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Workplace information literacy for administrative staff in HE

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Title: Workplace information literacy for administrative staff in higher education

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Biographical notes

Dr Mark Hepworth:

Mark Hepworth is a Senior Lecturer in the Department of Information Science at Loughborough University, U.K. His teaching, at a postgraduate and undergraduate level, primarily focuses on how to develop people-centred information services. He also delivers a module that prepares students for study at University. His research involves studying people and how they interact with information; their information needs and use of information. This has led him to study a diverse range of people and how they learn and manage information in both the formal learning environment and also the workplace. He supervises a number of PhDs that relate to these areas.

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Marian Smith completed a Masters in Information Science in the Department of Information Science, Loughborough University, where she specialized in information literacy and school children. She then took up a post as research assistant, working on a research project investigating information literacy in the workplace. Marian is now studying for a PhD. Her current topic is school age students' perceptions of information in the school as well as the leisure context, including the perception of information in the domain of social media.

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Abstract

A joint project carried out by Leeds University and Loughborough University, funded by JISC studied the information literacy of non academic staff in higher education. The in-depth, qualitative, study deployed an information audit, interviews and focus groups with eleven staff in the Finance and Research Departments at Loughborough University. The information literacy needs of staff were compared with the JISC i-skills model. The hierarchical and collaborative nature of the workplace meant that people's experience of information literacy in the workplace was more fragmented than in the academic context. Common labels could be used to describe information literacy in the different contexts but more emphasis was placed on data, internal information and information from other people in the workplace. Time had an impact on information literacy. Social networking skills were recognised as key information literacy skills. The need for staff to know how to organise information and develop information policies was identified.

Introduction

This paper discusses the findings of a joint project carried out by the Universities of Leeds and Loughborough and funded by the Joint Information Systems Committee (JISC). It looks in detail at the information literacy of two groups of non academic staff working in higher education.

The purpose of the study was to:

- identify information intensive situations experienced in the workplace;
- explore these situations and to review staff's knowledge and skills associated with managing information;
- compare this knowledge and skills set against the information literacy headings presented in the JISC i-skills model;
- make recommendations for staff development in terms of information literacy and information management.

This paper focuses on the first three objectives.

Literature Review

A number of definitions for information literacy exist. The Chartered Institute for Library and Information Professionals (CILIP) have defined information literacy as:

‘Knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner.’ (CILIP, 2005)

According Bundy, (2004, p.3) information literacy has generally been defined as:

‘An understanding and set of abilities enabling individuals to “recognise when information is needed and have the capacity to locate, evaluate and use effectively the needed information”.’

This piece of research took as its starting point the i-skills cycle published by the JISC (Joy & Taylor, 2005) based on the Big Blue model (2002). This model implies that the individual may undertake the entire process and tends to reflect the academic process. The labels attached to the various stages are abstractions, developed by library and information science practitioners and academics that help us to think about information literacy. They are not necessarily how people in general recognise or describe the processes associated with dealing with information.

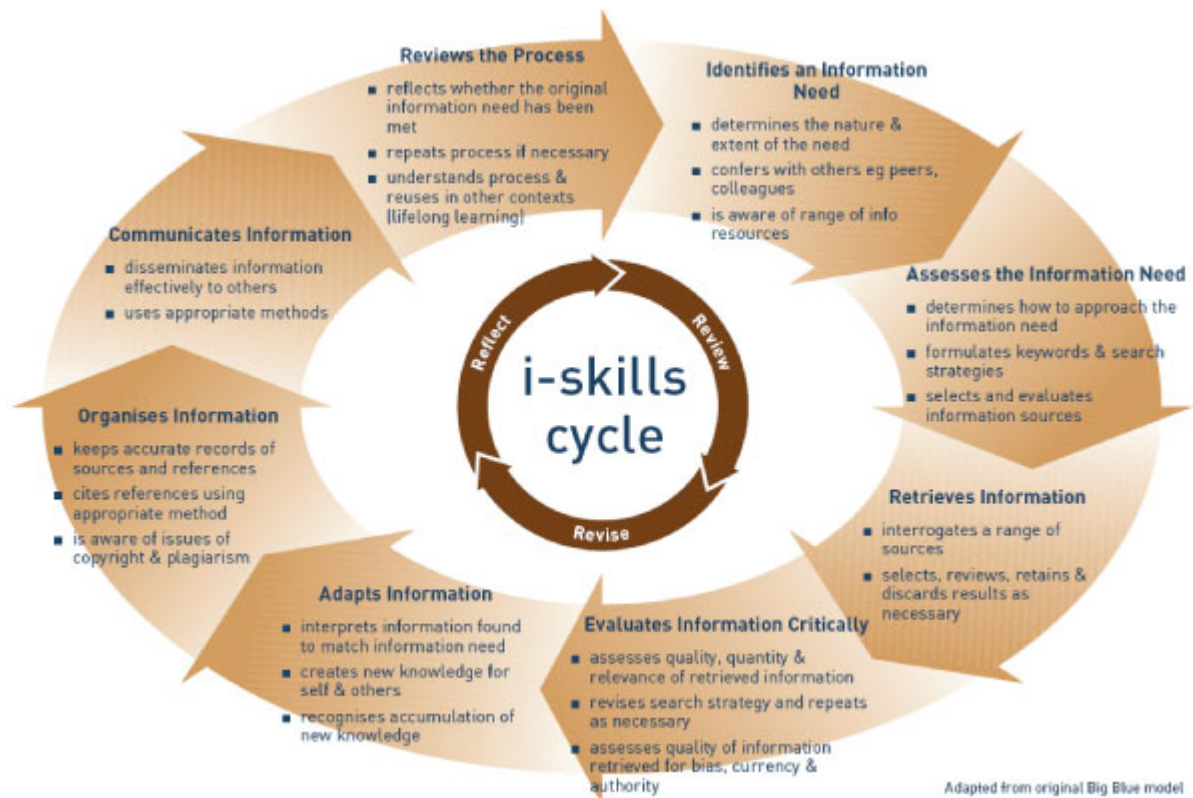


Figure 1. JISC i-skills cycle

As indicated by Rader (2002) the majority of studies investigating information literacy have been conducted in the academic environment. In recent years, however, there has been a growing interest in information literacy in the workplace. A number of these studies have demonstrated the differences in how information literacy is experienced in the workplace and in the academic environment. In her study of auditors Cheuk (1998a) found that information seeking in the workplace was unpredictable and individualistic in nature which led her to question whether students should be taught to follow a ‘right’ path to seek and use information. Kirk (2004) found that senior manager’s experience of information use was not that commonly suggested by models based on the educational sector. There was a social dimension to information use; it was not an individual activity. This social dimension has been explored by Lloyd (2003, 2005, 2006) who highlights the context specific nature of information literacy. Lloyd (2006) states that in order to become information literate in the workplace it is necessary to not only access and use information from textual sources but also from physical and social sources. O’Sullivan (2002) states that although information literacy is generally not adequately addressed in the workplace there is evidence that business and government recognise its relevance there. This is echoed in literature from the business sector as exemplified in the study by Klausegger et al., (2007):

‘From a managerial perspective our study highlights the need for professional information management: that is the need to support employees in identifying the right information, handling it efficiently, distinguishing what is relevant from what is not, and evaluating quality.’ (Klausegger et al., 2007, p.709)

Methodology

The research was exploratory and collected qualitative data using a combination of task analysis and Dervin's micro time line interview (Dervin, 1992). Two groups of staff from the Finance Office (seven staff) and Research Office (four staff) at Loughborough University were selected. They were chosen at three, comparable levels of seniority (senior manager e.g. Director/Deputy Director, middle management e.g. Research Development Officer, Financial Accountant and junior staff e.g. Payroll Officer, Contact Assistant). In total eleven staff were involved in the study. Interviews were conducted by the Loughborough University researcher, at which an audit of information tools in the work environment took place; roles, goals and tasks were discussed and sub-tasks identified and explored using the i-skills headings to probe for i-skills activities (see appendix 1). Questions such as what do you try to find out and where do you go to find out were used. Then a specific memorable sub-task was explored using the micro time line interview (see appendix 2) including what led up to the situation (the origin of information needs, what helped/hindered, and how was information used). Interview data was transcribed verbatim. Data was coded using a combination of information literacy models ACRL (2000), SCOUNL (1999) and i-skills (Joy & Taylor, 2005). Areas of knowledge and skill that were not covered by the i-skills model and not evident or explicit in other frameworks were identified. Focus group sessions, run by the Leeds University team of investigators, were then held with both groups. Themes arising from the interview data were explored in the focus group sessions enabling clarification and comment from the respondents and also the opportunity to discuss personnel developments implications. Data from the focus groups was transcribed and implications for professional development identified.

Findings

The findings outlined here focus on the information literacy needs of the respondents and draw, primarily, on the data from the interviews. The professional development issues are not explored. Further details of these can be found in the final JISC Report (Hepworth et al. 2006). The purpose of this analysis was to help determine the information literacy needs of the respondents but also to see whether conceptions of information literacy as indicated by the i-skills model were shared by the respondents. Furthermore areas that were not evident or explicit in the i-skills model or for that matter in other information literacy models were highlighted.

All participants reported that i-skills was a new term. In the interviews several respondents commented that this was the first time they had had the opportunity to think and talk about these tasks and processes. Even when the findings were presented at the focus group sessions people found it hard to relate to the abstract i-skills descriptions of information behaviour. When asked about their i-skills within the focus group setting, there was a need to review what was meant by the term, and many found it difficult to grasp the concept as a whole:

'We keep interpreting that as IT skills.'

'As soon as I see it, I just think computers.'

The initial stages of the i-skills cycle, *'identifies an information need'*, tended not to relate closely to the non-academic environment. This is partly because tasks were given to staff by their manager, either by phone, e-mail or face-to-face, and were likely to be relatively well defined. There was therefore little identification or definition of the topic or information need. However, definition of the topic did take place primarily through listening, questioning and possibly through discussion with colleagues. For example:

'When an academic requires assistance with a research application they will make initial contact with me either by email or phone. I ask them for an outline of who they are applying to i.e. what funding bodies and under what scheme.'

The i-skills label *'retrieves information'* was applicable in the non-academic context. However, the content of this process was very different from that implied by the Library and Information Science (LIS) models of i-skills and information literacy. The LIS profession tend to focus on the use of secondary sources of information materials traditionally given access to by the library. In the workplace very little emphasis was given to secondary sources of information and generally members of staff were dealing with primary data (names, numbers etc.) and not secondary information. This included gathering internal data concerning, for example, the Research Assessment Exercise or salary structures:

'All the information I need comes from the financial system. Within that there are lots of different areas each bit comes from a specific place so I know where those places are. For instance one area is research groups if I want to know what they have been spending I will run off a report from there.'

There were however cases where such internal data was compared with external data of a similar nature, acting as benchmarks. Nevertheless, data rather than information was key, and knowledge of internal data and information storage systems was crucial, rather than knowledge of external secondary sources or indexes to such information. However, tools such as search engines were used to identify external resources and respondents stated that they found it relatively easy to use these tools.

With regard to *'evaluates information critically,'* again rather than relating to content such as respected journal or author etc. the source of data tends to be internal and hence the authority is known and classical evaluative criteria relating to secondary sources do not apply. During the work process, however, validation took place, as well as clarification, generally through colleagues (i.e. other people were consulted to see whether something made sense or not):

'I do this job on my own [checking the monthly payroll] although my colleague does share the checking so we do discuss the work.'

Validation of information, particularly in the finance area, also tended to be based on professional training i.e. subject knowledge such as accounting, rather than criteria associated with the evaluation of published sources of information:

'I then have to analyse the information received, highlight any problems and ask appropriate questions. All this is a matter of professional judgement.'

The process of '*adapts information*' or using information is again rather different to that in the i-skills cycle where pulling together information is expected to be from different published sources. However, the act of pulling information together did take place; for example, information could be obtained from the web sites of different organisational bodies and then synthesised but generally not from published secondary sources as in the academic context. Furthermore, junior staff tended to be given data and very specific instructions of what to do with it, with little scope for choosing how to adapt the information or data. Nevertheless, thinking skills associated with using information were perceived to be important. These included analysing information and data, identifying gaps, collating material, and manipulating data and information in an appropriate way:

'You can't just download information and feed it into a report it all needs analysing. You need to be able to pick out the relevant information and analyse it and then feed it back into the reports.'

'To date I've done a précis on Whistle blowing. I've looked at the current university policy document and annotated it where I think there are gaps and now I am going through other universities' documents and I will come up with a draft policy.'

The ability to '*adapt information*' is therefore important. However, a wider conception of the nature of that information is required to include primarily internal and unpublished information in the workplace.

'*Organises information*' is a label that could be used to describe an activity in the workplace. However, the i-skills phrase 'keeps accurate records of sources and references' is not appropriate relating, as it does, to the academic context. Nevertheless organising information was a significant issue and an area of concern to staff. In fact respondents were concerned that they did not have any obvious work based method or structure for organising the information, data or knowledge associated with their work. How to manage e-mails was a commonly cited problem. One member of staff had developed their own strategy. But even they recognised it as problematic:

'The number of folders [email] reflects the breadth of what I have to deal with. I have to have an overview of the Office so I have certain strategic high level folders e.g. funding will be one folder with perhaps fifty sub folders... there are problems with storage.'

No systematic approach was taken to manage the desktop, files and folders etc. Nor was there any strategy for managing external information resources, such as information about organisations and their web sites that could be important sources of information or data. Little systematic management of or access to published sources such as professional magazines was evident.

'Communicates information' again implies some form of report, thesis etc. as in the study/academic context. In the workplace it is evident that data or information intensive tasks do not necessarily result in a 'report'. The output could be in the form of a spreadsheet, for example, or a PowerPoint presentation:

'I do a lot of power-point presentations for departments and Research Groups and Senior Management training courses.'

Nevertheless appropriate methods had to be used, and thought was given to the purpose of the data or information and who the intended 'consumer' was:

'Once I had found all the information I needed it ended up getting meticulously plotted in many spreadsheets and it then it becomes a question of filtering it for the audience because clearly it is easy as an accountant to produce reams of paper with numbers on that the average person will look at and go aagh! So it becomes an issue of making it user friendly and interesting and appropriate for the audience.'

The production of larger scale reports where a wider range of data and information were pulled together tended to be the function of senior rather than junior staff.

'Reviews the process' was considered useful but a luxury. It was something the respondents felt they should do but didn't have the time:

'Reviewing work is good practice but pressure of time and volume of work makes this difficult.'

Generally reviewing the process tended to be a form of checking whether the task had been completed successfully, and this involved talking to colleagues. It was not a reflective process that looked at the overall task and how they had gone about it but more to do with whether their work was correct, accurate and related to the expectations of their managers.

As indicated above, similar labels can be used to categorise people's activities in the workplace, however, they tend to be applied in a different way to that in the academic context. In particular 'organises information' has a far broader remit involving the organisation of data, information and knowledge that is part of the working environment. This encompasses the use of ICT to help manage this environment.

One of the few tasks that did involve the use of secondary sources was current awareness. Staff, particularly senior staff, did feel a need to keep abreast of development in the academic sector as a whole, and professional developments and changes that may have an impact on their work. Participants used professional magazines, such as the Journal of Research Administration, Accountancy Age; organisations that produced documentation which might affect practice or create opportunities, such as Higher Education and Research Opportunities; discussion lists, such as British Universities Finance Directors Group or ARMA JISCmail. Certain tasks also required people to refer to institutional policies and guidelines internal to the organisation such as Committee Minutes etc. Mapping this data and information landscape was therefore a necessity. Senior management in both the Finance Office

and the Research Office, (although it was more widespread in the latter), were particularly conscious of this role.

Skills not explicit in the i-skills model

In mapping the data against information literacy models and in particular the JISC i-skills model, comments were identified which did not easily fit into the headings offered by the model, but which nonetheless had a significant bearing on staff management of information. Some commentators may argue that these are implicit in the i-skills model and other information literacy frameworks. However, we would argue that, even if this was the case, they need to be made more explicit and their implications taken on board when discussing information literacy in the workplace.

These themes are:

- Time management and information overload;
- Networking;
- Team working.

The significance of these themes is echoed in the management literature (Margol & Kleiner, 1989, Terziovski, 2003, Claessens et al. 2007)

Time management and information overload

Repeated references were made to time management in interviews and focus groups. Time management had an impact on information behaviour in that the extent to which any i-skills type task was conducted was determined by the amount of time the person felt they had available. Hence people needed to constantly make judgements about how thorough their information behaviour could be depending on the time available. Pressure of time determined the length of searches carried out. Lack of time presented challenges when it came to organising information:

‘One frustration of my role is not always being able to do developmental things because the day to day work is of a huge volume relative to the number of staff in the office...it takes you away from being able to pursue certain things in a more proactive way.’

‘Having the ability to receive information, file it and archive it with easy personal access to the archives would help me as would having the time to carry out good housekeeping routines e.g. weeding my electronic records. Time can be a barrier.’

All participants had their own systems for managing information in hardcopy and electronically, though difficulties arose with the volume of information that required organising. Electronic storage of information and the ability to archive emails was an issue. As indicated above some participants found maintaining the organisation of information difficult. The primary reason for this was lack of time; a secondary reason was an inability to determine what should be kept and what should be discarded. The amount of information received which needed to be read and absorbed presented challenges:

'Keeping on top of all the information and keeping up to date with what is going on in the sector is vital. Information overload is one of the biggest problems. You need to be careful not to become blinded by too many sources of information. You need to be clearly focussed on what is most relevant to your needs.'

Keeping abreast of all new developments in their sectors was an issue for many participants, especially those employed at a senior level. This was done by reading professional literature, magazines and newspapers, accessing information from the web and in some cases using discussion lists and alerting services. There was, however, a level of anxiety in some cases that this was not being fully addressed. All but one participant demonstrated the need to keep up to date with new developments in their sectors:

'I read Payroll Pensions Review for specific information e.g. details of pension changes from April 1st.'

'I usually start the day with a list of tasks, prioritised. I routinely check a whole variety of info sources on a weekly basis as part of my work.'

Social Networking

Social networking, both inside the institution and outside of it, was cited as a very important means of gathering information:

'Knowing where to find the information was crucial and networking was key to this.'

In many cases it was seen as the only means of obtaining particular information. People were the main source of guidance in terms of determining what a task should entail. Networking was also required to help identify and gather data and information. It was therefore necessary to build a mental map of people who could have an impact on any stage in the completion of work. This involved both a knowledge of who and what was available, but also the interpersonal skills to build and make use of a network of people. A need to be knowledgeable of what data and information systems were in place in the workplace and how to use them was fundamental. However, little formalised training seemed to take place covering these systems and generally problems were dealt with on an ad hoc basis by asking colleagues for help:

'I use people a lot to find out information. More face to face contact would help...the amount you are likely to get out of someone is dependent on the nature of the relationship.'

This was seen as vital by the most senior members of staff:

'Networking with people there is far more productive than anything that comes out of meetings...I found myself sitting on a table with eleven Vice Chancellors for most of the day. It might not kick in for five or six months but there are now eleven other people I can pick the phone up to speak to.'

'Networking is a key part of my job, it is very useful. I make contacts at conferences and seminars I attend, with people I have dealt with e.g. when negotiating contracts that are collaborative with organisations, people I have worked with in the past. It is useful to have people you can ring up and find out what is going on at other institutions and how they are tackling problems, to compare notes with. It keeps you abreast of all the new developments and what is going on and helps you to focus on what is important for the university strategically and if you need information on particular thing you always know someone who can point you in the right direction or give you the information or do you a favour that is very important'

All participants demonstrated the need to know staff throughout the university. The more senior the member of staff the greater the need to know members of staff and what their responsibilities were:

'They were asking for Loughborough University to identify world wide centres of excellence in research in this area and I was asked to harness that information and let them know who the relevant people to speak to were. I was able to identify the relevant people to speak to through my knowledge of university staff.'

Although networking skills are not mentioned in the i-skills model the purpose of networking served familiar goals and processes, including interpreting (discussion of the problem), identifying sources (people and places), evaluating (gaining critical comment), communicating and sharing information. The difference, is the emphasis on the interpersonal skills required to undertake these activities.

The ability to identify and connect with other people, ask precise and accurate questions in order to elicit the required information were significant and necessary skills. These were recognised particularly amongst the more senior members of staff. Connected to this was the ability to listen carefully picking out the main points, and sifting the relevant information from the irrelevant:

'The meeting was really a fact finding session. I needed to find out why the contract wasn't signed, why three large invoices were outstanding, why they were issued late basically what the issues were and why the company were not paying. It was vital for me to get information from the HOD in order for me to get back to the company and argue our case.'

'I ask them for an outline of who they are applying to i.e. what funding bodies and under what scheme.'

Teamwork

The issue of teams was not considered when developing the student i-skills model (Big Blue, 2002), because of the emphasis on the skills needed to become an independent 'information literate person.' The workplace application of i-skills is characterised by the spread of skills across teams, where one person may specialise in a particular skill area out of necessity. Tasks are distributed amongst the team, data

and information is identified to some extent from the community of practice and problems are solved on an ad hoc basis with the help of others rather than in isolation.

Participants in positions of responsibility for other members of staff, referred to the need to be able to guide others in accessing, using, communicating and managing information:

'A lot of this job [monitoring expenditure in all departments] is me managing the process rather than doing it.'

'For instance when finding information there are some things I would expect others to be up to speed on but if I am asking them to look at a whole new area then I will give an indication of what we should be doing or where to look then they would come back to me and I would look at what they had found and consider what I thought we should be getting and make sure we hadn't missed anything.'

The members of staff employed in the more senior roles needed to have an overview of their departments. They needed a mental map of where information was kept and an information profile of their staff in order to know who to access information from quickly. They also needed the ability to guide others in the access, use, communication and management of information.

Different attitudes to the sharing of information were displayed. It was clear that where shared information existed, agreements about how sharing would work had not been made in advance or even considered. For example, participants mentioned a lack of version control. Some felt they were not able to 'trust' information in a shared space. There was felt to be a lack of policy with regard to managing information.

Differentiation

The hierarchical nature of work

By organising the data into responses given by participants of the same seniority, it was possible to identify clusters of common themes. The i-skills of the most senior members of staff in both groups were very similar. They kept on top of what was happening in their sectors, read professional literature, searched the web, evaluated, analysed and synthesised information. They had responsibility for guiding others in accessing, using, communicating and managing information. Networking was an important means of gathering information for this group. At this level there was an emphasis on using information rather than finding it, although there was an implicit skill in knowing who would have the information:

'I see my job as more using information than finding it. I end up co-ordinating the production of things but don't actually do it myself'

'If I want any significant amount of information out of the systems I would ask people who spend their time using the systems'

Participants in roles at the second level of seniority employed a number of similar i-skills. They kept on top of what was happening in their sector, read professional literature, and searched the web, evaluated, analysed and synthesised information. At this level, however differences appear between the two offices. In the Finance Office, members of staff searched the web but the range of sites used was far narrower than the range used in the Research Office. Members of staff in the Research Office searched a wider range of websites more frequently. Finance Office staff accessed much of their information from the various finance systems, and less reference was made to evaluating information found. Information on the system was unequivocally accepted:

'I always know where to search for the information. I need information from the in-house finance system to write the report. The Finance system gives details on each of the funds...there is no problem.'

There were noticeable differences in the i-skills of participants employed at the third level of seniority. Participants described their roles as routine and straight forward. There was no reading of professional literature though there was some occasional searching of the web. Information needs were consistent and easily defined with no need for planning. Information and data was accessed mainly from existing systems and individuals followed a set routine:

'I am dealing with maternity pay so every month I go to that month on the system...I then look at the amount of maternity pay and calculate a percentage manually...it is routine and there are never any problems unless the system is not working.'

However, information still needed to be analysed, reformatted and put back into the system:

'You can't just download information and feed it into a report it all needs analysing. You need to be able to pick out the relevant information and analyse it and then feed it back into the reports.'

There was less direct communication of information at the lower level. The nature of the roles meant that staff had a good knowledge of people employed throughout the university but little personal contact with them, and no networking was evident. The Research Office again made more references to evaluating information than the Finance Office at this level.

The Finance Office and Research Office

There was a marked difference in the use of current awareness services between the two offices. Two of the more senior members of the Finance Office referred to using a current awareness service whereas three of the four participants in the Research Office did so, reflecting a more outward looking work environment.

In the Finance Office more reference was made to specific information sources that they needed to be familiar with:

'All the information I need comes from the CIS financial system within that there are lots of different areas each bit comes from a specific place so I know where those places are. For instance one area is research groups if I want to know what they have been spending I will run off a report from there.'

The Finance Office made more reference to adapting information. Working as they do with numerical data, there was an awareness of the need to present information in a user friendly format. There was, however, little variety between the offices in the way that information was communicated. The most frequently cited means of communication were reports and emails. One reason cited for using email was the necessity of having an audit trail. Managing emails was a recognised problem.

Discussion and conclusion

In the work environment i-skills take a very different form to that in the academic context. In the academic context, common conceptions of information literacy describe the process a researcher or student follows in completing an individual task or assignment. This conception of i-skills and information literacy is reflected in the SCONUL (1999) and CILIP (2005) models of information literacy. However, other authors, basing their ideas on empirical studies, such as Kuhlthau (1993); Leckie et al. (1996) and Marchionini (1997) have emphasised the iterative nature of these processes rather than a sequential series of sub-processes. Other researchers of i-skills and information literacy, applying a phenomenographical approach, have derived conceptions of information literacy that are grounded in the perceptions of the individual rather than abstractions of the information profession (Bruce, 1997, Hepworth, 2003). This work implies that i-skills, stemming from the academic context, rather than being a generic phenomena commonly understood by all may be context specific and people's experience of information literacy may not echo LIS conceptions of information literacy – although similar labels (abstractions) may be used to describe such phenomena (Cheuk 1998b). Work by Lloyd (2006) and Cheuk (1998a) provide further evidence of the situated nature of information literacy.

In the workplace individuals do not, generally, start with a self contained topic that leads them to identify and assess an information need; retrieve information; evaluate information critically; adapt information; organise information; communicate information and review the process (as defined in the i-skills model). In some cases the singular nature of the role and also lack of time meant that delegation was not possible and the task was more self contained, in general, however, work was fragmented. It also involved a team of people, and hence delegation, repetition and collaboration. Tasks may start with one person and elements of the task may go to another, come back to the same person, go on to another and so on. Nevertheless, as Cheuk (1998b) pointed out, there are common underlying information processing situations.

Parts of the overall cycle tend to be delegated by senior staff. An individual may, therefore, be asked to organise and present information; they may be asked to find some information. Hence although elements of the i-skills cycle could be identified, overall, it did not reflect people's experience in the workplace. This was borne out in the focus group sessions where the results of the investigation were presented to staff in the Research Office. Staff commented that to represent their i-skills as a

continuous process with one stage leading to another was too formulaic and an abstraction. In addition it was found that participants were largely unconscious of their information processing activities and found it hard to relate to the abstract i-skills model as a whole but recognised aspects of it. The i-skills model therefore needs to be seen as a high level model or tool for thinking about information literacy rather than a model that literally describes people's experience.

It can be seen that several aspects of information literacy in the workplace are not reflected in the i-skills model. These include the impact of networking and team working where emphasis is placed on mapping the people who may play an important role as sources of information, providing critical evaluation and guidance in terms of the information itself and its presentation. A key skill associated with information management, in the workplace, is therefore the process of effectively networking with other people.

The ability to systematically manage information, for example emails, and deal with the problem of information overload was shown to be a key information literacy in the workplace. Lastly, and perhaps unsurprisingly, it was found that internal sources of information were more important than external sources of information.

It can be seen that there is a gap between librarians' and LIS academics' conceptions of the skills associated with information literacy that stem from the school and higher education context and the experience of information literacy in the workplace. This is partly because the terminology we use is unfamiliar to people in the workplace but also because of the hierarchical and collaborative nature of work which means that information literacies may be distributed among the work group. If librarians and information professionals wish to support information literacy in the work context they need to take on board a wider conception of the information landscape and information management in the workplace. Plus they need to appreciate the socially embedded nature of information literacy. However, there seems to be no shortage of help and support required that falls under the heading of information literacy. This includes help with the use of internal information systems; the effective use of data; the mapping of external sources such as useful organisational Web sites; the management of internal and externally generated information such as records, reports and emails and helping staff to develop information management policies. In addition workplace staff need support with the interpersonal aspects of information gathering and knowledge management including help with the less directed and more informal information and knowledge sharing between staff in the workplace.

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Appendix 1

Interview questions

Role, goals and tasks that feed into goals (Main Task Sheet)

- What is your role in the department?
- What would you say are the goals of your department?
- What are the main tasks you have to perform that feed into these goals?
- Let us take these and unpick them
- What are the sub tasks you have to perform in order to complete the main task?

Identify the most information intensive subtasks, up to 3 (sub-task sheets)

Now we are going to think about the sub-tasks and how you do them. We will turn to thinking about the information you need in order to accomplish these tasks and achieve your goals.

1) Identifies an information need [What do you try to find out?]

We are going to think about how you identify and assess your information needs in order to complete your task.

- What is the information needed by you in order to accomplish the sub task (what data, information, knowledge is needed)?
- How do you determine the nature and extent of the information needed?
- What questions/problems are you trying to answer?
What is the question? Who is the audience?
- Do you formulate a question to be answered? How is this done?
 - Through discussion? With whom? Colleagues/peers/others? If you discuss the problem with people how do you know who to talk to? How do you know they have the ability to help determine the information need?
 - Through brainstorming? Use of software?
 - What would help?
- Are you always clear about what information you need and how much information you need?
- When are you not clear about this? What would help?

2) Assesses information need [Where do you go to find out? How do you know where to go to find out?]

Planning a search

Locating

Knowledge of functionality of system

- Where does the information for the sub task come from? What sources?
- Why do you choose this way to get the answer?
- How confident are you in your ability to select the best approach to finding the information required?
- Do you plan how to search for information?
- How do you plan? /If not why not? What might help you?
- Do you know how information is organised? How do you know?
- Do you think that you always use appropriate searching techniques?

- Do you know what resources are available for searching to complete this task? Databases, search engines, spreadsheets etc.?
- Are you able to match your question to appropriate search tools (resources that help you to search for information e.g. databases, search engines)?
- How do you value the various resources?
- Are some more suitable for certain audiences e.g. Internet, intranet, financial systems, databases?
- Are there resources you are aware of but do not use? Why? What would help?
- When considering the availability of resources is it necessary to look beyond your local resources to resources at other locations?
- If you need to delegate the task how do you know who to delegate it to? How do you know they have the ability to find the information?
- Do you understand the functionality of the various search tools to guide others if they are completing this step?
- Are you aware of forums/discussion lists etc.?
- Do you have strategies to encourage networking/conferences/events in order to access information?
- Generally do you feel confident that you match your information need to the best resources?
- What information would you like to have to accomplish this task that is currently unavailable? Where would it come from? Name the source

3) Retrieves information

Accessing and retrieving the information

We are now going to consider how the information required for the task is retrieved

- How would you rate your retrieval skills?
 - In the main confident with few difficulties
 - Confident of dealing with everyday enquiries but sometimes uncertain about identifying sources of new information
 - Would benefit from developing extra skills to help me locate information quickly and efficiently
- What resources do you use to complete this task?
- Are you aware of other resources that are available that might help you complete the task? If so why do you choose not to use them? What would help?
- Are there resources that you are aware of that might help you but are not available if so what?
- Are you confident of using various information and communication technologies (databases, internet, search engines, subject gateways, intranet, financial systems, discussion lists, current awareness alerts) whatever is required to complete this task? Would anything help?
- Do you feel confident in your ability to select among the various technologies the one most appropriate for the task of extracting the needed information (e.g. copy/paste software functions, photocopier, scanner, and audio visual equipment)? Would anything help?
- Once information is located it may need to be downloaded, saved, printed, ordered do you feel confident of carrying out these processes?
- If you have to delegate this task how do you know who to delegate it to? How do you know they have the ability to retrieve the information?

4) Evaluates information critically

Having located and retrieved the information we now turn to what you do with the information

- When you access information you need to complete the task do you always examine it (i.e. do you check quality/quantity/relevance?)
- When you have your information do you evaluate it – examine and compare it thinking about reliability/validity/accuracy/authority/timeliness/point of view or bias?
- If you do evaluate the information what criteria do you use? Do you evaluate it using your own knowledge base – i.e. it fits in with what is already known?
- Can you think of anything that might help to make this step easier?
- If you have to delegate this task to others do they understand the criteria they have to work to?
- Do you find that there are sometimes gaps in the information found making it necessary to revise your search strategy and look elsewhere for information?
- How confident do you feel in your ability to evaluate information from traditional sources?
- How confident do you feel in your ability to evaluate information from the web?

5) Adapts information

Still on the subject of what you do with the information

- Do you read and select main ideas? Do you read/extract/paraphrase the information to meet your needs?
- Is there any discussion with others to validate the understanding and interpretation of information (colleagues/peers/experts)?
- If you need to ask others to complete this step how do you know who to ask?
- Do you have a knowledge and understanding of the range of media and formats for displaying information?
- Do you use computer and other technologies to manipulate data (databases, spreadsheets, multimedia and audio and visual equipment)?
- Are there technologies available that you do not use? Why? What would help?
- Are you aware of technologies that would help you to complete this step of your task but are unavailable? Name them
- Are you always able to decide if the original information need has been satisfied or if additional information is required?

6) Organises information

We will now look at how you organise the information you found.

- Is information organised so that it can be found again for future needs?
- Do you keep a record of documents found, sources used and references for future reference?
- Where do you keep them?
- Is information kept in hardcopy and electronically?
- Are search strategies saved?
- How confident do you feel in your ability:

- to use the various technologies to manage information selected and organised e.g. mark records within a database and save/email/export them, to use spreadsheet software to organise information
- to keep email files well organised
- to use information ethically and legally
- How confident are you in your:
 - Understanding of economic, legal and social issues
 - Understanding of copyright and fair use of copyright material
 - Awareness of laws, regulations, institutional policies and etiquette relating to access and use of information resources
 - Understanding of what constitutes plagiarism
- Do you know how to cite references?
- If others organise information do they have the capabilities to do it effectively?

7) Communicates information

We will now consider how the information you have found for this task is disseminated

- In what ways is information communicated effectively to others? Blogs, reports, financial plans, newsletters, discussion lists, RSS, podcasts, journals, websites, subject gateways, VLE, video conferencing
- Are there means of communicating information that you are aware of but do not use? Why not? What would help?
- What technology is used to disseminate information?
- Do you feel confident in your ability (or the ability of members of your team to whom you may delegate the task) to use various ICT applications in creating a product or presentation e.g. use of PowerPoint, multimedia software? Do you use any presentation software?
- Do you know the capabilities of various media to guide others if they are completing this step and to assess the outcome?

8) Reviews the process

Finally...

- Do you look back and consider what was done, how it was done and whether you would do it differently next time
- Was the original information need met?
- Does the process need to be repeated?
- Do you understand the process and will you be able to reuse it in other contexts?

Have you ever been aware of improvements which could be made?

Appendix 2

Critical incident technique

To help staff recall what happens in practice participants will be asked to concentrate on specific situations they have experienced whilst undertaking tasks. An adapted form of critical incident technique will be used to identify what led up to the situation, how it was resolved, focusing on what information was needed, what helped and how was the information used.

- 1. Name:**
- 2. Department:**
- 3. Role:**

Situations

4. Think back over your time employed in the role of _____. Without going into too much detail can you think of a time when you had a problem, a difficult decision, a particular situation where you needed information to answer a question? How would you describe that situation? What were the general circumstances leading up to that situation?

Gaps

Turning to your information needs.

- 5.** Thinking about this situation what happened? How much did you know about this situation/problem?
- 6.** What did you need to find out? What questions cropped up? What were the important things you wanted to find out?
- 7.** How important was it to have this information?
- 8.** How did you get the information/where did you go to find out/how did you know where to go [What helped to solve the problem? what was the solution? what ways of help?]
- 9.** Why did you choose this way to get the answer?
- 10.** Did you get complete or partial information? [Did you fully resolve? Did you get a full answer?] Did you find what you wanted? What would have been useful? What kind of information did you or would you have used? [What didn't work so well?]
- 11.** Did you see anything in particular as a barrier/constraint in finding this information? [What stopped you finding out? What was difficult in finding out? What obstacles did you face?]
[What did work?]
- 11.** Did you see anything in particular as helping? What?
- 12.** At the end of the day how did you feel about the situation?

Uses

- 13.** How did you use the information? What difference did it make? Did you expect the information to help? [Did you expect the answer to resolve the problem?] and did it help in ways you expected or in other ways?
- 14.** Did you expect the information would present problems? Were these expected problems or did the information present new problems?

- 15.** How did having the information help? [How did having the information resolve the situation?]
- 16.** How did the information hinder? [How did the information cause problems in any way?]
- 17.** In this situation what would have helped in resolving the situation?