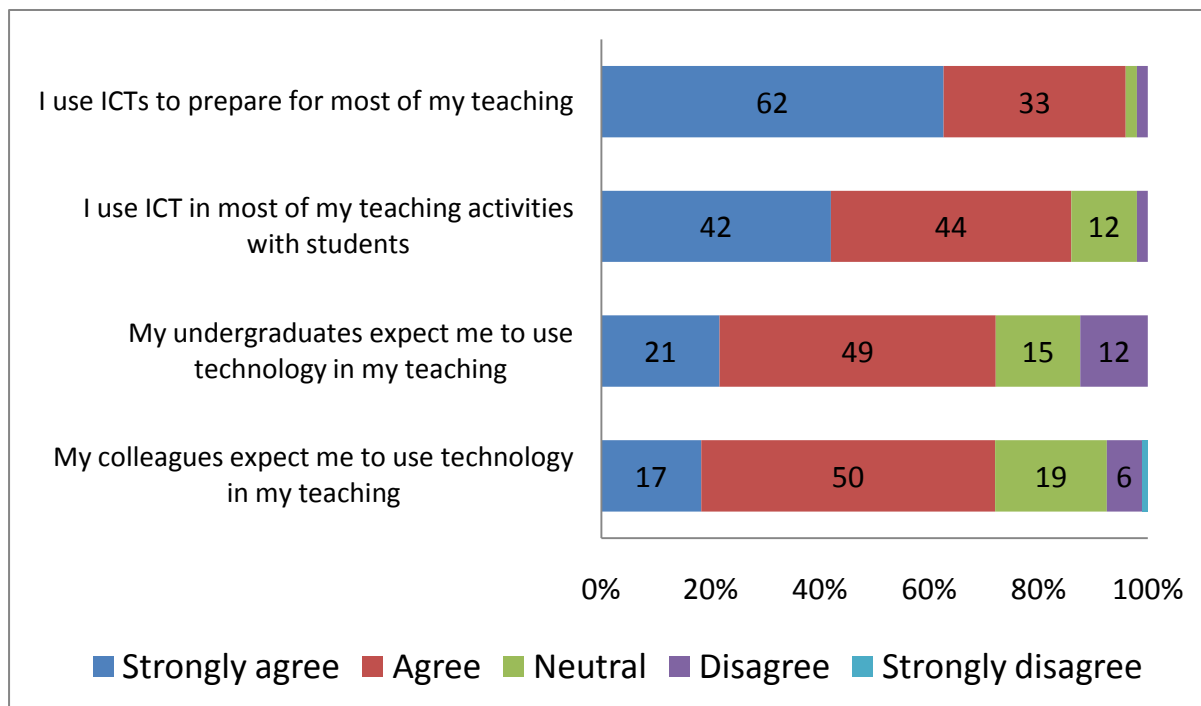
Fig 2: Years of teaching in higher education (%)



3. Use of ICT – expectations and practice

From the responses it would seem that there is a high proportion of staff (95%) using ICT to prepare for their teaching as well as almost all (86%) who agree/strongly agree that they use ICT in most of their teaching activities. The majority of staff also say that there is an expectation from both undergraduates and colleagues that they use technology in their teaching.

Fig 3: Use of ICT – expectations and practice



However, there are varying opinions on using technology in teaching as can be seen from those respondents who chose to comment further. Some comments reflect a view of the students as “digital natives”⁵, a term used here to cover responses that highlight that students use technology all the time, expect the use of technology and that using technology in teaching and learning is simply part of the future developments of the sector and the world in general. Others express the view that the use of technology is a fashion/fad and see teaching and learning as more of a craft, a slow process.

“In the digital age do we have a choice? These are the tools that are students are already fluent in and we should be meeting them on their territory. I do not support slavish adherence to technology and ensure lectures are an interactive experience but to not use available technology would be a real hindrance.”

⁵ Please note that the term “digital native” is contested. See for example: Bennett, S., Maton, K. and Kervin, L. (2008). “The ‘digital natives’ debate: A critical review of the evidence” in *British Journal of Educational Technology* 39 (5): 775–786.

“My students are all IT literate and look to me to use technology that they can understand and also explore”

“The importance of technology in teaching is over rated. Teaching is not a mechanistic process and I find that teaching staff who struggle to articulate their points are often those who hide behind technology rather than using it as an adjunct”

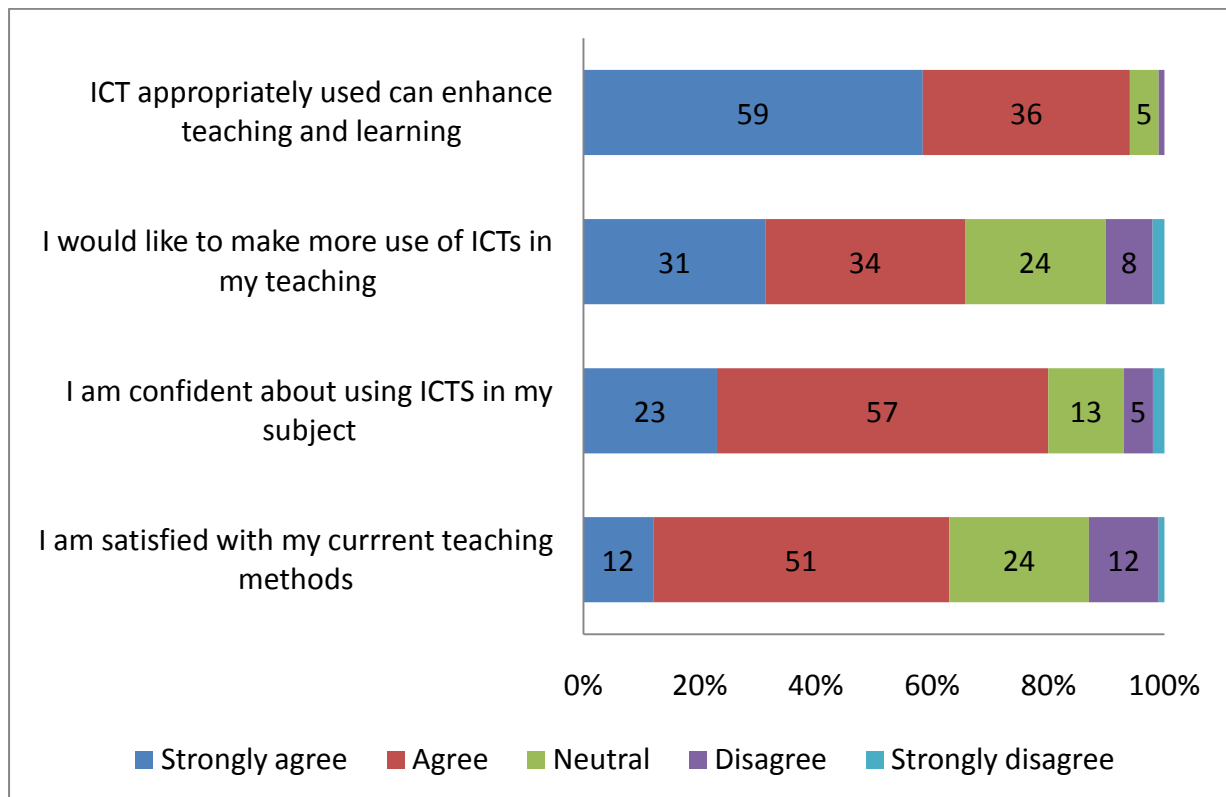
“Powerpoint is good to sell cars, but a blackboard/whiteboard leaves time for the info to sink in... slow is good!

It is important to remember that these comments are a quick snap shot from a survey and that we cannot draw any conclusions about staff views on the pedagogical benefits of technologies or their impact on teaching and learning.

4. Opinions on teaching and the use of ICT

The survey indicates that staff would like to make more use of ICT in their teaching and encouragingly, the majority (80%) responded that they were confident about using ICTs in their subjects. There is also a high level of agreement (95%) that if ICT is appropriately used it can enhance teaching and learning.

Fig 4: Teaching and the use of ICT (%)



Further comments from some of the respondents expand on the need for technology usage to be governed by learning needs, the importance of feeling confident about using technology (for both staff and students) and also a concern that technology does not become a replacement for personal interaction.

“I want to use technology if it enhances the learning of the students. I see no point in using technology simply because it is there or because it happens to be fashionable this month.”

“If I am already confident in using the technology is an important factor, if I am not I have very little or no time to learn and so cannot use it. To some extent technologies get in the way of the personal interaction that takes places in teaching sessions.”

“What I feel confident with, what I can use. I will be using more (eg podcast) in the coming year – it’s about time to learn and develop”

About two-thirds of staff (63%) are satisfied with their current teaching methods which could be an indication that there is a need to and a desire by staff for improving current practice or exploring alternative approaches (see Fig 4). This could be an issue to explore a bit further in order to find out why some staff are not satisfied with their teaching methods and what could be done to support them in their professional development.

5. Barriers to ICT use

“The main barrier is time available to learn to use technology and then to redesign teaching delivery.”

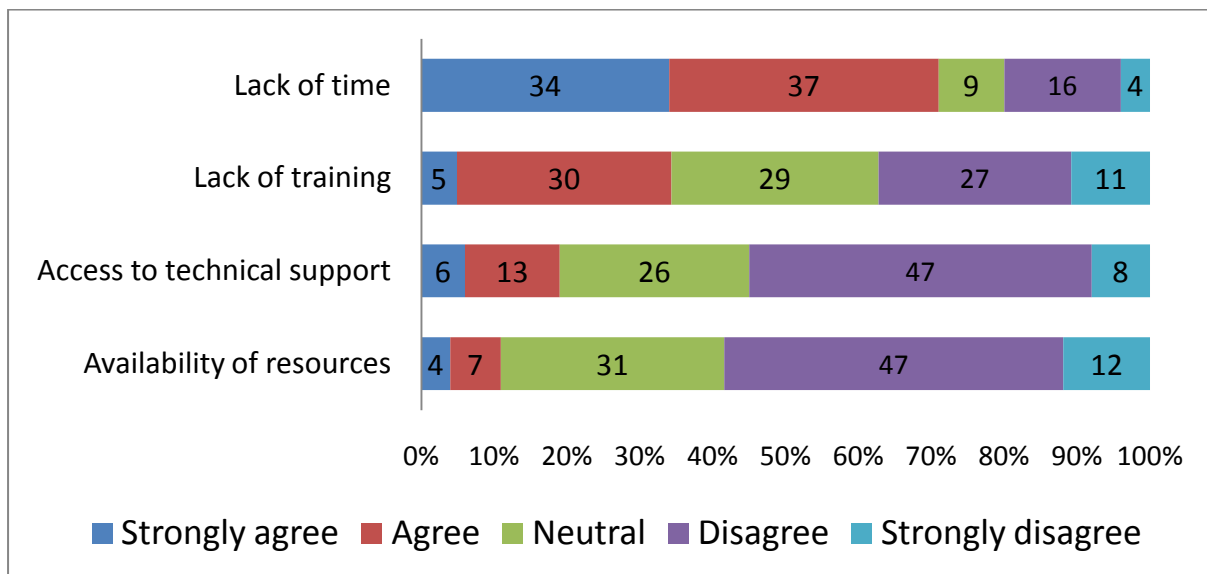
When asked about barriers to making use of ICT in teaching and learning the main reason given was lack of time. The issue of lack of time is reflected in much of the existing literature dealing with barriers to using and implementing technologies in education. However, “lack of time” is often a catch-all excuse to explain a lack of engagement, when in fact it might be due to prioritisation of activities. It is a response that would benefit from being unpacked and explored further. Here it is also worth considering that many uses of technology can save you time in the long run, e.g. things such as electronic marking or use of peer-assessment (aided by technology). Perhaps the improvements in efficiency that can be achieved using technologies need to be highlighted to staff in the future.

Although just over a third (35%) of respondents saw lack of training as a barrier, 38% did not see lack of training as a barrier. At the University, the experience has been that many staff development training courses covering teaching technologies have to be cancelled due to lack of people booking on⁶. So there is an interesting discrepancy between what is on offer,

⁶ Many of the sessions we do offer tend to be for only 8-10 participants. So even when run if only once a year (as many are) this is a very small percentage of staff attending.

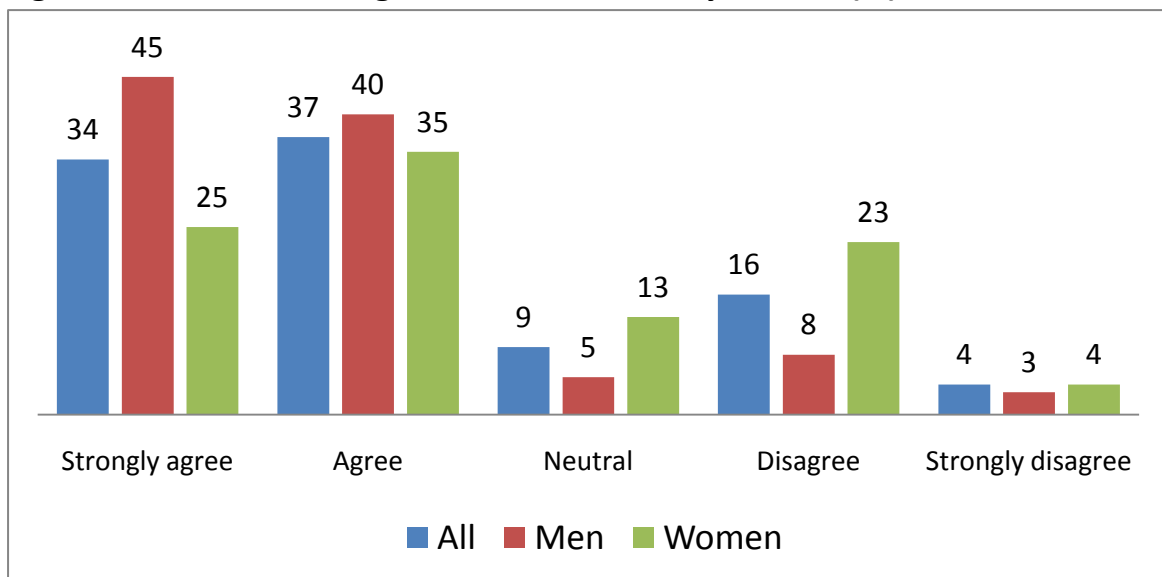
what the staff has expressed a need for and the lack of uptake. There is also the possibility that the courses on offer are not the types (content or delivery wise) that staff would like/need. Interestingly, only 11% indicated that lack of resources was an issue (though this depends on how respondents define resources). Almost two thirds (55%) did not consider access to technical support an issue.

Fig 5: Barriers to ICT use (%)



Looking specifically at responses to the statement: “Lack of time is a significant barrier to my use of ICTs for teaching”, there are some differences in the responses by gender: A higher proportion of men (45%) strongly agree that lack of time is a significant barrier to using ICT in teaching compared to women (25%). Further investigation would be necessary in order to explore the significance of this difference.

Fig 6: Lack of time is a significant barrier to my ICT use (%)



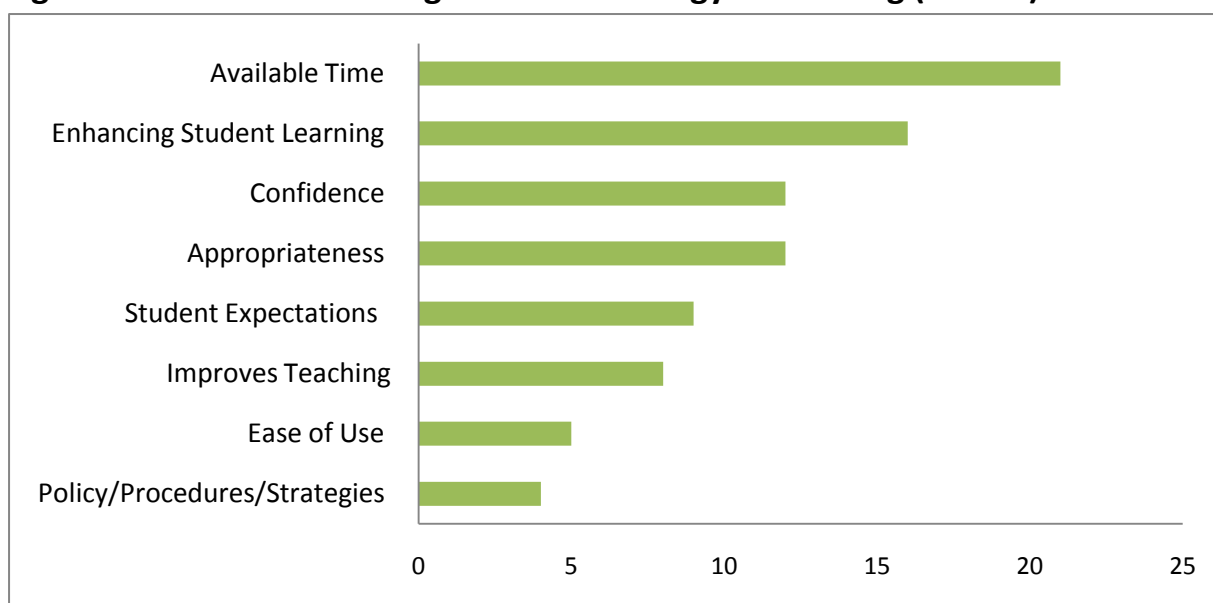
6. Deciding to use ICT in teaching

A more open ended question asked respondents to comment on the factors that influence their decisions to use (or not use) technology in their teaching. In looking at the comments in more detail, the responses were organised thematically into eight categories. The results of this analysis can only be said to indicate areas of interest as there is not enough data to be able to draw any conclusions. The comments under each heading were then totalled to give a summary of the issues that people were raising ⁷.

Reinforcing the responses given to the earlier question about barriers to using technology (see Fig 5), once again, lack of time was the factor mentioned most frequently. The second most frequently mentioned factor was that the technology enhanced student learning,

if ICT is appropriately used it can enhance teaching and learning

Fig 7: Factors when deciding to use technology in teaching (counts)



The categories defined in more detail are:

- **Available Time** (time availability mentioned as an issue or barrier to using technology)
- **Appropriate** (how appropriate use of technology is to the subject and learning tasks)
- **Ease of Use** (for the member of staff – ease of use of the technology)
- **Confidence** in use/Technical Ability (whether the member of staff feels confident in using the technology in teaching and learning)
- **Improves Teaching/Self Development** (if the staff member felt that teaching or their teaching skills would be improved by using technology)

⁷ Please note that responses were organised under more than one heading when appropriate and therefore the total does not represent total number of responses.

- **Enhancing Student Learning** (If the member of staff mentioned that they would use the technology if they considered the learning experience for the students)
- **Student Expectations** (mentioning student expectations as a driver for use of technology in teaching and learning – whether they agreed with it or not)
- **Policy/Procedures/Strategies** (perceived institutional policy, rules, procedures which may drive the use of technology or not)

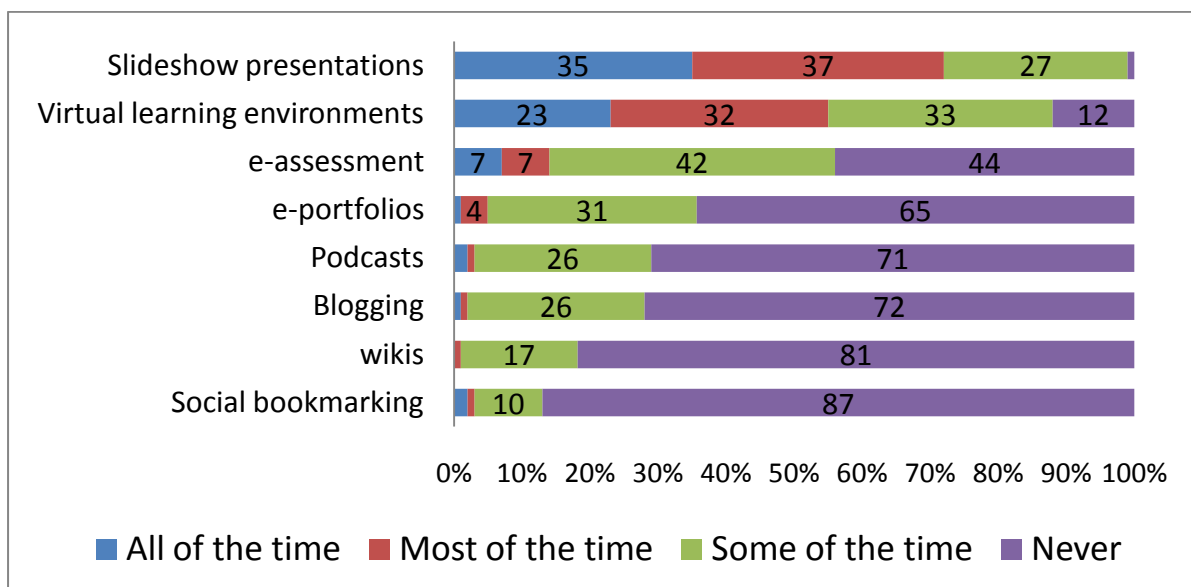
7. Use of specific technologies

It is clear from the survey that staff members are more comfortable with using mainstream technologies, such as PowerPoint presentations. It is possible that the popularity of PowerPoint is related to the ease with which they can be adapted to the traditional lecture but this is a purely speculative point.

The second and third most frequently used technologies, VLEs and e-assessment, are probably more institutionally driven rather than down to individuals, which could explain why they are high on the list of frequency of use. Although here it is worth noting that 12% say they “Never” use virtual learning environments, as this would include the University platform Blackboard, an established technology.

It is perhaps surprising to see the very high percentage of staff who have never used blogs, wikis or podcasts, and this indicates that there are more work to be done in promoting the benefits of these tools. It would be useful to explore the use of social networking tools, webinar and chat tools, which were not included in the survey options, to see how often these are used. Other technologies mentioned were simulation software videos, as in video clips, and link to online sources.

Fig 8: How frequently do you use these technologies?



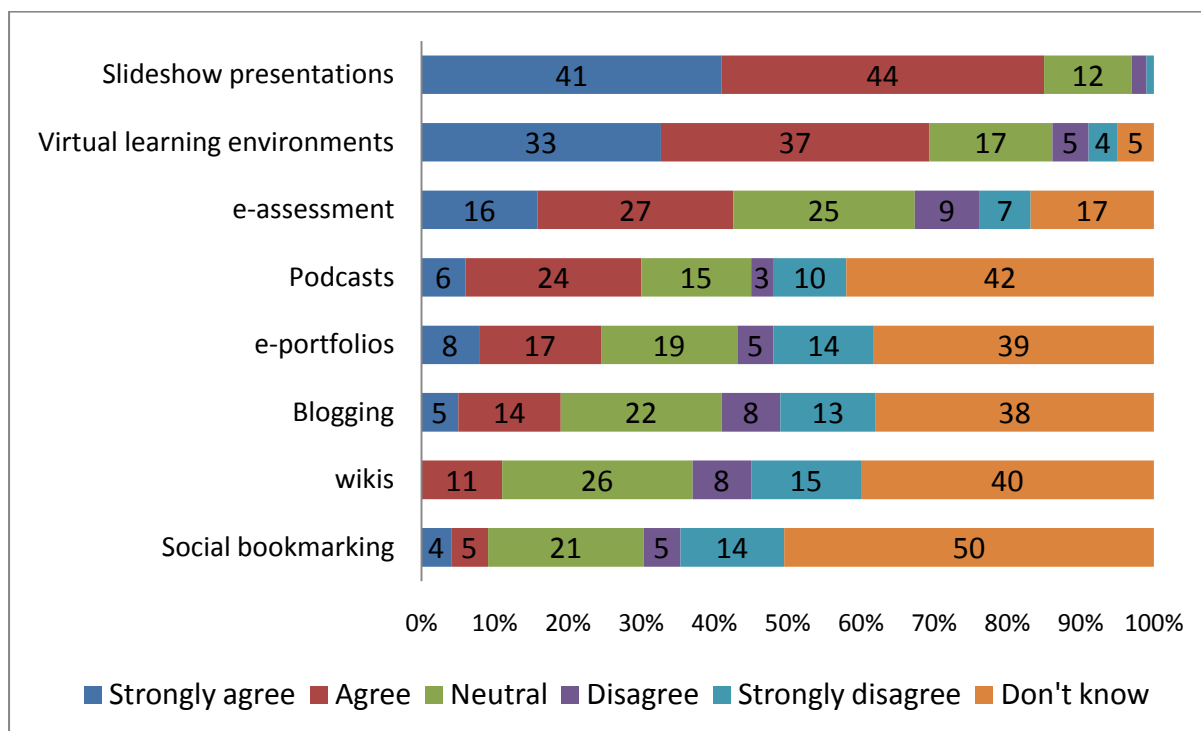
8. The impact of technologies on teaching

The survey went on to ask to what extent the respondents agree that the various technologies have a positive impact on their teaching. There is a high percentage of “Don’t know” for most of the technologies and almost all of these responses are from staff who indicated they have not used the technology.

However, there are a significant minority (between 13% and 23%) that do not agree that podcasts, e-portfolios, blogging, wikis and social bookmarking have a positive impact on their teaching.

The respondents who “strongly disagree” that Powerpoint, podcasts, e-assessment, blog, wiki and social bookmarking have a positive impact are respondents who indicate they have never used that technology. With the technologies e-portfolio and virtual learning environments this was also true with the exception of a couple of respondent who indicated they had used these technologies some of the time.

Fig 9: Do these technologies have a positive impact on your teaching?



9. Deciding which technologies to use

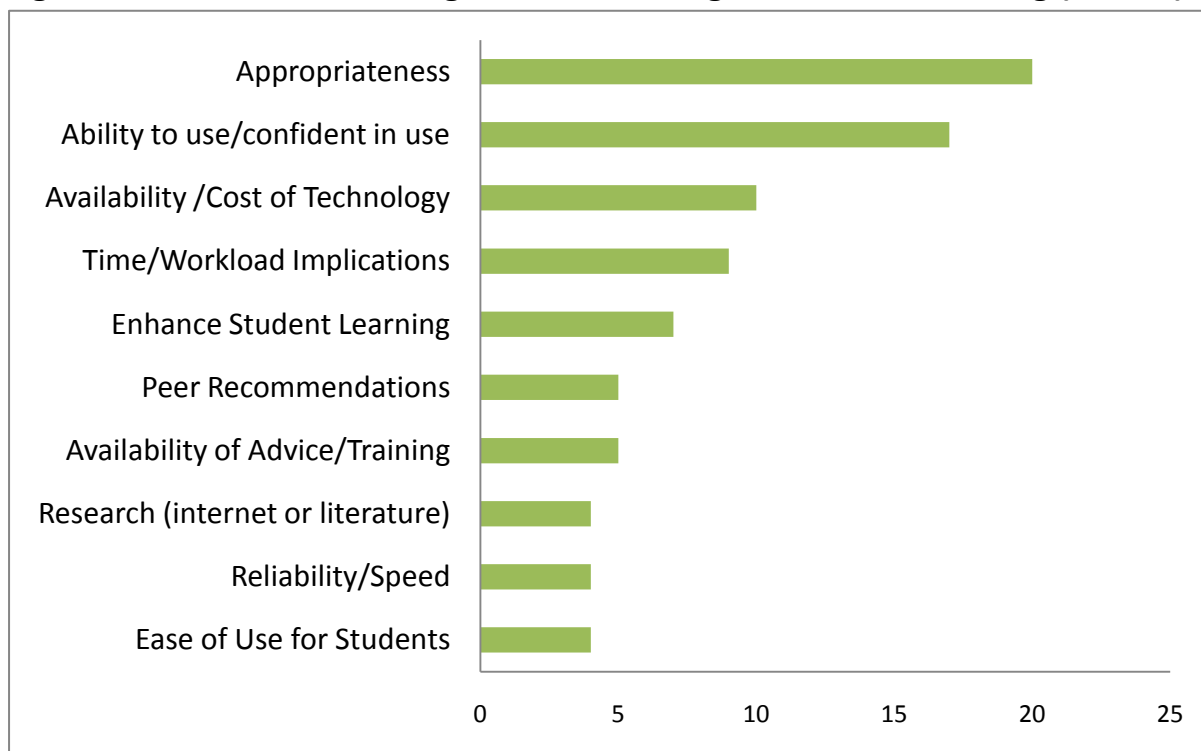
“Impact on workloads, likely involvement of students, appropriateness for learning outcomes, efficiency.”

Respondents were asked to comment on how they decide on which technologies to use in their teaching. The comments were analysed thematically and ten categories emerged. The comments under each heading were then totalled to give a summary of the issues that people were raising⁸. The results of this analysis can only be said to indicate areas of interest as there is not enough data to be able to draw any conclusions.

Encouragingly, appropriateness of the technology is mentioned the most by respondents. It also seems that staff made the choice of what to use based on their skill/knowledge as well as what is readily available and affordable. Interestingly, time did not feature as the top factor in these responses, though time was mentioned as the top factor both when respondents were asked about barriers (see Fig 5) and when they were asked to comment overall on what influenced their decision to use technologies (see Fig 10).

Other factors that are highlighted are the speed and reliability of ICTs as well as staff researching relevant technologies, using both internet resources and academic articles on use of technologies.

Fig 10: Factors when deciding *which* technologies to use in teaching (counts)



⁸ Please note that responses were organised under more than one heading when appropriate and therefore the total does not represent total number of responses.

10. Conclusions and areas for further consideration

Although the survey indicates that a high proportion of staff are using technology in teaching to some extent, it also reveals areas where there are opportunities for development. The low usage of some technologies that can save time and/or enhance collaborative learning, such as e-assessment and blogging are perhaps areas for concern. Perhaps it is necessary to do more to highlight the improvements in efficiency that can be achieved by using technologies and the ways technologies can address pedagogical needs. Some new developments in staff training are already being carried out, for example, the Learning Bytes sessions⁹, which are focused on being short, practical, informal and about sharing best practice. Another University funded teaching and learning project¹⁰ is also underway to support 30 members of staff to look at how best to incorporate technologies into their teaching. The focus of the training is very much on the effective pedagogic use of learning technologies.

It may be useful to further explore how to deliver appropriate training and development to address any discrepancy between what is on offer, what the staff have expressed a need for and the lack of uptake. There is a need to ensure that the training on offer is the type (content or delivery wise) that staff would like/need and can fit into their work load. Furthermore, the dissatisfaction expressed by some staff about the use of ICT within their teaching methods could be an area to explore and ideally seek to address via appropriate support mechanisms. The Teaching and Learning Institute along with staff development are reviewing the teaching and learning courses on offer and this will also be a key theme in the review of School's teaching and learning strategies which the Institute has organised later this year.

The recurring issue of lack of time would possibly benefit from being unpacked and explored further and is perhaps something that Schools would be interested in following up with staff. Sue Folley and Kathrine Jensen are presenting the survey findings at the School of Education and Professional Development research festival on the 29th March 2011 and the planned workshop includes asking attendees to explore this interesting question.

It may be useful for the University and Schools to consider any other tools that staff may be using with students, such as web based seminars or voting pads, but which were not included in the survey options.

⁹ Sue Folley and Jane Gaffikin are responsible for the Learning Bytes project which is a University funded teaching and learning project. <http://ipark.hud.ac.uk/content/learning-bytes>

¹⁰ Taking a Bigger Byte: providing a next step for supported staff development in eLearning http://www2.hud.ac.uk/tali/support/proj11_byte.php

The survey mainly explores staff use of technology with a focus on delivery and it may be useful for Schools to explore how students make use of technology inside as well as outside the curriculum designated time.

It would be worthwhile to perhaps monitor the use of virtual learning environments to ensure the full potential of the new Blackboard upgrade (UniLearn) is utilised, getting all staff onboard and reducing the percentage of lecturers who never make appropriate use of this technology. A central University steering group, chaired by Pro-Vice Chancellor Tim Thornton, has been set up to ensure a coordinated approach and to set minimum standards. The VLE steering group is responsible for developing strategy for, and overseeing developments of, the University's Virtual Learning Environment.