The Use of Technology and eLearning among Academic Staff: a case study

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Context

This study was undertaken in the light of the development of a Learning and Teaching Strategy in the Department of Education at London Metropolitan University, which identified the use of technology and e-learning as an area for development. Members of staff felt that they were very much at different points towards embedding aspects of technology-mediated learning into their practice. This reflects the findings in the National Committee of Inquiry into Higher Education (Dearing) Report, almost a decade ago, which highlighted the gap between potential use and use in practice relating to instructors' and learners' responses to the use of technology in learning-related situations. Furthermore, as Collis and Moonen (2001) point out:

> *'Despite all the possibilities for increased flexibility and the institution's perception that you can't not do it, the actual voluntary use of technology applications as a purposeful part of the instructional delivery of a course or related to a classroom lesson is still far from widespread.'* (Collis and Moonen, 2001)
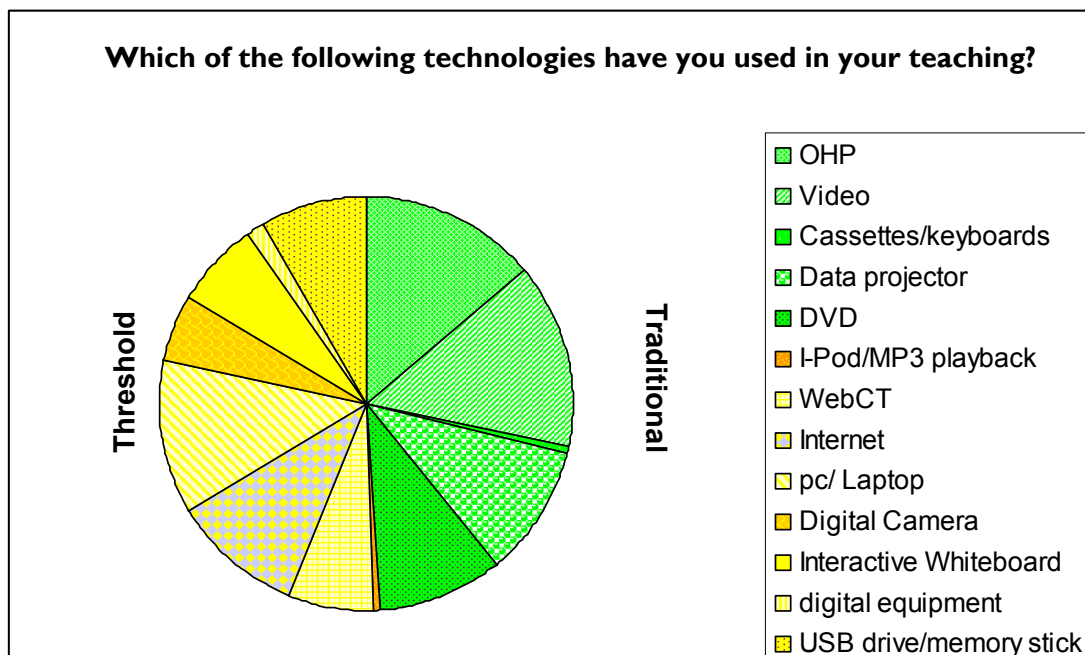
There have been a number of studies which have explored the factors that influence an instructor's decision to make use of a technology application in his or her pedagogical practice. One such model is the 4-E Model (Collis, Peters and Pals, 1999) which proposes that an individual's likelihood of voluntarily making use of a particular type of technology for a learning-related purpose is a function of the 4 E's: the environmental context, the individual's perception of educational effectiveness, ease of use and sense of personal engagement with the technology, the latter two being of most importance. This is highlighted in a response in this study that 'it only takes an unsuccessful experience with ICT for staff to elect for safer resource use and end up being less ambitious in their teaching as a result'.

Methodology

In order to plan the next steps and ensure effective and appropriate decision-making within the Department of Education, it was important to carry out an audit of the current situation. A questionnaire was designed to determine use, attitudes and reflection on aspects of technology in terms of how its use assists or impedes such learning in practice. Questionnaires were sent out to all (30) academic staff in the Department of Education and we received 24 completed audits (80%).

Main findings

It was found that colleagues used traditional technologies more than new technologies, 76% and 61% used the overhead projector (OHP) and video respectively. The newer 'threshold' technologies appeared to have a normal distribution on the pie chart below, reflecting the responses 'sometimes' (48%) (most commonly a laptop pc) and 'often' (21%). These are the ones where a progressional model for innovation would suggest that change or developments are most likely to happen over time.

Which of the following technologies have you used in your teaching?

Legend:
- OHP
- Video
- Cassettes/keyboards
- Data projector
- DVD
- I-Pod/MP3 playback
- WebCT
- Internet
- pc/ Laptop
- Digital Camera
- Interactive Whiteboard
- digital equipment
- USB drive/memory stick

In terms of software use, most staff used ICT (Word) for teaching preparation. Half of the respondents have used PowerPoint in their teaching, 45% in preparation and 65% have used PowerPoint presentations in teaching. This suggests the use of 'ready-made' training/educational/Government PowerPoint presentations. Such a trend is also reflected in the question on the use of technology at home where staff indicated a quite extensive use of technology for preparation (43%). This then raises the question of how staff prepare for their teaching and how technologies could support this task.

Most staff use the internet for preparation and/or research (70%). Only one-third (33%) use it in their teaching, however. Sites accessed are primarily governmental sites which would reflect expected usage for an Education Department where relevant information would be found; for example Sure Start, TDA, QCA, DfES Standards site and Ofsted. However, this response suggests that the internet is used rather passively. There is a need therefore to look for ways of enhancing its use more dynamically.

Colleagues were asked about what they considered to be the greatest benefits of their use of ICT. A number of responses related to pedagogical values, e.g. 'Good source of up to date information for tutor and students' (48%) and imaginative and interesting delivery - provides greater opportunities for pedagogic processes/teaching and learning methods (48%). Such responses may suggest that new technologies were facilitating traditional pedagogies, rather than operating in a transformative way and reshaping the ways in which learners engage with the learning experience; for example less than a quarter of respondents (22%) mentioned online learning, interactivity or the development of higher order skills which technology can offer. This finding is supported by Laurillard (2001) who stated:

> '… The academic community has not redefined what counts as higher learning, and therefore cannot draft the specification for how the new technology should do anything other than what learning technology has always done - transmit the academic's knowledge to the student….'
> (Laurillard, 2001)

With regard to perceived constraints in their use of ICT in their teaching, 'availability' (48%) and 'access' (43%) were identified as the main obstacles. This may suggest that staff knew what they lacked and were unable to access it but this is difficult to quantify. If we accept that confidence comes with access and opportunity, there could be correlation between lack of access and confidence.
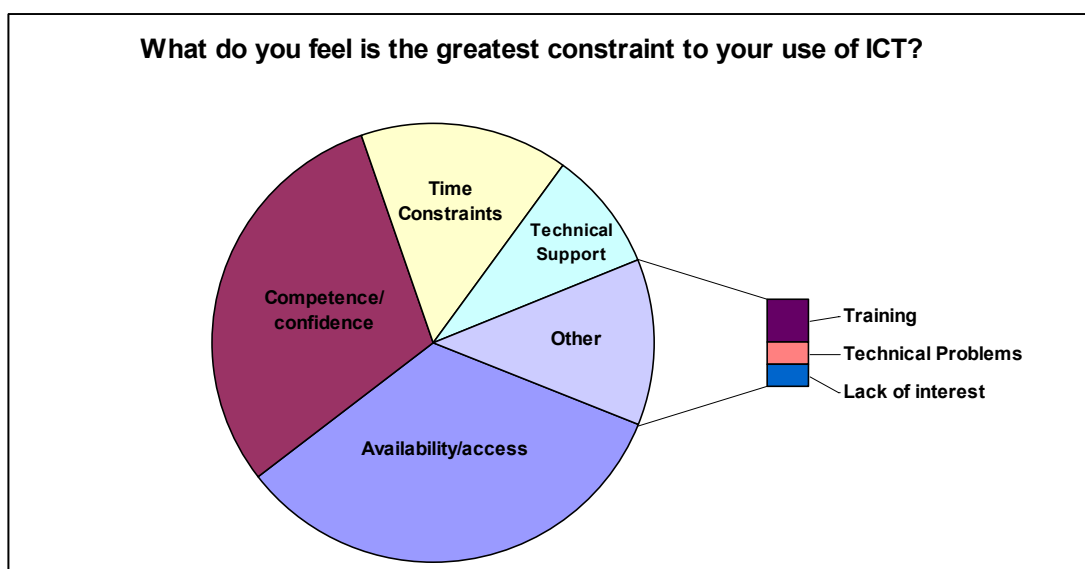
Indeed, it was a concern that 39% of staff claimed that they had no strengths in ICT, although further questioning of what they understood by 'no strengths' would have been valuable. This contradicts the fact that practically all used a computer at home.

Do you use a computer at home?

Sometimes
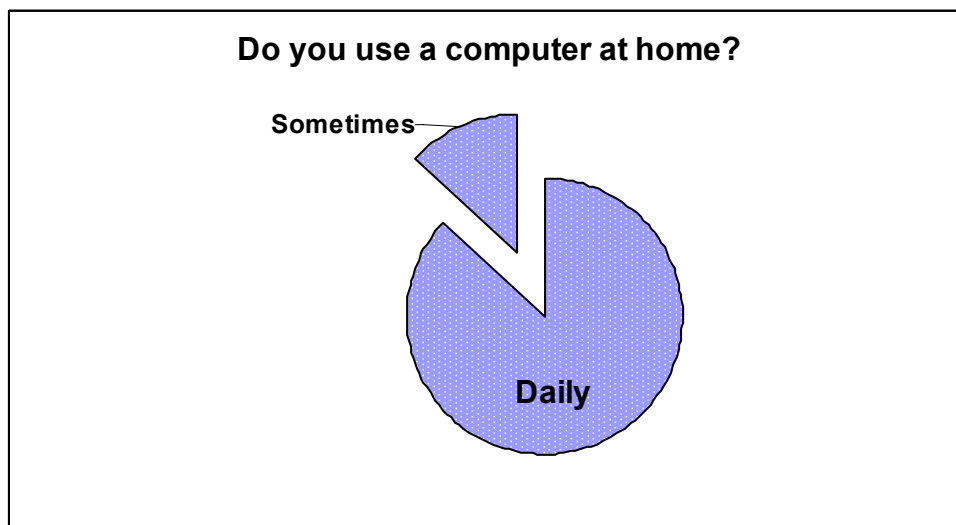
Daily

Almost all staff used ICT for their own purposes on a daily basis. This finding therefore suggests that some people are not making the connection between ICT in education and 'real life'. This point is reinforced by Futurelab:

> '… The world is changing. Students are increasingly attuned to the demands of living in a technology-driven world and fully expect 24/7 connectivity, be it by e-mail, text or mobile internet access. For some students, this can create a gap between their experiences outside school and within it - leading them to feel that they are powering down once they enter the school gates… ' (Futurelab, June 2005)

Lack of access to consistent and reliable computer systems was seen as a major problem with ICT use for teaching and frequent technical problems were reported (74% of staff feeling that this was a major factor).

Implications for practice and staff development

Most staff (78%) felt ICT access is essential in teaching rooms. In order to encourage them to use ICT, half of the respondents reported the need for more technical support. Additionally nearly half (43%) felt that training would definitely help their practice. Furthermore this would support current Learning and Teaching strategies where the use of technology in teaching and learning has been identified as a priority.

The university offers a number of courses which are available to academic staff, and respondents were asked to prioritise what training they would benefit from. Core areas such as using the internet and word-processing were not

needed, although almost a third of staff felt that they would benefit from training on the organisation of files and folders. Specialist training in interactive whiteboards, Excel and Livelink (the University's document management system) was also requested. It may, therefore, be possible to devise a range of more appropriate courses and training based on these findings and a consistent timetable of training and time allocated on timetables would encourage staff to participate in activities and this should be reflected in the departmental Learning and Teaching Strategy.

Where confidence/skills are more evenly spread a 'buddy system' would be a suitable strategy to adopt rather than a more direct approach to training where a large majority need help. During 2005/6, there was a successful initiative in the Department on the Post Graduate Certificate in Education (PGCE) Early Years and Primary Education course that involved the ICT lecturers working alongside colleagues to encourage and support the use of technology in the teaching and learning of their subjects. The ICT co-ordinator's role was an important factor in the success of the process in instigating the planning, providing relevant and current ICT use for each of the subjects and particularly in offering support and encouragement to colleagues. Successful sessions, which were the majority, utilised the strengths of team teaching and provided excellent models of the use of ICT in subject teaching for the students.

There was a general lack of awareness of any developments relating to the recent innovation in the use of technologies in education. Half of the respondents did not provide any response to this question which may be because of the use of generic ICT tools rather than the use of specific sites relating to their specialist curriculum subjects. This raises a concern with regard to a lack of joined-up thinking and making pedagogical connections with the use of ICT in teaching and learning.

> '… *Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language… Should the Digital Native students learn the old ways, or should their Digital Immigrant educators learn the new… ?'* (Prensky, 2001)

The central question that a large number of universities and colleges seem to be asking themselves with regard to the impact of ICT is, 'How do we integrate this new technology into the way we already do things?' (Postman 1992). However any new technology carries along with it its own rules for operation and these rules alter what has gone before (Kroeker 2000). Any new technology creates opportunities for growth in new directions, while at the same time destroying, or at least causing the abandonment or rethinking of, an old way of doing things.

Respondents held mixed and, at times, vague understanding of the term 'eLearning'. Some respondents expressed a fairly general definition, others more specific and more software driven conception. Indeed, a third of staff were not sure of the term or did not provide an answer to the question. In fact there are numerous definitions for the term 'eLearning' and definitions of the term continue to evolve. ELearning has become the term used to describe the *diverse* use of information and communications technologies to support and enhance learning, teaching and assessment.

Over half of the respondents did feel that the use of eLearning was important in their courses with 57% stating that they would definitely or possibly welcome training on the use of ICT in education. More disturbing was the fact that 26% of staff felt that eLearning was not relevant and 22% did not even provide any response. Yet education-orientated courses, especially initial teacher education programmes, have a key responsibility here, as argued by Barton and Haydn:

> *'… Considering the role of HEIs more generally in supporting trainees' use of ICT, the data from the trainee focus group discussion would suggest the key elements to be providing trainees with a vision of how ICT can be used and also providing an overview of what is available...'* (Barton and Haydn, 2005)

In summary the study found that the reality of instigating change in higher education is constrained by lack of time and money, lack of academic staff knowledge and development, and lack of support staff. These findings mirror results of the study commissioned by the JISC (Joint Information Systems Committee) and UCISA (Universities and Colleges Information Systems Association) in August 2002 from a consortium of research organisations led by the Social Informatics Research Unit at the University of Brighton which was a national survey of all FE and HE institutions (JISC 2003).

Conclusion

Feedback from all respondents in this study will contribute to the process to determine use, attitudes and reflection on aspects of technology in terms of how its use assists or impedes teaching and learning within the Department of Education.

As technology becomes an embedded medium throughout our daily lives, research into its use for teaching and learning has shifted its focus from the technology itself to how it can support application of learning theories to pedagogical approaches. Many theories and related eLearning approaches consider the needs of the learner in terms of the most appropriate technological applications, but often neglect the needs and implications for the instructor.

However, as educators it is vital for lecturers to demonstrate both competency and willingness to incorporate technologies in their pedagogical practice.

> '… Teacher educators, being role models for the integration of technology into classroom teaching, should demonstrate their own competency and willingness to use ICT in teaching…' (Yildirim 2000).

This is particularly applicable to programmes for initial teacher education:

> '… A central strand of ICT policy in education has been the development of a technologically empowered teaching force so that ICT is 'embedded in teaching and learning… " (Clarke, 2004).

The use of ICT and eLearning in Higher Education enables students to become active, dynamic learners with higher order skills rather than passive learners based on the more traditional, transmission model of learning

> '… The teacher's job is … to support students by aligning teaching methods, assessment tasks and classroom climate to acquiring the kinds of skills and kinds of understanding that we want them to acquire.. .'
> (Biggs, 2001)

It is therefore crucial to incorporate the use of ICT and eLearning into all courses and modules to facilitate change.

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