Chapter 2:

How is Information Literacy experienced in the workplace?

This Chapter Will Discuss:

- How researchers have sought to understand Information Literacy, including how it is 'experienced' in the real world.

- How Information Literacy can be understood as something experienced in a range of contexts meaningful to the individual and relevant to her/his contributive engagement with the workplace.

- How Information Literacy experience can be investigated to show the kinds of purposeful knowledge development activities it facilitates, and that are key to the functioning workplace.

1. Introduction

How does the undifferentiated and overwhelming flood of Information available to (or imposed on) the workplace environment, become knowledge; the specific knowledge needed to allow an individual or team to operate in an informed way within professional and business organisations?

According to Luciano Floridi, knowledge is information which is true in its meaning (Floridi, 2010); a sufficiency of which when brought into relationship with existing knowledge (learning), leads to increased understanding and more effective decision-making (Megill 2012; Hoyt et al. 2012). Information Literacy operates at the Information-Knowledge crux: seeking, sorting, evaluating information; managing and presenting true information within new structures and relationships of knowledge. It is experienced by someone who can 'synthesis[e] …information and data to create new knowledge' (SCONUL 2011, p. 11) and so promote learning.

In fact, Information Literacy experience appears to involve the development of knowledge that is meaningful in specific contexts. In the workplace, Information Literacy experiences generate the knowledge that contributes to a greater understanding, and to the successful undertaking, of designated roles and tasks (Forster 2015a). Such experiences include an awareness of the information needed in each workplace context, and the varying sources, processes and 'co-participatory practices' (Lloyd 2010) needed to develop knowledge as the context varies.

The findings derived from a study of the experience of Information Literacy in the nursing profession (Forster 2015a) appeared to show that Information Literacy is always an experience of the development of the knowledge, and hence the knowledge-based decision-making abilities, nurses need in the specific contexts of

their practice. The findings from this study, together with an analysis of the findings of several previous studies (e.g. Boon et al. 2007; Diehm and Lupton 2012; Williams 2007; Lloyd, 2006; Lupton, 2008; Limberg 1999; Partridge, & Bruce, 2009), as well as consideration of recent work by Bruce and various colleagues (Bruce and Hughes 2010; Bruce et al. 2012; Bruce et al. 2014), suggested that this may be true of Information Literacy experience in general. A conclusion which implies a key role for Information Literacy in the facilitation of health, legal, business or other professionals' engagement in those knowledge development and learning processes which allow them to achieve competence and effective practice. The potential practical value of this understanding and approach to information professionals will be discussed in various contexts within this book.

The Nursing study will be used for example purposes throughout several chapters of this book. Its methodological structure (as we will see) allowed a wide range of conclusions about such experiences to be drawn which could be reasonably applied to the workplace generally, especially where professionals worked in teams, had clients or patients, and had an ethical obligation to those clients or patients to work from the highest possible level of knowledge. Where appropriate, other studies will be referred to, however studies of professional Information Literacy experiences of sufficient detail remain small in number.

This chapter will begin by briefly looking at some of the ways Information Literacy has been studied and understood and their value in the workplace context. The nature and significance of Information Literacy experience is then discussed and how such experience might be investigated in a workplace.

2. Ways of thinking about Information Literacy

There have been several ways of thinking about and investigating information Literacy since the introduction of the concept in 1974. Early approaches understood it as a complex of skills and knowledge by means of which one finds and uses information effectively. Others took a more subjective view, focussing on 'competence' within contexts of information use (Snavely and Cooper, 1997) and regarding Information Literacy as a personal attribute. A later approach embraced the idea of Information Literacy as something experienced in the real world – in technical terms, a 'phenomenon'. This latter approach allows us to draw a picture of what Information Literacy is 'for' and how and why it functions as part of day to day work life. Specifically it shows us what kinds of knowledge a worker needs, and how information is used to develop it.

Do such approaches dictate how we see the value, significance and pervasiveness of Information Literacy in the modern work environment? It is certainly true that researchers, librarians, managers/entrepreneurs, and professionals can be affected by how they conceptualise, investigate and value it. The value of investigating Information Literacy 'experience' is that such an approach is more likely to give us the 'reality' of Information Literacy experience that can be so useful to librarians and employers.

2.1. Skills and knowledge in the workplace

From the earliest days of its conceptualisation, Information Literacy has been seen in its 'simplest' form as a range of uncontextualised abilities in the form of *skills* in the use of information search tools, and application of *knowledge* needed to use these

tools effectively and make sense of the information found (Doyle 1992). In the workplace this may mean skilful use of company websites or other electronic databases or resources designed for particular professions, such as *Lexis/Nexis* for lawyers or *Business Source Premier*. Students training for the professions are usually taught how to use these tools and how to interpret what they find; and employers may expect, if not all their employees to be proficient, at least those in key positions with an instructional or information dissemination role. In this model of Information Literacy, information searches can be planned and executed, information of value can be retrieved, critiqued and 'applied', by following standard processes and applying abstract knowledge, in any given context; the fundamental experience being the same in each case. To what end and in what context the information is sought and applied is irrelevant.

However are purpose and context significant in the proper understanding of Information Literacy in the workplace? In order to understand and develop Information Literacy do we need to know more of its contextual purpose, functionality and value? This may be knowledge which might also allow us to show relevant stakeholders the value of development.

2.2. Knowing How to Use Information in Context

Some approaches to Information Literacy are 'constructivist'. That is, Information Literacy is a personal attribute (SCONUL, 2011), the ability to apply skills and knowledge to solve a problem in the real world (Kuhlthau, 1988; 2004). Knowing how to search databases and critique findings is not enough; the Information Literate person must be able to exhibit an ability to reflect and so adapt information practices.

One must know what information is required under which circumstances to solve which specific knowledge-deficit 'problems'. Considering the value that is therefore placed on knowing how skills and knowledge are applied in practice, it is not surprising that this should be an approach valued in workplace Information Literacy analysis and research. Scenario-based Information Literacy education for health and social care workers is based on an understanding that information is used in context and for particular purposes. Those numerous purposes, derived from the multifaceted nature of the workplace environment, determine how, when and why information is required and used. Therefore to be effective in the workplace requires training in the relationship between information and its contexts of use, including what information is used *for*.

It is understood from this perspective that necessary skills and knowledge might change significantly between contexts and purposes and in themselves have no absolute value as markers of Information Literacy. However, several questions remain: what is the actual nature of each context in terms of Information Literacy experience? How does Information Literacy actually exhibit in each context? And 'does each context always elicit the same Information Literacy experiences?' amongst others.

2.3. Information Literacy from an organizational perspective

Although Information Literacy definition and research is most frequently focused on the individual, and this is relevant to workplaces in which individuals operate in professional and other responsible roles, much interest in Information Literacy in the workplace is focused on the 'Information Literate Organisation'. How do

organisations expect their employees to use and share information, and to what ends? How do individuals share information within teams and how do organisations coordinate information flow from various internal and external sources? How do they use it to develop a general knowledge base? Lloyd (2010) and others insist that workplace information Literacy is strongly team-focused, with 'individual' information use less common. Some of the chapters in this book will take such perspectives, either entirely or in part, and from a constructivist or relational/experiential perspective. Each of these perspectives can, and have, been employed to informative effect.

In an organizational context, interest lies in how the Information Literate employee contributes to the organisation's aims and the ways in which an Information Literate workforce is beneficial to the organisation in question. However, the details of 'Knowledge Management', the process of finding and effectively using organizational knowledge, is outside the scope of this book.

2.4. Real world experiences

Some researchers were unsatisfied with what they were able to discover about Information Literacy and how it operated in the real world, including that of the workplace. How were the processes and actions that constituted Information skills and knowledge actually experienced? Hjorland's approach to Information seeking behaviour (Hjorland, 2000) suggested that Information Literacy could be seen as a sequence of processes and behaviours firmly grounded in the 'Information World' in which the individual operates; Information Literacy was **something experienced in a range of contexts meaningful to the individual and relevant to her/his**

significant engagement with the world. As will be discussed elsewhere, the 'meaning' of each experience lies in the type of knowledge sought; itself determined by the purpose of the information quest.

The influence of this contextual or 'relational' approach is apparent in that branch of Information Literacy research which concentrates on its 'experience'. A range of recent research studies have been grounded in this approach to Information Literacy (e.g. Limberg 1999; Lloyd, 2006; Boon et al. 2007; Williams 2007; Lupton, 2008; Partridge, & Bruce, 2009; Diehm and Lupton 2012; Sayyad Abdi, 2014; Forster 2015a).

3. Investigating Information Literacy Experience in the Workplace

We can use terms commonly employed in Information Science to attempt a definition of the 'experience of Information Literacy' in the workplace. How is Information Literacy experienced?

> '*Information Literacy in the workplace is learning, experienced as task focused information need and its fulfilment as knowledge development, ontologically grounded in a discourse community and its domain.*'

Information Science literature often refers to a profession as a *Discourse Community*: a group with a common purpose and a commonly understood means of communication (Swales, 1990) all of which takes place within, and by means of, its information world or 'Domain'. A 'Domain is '*the set of Information systems, resources, services and processes associated with a group of users with common concerns'* (Bawden and Robinson, 2012, p.93). Information need, search, critique

and application cannot exist outside such a context. We only perform these tasks when under impulses derived from a Discourse Community. An individual's Information Literacy experience in the workplace is grounded in the interlinked workplace and professional communities and their Information Domains. Experience that varies by an individual's role, purpose and, of course, pre-existing knowledge and understanding. Lloyd (2010) has used the expression 'Information Literacy Landscape' to describe the unity of the discourse community and domain. This is a landscape which, in the workplace context, involves a significant range of collaborative, intersubjective forms of Information Literacy that often employ a wide range of non-documental but highly contextual information sources.

3.1. A Methodology for Investigating Information Literacy Experience

Finding the range of Information Literacy experiences of a profession or other work-based group promises valuable information on how they might be supported in information resources provision and Information Literacy education. If we know how and why, in what context, information is used, we can understand what information resources must be made available by a library and information service, and the information activities that need to be understood, taught and facilitated.

So how might Information Literacy experience be investigated? Researchers have made frequent use of a qualitative methodology Phenomenography, for this purpose.

Phenomenography is defined by its founder as

'*The empirical study of the limited number of qualitatively different ways in which various phenomena in, and aspects of, the world around us are experienced'*.
(Marton 1994, p.4424)

Researchers interview participants using lightly structured interview protocols, encouraging them to expand on their experiences and focusing on those which they themselves regard as significant. Rather than asking participants to give their definition of Information Literacy, they are asked to describe when they sought and applied information effectively to increase purposeful knowledge in their day to day lives. Hence findings are rich in the experiences of the concept of Information Literacy, even for those participants unfamiliar with the concept.

Analysis of the interview transcripts eventually yields generalised descriptions of the varying experiences of the group, which are believed to reflect that of the original population as a whole. These 'Categories of Description', when taken together, give the overall picture of the ways the original population (such as a profession, for example) experience the phenomenon in question. Each Category does not represent a subgroup; any individual could experience the phenomenon in any of the ways described, depending on the context and purpose of information need.

Phenomenographic research has provided some useful information about how groups experience phenomena. For example, that the range and variation in how something is experienced within a group or population is limited and not, as might be imagined, infinite; that the variations can be described in a simple descriptive way; and the variations can be linked in an informative way, usually as a hierarchy of complexity of experience.

3.2. Phenomenography and Information Literacy

Christine Bruce (Bruce 1997) was the first to use phenomenography to investigate Information Literacy. From her research into Australian academics, she derived

seven Categories of Description describing the ways in which they experience being information Literate. The relational model of information Literacy developed from this study emphasises that the information user's experience of being information literate is subjective but contextualized. Each individual can potentially experience Information Literacy in any of the ways described by the Categories, exchanging one way for another as their perspective changes as information gathering and processing tasks vary; although not all information users are necessarily capable of the more complex experiences.

This 'relational' approach to Information Literacy has begun to find mainstream recognition. From ACRL (American College and Research Libraries)'s recent re-assessment of their definition of Information Literacy:

> *ACRL's previous definition of information literacy describes it as a set of skills or competencies that are uniform among all learners… Other conceptions growing out of the research of Bruce, Lupton, Lloyd, and Limburg identify the limitations of this skill- and- individual-attribute-based conception… [and] emphasize [instead] the highly relational, context-specific nature of information literacy.*

> *(ACRL 2014, p. 4)*

Bruce's work has proven to be seminal. Since 1997 other studies have investigated the experience of Information Literacy in specific groups and contexts. Some of these studies have gone on to draw further conclusions about Information Literacy, including conclusions significant to the work environment. These include the idea that Information Literacy is, at its centre, the key to knowledge development and so to learning.

'Information literacy is about effective engagement with information, when learning in different contexts.' (Bruce and Hughes, 2010, p.A2)

As mentioned above, the fundamental aim of research of this kind is to determine what Information Literacy means in practical terms for a group or profession, and to use this to describe criteria for more focussed information resource provision and Information Literacy education. In some studies, such as the type described in detail in the next sections, the archetypal experiences described by Categories of Description is in a form which points to the nature of the knowledge that experiencing Information Literacy generates. This insight into what a group learns through Information Literacy, and in what contexts, has the potential to allow Information Literacy education to be focused more effectively, and so in due course develop more effective professional and workplace information use. Chapter 11 gives an example of how this might be done.

3.3. Conducting an investigation into Information Literacy experience

Data Collection

Data collection is conducted through semi-structured Interviews with

'the researcher clearly setting the interview topic through the use of a number of set questions, but then making substantial use of follow-up questions to further investigate interviewees' responses' (Åkerlind et al., 2005, p.80)

in order to encourage the participant to freely describe their experiences of Information Literacy in a manner which reveals the range of meanings it has for them

in their 'world' while avoiding imposing the researcher's assumptions, either conscious or unconscious.

It is essential that interview questions are as open ended as possible (Marton, 1988) to allow the participant to be free to express in full what Information Literacy means to them: what information is used for and what knowledge is needed in their day to day lives. The interview should also be flexible in terms of direction and question order for the same purpose. There should not be too many questions with too many details of the questions developed in advance. Questions should follow and be in the context of what the participant is saying and is currently describing. The interviewer must develop follow-up questions which respond to the participant's own handling of the questions and corresponding exposition of those experiences.

Be sensitive to what the interviewee is conveying, try to 'tease out' their meaning, and don't try to direct her/him along lines you assume are relevant!

Data Analysis

The interviews are recorded and an accurate transcript of each is produced.

The data analysis method has several stages. The process begins with careful analysis of the transcripts to identify examples, and develop descriptions, of experiences with information that are common to at least some of the participants.

This leads finally to a process of **categorisation**: both '**vertically**', bringing together experiences under 'themes' that describe in general terms how and why information is sought and used by the group, and '**horizontally**', bringing together experiences (from all themes) which describe the same level of complexity, from simple day to

day activities in which basic immediate knowledge is required, to deep and large-scale ones in which knowledge is developed to allow strategic thinking to take place.

These intinitial descriptions of experience, and the structures developed from them, are the final outcome of the research study, providing a detailed and valuable description of the how, when and why the group uses information.

1. Sorting and Analysing the Transcripts

The process begins with an initial engagement with the transcripts of the interviews. This is a process which develops increasing levels of familiarity to the point where the researcher can begin identifying, within and across the transcripts, describable information experiences. Each transcript is read through three times; on the third reading notes are made, describing and summarizing these impressions.

The next stage involves grouping transcripts together after re-reading both the transcripts and the notes several times. What are the main themes? How and why (in a general way at this stage) is information understood, sought and used, and how can these experiences be described? 'How' might be: Searching professional databases; 'Why' might be: facilitating relationships; attempting to achieve competent working practice; contribute to a team. A transcript might appear in several groups if several of these are prominent.

The next stage involves re-arranging the groups after further readings, and focusing on the 'why' and 'how' more closely, at a finer level of detail, in order to develop *Dimensions of Variation of Awareness*. These are simple statements which describe experience of Information Literacy, the seeking, critiquing and using of information, for a <u>particular</u> purpose in work life; a more focused 'why' or 'how'. These are the

building blocks from which we can construct descriptions of how our group of information users experience Information Literacy as a profession.

2. Developing the Building Blocks

The process of developing Dimensions of Variation begins with the identification and underlining of statements which seem to describe or suggest Information Literacy experience which focuses on a specific 'why' or 'how' of the kind described above. These are labelled by means of brief words or phrases describing the experience's context. E.g. 'finding information for client families' or 'contributing to the multidisciplinary team' or 'searching for clinical guidelines'.

The next stage is to seek links in meaning and significance to <u>other</u> apparently related statements elsewhere in the transcript. This is a more complex process than simply looking for similarities of phrasing; it involves seeking expressions which might suggest a further development, modification or focusing of the original description is necessary. If such expressions are found, the original descriptive identifier is modified accordingly.

This process continues across the other transcripts from the same group. If the experience is traced in other transcripts then the process of modification of the expression is continued. The expression continues to be modified until it satisfactorily expresses the experience of the wider group (or at least some of it).

How does this work in practice? Here are two examples (Forster, 2015a):

Example 1. How the Dimension of Variation *Information Literacy experienced in developing an evidence-based ward culture* was formulated.

This evolved, to begin with, from descriptions of experiences involving the location and application of research evidence which were underlined and compared. These were found to often be contextualised in the transcripts by a sense of professionalism and conviction. Elsewhere, both within the same transcript and in others, this was further developed by some participants in discussions of the need for the wider adoption of such attitudes within the profession; of how their information activities encouraged colleagues to use research evidence and think in an evidence-based way; and how they themselves have through their information activities contributed to Evidence-Based Practice's entrenchment within their Team and Ward.

Example 2. How the Dimension of Variation *…achieving optimum and so ethically defensible care* was formulated.

Initial statements describing searching for, and applying research evidence in both primary and secondary form, occurred in contexts in which it was made clear by participants that evidence-based practice was an attempt to achieve the best possible care. This was frequently contextualised in discussions of responsibilities to patients and the nature of those responsibilities. These discussions often referred to the negative consequences of failure to be information Literate in this way; consequences which could be harmful for patients and therefore gave an ethical colouring to Information Literacy.

This 'iterative' process is key to validity (Åkerlind et al 2005).

3. Developing Structures from the Building Blocks

a. Themes of Expanding Awareness

The themes or general 'why's and 'how's of Information Literacy experience can be understood as parts of that experience, the sum total of which describes the breadth of Information Literacy experience as a whole. Themes of the 'why' type within workplace Information Literacy experience might include

> *'organizational or personal decision-making, collaborative design, evidence-based practice, disciplinary research, professional and private problem-solving (Bruce, 2008; Bruce, Hughes and Somerville, 2014).*

The technical term used is *Theme of Expanding Awareness*: a name which highlights the other dimension within Information Literacy experience: higher or lower levels of complexity. Complexity of experience reflects 'awareness' of Information Literacy's potentialities, of what it is capable of; or what it needs to do. Experiences may be simple ones in which information is used in simple day to day tasks or more complex, in which information is used for activities, for instance, at a strategic level.

The Themes are derived initially from the 'grouping of transcripts' stage of the sorting and analysing process, and are refined and finalised through **the process of grouping the Dimensions of Variation under them**. The process is completed when we can

- arrange all of the Dimensions under Themes, and each Theme gives a satisfactory general description of its group of Dimensions;

- arrange all of the Dimensions within each Theme in order of complexity, from least complex experience to most complex (the '**vertical**' grouping mentioned at the beginning of this Data Analysis section).

These processes rely on objective judgement which requires correction or confirmation by others.

In our examples above, the Dimensions of Variation ***Developing an evidence-based ward culture*** and ***Achieving optimum and so ethically defensible care*** were both grouped under the Theme: *Information Literacy experienced through its role in helping to achieve 'Best Practice'*. The latter was judged to be a slightly more sophisticated experience than the former.

b. Deriving Categories of Description

The next structural formulations are the *Categories of Description* described earlier. These are developed from the grouping and summary description of the **Dimensions from all of the Themes**, hence from the whole breadth of Information Literacy experience, **at the same comparative level of sophistication of experience** (the '**horizontal**' grouping).

This can best be understood clearly by means of a diagram.

Figure 1. Relationship between Dimensions, Themes and Categories of Description

	Themes							
	1	2	3	4	5	6	7	
	Dimensions of lowest complexity	Dimensions of lowest complexity	Dimensions of lowest complexity	Dimensions of lowest complexity	Dimensions of lowest complexity	Dimensions of lowest complexity	Dimensions of lowest complexity	A
	Dimensions of greater complexity	Dimensions of greater complexity	Dimensions of greater complexity	Dimensions of greater complexity	Dimensions of greater complexity	Dimensions of greater complexity	Dimensions of greater complexity	B
	Dimensions of greater complexity still	Dimensions of greater complexity still	Dimensions of greater complexity still	Dimensions of greater complexity still	Dimensions of greater complexity still	Dimensions of greater complexity still	Dimensions of greater complexity still	C
	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	D
	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	E
	Dimensions of highest complexity	Dimension of highest complexity	Dimension of highest complexity	Dimensions of highest complexity	Dimensions of highest complexity	Dimension of highest s complexity	Dimension of highest complexity	F

Left axis label: Expanding 'Awareness' of complexity of potential experience

Right axis label: Categories of Description

A range of Categories of Description which describe a 'way of experiencing Information Literacy' are produced in this way, with the level of complexity of experience varying from simple to very complex. In Workplace terms, from simple day to day tasks to those at the strategic level. The number of Themes and Categories will vary between studied populations.

3.4. An example of a research study into Information Literacy experience

The nursing study, which made use of the methods described above, found that Information Literacy was experienced in seven Themes. That is, there are seven general 'why's and 'how's describing Information Literacy experience in nursing practice, under which 70 Dimensions of Variation, the more specific and focused 'why's and 'how's, could be grouped in order of complexity:

1. Information Literacy experienced in processes of professional self-development

2. Information Literacy experienced in development and maintenance of relationships (with patients, patients' families, colleagues and other professionals)

3. Information Literacy experienced through its role in helping to achieve best practice

4. Information Literacy experienced within understandings and experiences of EBP

5. Information Literacy experienced within application of skills and processes of evidence and other information gathering

6. Information Literacy experienced in the context of an understanding and knowledge of the principles and concepts behind evidence and other information gathering

7. Information Literacy experienced through applicable conceptions of information

The Dimensions of Variation under, for example, Theme 3 could be arranged in 6 groups, each of similar complexity, labelled A to F and given a summary description. 'A' gathering the least complex experiences; 'F' the most complex. This is a helpful

process when there are as many Dimensions as there are in this study; it both encourages close analysis by the researcher of the Dimensions and makes the process of the creation of Categories of Description easier.

The Dimensions themselves are bullet pointed.

A.   Practising with sufficient background information to function

- Obtaining sufficient background psycho-socio-cultural background knowledge on a patient

- Determining the most cost-effective/efficient treatment option

B.   Helping the team practice efficiently

- Contributing evidence and other information to the Multidisciplinary team.

C.   Using information as a tool for 'improvement'

- Attempting to improve individual outcomes

- Attempting to 'improve my practice'

- Suggesting a change in practice

D.   Working towards an effective practice dynamic

- Developing up-to-date- practice

- Developing practice that is recognised as objectively proven / justifiable

- Developing rationales for change

E.   Developing a culture of efficiency and accountability

- Developing a culture of change within the ward

- Developing a culture of accountability to patients

- Developing an evidence-based ward culture

F.   Exploring the compassionate and ethical foci of care

- Exploring the parameters of compassionate care

- Focusing on the nature of patient safety

- Achieving optimum and so ethically defensible care

Six Categories of Description were identified: Category A (the simplest experience) through to Category F (the most complex).

Category A was developed from the groups of Dimensions under each Theme that described the simplest experiences.

From Theme 1: Seeking out basic knowledge of clinical contexts and conditions

From Theme 2: Interacting passively with others –others as a source of information

From Theme 3: Practising with sufficient background information to function

From Theme 4: Obtaining instruction in/ seeking to understand the process of care

From Theme 5: Operating with limited negotiation of the technology

From Theme 6: Using background technical knowledge of information sources and types, needed to find and use evidence

From Theme 7: Working with the 'basic facts'.

Bringing these into a unity gives an overall picture of one way (in this case the simplest way) of experiencing Information Literacy as a nurse:

Category A: *'The passive minimalist.'*

This category describes experiences of information literacy in which 'the facts' are obtained to deal with the immediate and simple issue or context. Passive information absorption occurs as frequently as information gathering; the latter may frequently be of the 'scavenging' type

The other Categories were:

B. The knowledgeable goal achiever (creating knowledge for specific goals)

C. The focussed, competent and evolving professional (creating knowledge to develop professional competence – to function effectively in particular day to day roles)

D. The confident and trusted promoter of justifiable change (creating knowledge that can be used as an agent of change through an understanding of situations and contexts)

E. The Teacher and Promoter of an evidence-based culture (developing knowledge infrastructures which allow specific roles to be performed of the kind which must be based on a complete or almost complete understanding of a context or activity)

F. The Leader, Philosopher and Strategist (developing knowledge infrastructures which allow one to act as an established source or vector of 'wisdom' in various specific contexts)

The nurse can potentially move between the different ways of experiencing Information Literacy depending on the immediate context. She may be a *Passive*

Minimalist in some contexts of her work and a *Teacher and Promoter of Evidence-based Culture* in others.

3.5. Information Literacy as task focused knowledge development – what about other studies of Information Literacy experience?

Earlier in the chapter we defined Information Literacy in the workplace as:

> '*Information Literacy in the workplace is learning, experienced as task focused information need and its fulfilment as knowledge development, ontologically grounded in a discourse community and its domain.*'

Though the Categories of Description in the Nursing study all contained aspects of experience which were processes related to information gathering (the 'how's, from Themes 5, 6 and 7), the Categories also incorporate aspects (the 'why's, from Themes 1-4) which focused the complete experience on, and in, the **development of knowledge required for particular clinical functions**; that is, the development of knowledge as needed to function in the workplace. This was something which seemed particularly significant.

That all of the 'complete' experiences of Information Literacy were focused on knowledge development might seem obvious. How else would Information Literacy express itself in the real world but in a successful attempt to develop one's subjective knowledge or the knowledge of a team through the effective acquisition and use of information? However this idea of Information Literacy hasn't been a universally excepted one, especially by those who focus their understanding on behaviourist paradigms. What about the rest of the research literature into 'Information Literacy experience'? Do other research studies point to the same conclusion? Could the

statement, *Information Literacy experiences are always focused on purposeful knowledge development*, be supported by the findings of previous work?

Most other studies in Information Literacy experience (e.g. Boon et al. 2007; Diehm and Lupton 2012; Williams 2007; Lloyd, 2006; Lupton, 2008; Limberg 1999; Partridge, & Bruce, 2009) can be summarised as producing Categories of Description of three types:

1. 'Process' categories in which experience is focused on Information skills and competence. Categories entirely of the 'how' aspect of Information Literacy.

2. 'Knowledge' categories in which the experience is clearly marked as developing knowledge. Knowledge of something for a particular purpose.

3. Knowledge-based decision-making categories, in which knowledge is developed to enable effective decision-making, teaching or similar knowledge-backed creative activities.

Categories of Description of types two and three clearly support the idea that Information Literacy is focused on the development of knowledge. Type 1 categories, apparently contradict this. These 'process' categories don't seem to be focused in this way. They have a 'how' aspect but not a 'why'. However such categories seem to be reinterpretable based on the findings of the nursing study.

As we have seen, the nursing study showed that complete experiences of Information Literacy as described by the Categories of Description consisted of all seven of its themes. Some of these themes, primarily numbers five, six and seven, had functional or 'how' characteristics – that is, are focused on the information

identification and gathering itself. However, these functional experiences of Information Literacy were always partial ones and always formed part of a complete experience focused on personal knowledge development, as defined and contextualised by the Categories of Description.

This view of Categories of Description as containing several aspects including necessarily both functional and meaning-focused ones, 'how' and 'why', is supported by the philosopher Edmund Husserl's analysis of the essential nature of the experience of phenomena (Cerbone 2006). Husserl described such experience as a composite of an awareness of process (or what he labelled 'noetic' themes, which describe the "activity across time" component of the experience of a phenomenon) and an awareness of meaning ('noematic' themes). Experiences must have meaning as well as functionality; must have a 'why' aspect and a 'how' aspect. That meaning, in the experience of Information Literacy, is the knowledge developed for the purposes experienced in the context of that experience.

The unique detail of the Nursing study's analysis methods, absent from previous studies, allows us to see that Type 1 categories aren't complete descriptions of Information Literacy at all.

4. Conclusion: Information Literacy experience in the workplace is….creating knowledge to operate competently, to maintain relationships, to develop personally, to lead, to create….and to learn

The idea that Information Literacy is key to knowledge development and learning is increasingly finding favour:

> *Information literacy is …. the use of information in **creating new knowledge** and participating ethically in communities of learning.* (ACRL, 2015, p.3)

If this is indeed the case, then Information Literacy can be seen as an aspect of the learning process. In the context of the workplace, it can be regarded as a means through which employees develop both their own and their team's knowledge, and 'learn' in ways which help them contribute to the organisation's or corporation's aims.

An awareness of the nature and context of Information Literacy experiences is vital. Research which allows organisations, and the information professionals who work for them, to know and understand just how, why and in what contexts Information Literacy promotes knowledge development and learning in a workplace, team or profession and why, might improve workplace effectiveness and allow librarians to better focus their Information Literacy education and information resources provision.

Informed Learning

In recent years Christine Bruce and her colleagues have developed the concept of 'Informed learning' (Bruce and Hughes 2010; Bruce, Hughes and Somerville 2012) in which Information Literacy's role within learning is described and made explicit as

….using information to learn. It….is about being aware of the kinds of information we are using, how we are using information and how different forms of information come together to inform and transform our work. (Bruce, Hughes and Somerville 2012, p-8-9)

Informed Learning is based on the belief, derived from research into the experience of Information Literacy in varying environments (Bruce and Hughes 2010), that Information Literacy is an engine which propels learning (individually and collectively), through awareness of the ways in which information can be used to build knowledge in the workplace, amongst other environments. Information Literacy is something experienced in, and transferable to, a range of contexts and purposes, and is fundamental to the learning process as a 'transformative' generator of knowledge (Bruce, Hughes and Somerville 2014).

Importantly, workplace Information Literacy, when transformed into Informed Learning through knowledge of contextual experiences, is team focused (Lloyd, 2010) and inter-professional. It facilitates collaboration in which knowledge development is focused on the team's, and organization's, aims and priorities.

These ideas and approaches are helpful in the analysis of Information Literacy in the workplace. They highlight the contextuality of Information Literacy and therefore of the development of knowledge and learning (Bruce, Hughes and Somerville, 2012). They identify Information Literacy as the motor of learning and therefore central to effectiveness in those workplaces which feature professions in which Information gathering and interpretation are fundamental (Evetts 2006). They imply Information Literacy allows a health, legal or business professional to work from an adequate

basis of knowledge so that the patient, client or customer receives a fully competent and creative service.

The study of Information Literacy experience can shed light on the information-focused learning processes and contexts which occur in every workplace involving individual, collaborative and interactive information use. If those learning contexts are highlighted and learning processes are understood, then it becomes possible to assist the individual and team to greater awareness and understanding of the best ways to use information to learn in ways that contribute to the organization's goals. Librarians can be key to the learning process, not only within the education setting, but also within the work setting. They can do this not only as developers of information knowledge and skills, but through developing awareness of context, potential fields of information activity, how such skills might be contextually applied to professional and organisation effect, as well as which information resources are essential to professional activity. Research evidence is the key.