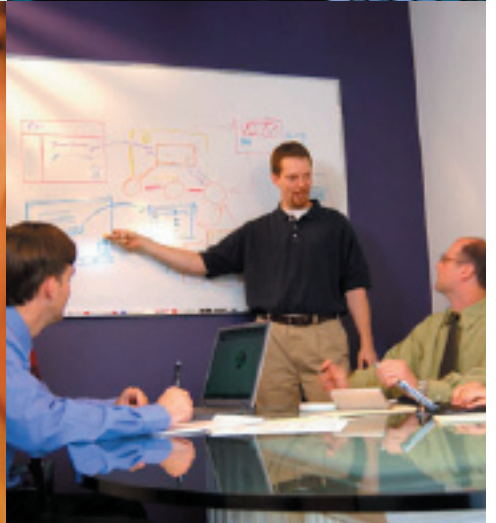
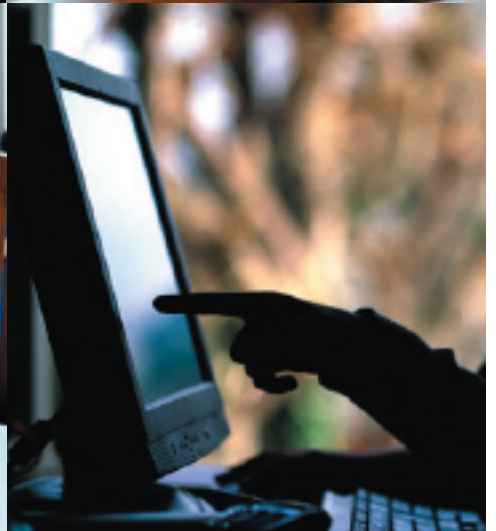
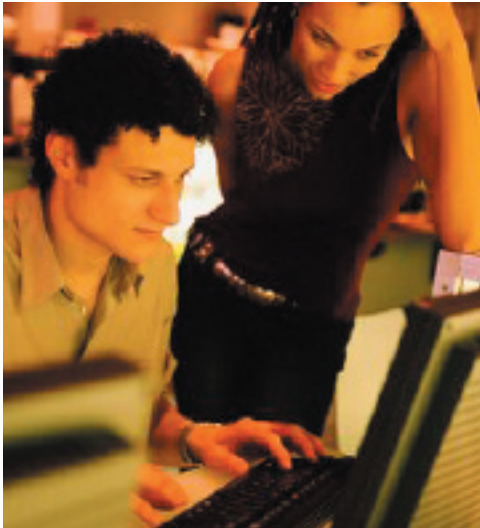


JISC

e-Administration

Investing in Staff i-Skills

A strategy for institutional development



“Researchers at the University of California, Berkeley, say that the amount of information generated worldwide has increased by 30% each year since 1999... that means 800 megabytes of data, roughly equivalent to 800 books was created for each man, woman and child in 2002”

Macintosh (2003)

If further and higher education institutions are to continue to successfully deliver their core business, staff i-skills have to become a fundamental feature of all staff development policies.

This document has been compiled for staff with responsibility for defining and influencing policy. It aims to:

- Provide evidence to support the argument for investment in staff i-skills
- Examine the potential risk little or no action is likely to have on the effectiveness of an institution and
- Provide an example of an institution-wide framework to progress i-skills

Investing in Staff i-Skills 2005: Compiled for JISC by Alison Mackenzie, Manchester Metropolitan University

Introduction

"I always use Google – quicker and easier than going to the library, can use from desk, allows for seamless searching"

HE Administrator

"...Internet is time consuming – can take time to locate sources – use favourites to try and save time"

FE Manager

Information overload is a perceived characteristic of contemporary life. Working in an electronic environment increases dependency on information, how it flows, who receives it, how to assess its quality and relevance. The delivery of information to the desktop raises expectations and, in turn, this impacts on a broad range of activities, which in the further and higher education contexts ranges from **teaching** to **research** to **student learning**.

It is evident that staff need more than just ICT skills to feel confident working with the wide range of information sources available today. Consider the cumulative impact of recent developments, the incremental shift from **didactic to constructivist** teaching; from **face to face, to blended delivery**; from **paper to electronic**; from **email to instant messaging**. Align this with the situation where the content of many educational programmes suffers from in-built obsolescence and we find ourselves facing a complexity of need that extends beyond simple up-skilling.

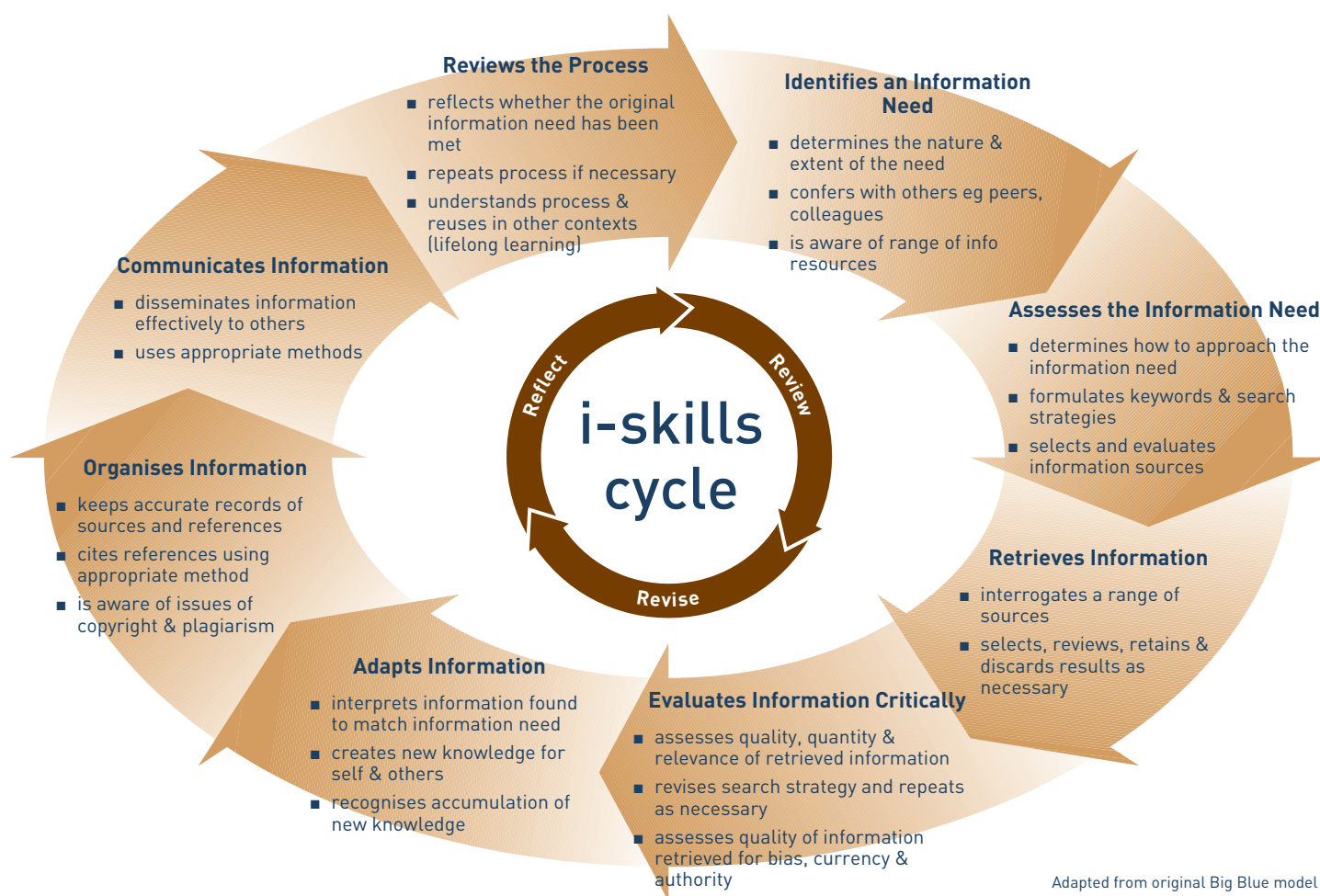
It is of utmost importance that all staff employed in the education sector are given support to develop confidence and competence in their ability to identify and apply quality information, in whatever media, to inform and add value to their working lives.

What are i-skills?

'Information skills' is a term that has been used increasingly in further and higher education (FE & HE) in the last five years. There is a wealth of literature that exists on this subject. A cursory glance at this shows that information skills is a concept which has many definitions, almost all of which tend to be context specific. Information skills can also be described as information literacy or variations such as information fluency, knowledge literacy, or knowledge management. When describing information skills, there exists a tendency to conflate it with ICT skills and whilst ICT skills do play a part they are not the whole picture. There is also a tendency to regard their development as only applicable to learners. Again, this is a misconception. They are, in fact, skills that can be applied to all areas of modern life, including the workplace. As a result of the potential confusion over what these terms mean and how they apply to the workplace a new term has been introduced, i-skills. These are defined as the ability to...

...identify, assess, retrieve, evaluate, adapt, organise and communicate information within an iterative context of review and reflection.

The nature and shape of the environment which staff work in is now more complex than ever, and the skills that are needed extend beyond ICT to embrace the analytical and evaluative skills essential to effective information management.



In practice i-skills can be broken down into a series of activities that underscore good practice across many work-based functions in both further and higher education. For example:

- Research
- Teaching
- Student support services
- Management
- Marketing

It is important to view the attainment of these skills not in isolation but as part of a matrix of skills which relate to, in varying degrees, e-learning, e-literacy and learning and teaching technologies such as Virtual Learning Environments (VLEs).

Background and context

Following on from the Big Blue (2002), which examined the provision for the development of student information skills, it became apparent that there was an equally strong argument to investigate the development of staff use of i-skills within the workplace. This was taken forward by three parallel projects during 2003.

Big Blue connect	Investigation into the information skills sets of staff working in FE and HE, looking at competencies within different roles and developing a map of i-skills. Manchester Metropolitan University, December 2003 www.library.mmu.ac.uk/bbconnect
Staff Development Provision Study	Study to provide an overview of existing staff development provision for i-skills in FE and HE. Reviewed provision by institutions and support organisations and assessed areas of strengths and weaknesses. ESYS plc, December 2003 www.jisc.ac.uk/cpdresources
Drivers for Staff Development Study	Study to identify the drivers for staff development in FE and HE and explores the implications for development of staff i-skills. HE Consulting, December 2003 www.jisc.ac.uk/cpdresources

Key findings from all three projects identified the following issues

Defining i-skills

- General confusion exists over definitions and terminology used to describe information skills, and there is an accompanying lack of understanding of their importance to both an individual and an institution
- There is a tendency to conflate i-skills with ICT skills
- These issues mean that i-skills needs tend not to be recognised and addressed in their own right by staff

Skills gaps

- Relatively few staff interviewed demonstrated the skills and confidence to apply information to best advantage
- The majority of staff interviewed adopted a satisficing approach; a reluctance to move beyond their 'comfort zone'
- i-Skills for non-academic staff (other than librarians) are not currently addressed
- i-Skills provision is stronger in some specific subject areas (medical, health, law)

Lack of strategic framework for i-skills

- There is no precedent in place to allocate responsibility for i-skills development
- There is little evidence to indicate that i-skills provision is part of an institution-wide strategy for development of staff core skills
- There is a lack of institution-wide ownership of i-skills issues; it is seen as a 'library thing'
- It is not accredited or linked to career progression or recognised by any of the main professional organisations eg HE Academy
- There is little or no evidence to suggest that staff developers either recognise i-skills as a priority or as a development area for an institution

Fragmented provision, poor take-up

- Existing training provision is fragmented with ad hoc courses and events run mainly by libraries and a small number of external agencies
- Courses tend to take a 'one-size fits all' approach in the absence of any defined progression path for i-skills
- Take-up is patchy making it difficult to justify running additional courses

“The student body is changing, with more part-time and mature students and people from diverse backgrounds. In the modern world, people increasingly need skills of evaluating and managing information, in both their personal and working lives. Curriculum design and pedagogy within HE must support and develop these skills and encourage students to take responsibility for their own learning.”

HEFCE Strategic Plan 2003–2008

The evidence gathered from across all three projects indicates that i-skills are not recognised in the context of strategic development. One reason why this perception has developed is that evidence of ‘poor’ i-skills is often hard to identify, let alone measure in concrete quantifiable terms; this is in direct contrast to ICT skills, where poor levels of competence and application are easily visible.

Why invest in developing i-skills?

Educational institutions function across networks, transferring and sharing information, knowledge and good practice. How successful an institution is, how its ‘quality’ is judged, is dependent on a number of variables, including stakeholder perceptions.

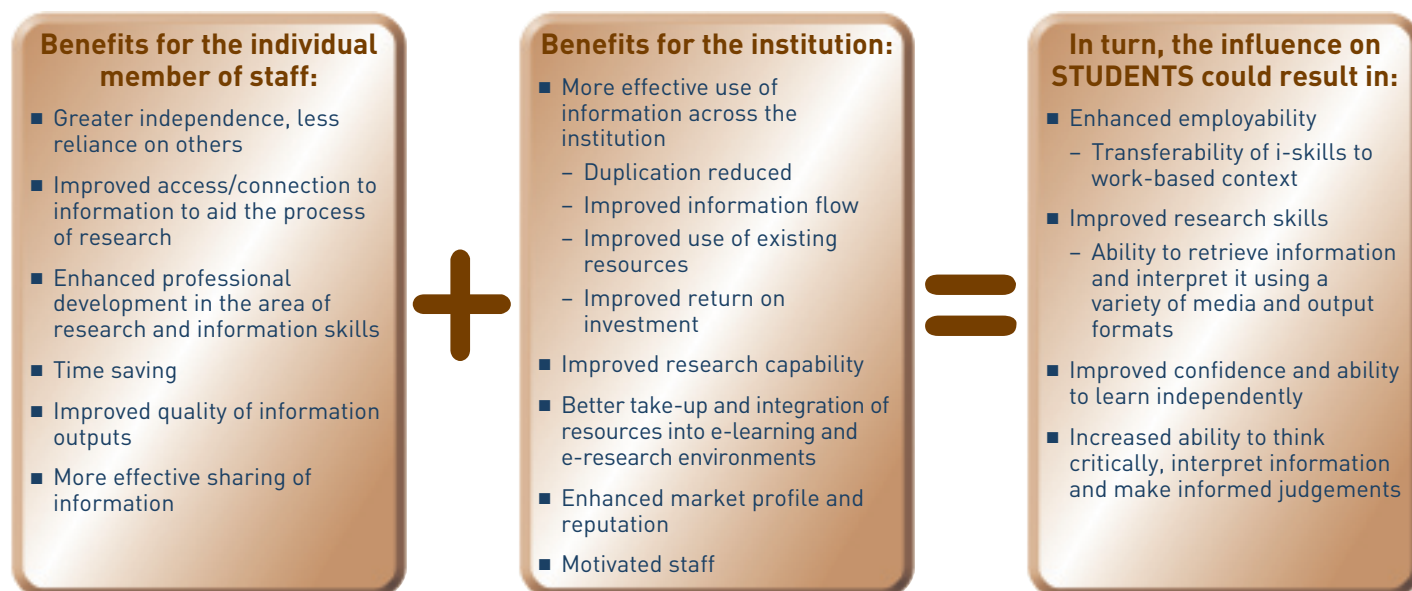
The flow of information and knowledge from and between departments of an institution and beyond informs the quality of relationships between an institution and its key client

group (students); employers; research funders; government departments; quality assurance agencies and other bodies.

It is unlikely that managers have clearly identified the role i-skills have in developing and progressing the effectiveness and success of their institution, either internally or externally. This is not surprising, but i-skills can play a significant part in an institution’s aim to enhance its excellence in teaching, learning, and research, and its reputation with employers, external funders, quality assurance agencies and the local community.

There are some clear and direct benefits which i-skills can accrue for each of the stakeholder groups.

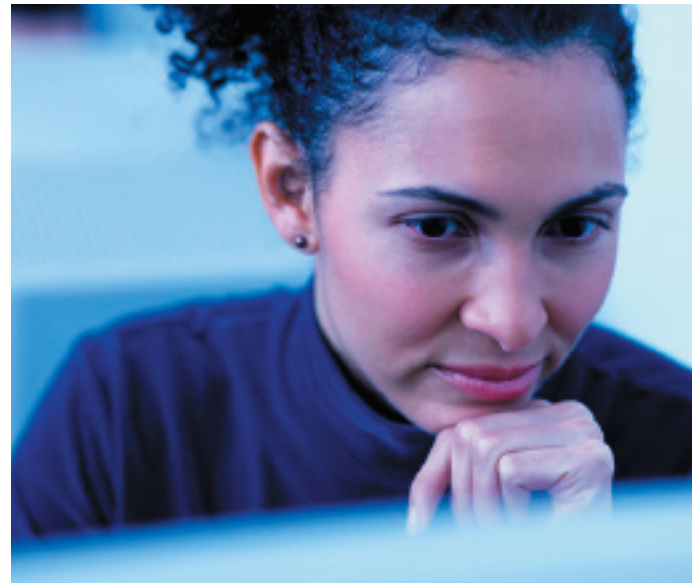
i-Skills development should be seen as an ‘agent for change’ enabling institutions to progress, expand capacity and further develop expertise.



The potential impact of poor i-skills on the workplace

Research by Cheuk (2002) conducted across the commercial sector identified the impact that poor i-skills can have on workplace effectiveness. Many of the observations are common to all sectors including further and higher education, and are indicative of the risks associated with taking little or no effective action in this area.

Information skill lacking	Effects on business
Unable to determine the nature and extent of information needed	Increased costs (time) in carrying out research and information overload in results
Unable to retrieve information effectively from information systems	Staff are unable to use valuable information at their disposal
Not aware of the full range of resources available	Useful resources not fully exploited and quality of work could be adversely affected
Unable to evaluate and filter information	Employees providing wrong or inappropriate solutions
Information and electronic mailbox overload	Waste time with junk mail and miss important information
Unable to exploit technology to manage information	Repetition of work and staff don't think of sharing information
Unable to relate information creation and use in broader context	Staff are unable to use valuable information at their disposal
Information authorship not acknowledged	Discourages information sharing, innovation and creativity and lowers morale
Unable to evaluate costs and benefits of information management	Set up systems and databases without considering management and updating. Wasteful



Cheuk goes on to state:

“There is a continuous cycle in the creation and use of information in the work settings. Employees create information and share it with other colleagues. Employees access information to add value to their own work. Yet, in the process of going through this cycle, we see a lot of inefficiencies, partly due to employees’ lack of information literacy skills.”

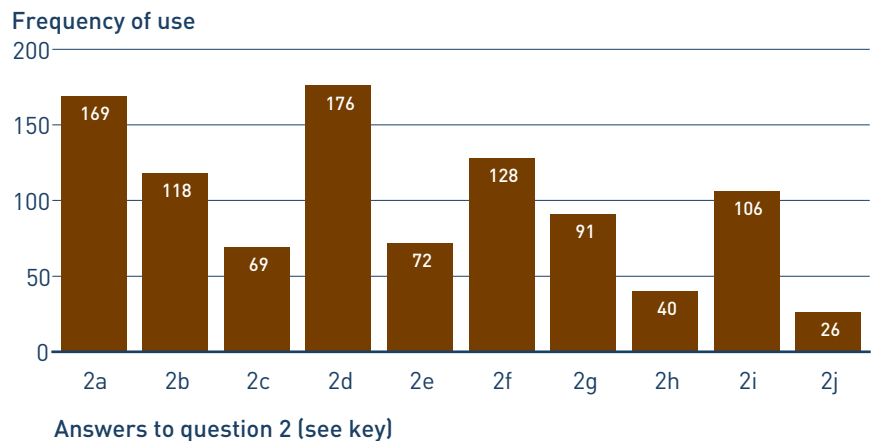
i-Skills: research into current practice

Research from the Big Blue *connect* (2003), which investigated the i-skills of staff working in the UK further and higher education sectors provided an overview of the information-seeking behaviour and range of sources used to satisfy an information need. As a result of surveys and interviews, a picture emerged of the most frequently used sources and patterns of usage. These were categorised by groups of staff, administrative (eg a range of staff in non-academic positions), teaching and research.

Findings from the survey of 218 staff from 53 institutions working in a variety of capacities across the sectors identified some of the most commonly used information sources.

2a	Professional literature
2b	Research material/Conference papers
2c	General management literature
2d	Internally generated documentation eg Institutional policies; local procedures
2e	Legal information
2f	Government publications
2g	Statistical data
2h	Market research
2i	Technical literature/Trade publications
2j	Other (please state)

Which of the following sources do you use regularly in order to meet the information requirements of your post?



These were professional literature, internally generated documentation and policies, and government publications.

Although there were variations across each of the broad staff groupings, equally there were some responses common to all, such as a significant reliance on internal documentation to support everyday information needs.

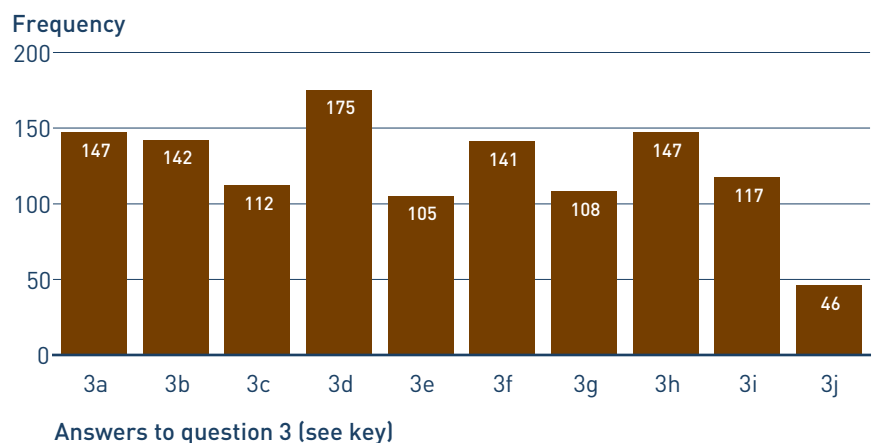
The next stage in the research was to identify where staff found this information.

The most heavily interrogated resource for everyday information is the home institution's internal repository of information. The importance of this as a key information source is evident in the responses from all staff groups.

The information source most widely used was faculty/departmental resources such as web pages, newsletters or reports.

3a	Journals
3b	Books
3c	Reference material eg directories
3d	Faculty/departmental resources eg web pages, newsletters, reports etc
3e	Newspapers
3f	Institutional policies/internal guidance
3g	Institution's library
3h	Co-workers
3i	Other personal contacts
3j	Miscellaneous

Where did you find this information?



“The key findings from this part of the survey identified that, although many staff felt they had the skills required to use information effectively, relatively few clearly demonstrated the effective application of a broad range of i-skills.”

Co-workers were the second most popular source of information with a 67% response rate.

As may be expected, academic staff and researchers indicated a high rate of usage of journals and books.

Institutional policies and internal guidance were also a popular resource with 65% of respondents stating that they used them regularly.

The research then focused on use of the Internet-based resources in general use across both sectors. This found that the majority of staff restricted their usage to relatively few search tools.

Internet search engines and specific websites were the most popular resources, with 90% and 88%, respectively, of those surveyed stating that they used them.

This is borne out by comments made in the second part of the survey when respondents were asked to describe how they would satisfy a particular information need. Local Intranets and institution’s own websites were also highly rated with 74% and 64% respectively. This again

correlates to the earlier responses with regard to internal documentation and departmental resources.

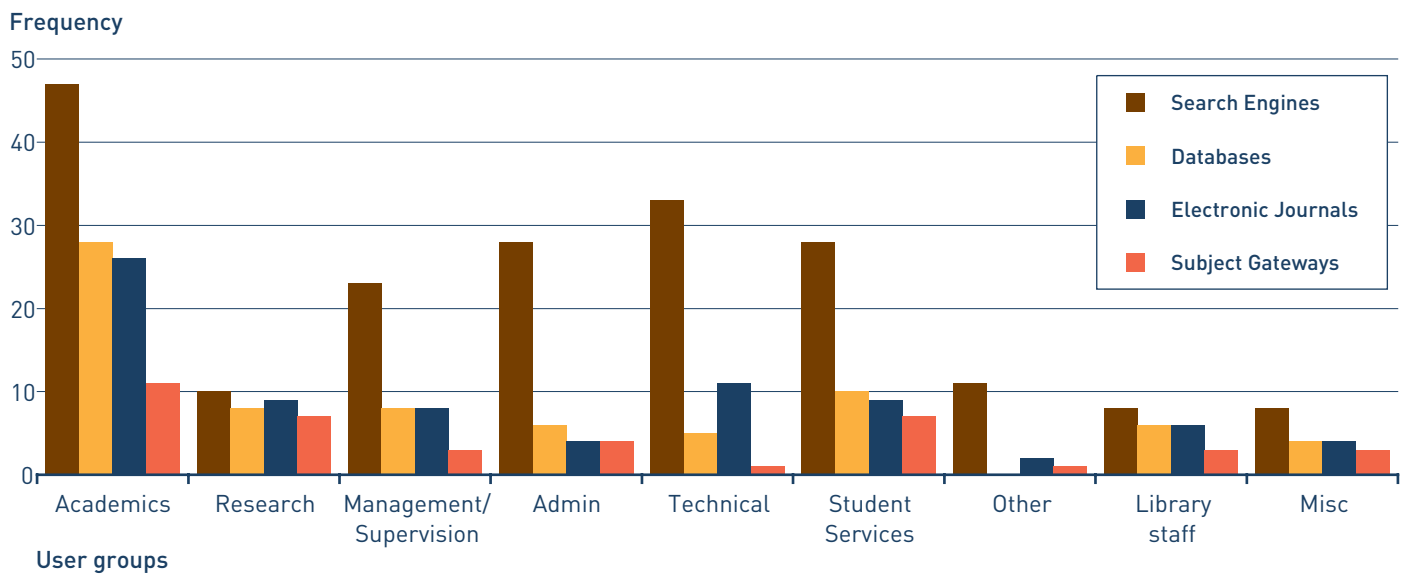
Little-used resources include subject gateways, electronic directories such as KnowUK, newsgroups and discussion lists.

The second part of the survey consisted of a structured one-to-one interview. The aim was to ask staff to outline their approach to locating information using one of a series of scenarios. Responses were benchmarked against the characteristics of i-skills (as identified in the model above) with a view to assessing their skill level and understanding the obstacles that prevent staff from maximising the benefits of available information.

Staff interviewed represented a diversity of staff groups and were employed across a broad range of further and higher education institutions.

The key findings from this part of the survey identified that, although many staff felt they had the skills required to use information effectively, relatively few clearly demonstrated the effective application of a broad range of i-skills.

Comparison of the key information sources used by different groups



In particular, many staff were vague about the criteria for evaluating Internet resources. There was a general lack of awareness of the concept of i-skills beyond that of effective use of the Internet. Anecdotal evidence from interviewees indicated that pressures on time determine their approach to and use of information sources, applications and resources.

These findings were also validated in the ESYS survey of existing staff development provision for i-skills. The survey found that i-skills training is available but fragmented, involving various institutional services as well as support organisations and initiatives such as the JISC Regional Support Centres, the Resource Discovery Network Virtual Training Suite (RDN-VTS), Netskills and the Higher

Education Academy (HEA). Respondents felt strongly that a more coherent sector-wide framework was necessary to 'join-up' the different strands, provide greater impetus for strategic i-skills planning and make this an area recognised in mainstream staff development.

Libraries and learning resources centres are leading the way in provision but find that take-up can be patchy where provision is of a more general nature. The most successful courses and projects appear to be those focused on a particular target audience or subject area. Integrating i-skills in staff development for e-learning was seen to be an opportunity to raise the profile of a topic that can be very difficult to promote in isolation.



Part 2: Moving forward: developing an institution-wide i-skills framework

The successful development and application of i-skills is an essential element in the process of lifelong learning. Many individual staff currently take advantage of training to address their own skills gaps and apply those newly acquired skills in their current and future posts. This approach is successful for some, but fails to address the general up-skilling of all staff, or tackle the longer-term issues of sustainability and development. In particular, moving forward in the e-environment presents challenges that cannot be addressed by the current fragmented provision of i-skills.

The aim of this section is to introduce tools for the development of an institution-wide strategy where the development of i-skills is explicitly aligned to institutional goals and objectives.

The following three approaches have been designed to assist progress.

The first two focus principally on assessment.

The **Self Assessment** test (*adapted from the ACRL Information literacy, Institutional Quotient test*) is designed to assess an institution's current position with regard to i-skills.

The **identification of drivers** that will encourage the up-take of i-skills is examined in the second approach. Examples of how these drivers could be used as motivators for development are provided.

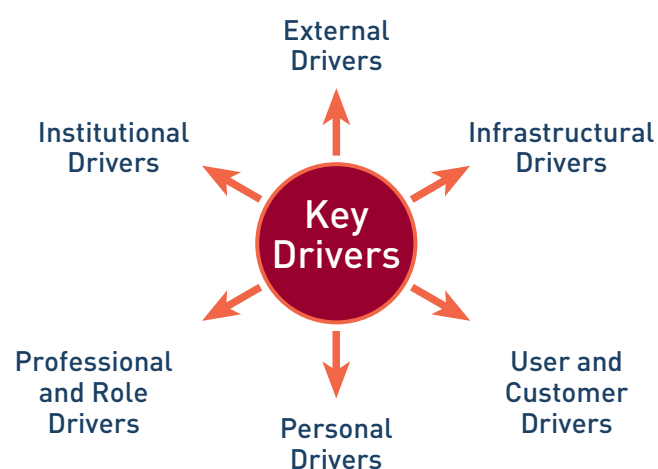
The final approach introduces a **model for developing i-skills** at an institutional level. It highlights issues for consideration linked to development, sustainability and up-scaling.

2. Motivation for development: staff development drivers

One of the key criteria for success which underpins the introduction of any staff development initiative is its ability to meet/complement the drivers that exist to ensure that the institution is meeting its strategic aims. Aligning staff development to an institution's aims will assist staff in recognising both the relevance and the importance of the activity.

How can this be achieved for i-skills?

Types of staff development driver



Each of these drivers has the capacity to exert influence on where an institution invests its resources in developing its staff.

The table overleaf suggests ways in which an institution can incorporate and link i-skills into its development strategy, both at an institutional and individual level.

1. Self-assessment

Please see the Self-assessment insert in this document. If the insert is missing or you would like further copies, please visit www.jisc.ac.uk/cpdresources.

This approach to developing i-skills moves the delivery of training from an ad-hoc position, to one that is overtly aligned to improving the performance and expertise of the institution and its staff.

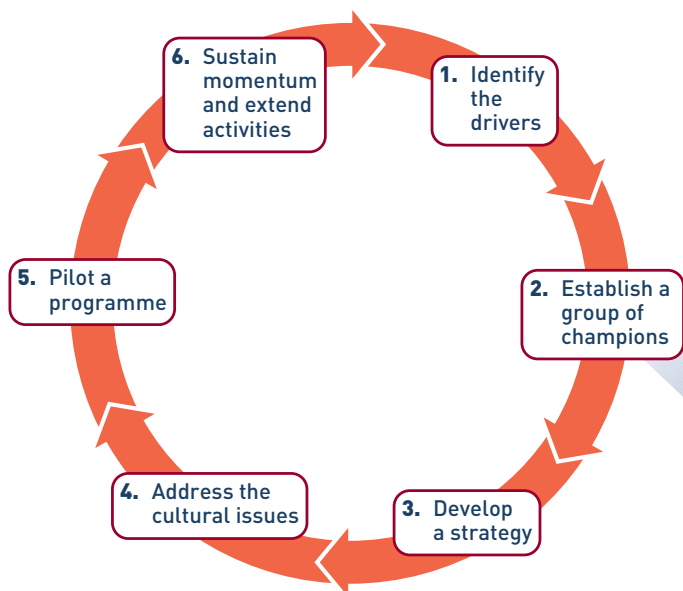
Aligning staff development drivers with i-skills

Drivers	Alignment with i-skills (examples)
External	<ul style="list-style-type: none"> ■ Quality assurance reviews/Common inspection framework <ul style="list-style-type: none"> - Evidence to demonstrate application of range of resources in teaching and learning ■ Research assessment exercises <ul style="list-style-type: none"> - Research capability and development ■ Institutional audits <ul style="list-style-type: none"> - Efficiency of information infrastructure - Effective communication infrastructure - Value for money; uptake and usage of resources
Institutional	<ul style="list-style-type: none"> ■ Improving performance <ul style="list-style-type: none"> - Student results - Student employability - Position in the marketplace ■ HR strategies <ul style="list-style-type: none"> - Recruitment policies – application of i-skills in relation to job - CPD programmes - Staff development review/Performance appraisal
Infrastructure	<ul style="list-style-type: none"> ■ E-learning developments <ul style="list-style-type: none"> - Integrate i-skills into use of new technologies ■ IT developments <ul style="list-style-type: none"> - Applying i-skills to use of internal documentation
Professional/Role	<ul style="list-style-type: none"> ■ Career development opportunities <ul style="list-style-type: none"> - Accredited courses - Requirements of professional institutes
Customer/User	<ul style="list-style-type: none"> ■ Student expectations of added value <ul style="list-style-type: none"> - Quality of teaching/ Academic excellence - Learning support services eg presentation skills; communication skills - Student support services eg library; careers
Personal	<ul style="list-style-type: none"> ■ What's in it for me? <ul style="list-style-type: none"> - Personal development - Career opportunities/progression

Each of the drivers could be used to further the development of i-skills. Some of the drivers are clearly more influential than others. The identification of, and choice of, drivers to encourage uptake of i-skills will reflect individual institution's priorities and strategic aims. This approach to

developing i-skills moves the delivery of training from an ad-hoc position, to one that is overtly aligned to improving the performance and expertise of the institution and its staff.

3. Introducing an i-skills framework: a model for development

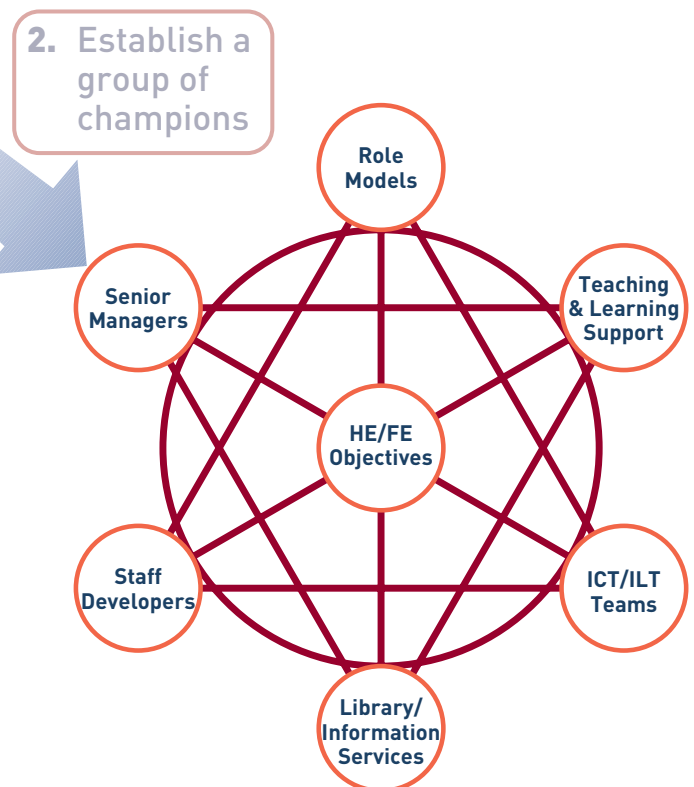


1. Identify the drivers

i-Skills in isolation is not an ‘agent for change’ – however, without i-skills institutions will limit their potential to respond effectively to changes in the environment. In considering the range of drivers, managers might consider looking beyond the key drivers associated with staff development to look more widely at the external environment and changes within the education sectors, identifying those which will determine the innovative capability of the institution and its potential to respond effectively to opportunities for development.

2. Establish a group of champions: opportunity for collaboration

The delivery of i-skills may provide an opportunity to involve staff from a number of sections who perhaps have more commonly delivered training independently but not necessarily to different cohorts of staff. Developing an integrated delivery team has the potential to enhance collaboration across sections, improve the content and relevance of the material and, in avoiding duplication of effort, maximise existing resources and expertise.



3. Develop a strategy

In consultation with staff, determine where i-skills can be incorporated into an institution’s existing staff development strategy. Articulate the key objectives of an i-skills strategy for both the institution and the individual. Without clear and explicit links to the benefits of i-skills the prospect of any real and sustainable change in its prioritisation as a staff development activity is limited.

Working alongside the champions, identify where i-skills can easily be incorporated into existing training and development activities and/or take advantage of existing human resource practices and identify where you can include i-skills. For example:

- Incorporate into staff appraisal schemes
- Integrate into staff induction programmes
- Integrate into professional training programmes for new lecturing staff and research staff and students eg PGCE
- Encourage teaching staff and library/ learning resource staff to liaise more formally over the use of Internet resources in the curriculum
- Identify existing ICT provision and where appropriate extend to include i-skills
- Explicitly include development of student i-skills in programme/curriculum planning
- Ensure that any training linked to developing e-learning materials includes elements of i-skills

4. Address cultural issues

Addressing these issues is largely grounded in an individual institution's organisational and cultural contexts. However, some general findings from the Big Blue *connect* and ESYS research projects identified a reluctance by many staff to change their established practices. This contrasted with the recognition that their working lives could be vastly improved if they felt more confident and able to use information resources, e-learning tools and applications.

Sufficient attention has to be paid to these and other prevailing attitudes in the approach taken to the introduction of an i-skills strategy.

Consideration should also be given to the following:

- Evidence of institutional support
- Communication of the strategy
- Articulation of benefits
- Involvement of staff from across the institution
- Feedback and consultation opportunities

5. Pilot a programme

The operational considerations of delivering a programme or initiative are covered in more detail in *Improving staff i-skills*. The insert 'Starter for 10' will provide those involved in staff development with ideas and inspiration for the launch of a programme. If the insert is missing or you want further copies please visit: www.jisc.ac.uk/cpdresources.

From an institutional perspective, identifying the evaluative measures and feedback mechanisms that need to be in place to assess whether the investment is meeting both individual and institutional goals is essential to determining the success of the programme.

6. Sustain momentum and extend activities

The opportunity to reflect on current practices, questioning what is done and why, rather than relying on assumptions and anecdotal evidence, will form the basis for a successful review. Linking this activity with the identification of drivers and the design of a framework for uptake and delivery will enable institutions to move forward on the delivery of i-skills in such a way as to up-scale as and when need demands. The process must be seen as iterative. Building in strategies for planning and adapting to changing needs will improve its potential for longevity and assist with the expansion of activities into other areas of the institution. A significant factor in developing a sustainable model will be the level of support provided by managers: the recognition that i-skills is integral to the successful development of staff and that i-skills feature in institutional staff development policies.

References & further information

References

The Big Blue

www.library.mmu.ac.uk/bigblue/bigblue.html

Big Blue connect

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www.cerlim.ac.uk/projects/linker/index.php

Cheuk, B., *Information literacy in the workplace context: issues, best practices and challenges*, July 2002, White Paper prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic. Available at:

www.nclis.gov/libinter/infolitconf&meet/papers/cheuk-fullpaper.pdf

Other publications in this series

This publication has two sister publications. Other publications relating to this area of work are also available:

Please visit www.jisc.ac.uk/cpdresources

i-Skills studies

Big Blue connect

Investigation into the information skills sets of staff working in FE and HE, looking at competencies within different roles and developing a map of i-skills. Manchester Metropolitan University, December 2003

www.library.mmu.ac.uk/bbconnect

Staff Development Provision Study

Study to provide an overview of existing staff development provision for i-skills in FE and HE. Reviewed provision by institutions and support organisations and assessed areas of strengths and weaknesses. ESYS plc, December 2003

www.jisc.ac.uk/cpdresources

Drivers for Staff Development Study

Study to identify the drivers for staff development in HE and FE and explores the implications for development of staff i-skills. HE Consulting, December 2003

www.jisc.ac.uk/cpdresources

JISC Staff Information Skills Set Programme

The Joint Information Systems Committee (JISC) supports Further and Higher Education in the use of information and communications technology. The Staff Information Skills Set project (SISS) has been established to take forwards JISC's work in the area of i-skills.

Contact:

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Web: www.jisc.ac.uk/cpdresources

Useful websites

Useful websites

Resource Discovery Network (RDN)

High-quality Internet resources for further and higher education

www.rdn.ac.uk

Resource Discovery Network Virtual Training Suite

Online tutorials and workshops to support staff and student i-skills

www.vts.rdn.ac.uk

Scottish FE Unit (SFEU)

Support staff development through events and knowledge networks

www.sfeu.ac.uk

Examples of i-skills programmes and projects

Supporting New Academic Staff (SNAS)

Teaching resources, materials and training events for new staff in various disciplines

www.heacademy.ac.uk/SNAS.htm

LawPaths

Project to support use of new electronic legal information resources

<http://library.kent.ac.uk/library/lawpaths/default.htm>

Higher Education Academy (HEA)

Survey of student e-literacy training packages

www.ics.ltsn.ac.uk/pub/italics/issue1/stubbings/010.html

SEEK – Sheffield Evidence for Effectiveness and Knowledge

Joint NHS/FE-developed website to support i-skills in evidence-based medicine

www.shef.ac.uk/seek/learntools.htm

Note: These examples were taken from the JISC-funded study in December 2003 to review existing i-skills provision. If you have interesting examples that could be included here please contact the JISC SISS programme manager, m.batchelor@jisc.ac.uk

Training providers

Association for Learning Technologies (ALT)

Workshops and events on handling content for teaching and learning, copyright and so on

www.alt.ac.uk

FERL Practitioners Programme (FPP)

Module G – Covers creating and adapting content for teaching and learning. Module I – Covers different approaches to finding subject-based ILT resources, issues relating to finding, storing and disseminating resources locally in line with current legislation and good practice

www.ferl.becta.org.uk/fpp

The Higher Education Academy (HEA)

The HEA provides discipline-based support for learning and teaching through its Subject Network

www.heacademy.ac.uk

JISC Legal

Free enquiry service, information resources and training events related to legal issues such as Freedom of Information, Copyright and Data Protection

www.jisclegal.ac.uk

JISC Plagiarism Service

Raising awareness of plagiarism in the academic community through advice, online resources, training and an electronic detection service

www.jiscpas.ac.uk

JISC Regional Support Centres

Locally based support for FE staff development in i-skills

www.jisc.ac.uk/index.cfm?name=rsc

National Learning Network

Database of staff development events and resources

www.nln.ac.uk

Netskills

A JISC-supported service providing workshops and materials to support staff and student i-skills

www.netskills.ac.uk

Investing in Staff i-Skills

This document is available in alternative formats

For more information: www.jisc.ac.uk/cpdresources

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