

# Are FE/HE Staff ICT Competent?

## A report from the tRISSt research project

Dean Garratt, Peter Gilroy (Manchester Metropolitan University)

Diane Saxon and Clive Cairns (City College Manchester)

[d.garratt@mmu.ac.uk](mailto:d.garratt@mmu.ac.uk) [p.gilroy@mmu.ac.uk](mailto:p.gilroy@mmu.ac.uk) [dsaxon@ccm.ac.uk](mailto:dsaxon@ccm.ac.uk) [ccairns@ccm.ac.uk](mailto:ccairns@ccm.ac.uk)

### ABSTRACT

In this paper, we describe the finding of the first phase of the Recognition of ICT Skills of Staff (tRISSt) project, in which we raise questions about the assumption that FE and HE staff have the appropriate ICT capabilities to make use of the opportunities provided by networked learning to develop teaching and learning in their students.

### Keywords

Information technology and learning, professional development of FE and HE staff

### Background

In recent years a number of UK government reports (see for example Dearing, 1997; FEFC, 1999) have identified a need for institutions of further and higher education (FE and HE) to improve the profile and delivery of Information and Communication Technology (ICT). At the same time, the globalizing effects of a growing technological imperative (Giddens, 1999) have meant that colleges and universities can no longer be complacent regarding their staff's abilities to use ICT as a vehicle by which academic standards can be raised. It is now accepted that there is an urgent need to promote the use of learning technologies. In addition staff and students will need appropriate support so that they might embed these technologies within a context that is appropriate to their own learning and scholarship (Harvey and Oliver, 2001). It comes as no surprise, then, that during the last few years interested parties have witnessed a steep rise in the number of studies and research reports exploring issues of current need, existing provision and, more recently, the development of structured programmes to facilitate ICT as an effective learning tool, generic to all disciplines (see for example, TALISMAN, 1995; Anstey, 2000; Beetham and Jones 2000; Pavey and Watson 2001; Harvey and Oliver 2001).

However, in spite of this flood of research, Anstey has argued that while ICT has undoubtedly made an impact on the work of higher education institutions (HEIs), much 'has been on a piecemeal and ad hoc basis' (2000, p.7). Furthermore, he suggests that if ICT is to prevail sector wide then 'people need the skills to use it' (ibid.). Although Anstey's study was limited to an analysis of the needs of the staff of one particular university, and therefore has limited generalizability, it raises at least two important issues. First, lessons may be learned from this case that might help ward off complacency within the sector with respect to ICT provision. Second, that the process of identifying ICT needs, and the skills which match those needs, cannot easily be overlooked by higher education establishments if the issue of embedding ICT skills is to be taken seriously.

Interestingly, the imperative first to identify and then embed ICT skills within institutions has not gone unrecognised within the FE sector, where Donovan (2001) has emphasised the importance of seeking out the service needs of staff in order to address issues of staff development, strategic management and management support in the coordination and provision of ICT. Donovan's research is set against a backdrop of intensive government agency activity, in which the Further Education National Training Organisation (FENTO) has issued draft standards for the implementation of Information and Communication Technology in FE institutions. While there is no obvious equivalent in standards within higher education (although the Higher Education Staff Development

Agency – HESDA - is currently reviewing standards within the sector - see for example HESDA, 2001a), a number of recent studies have conducted audits with the aim of determining current levels of need and provision. For example, Pavey and Watson (2001) have set out to determine the current level of IT literacy of academic staff within their institution, while Beetham and Jones (2000) succeeded in identifying roles in the coordination, development, use and support of learning technologies more widely across UK HEIs. Furthermore, similar work has been carried out in higher education in Scotland, where Wiles and McCulloch (2001) have sought to identify needs that underpin and enhance the practice of staff developers in ICT learning and teaching, covering a range of different Scottish HEIs. Elsewhere, Littlejohn et al. (2001), recognising the fact that levels of support in the use of ICT Teaching, Learning and Assessment do not meet current needs, have developed a structured programme - Enabling Large-Scale Institutional Implementation of ICT (ELICIT)- within which courses to develop pedagogical skills and online modules have been created.

While such studies and reports have provided an important backdrop to the research reported on in this paper, none have attempted a UK-wide needs analysis of ICT skills. More particularly, there has been no published research exploring the key perceptions of staff development personnel in relation to the specification of ICT skills across the differing roles of staff, academic and non-academic, in institutions of both further and higher education. In contrast with its predecessors then, but also to complement their work, this is what, in part, the Recognition of ICT Skills of Staff Project (tRISSt) aims to achieve.

The tRISSt project has three main objectives. First, to examine the contrasting ICT needs of differing categories of staff in differing HE/FE institutions. This requires a HE/FE sector wide needs analysis of professional development in ICT. Second, to determine what already exists across the HE/FE sector regarding ICT provision and accreditation, in order that a critical comparison can be made of existing forms of ICT assessment systems. Thirdly, to discover what form, or forms, of accreditation would best meet the current and future needs of HE/FE institutions and staff, to allow recommendations of best practice to be made. Since the project has met its first objective this paper allows the team to share some of its key findings, in particular the assumption that FE/HE staff are now in a position to take full advantage of the opportunities provided by ICT on which much of networked learning depends.

## **Outline methodology and Data Sources**

During the first phase of the project contact was made with all HE/FE institutions across the UK. Of the 654 institutions that were invited to complete our questionnaire, approximately 20% responded, providing a fairly even and representative distribution across both HE and FE sectors. The purpose of the first questionnaire was to discover the perceptions of staff development personnel in relation to those ICT skills believed to be required by different categories of staff across institutions.

There are at least three reasons for our targeting this area: one is that we believe staff development is potentially a mechanism through which staff in a variety of different roles can be motivated to develop and upgrade their knowledge and skills of ICT (Milligan, 2001). This resonates strongly with findings from the National Learning Network (NLN), in which staff development is viewed as an essential component in progress (NLN, 2001). Second, we believe that staff development is a key institutional role which, as other studies have implied (see for example Anstey, 2000; Beetham and Jones, 2000, Wiles and McCulloch, 2001; FEILT, 1999, LSDA, 2001), is crucial in providing an institutional perspective on the question of need, coordination of effective training programmes, and recommendations for best practice. A third reason, as Webb (1996) has suggested, is that many currently involved in staff development have previously worked in other academic roles, and so bring with them a perspective that encapsulates both their present role and previous professional experiences. It is in this way that the institutional perspective and the potentially many and varied overlapping personal roles can become inseparably interwoven. In some cases we believe this could provide a deeper insight into the mechanisms that govern ICT provision across the sectors, and in turn provide us with a necessary and important platform leading into subsequent stages of the project.

Methodologically, we adopted a qualitative approach to our analysis using interpretation as the principal means of analysing data. The task of making meanings and developing understandings is predicated upon the interaction of both the substance of our findings and the extensive field of literature in which our data is located. We would emphasise that in the hermeneutical tradition (Gadamer, 1979) our findings are located within and between existing practice, meaning that we shall make sense of our data on the basis of our collective experiences, interests and theoretical dispositions. Our intention of telling stories with a point (Feyerabend, 1981) necessitates the movement back and forth between the parts (stages) and whole (completion) of the project in order that coherence and plausibility may be developed. In this way, we see the developing analysis of our findings as one that moves concentrically, forming circles of understanding that both reveal and conceal the various meanings of our data (Stronach and Maclure, 1997). With this in mind, we would wish to emphasise that our analysis is inevitably both provisional and partial at this stage, since we would expect to experience changes in our interpretation of findings as the project continues to evolve. Indeed, breaking the project in to three stages was deliberately designed to allow for such re-interpretation.

## **Lecturers and ICT Knowledge Gaps**

Wiles and McCulloch's (2001) research suggests that there is a lack of strategic development in institutions for the implementation of ICT in learning and teaching, an argument that also has some resonance within the FE sector. The Learning and Skills

Development Agency (LSDA) in partnership with the National Information and Learning Technology Association (NILTA) is sharing development work with the Further Education National Training Organisation (FENTO), to produce a set of national standards for the use of ICT in further education institutions. FENTO have recognised the importance of the joint roles of manager and senior manager within this context, seeking to identify standards that improve the delivery of learning, support for learning, management of learning and organisational management of Information and Learning Technology (ILT). While these are only at draft stage, the latter is ostensibly a clear expression of expectations for these roles in relation to ICT provision within the sector. Yet in spite of this important work, the standards are less than specific about the sorts of ICT skills that can be expected to furnish such roles. It is, therefore, in recognition of the gaps within both sectors of education, with respect to knowledge of the perceived requirements for ICT skills for the role of lecturer that we present our first set of findings.

## **Staff Development Officers' Conceptions of the ICT Skills of Lecturers**

The role of 'lecturer' is one that contains a variety of differing responsibilities and duties. Included among these are responsibilities for the 'delivery' of learning, aspects of supporting learning and its administration and contributions towards the effective management and deployment of organisational strategies. According to Beetham and Jones (2000), such roles often do not correspond with clear-cut divisions of labour among individuals, many of whom have multiple responsibilities. Indeed, we found from our survey that some of those whose principal role was defined in terms of lecturing (or the delivery of learning), were at the same time involved in some significant aspects of management, examples of which include curriculum planning, ICT coordination, or even staff development itself. We should note however, that this was more often, though by no means exclusively, the case for FE and sixth form college staff, rather than staff working within higher education.

Befitting the multifaceted role of lecturer, we anticipated a consensus of opinion that would affirm the requirement for an impressive range of ICT skills across the named fields. This is particularly true within the context of further education, where it can be argued that the role of lecturer embraces each of the four areas of standards that FENTO have recently drafted. Of these, one in particular relates to the process of facilitating learning using ILT, where FENTO have identified four key dimensions. These include the need to 'plan to use ILT as part of the learning programme (A1), to 'support learners and groups of learners on-site using ILT' (A3), 'support learners and groups of learners online' (A4), 'assess learning using ILT' (A5) (FENTO, 2001, p.2). For each of these dimensions a further list of standards is elaborated, and it is to the first of these that we briefly focus our attention.

In satisfying the standard of 'identifying opportunities for using ILT' (A1.1), it could be argued that lecturers should: 'continuously update their knowledge and skills in the use of ILT' (ibid., p.6); 'establish which learning objectives can be supported through the use of ILT' (ibid.); 'establish whether the abilities and learning styles of the learners will enable them to benefit from the use of ILT' (ibid.); 'consult openly with colleagues or ILT specialists, where they are unsure about the suitability of ILT to support learning' (ibid.). Each of these standards presumes a detailed knowledge and understanding of the application of ILT to learning. Consequently, they imply that lecturing staff should possess as wide a range of ICT skills as possible to ensure they are able to meet the required standards. Yet interestingly, the results of our survey reveal a more complex pattern of responses.

First, in the field general application and operating system, staff development officers surprised us by providing a less than completely positive response to the requirement to "use features of the operating system" and "manage folders", both of which elicited favourable responses from 93% and 86% of the sample, respectively. Somewhat unexpectedly, only basic word processing skills were perceived as required by all staff in this field. These 'basic' skill were, namely, manipulating text and formatting and positioning text. The use of writing tools and the ability to create and use tables were seen to be important by 93% of our sample, whereas other word processing skills (using graphics, drawing tools and mail merge) were deemed to be a necessary requirement for lecturers by considerably fewer staff development officers, namely 71%, 64% and 29%, respectively.

These findings are surprising since they help create a perception that lecturing staff do not require the facility to use key features of computers' operating system, or basic skills like managing folders, or, further still, more advanced word processing skills. Moreover, when staff development personnel were asked if lecturing staff should be required to "provide support for computer users" the response was also strikingly low at 43%. Again, this is surprising when FENTO have identified standards that require staff to: 'encourage individual learners to use ILT materials and resources autonomously, providing the support they need to use them effectively' (FENTO, 2001, p.11); 'where necessary, customise ILT materials to make them suitable for meeting learning objectives' (2001, p.7), 'check that equipment is working correctly' (2001, p.7), and 'use ILT materials and equipment effectively to help groups of learners to develop their knowledge and skills'.

We would argue that each of these presumes a depth of understanding and knowledge of ILT that extends well beyond the most superficial and basic acquisition of skills. Indeed, this perspective coincides with the view of Anstey in higher education, where he claims that 'all staff should have a broader skill set so that the ICT provision offers a richer rather than minimalist environment ... [they] should be able, with confidence, to handle files, navigate directories/folders, and use a word processor – in addition to competence with very basic e-mail and the intranet' (2000, p.30).

The number of positive responses from HE staff in consideration of the requirement for word processing skills was comparable with those in FE. For example, all HE staff development officers saw a need for lecturers to possess word processing skills such as manipulating text, formatting and positioning text and creating and using tables. However, their response to the other skills we had identified was, on the whole, marginally lower than for their FE counterparts. Skills for using writing and drawing tools elicited a 67% positive response, while the need to use graphics was seen as required by just 50% of the sample. The consensus of opinion for HE staff development officers indicated that the use of graphics, drawing tools and mail merge was, in the main, not something expected from lecturing staff. These findings are in broad agreement with the work of Pavey and Watson (2001), in which the perceptions of academic staff at the University of Durham showed that 81% believed themselves to have good/advanced Windows and file management skills and 88% perceived themselves to have good/advanced Word skills. While Pavey and Watson's research is different in as much as it provides an insight into the perceptions of different academics within one institution, the perceptions of staff development personnel within our study provide an overview that has some resonance with this work.

Another surprise came from the FE sample where, in relation to lecturing staff and their e-mail skills, there was a less than complete positive response, with only 93% of the sample considering basic e-mail skills, the ability to use attachments and the task of managing mail as a requirement for their lecturers. Even less (86%), thought the ability to use address books and distribution lists was important. Similarly, in relation to internet skills, only 86% of the sample thought lecturing staff should be required to navigate the World Wide Web and extract and save material. While slightly more (93%) gave a positive response for using a search engine, considerably fewer (79%) thought the skill of using bookmarks or favourites was required. Our point here is that if lecturers are not expected to possess the ICT skills they need to offer support to learners, then the requirement that they encourage learners to learn from other learners through ICT or, alternatively, support learners and groups of learners on-line, as FENTO have suggested, is unlikely to be uniformly achieved.

We would argue that many of FENTO's drafted standards, including, for example, the need for lecturing staff to 'provide the support learners need to record and update data about themselves (2001, p.21) and 'maintain complete, accurate and up-to-date information on learner participation using ILT' (ibid.), can be interpreted as presuming a high level of competence with database applications (we might also acknowledge that some of these standards might be relevant to MIS staff). Curiously, however, this was not recognised in any significant way by the staff development officers in our survey. For example, only 29% of the sample acknowledged the need for lecturing staff to enter and edit data and select data using queries, while considerably fewer (14%) acknowledged the requirement to create databases and tables and only a nominal 7% thought the ability to create forms was necessary.

This is perhaps a little surprising given that within the context of lecturers assessing learning, staff will be asked to 'provide complete, accurate and up-to-date reports on learners' achievements to those entitled to this information, in the required formats and at the required times' (FENTO, 2001, p.21). In contrast with their FE counterparts, HE staff development personnel saw the requirement for e-mail and Internet skills as a necessary part of a lecturer's portfolio of skills. There was an overwhelmingly positive response for each of the skills considered, where even the requirement for using bookmarks or favourites elicited a 83% favourable response.

A mixed response was produced by the FE sample in relation to the requirement that lecturing staff have spreadsheet skills. Positive responses seemingly faded as more complex skills were considered within this field. For example, while 64% of the sample perceived entering data and formulae as a requirement for lecturing staff, only 57% saw the manipulation of spreadsheets as a necessary skill for this category. Moreover, although 43% of the sample saw using charts as a requirement for lecturers, only a nominal 14% thought it necessary that lecturers demonstrate ability to link information between different sheets and files.

In consideration of other skills, the response in HE was variable and in many ways no more reassuring than that produced within FE. For example, only 50% of the sample saw the need for their lecturers to have basic spreadsheet skills, while fewer still – 33% – thought it necessary for lecturers to be able to use charts or link information between different sheets and files.

In terms of presentation skills and other more specialised ICT skills, the response from our survey for both FE and HE staff was mixed. For example, while preparing a simple presentation using text produced a 93% favourable response for FE staff, using graphics and objects and preparing slide shows were seen as less important, producing positive responses from only 71% and 79% of the sample, respectively. In contrast, for HE staff the percentage of positive responses in relation to the same skills was 100%, 83% and 83% respectively.

In FE, positive responses in relation to other ICT skills were relatively low (see Figure 1).

## Figure 1



For example, only 21% thought it necessary that lecturing staff should be able to create and edit graphic files, whereas in HE none of our sample thought this necessary. Slightly more (43% in FE) saw the need to be able to capture screen and use this in other applications as important, while 50% in this sector thought preparing material for the World Wide Web, using sound and using video clips was a necessary requirement for lecturers. These findings are surprising given the demands upon lecturing staff to be creative in their delivery of learning and assessment and in their technical support of learners (FENTO, 2001). However, it is somewhat more reassuring to reflect on the higher responses that were elicited for the skills of using a scanner and digital camera - 57% and data projector - 71%. The HE response in relation to these fields was comparable, where 67% of the sample thought it necessary that lecturing staff should possess these skills.

## Discussion and Conclusions

The FENTO standards as they apply to lecturers' supporting learning assumes that lecturers have the appropriate knowledge and understanding of how ICT can be applied to learning, and relatively high level skills to operationalise that knowledge. However, this does not seem uniformly to be the expectation of staff development officers, significant numbers of whom seem to believe that only very basic word processing skills are required for lecturing staff. Consequently the FENTO standards which relate to lecturing staff providing ICT support for learners would seem to be either ignored or felt to be irrelevant by a significant number of staff development officers. This point applies to HE lecturing staff too.

With regard to e-mail and the use of the internet, there appears to exist a difference between FE and HE staff development officers' perceptions of lecturers' skills. For many staff development officers FE staff were seen as requiring relatively low-level skills, whereas such knowledge were seen as a necessary part of HE lecturers' skills. We are puzzled as to why there should be this disparity, given the fact that e-mails are fast becoming the standard medium for communication within and without institutions. Moreover, if there are lecturing staff in either sector who are not expected to be able to use the World Wide Web then their staff development officers are in effect cutting such staff off from invaluable teaching and learning resources: in addition, these staff would then not be able to point their students at such a resource.

Given the fact that that FE and HE staff were, in the main, perceived as not requiring any significant abilities regarding database and spreadsheet applications we wondered how staff were supposed to be able to use ICT to track the learning achievements of their students. In fact the picture that emerges of such staff is a very strange one, in that they are expected to be able to enter data and formulae into spreadsheets, but not necessarily to manipulate this data, nor link it to other files.

In general both FE and HE lecturers were perceived by many of their staff development officers as not requiring substantial and varied presentational ICT skills, nor were they expected to be able to make use of the sorts of material that would add interest to what presentations they might produce (through sound and video clips for example). The suggestion seems to be that lecturers were not necessarily being weaned away from a reliance on text-based learning aids, in particular overhead presentations as opposed to ICT-based 'shows'.

The differences between the staff development officers' perceptions of the ICT skills required by their FE and HE lecturing staff seem minimal. Both sets of staff are carrying out similar functions, both would seem to need similar skills, both appear not to need extended forms of staff development to acquire any except the most basic of those skills.

Our conclusion would be that if lecturing staff in FE and HE are to use ICT to support their learners in the many and varied ways that the technology provides (and which the draft FENTO standards identify) then there needs to be a sustained information campaign to raise FE and HE institutions' awareness of the ICT skills that lecturers now require, targeted specifically at FE and HE staff development officers. If many of these officers have inappropriately low expectations of the ICT skills their lecturing staff need then this expectation is likely to become a self-fulfilling prophecy, in that the lecturers will not be provided with either the incentive or the opportunities that would allow them to develop their ICT skills appropriately. It should also be noted, *en passant*, that lecturers with such restricted ICT skills are likely to restrict in similar ways the learning opportunities of their students.

## References

- Anstey, P.(2000) SCAITS – Staff Communication and information Technology Skills, Final Report, <http://www.uea.ac.uk/csed/scaits>
- Beetham, H. and Jones, S. (2000) *Career Development of Learning Technology Staff: Scoping Study Final Report*, <http://sh.plym.ac.uk/eds/effects/jcalt-project/>
- Blair, A. (1997) *Connecting the Learning Society*,
- DfES <http://www.dfee.gov.uk/grid/consult/foreword.htm>
- Dearing, R. (1997) *National Committee of Enquiry into Higher Education in the Learning Society*, London, HMSO.
- Donovan, K. (2001) *Evaluation of National Learning Network and its impact on teaching and learning*, paper presented at the Association for Learning Technology Conference, Edinburgh, 11-14<sup>th</sup> September, 2001.
- FEFC - Further Education Funding Council (1999) *Networking Lifelong Learning: An ILT development strategy for FE*, Coventry, Further Education Funding Council, April, 1999.
- FEILT – Further Education Information and Learning Technology (1999) *Networking lifelong learning: an ILT development strategy for FE 1999*, [http://www.fefc.ac.uk/documents/circulars/fevc\\_pubs/9918.pdf](http://www.fefc.ac.uk/documents/circulars/fevc_pubs/9918.pdf)
- FENTO - Further Education National Training Organisation (2001) *The application of ICT to Teaching & Supporting Learning and Management*, Final Draft, October 2001.
- Feyerabend, P. (1981) *Realism, rationalism and scientific method*, Cambridge, Cambridge University Press.
- Gadamer, H-G. (1979) *Truth and Method*, London, Sheed and Ward.
- Giddens, A. (1999) *Runaway World: How Globalisation Is Reshaping Our Lives*, Profile Books, <http://www.lse.ac.uk/Giddens/RWDglobalisation.htm>
- Harvey, J. and Oliver, M. (2001) *Evaluating the impact of EFFECTS on academic staff*, paper presented at the Association for Learning Technology Conference, Edinburgh, 11-14<sup>th</sup> September.
- HESDA - Higher Education Staff Development Agency (2001a) – *Standards and Qualifications*, <http://www.hesda.org.uk/nation/stand.html>
- HESDA - Higher Education Staff Development Agency (2001b) – *KPBSD Technology Training Model*, <http://www.kpbsd.k12.ak.us/tech/plan/training/train.model.html>
- HESDA – Higher Education Staff Development Agency (2001c) – *Senior Management Development*,

<http://www.hesda.org.uk/nation/exec.html>

Littlejohn, A., Peacock, S., McAteer, E., Juwah, C. Bates, D. and Bruce, S. (2001) *Enabling Large-scale Institutional Implementation of C & IT*, <http://www.elicit.scotcit.ac.uk>

LSDA - Learning and Skills Development Agency (2001), *Research Development*  
<http://www.lsda.org.uk/research/>

Milligan, C. (2001) *Delivering Staff and Professional Development Using Virtual Learning Environments*, Report 2, <http://www.jisc.ac.uk/jtap/htm/jtap-044.html>

NLN - National Learning Network (2001) <http://www.nln.ac.uk>

Pavey, J. and Watson, B. (2001) *Summary for C&IT Skills Audit of all Students and Academic/Academic Related Staff in June 2000*, paper presented at the Association for Learning Technology Conference, Edinburgh, 11-14<sup>th</sup> September. Stonach, I and Maclure, M. (1997) *Educational research undone: The postmodern embrace*, Buckinghamshire, Open University Press.

TALISMAN - Teaching and Learning in Scottish Metropolitan Area Networks (1995),  
<http://www.talisman.hw.ac.uk/>

Toffler, A. (1970) *Future Shock*,

Web, G. (1996) *Understanding Staff Development*, Milton Keynes, Open University Press.

Wiles, K. and McCulloch, M. (2001) *Briefing Paper: Frameworks for staff development in C&IT in learning and teaching*, <http://netculture.scotcit.ac.uk>

Zuboff, S. (1988) *In the Age of the Smart Machine: The Future of Work and Power*. New York: Basic Books.