



Scottish higher education
funding council



Executive Summary Report

November 2004



Preface

This report is a detailed executive summary of the full HETNA Report. Its purpose is to provide a concise account and overview of the HETNA surveys. The sections on the analysis and recommendations of the HETNA study are included in this report in their entirety. However, readers wishing further details of the methodology and surveys should consult the full report, the contents of which are as follows:

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1 Introduction

- 1.1 The Joint Scottish Further and Higher Education Funding Councils e-Learning Group published their final report in July 2003.¹ The purpose of the report was to advise the FE and HE sectors and the Councils themselves on their approaches to the development of e-learning. One of the key recommendations was the need for a systematic analysis of the information and communication technology (ICT) skills required by different categories of staff, to inform ways of developing these skills in the context of e-learning.
- 1.2 In February 2004, the Scottish Centre for Research into On-line Learning and Assessment (SCROLLA), in partnership with e-learning consultants Glenaffric Ltd and the Joint Information Systems Committee (JISC) Regional Support Centres (RSCs) in Scotland, was commissioned to undertake an analysis of ICT-related training needs across the Scottish higher education (HE) sector.
- 1.3 The aim of the analysis, entitled HETNA, was to gather detailed information on the ICT-related training needs of staff working in the 20 higher education institutions (HEIs) funded by the Scottish Higher Education Funding Council.

The objectives of the study were to inquire into:

- the range extent and availability, awareness and use of ICT resources for teaching, research and management support within and across Scottish HEIs;
- from institutional perspectives: what training is available currently for which staff context categories, what provision should be made to meet staff development needs to enable the support of e-learning, and how best to resource that provision across the Scottish HE sector; and
- from university staff perspectives: what ICT skills they have and how they use these in context, what ICT-specific training or development

¹ Joint SFEFC/SHEFC e-Learning Group: Final Report, SFC, July 2003
http://www.sfc.ac.uk/joint_info/publications/joint_e-learning_report_july_2003.html

programmes they have undertaken in their professional contexts, what they know about available programmes and resources and their individually perceived training needs for best use of ICT in the support of e-learning.

2 Overview of methods

2.1 HETNA involved the following key elements:

- a full-scale web-delivered survey open to all staff, academic and non-academic, working in Scottish higher education institutions;
- an enquiry into institutional e-learning aspirations, current provision for staff development of e-learning support skills and staff training needs, involving key informants in each Scottish HEI; and
- four in-depth case studies of approaches and aspirations of institutions representing the diversity of Scottish HEIs.

2.2 The HETNA web-based survey was carried out in May 2004, with specific questionnaires for the following staff groups:

- Academic, research and academic-related
- Library and information services
- Senior management
- IT and networking
- Administrative and all other support staff

Almost 3,500 responses were received across all staff categories, making this component of HETNA one of the largest surveys conducted to date within Scottish HE in relation to ICT.

2.3 Each Scottish HEI was asked to nominate a key informant with senior management responsibility to respond to an enquiry matrix on behalf of the institution. The matrix was adapted from the eleven distinct institutional activities or processes identified in the Councils' Joint e-Learning Report. These processes relate to the potential impact of ICT on different aspects of students' educational experience, including enrolment, course information, the delivery of study materials, support for tutorials and lectures, assessment, project and laboratory work, careers advice and guidance.

2.4 Following from the key informant feedback, a desk-based study was conducted of existing accredited training provision for staff in the HE sector with relevance for e-learning support, through web search, email and telephone contact with human resource and staff development representatives.

2.5 Four institutions were identified for in-depth qualitative case studies of approaches to e-learning. The case study institutions, selected to be broadly representative of the sector as a whole in terms of size, scope and geographical location, were as follows:

- University of Abertay Dundee
- University of Edinburgh
- University of Paisley
- University of Stirling

The case study visits took place in June 2004.

3 Summary analysis of the web-based survey

Responses to the web-based survey of ICT-related staff development needs are broadly clustered in three key areas:

- Computer access, confidence and usage
- Staff ICT skills, abilities and use of facilities
- Identified staff development needs

In order to give an indication of progress over time, collated responses are compared where appropriate to the previous TALiSMAN staff development survey in 1998², and the ETNA survey of 2003³.

3.1 *Computer access, confidence and usage*

- 3.1.1 As with the previous TALiSMAN and ETNA surveys, HETNA attempted to gauge respondents' access to computers and the degrees of familiarity and confidence with which they used them. In 1998, 70% of staff respondents in Scottish HE had exclusive access to a networked computer. In 2004, this number across all categories averaged 92%, with a lowest figure of 81% for librarians and a highest figure of 99% for IT staff. Levels of staff dissatisfaction in the power of their computer had dropped from 28% in 1998 to 16%, with the highest levels of dissatisfaction (21%) among administrative staff. Almost all respondents have access to a computer at home, and more than three quarters have home Internet access.
- 3.1.2 The main reported uses of computers were to find information and resources and to communicate with colleagues. Use of computers to communicate with students has risen from 55% in 1998 to almost 75% in 2004.
- 3.1.3 Across the respondent groups, 94% reported that they felt confident in using computers. In 1998, 80% of TALiSMAN respondents described themselves as confident users.

3.2 *Staff ICT skill, abilities and use of facilities*

- 3.2.1 Across all groups questioned there were high levels of confidence in being able to store files in folders and to retrieve them, with the highest levels reported by administrative staff. All groups were evenly confident in their abilities to use word processing applications. As may be expected from their role, administrative staff indicated higher skills than academic staff in creating spreadsheets. However, reported skills dropped markedly when it came to being able to use functions within spreadsheets: for this sub-question administrative and academic groups were almost identical. Unsurprisingly, academics claimed high proficiency in using presentation software. All groups appeared equally skilled in being able to search the web for information. Academics were the highest scoring group in the ability to create web pages, though only a fifth reported that they felt confident in doing so.
- 3.2.2 Responses suggest that knowledge about Virtual Learning Environment (VLE) deployment is patchy across most staff groups. Highest levels of awareness were reported among technical staff, and lowest among administrative staff

² TALiSMAN Project Evaluation: Report to the Scottish Higher Education Council, E. McAteer et al, 1998 (no longer available online)

³ ETNA: The Enhanced Training Needs Analysis, JISC RSC Scotland North and East, 2003. Available at: <http://www.rsc-ne-scotland.ac.uk/etna/download.html>

groups. Responses with regard to VLE usage were lower still. On average, only 12% of respondents indicated that they had received any training in using the institution's VLE, with an overwhelming 88% saying they had not received any training, or giving no response to the question.

- 3.2.3 Low levels of VLE awareness and use indicate how much staff development is required if strategists intend that ubiquitous VLE usage will be achieved in Scottish universities. As VLE usage becomes more pervasive, the functional link between administrative staff and VLEs may be anticipated to grow and a need will emerge for more accurate information to be available through the VLE. Clearly, staff development opportunities will need to be scheduled for staff both directly and indirectly connected with teaching and learning if local VLE deployments are to be successful.
- 3.2.4 By contrast, the web-based survey logged a higher awareness of institutional video conferencing (VC) facilities. Staff groups stating most frequent use were technical and managerial. 23% of academic staff reported using VC for teaching purposes, more than three times that recorded in the TALiSMAN survey of six years ago.

3.3 *Identified staff development needs*

- 3.3.1 Priority training needs identified by academic staff were online learning pedagogy, authoring online materials and VLE use. For librarians, the three most popular requests were for effective use of the library management system, authoring online materials and metadata tagging. Administrative staff prioritised creating web pages, and the ECDL (European Computer Driving Licence) software applications training programme. Common to all three cohorts is a wish to be able to make materials available online.
- 3.3.2 Online publishing (web development) was the most significant specialist training need identified by academic, administrative and library staff alike. A need for training in project management was identified by just over a third of all academics and administrative staff.
- 3.3.3 High percentages across all categories did not respond at all to the question about awareness of the Special Educational Needs Disability Act (SENDA). Responses indicate that some headway has been achieved in informing staff of their SENDA-related obligations, though there would clearly appear to be a need for further training.
- 3.3.4 Comments received in HETNA about accessibility make it clear that many members of staff do not feel it their job to know more than where to go if they need help. Librarians reported the highest levels of knowledge about specific assistive technologies, and also the strongest wish to know more. It is likely that staff development plans within universities in the area of assistive technologies would benefit both from providing further training to this group and by involving them in the training of their colleagues in other professional areas. As with ETNA, a key issue identified is not only a need for general awareness-raising in assistive technologies, but also for practical training in how to apply the things learned.
- 3.3.5 All categories indicated that lack of time was a significant barrier to receiving further training, and all cohorts were asked about the types of training scenarios that they would find acceptable. Though face-to-face was the most preferred, a close second for all categories was 'blended learning' – a mixture of face to face

and online learning support. A much less acceptable mode was 'advice by phone, electronic mail or through electronic discussion lists'. In 1998, these methods were considered acceptable to approximately twice the percentage of academic respondents as in 2004, which is perhaps indicative of a perceived electronic information overload in the interim.

4 Summary analysis from the institutional-level enquiries and case studies

Key findings from the analysis and interpretation of data drawn from the key informant enquiry, the desk-based study on existing training and the case visits are clustered within four key themes:

- Drivers for e-learning development
- Barriers to e-learning development
- Institutional factors
- e-Learning and pedagogy

Where appropriate, findings are related to the outcomes from the web-based survey.

4.1 Drivers for e-learning development

- 4.1.1 The key informant enquiry, the desk-top study and the in-depth case studies suggest that institutional transition is a key factor in institutional implementation of e-learning. Many institutions are currently undergoing or have recently undergone significant organisational restructuring, with new senior management teams, functional re-organisation and the emergence of new strategic approaches to institutional development and staff training. New or replacement systems to support these functions are being procured, in a context of long-term planning for e-business developments and systems interoperability. In the longer term, these processes of transition should facilitate organisational transformation, but the current picture is by no means clear.
- 4.1.2 In most cases, the development of e-learning provision in the institution has until recently been the domain of a small number of dedicated enthusiasts, or confined to areas where there was a specific contextual need for e-learning or distance delivery. Institutions are now recognising the potential value of e-learning to enhance the mainstream on-campus student experience, and to meet key institutional requirements in terms of improved recruitment, retention and reputation. This awareness has still to percolate across the broader staff groups, as was reflected in the web-based survey outcomes. Although some VLE-type systems had been put in place, a large proportion of staff who responded to the individual survey appeared to be unaware of their presence.
- 4.1.3 Student expectations regarding the use of technology to enhance their learning experience are increasing, along with levels of student IT literacy on entry and PC ownership. There is growing awareness of the need to consult students about e-learning developments.
- 4.1.4 Academic staff are increasingly interested in using technology to reduce their administrative burden, which in turn can enhance teaching quality. The web-based survey findings indicate high levels of confidence in the use of technology, particularly for standard applications such as word processing, email and Internet search. While it might be suggested that respondents to an online survey are de facto confident users of standard ICT applications, the

developing demand for e-pedagogy training indicates an increasing awareness of the possible benefits of technology in other aspects of professional life.

- 4.1.5 Changing student demographics, the widening participation agenda, increasing levels of student employment while on course, and the needs and potential of part-time, SME and CPD markets are all recognised drivers in the development of e-learning provision. There are strong indications that Scottish HEIs view e-learning provision less as a global commodity and more as an opportunity to develop a regional agenda for HE in their areas.
- 4.1.6 Institutions have taken different approaches to strategic recognition and planning for e-learning development and training. Some include e-learning as an integral element in the institution's general teaching and learning strategy. Others have developed or are developing a separate e-learning strategy. The responses to the institution-level enquiries, backed by the four in-depth case studies, indicate that the latter approach is seen as a necessary transition step on the road to full integration and embedding of e-learning in mainstream strategic approaches to learning, teaching, assessment and quality enhancement.

4.2 *Barriers to e-learning development*

- 4.2.1 The key barriers highlighted by institutions to the development of e-learning are resource-based, relating mainly to concerns about cost-effectiveness and the need for a demonstrable return on investment. However, institutional capacity, individual confidence and staff time also emerged as principal concerns, and these clearly have implications for staff development. The staff age profile also has a bearing on e-learning development, with at least one institution revising its recruitment strategy to ensure a better balance of experience and innovation in its staff profile.
- 4.2.2 Barriers to e-learning development are also perceived in the residual perception that institutions value research outputs more highly than teaching innovation. A clear and transparent system for rewarding innovation and good practice in teaching is required if staff are to invest time and resources in developing their ICT skills and learning to use e-learning tools.
- 4.2.3 There appears to be a certain weariness in the sector around accommodating change in teaching practice. The web-based survey of individual staff development needs identified insufficient time to learn new techniques as a principal barrier to e-learning development. The impression from both the case study visits and the institution-level enquiries is that the sector is struggling with the pressure to use technology in their apparently constrained environments.
- 4.2.4 To some, e-learning was seen as the panacea to many of the sector's ills. However, whilst the enthusiasts continue to evangelise its strengths, sceptics point to the weaknesses of cost, unproven benefits, and the investment needed to learn how to use technology effectively. This is further compounded by the recent demise of the UKeU in England, and continuing confusion over the status of the Interactive University in Scotland. It is not that staff are unwilling to change their practice, they just need to see a good reason for doing so.

4.3 *Institutional factors*

- 4.3.1 The institutional-level enquiries and the case studies suggest that in this process of transition towards cultural change and organisational transformation,

staff development needs and priorities are only now starting to emerge and to be considered from a strategic perspective. Small pockets of organic activity across institutions are now being mainstreamed, and senior managers are engaged in a process of determining and implementing both central and devolved structures to support e-learning and the use of technology to improve internal business processes.

- 4.3.2 Institutions recognise the value of individual enthusiasts in helping to generate more generic cultural change, and staff themselves suggest that more use could be made of existing subject expertise to promote institutional e-learning developments. In this context, however, it was noted that academic subject expertise is often channelled externally, valued in a national or international context, rather than used to develop internal skills and knowledge in the institution.
- 4.3.3 There is a sense in some of the institutional responses that all academic staff should be able to produce quality e-learning materials through having simple tools available to them. This might have correspondence in the evidence from the web-based survey that 'web page development' is a skills need identified widely across staff categories. However, there is an emerging divergent model of technical support and pedagogical expertise in the sector. Three of the four case study institutions have dedicated units supporting learning and teaching in general and e-learning developments in particular. These are mainly multi-disciplinary teams providing staff development opportunities and technical support, with some pedagogical guidance where appropriate. In this context, the main staff development issues are to do with learning design – the appropriate use of technology in a course, the appropriate proportion of ICT-supported elements – and the effectiveness of the online provision in enhancing the quality of the learning experience. Individual responses to the online survey seem to be in agreement with this, with academic staff requesting more training in e-pedagogy, and use of such complex resources as multimedia, web design and assessment tools.
- 4.3.4 From the institutional-level enquiries and the case studies, there is little evidence of cross-sectoral collaboration in an e-learning context, and little uptake of national resource banks and learning object databases. Staff are more likely to use materials developed by colleagues in the same department. There is some intra-institutional collaboration, often brokered by multidisciplinary central learning technology units but also arising from serendipitous relations, movement of staff between departments, or organisational restructuring.
- 4.3.5 A number of institutions are in the process of redesigning their web presence. In many instances this includes the provision of a content management system that should facilitate collaborative developments and the repurposing of learning materials. These initiatives may account for the identification of web page development as a key support need across many staff categories in the web-based survey.
- 4.3.6 In some cases, use is being made of the VLE for internal staff development. As well as institutional documents, policies and papers, staff can access training materials and modules on their desktop as and when required. This provision may develop further as IT and network service, and educational support staff, become familiar with resources and opportunities. Staff awareness of the VLE,

which the web-based survey indicates as presently low, will increase alongside this.

- 4.3.7 The use of technology to support learning impacts on the staff development requirements of administrative staff who are increasingly required to mount materials in the VLE or content management system, and undertake the online maintenance and updating of materials. Responses to the web-based survey from the administrator group indicate little awareness of the possible relevance of VLEs to administrative staff duties such as uploading content, or in relation to management information needs.
- 4.3.8 High levels of student PC ownership have corresponding implications for on-campus provision of informal learning spaces with wireless and broadband access. These e-learning developments are therefore also impacting on longer-term estates planning. This also has implications for training IT and networking staff, who name wireless technologies in their top three staff development priorities in the web-based survey responses.
- 4.3.9 Despite the apparent lack of engagement with e-portfolio activity reflected in the institutional-level enquiries, the case studies indicate that there is ongoing work in this area. Furthermore, growing interest in the sector in developing student employability is apparent, and there are indications of increasing involvement with the work of the HE Academy in Scotland in this regard.
- 4.3.10 Disability awareness is flagged in the institutional and case data both as an area of existing provision and one where there is an identified need for further development. The web-based survey indicates that information and training on the Special Educational Needs Disability Act (SENDA) is required in most staff categories.

4.4 *e-Learning and pedagogy*

- 4.4.1 One of the most significant pedagogical implications of e-learning in HE that emerged from the case studies lies in the recognition of changing student skills requirements for the effective use of online resources. Increasing online learning elements in undergraduate programmes are facilitating the early development of independent research skills.
- 4.4.2 The institutional-level enquiries and the case studies also underline the interest in the use of technology to support and improve assessment that is highlighted in the web-based survey of individual staff support needs.
- 4.4.3 The key informant enquiry, the desktop study of current training provision for e-learning support, and the four case studies confirm the conclusion of the web-based survey that audio is a currently underused technology. They also confirm that institutions are aware that they are underusing their videoconferencing facilities. Where these facilities are used, this is mainly for course management, meetings, or for the remote delivery of specialist vocational courses. However, this does not mean that academic staff require further development in the use of videoconferencing to support delivery, as it is now becoming apparent that videoconferencing is not necessarily the most appropriate medium for learning and teaching. VLEs, desktop conferencing and video streaming increasingly provide a more flexible, reliable and cost-effective means of communicating between individuals in real time.
- 4.4.4 Both the case studies and the institutional-level enquiries reflect a strong sense among academic staff that what is required for meaningful e-learning is support

in the development of staff skills and techniques rather than the provision of tools and systems. This also corroborates the findings of the web-based survey of individual staff development needs. Staff highlight the need to understand, appreciate and apply pedagogical approaches for online delivery, particularly course design skills and techniques for supporting online learning. There is some awareness of the opportunities presented by technology to improve on-campus learning experiences, not just in catering for different learning styles and meeting accessibility requirements, but also in improving student engagement in classroom-based seminars and lectures through opportunities to access lecture notes and supplementary materials online.

- 4.4.5 Institutional provision of training in e-learning development and support, with options for professional qualifications through accredited training programmes, is as yet light but clearly on the increase. Staff awareness, and uptake, will follow if training provision is seen as relevant to both staff and student needs, and if programmes are available on an open and flexible basis. Some institutions already conduct internal surveys of staff training needs, and current instruments could be adapted to better draw out e-learning development needs and issues of accreditation and CPD within overall provision. The presence of such agencies as the HE Academy is seen as influencing this development; more influential, however, is the increasing use of VLE resources by institutions across the HE sector.

5 Recommendations

The findings from HETNA underpin a number of recommendations for further action by the Funding Council and by individual institutions.

- 5.1 Considerable emphasis is being placed on the drive towards **transformation** of higher education, specifically the use of technology to improve business process efficiency and enhance the quality of learning and teaching. In the context of staff development provision, there should be some explicit recognition of the processes of transition that institutions are currently undergoing and the steps that they are taking to effect meaningful transformation in a timeframe and cultural context that is appropriate to their needs.
- The Funding Council should therefore continue to monitor developments in e-learning and provide support as appropriate on an ongoing basis.
 - This would best be engaged in articulation with institutions' own self-monitoring processes, with support for the development of appropriate indicators for provision of inter-institutional as well as intra-institutional information on activity and change.
 - Using such data, studies on the impact over time of ICT-related staff development initiatives should be commissioned, at two-yearly intervals.
 - Universities should ensure that communication of e-learning strategies appropriately targets all levels and categories of institutional staff.
 - Institutional expectations of staff with respect to e-learning support systems and applications, including VLEs, should be clearly stated, and appropriate training programmes for relevant categories of staff should be supported.

- 5.2 Each institution has adopted an approach to the **strategic development of e-learning** that is appropriate to its institutional context and aspirations. The Funding Council should not require institutions to take any one specific approach to the development and implementation of an e-learning strategy, but should encourage attention being paid to the development and implementation of the use of technology for learning, teaching, research and other business activities of the institution.
- Institutions should be able to present a clear vision and strategic plan for the development of e-learning to suit their own purpose and context.
 - Institutions should ensure that the needs and aspirations of students are captured and reflected in their plans for online and e-learning development.
 - Existing internal surveys of staff training needs should address e-learning support development, and articulate more closely with institutional learning and teaching strategies. Indexing 8.1 and 8.3, consultation support should be available to institutions to enable capture and sharing of useful information across the sector.
- 5.3 Technological innovation provides opportunities for **collaboration and sharing** of good practice at local, departmental level, across institutions, across the sector and nationally/internationally.
- Council should continue to support the development of a culture of collaboration and sharing materials, approaches and expertise across institutions and the wider Scottish educational sector.
 - Council should encourage the use of national resource banks such as JORUM, as appropriate to institutional needs.
 - Institutions should ensure that appropriate staff development is in place for the creation and implementation of reusable resources.
 - Issues of the relative perceptions of the value of digital resources and printed texts should be kept under review by individual practitioners as well as at a national level.
- 5.4 Staff development initiatives and interventions should reflect the **diversity of institutional approaches** to the provision of technical support and pedagogical development.
- Funding Council interventions should recognise this diversity and encourage each institution to develop support structures appropriate to its particular context and aspirations.
 - Development of appropriate systems to facilitate sharing of experience and knowledge for adaptation within individual support structures should be resourced.
 - Institutions should keep their provision for staff development and support for e-learning under review, and ensure that staff have access to appropriate sources of technical support and advice on pedagogical approaches and learning design.
 - Staff development provision should be designed to encourage a range of access opportunities both at and away from the workplace, whilst taking into account consideration of work-life balance. The willingness of all staff

categories to engage in a blend of face-to-face sessions and e-learning should also be reflected in provision.

5.5 While library, IT and administrative staff report that they are reasonably well served by current programmes and provision overseen by their professional bodies, **structured professional development opportunities for academic staff** are less apparent.

- The Funding Council should continue to consult with other UK agencies such as the HE Academy and the Association for Learning Technology (ALT) on appropriate initiatives to encourage teaching innovation, and explore the potential benefits of developing and implementing national award schemes to recognise and reward innovative teaching practice in Scotland.
- Institutions should maintain an awareness of developments and opportunities for academic staff in e-learning and pedagogy, and explore the potential benefits of recognising and rewarding teaching innovation in e-learning and online provision at all levels of seniority. Mechanisms for sharing good practice should be developed and maintained.

5.6 Technological innovation provides opportunities to review and refine all aspects of professional activity in institutions, and the sector continues to need and request provision for the development of **good practice in supporting all aspects of the learning experience**.

- Institutions should be encouraged to engage with the ongoing activities and outputs of the organisations such as the HE Academy and ALT, the JISC Regional Support Centres and initiatives such as the JISC e-Learning Programme.
- The Funding Council should continue to promote and raise awareness of e-learning and pedagogy initiatives taking place on a UK level.
- Institutions should recognise the role of library and learning resource professionals in enhancing student information literacy skills. The critical role of such staff for ensuring standards of provision and practice for accessibility should be acknowledged and supported.
- Institutions should plan for the longer-term implications for course design of student early development of online research techniques for course design and its impact on taught research provision.
- Staff development priorities are only now emerging for some of the recent technology-based developments such as online enrolment, PDP, e-portfolios and online assessment, and should be kept under active review on a national basis.
- The issue of accreditation for e-learning support training programmes should be addressed within overall provision and support for the continuing professional development of all categories of university staff, at all levels.