DRAWING FROM OTHERS: WAYS OF KNOWING ABOUT INFORMATION LITERACY PERFORMANCE

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ABSTRACT

In this paper I present an emerging model of information literacy process which describes the nature of information literacy in a workplace context. The model emphasises the relationship between conceptual, social, and embodied sources of information and the role played by others in providing information opportunities that facilitate knowing as an active part of "learning performance".

INTRODUCTION

The concept of information literacy is more complex than the sum of its practices. An information literate person can be described as a knowing, expert user of information who has a deep connection and fluency with the sites of knowledge within an information landscape. Information literacy, as a process, leads to knowing the world through access to information in all its manifestations, and through information use. Information literacy acts as catalyst for learning, preparing the learner to connect and interact with sources of information and sites of knowledge which are unique to any information landscape. Information literacy is a way of knowing, of being in the world and interacting with it through engagement and interaction with signs, symbols, artefacts, and people from which information relevant to the context – and thus meaning – can be drawn.

In this paper I explore how a person becomes information literate in the workplace, the modalities of information that information literacy practices connect with, and the implications of these connections for librarians teaching information literacy. I will introduce the concept of "transfer" and explore its implications for librarians who teach information literacy.

In a previous paper (Lloyd, 2005), I suggested that "just as there are many faces of information literacy, there are also many ways of understanding, experiencing and conceptualising the phenomenon" (p. 88). The way we experience information literacy and the way information practices allow us to know an information landscape will differ. This paper represents my attempt to draw together the processes and practices which were identified in previous research into a specific workplace. As result of this research, an emerging model of information literacy is described which may be extended into other contexts, and which reflects not only the processes of information literacy, but the practices of others who are engaged with connecting newcomers to their information environments.

SOCIO-CULTURAL VIEW OF LEARNING

Socio-cultural views of learning offer a more holistic approach to understanding information literacy as a catalyst for learning (Lave and Wenger, 1991; Engestrom, 2001; Hager, 2004). These views construct a dynamic account of learning as a process, through the whole person interacting with the context. This view emphasises the dynamic relationship between learner and environment, where the two are inextricably enmeshed, and results in a change in both (Hager, 2004, p. 12). This approach underlines the importance of contextuality, through which social, cultural, and embodied factors influence learning. From a socio-cultural perspective, learning is rendered as an active process which facilitates the construction and reconstruction of the learner and which focuses on the "construction of learning, of learners and of the environments in which they operate" (Hager, 2004, p. 14).

Information literacy is inextricably tied to learning. It is a catalyst which prepares people to connect with information in the construction of knowledge and, in that process, facilitates knowing. As such, information literacy should be viewed as an active process, as part of the performance of learning, which leads to a transformation of the learner from novice to expert.

AN EMERGING MODEL OF INFORMATION LITERACY

Models are underpinned by a theoretical perspective, an ontological understanding of what a phenomenon is. This understanding should be broad enough to be understood in other contexts (although its manifestation may be different because practice is context driven). An ontological understanding of information literacy may be described as a "way of knowing about what there is (the stuff that gives meaning to a context) in an information universe". If we accept that information literacy is an active process which leads to a way knowing, and that an information literate person is a knowing user of information, then we can turn our attention to focusing on what there is (i.e., social, physical, and textual sites of knowledge). We can then suggest how to facilitate information literacy practices that allow us to know these sites of knowledge.

The model of information literacy and of the information literacy process presented here is influenced by a constructivist-constructionist paradigm (Philips, 1995; Smith, 2003; Schwandt, 2003). It is also ecological, in the sense that it acknowledges the whole person interacting with and being influenced by affordances which exist within an environment (Gibson, 1979). The constructivist paradigm acknowledges the multiple realities of everyday life and accords importance to influences which impact on the lived experience of people as they engage with a diverse range of information environments and sites of knowledge to construct meaning. The construction and reconstruction of meaning enables the development of subjective and intersubjective identities and positions. Therefore, knowing is not a passive accomplishment; it requires an active relationship and participation with the symbols and practices which constitute an information landscape. According to Belenkey, Clinchy, Goldberger, and Tarule (1986) "All knowledge is a construction and that truth is a matter of context in which it is embedded" (p. 138).

The emerging model of the information literacy process which is presented in this paper, is drawn from a three-year study of fire fighters' workplace learning. In this study the meaning and manifestation of information literacy practice was explored. Information literacy emerged from this study as an embodied and situated practice, which includes a complex constellation of information skills and social

processes that facilitate and promote access to information from social, embodied, and conceptual sources of knowledge. The model adopts a "whole person" in the world view; this necessitates a definition of knowledge that recognises the social, physical, and textual practices associated with knowing as an activity. Knowledge is defined as encompassing "conceptual and procedural forms of knowledge and the dispositions (values, attitudes) that underpin them" (Billett, 2001, p. 50). Information is defined as "something that modifies an individual's knowledge structures of or knowledge states" (Ingwersen as cited in Talja, 1997, p. 68), or as Bateson (1972, p. 459) offers, "any difference which makes a difference".

KNOWING THAT, KNOWING WHY, KNOWING HOW

Learning to work requires a connection between codified sources of information (know why) with situated sources of embodied and social information which are tacit and difficult to articulate into codified knowledge. Practical knowledge (know how) is developed through access to physical and social modalities of information. In this respect the community of practice becomes a critical source of tacit and embodied knowledge. In addition, physical information located and expressed through bodily performance also becomes an important modality and source of knowledge. O'Loughlin (1998, p. 279) argues for a conception of the communicative body as "that for which gesture, body orientation and proximity are the vehicle through which meanings are expressed. Thinking is undeniably embodied".

As workers, our understanding of the value and usefulness of information will be reinforced through the communities that we engage with. For the new worker, these communities play an important role in the information literacy cycle by affording, interpreting, and mediating information. Through these communities we are drawn into the discourse of the information environment, and through discursive practices of the community we are given access to information that may not be formally represented through codified forms of knowledge, but is rendered through the experiences of seasoned practitioners.

Figure 1 is a visual representation, based on my previous research, of how I conceive information literacy. This representation is a simplification of the complex interrelationships

and interdependencies that lead to knowing why and knowing how. Until the teacher or the learner in any context experiences it, information literacy as a lived phenomenon remains artificial, predictable, and conceptually based.
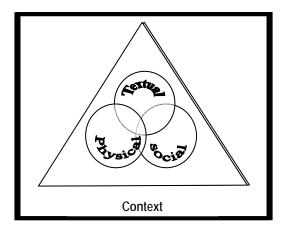

Figure 1. A holistic view of information literacy.

I will now briefly explore each of these modalities contained in the model (see Lloyd, 2005 for further discussion) before exploring how each contributes to the person becoming information literate.

Textual information

Textual information manifests as the formal representations of knowing (Todd, 2004). Codified knowledge is manifest through textual sites which facilitate the development of "knowledge about or know that" (Blackler, 1995, p. 1023). In the fire fighter study (Lloyd, 2004) examples include training manuals, standing orders, in orders, safety bulletins, and administrative information. Through these documents novices engage with the discourse of the institution. Learning how to locate and access textual information positions fire fighters towards a connection with institutional understandings of practice, procedure, and profession which can be replicated and re-stated. Engaging with textual information allows fire fighters to form a conceptual view of how practice and profession should proceed according to institutional expectations (Lloyd, 2005).

Connection to information through codified forms of knowledge creates a conceptual understanding of the workplace. This connection positions the newcomer in relation to the given power hierarchies within the institutional discourses, and enables the individual to form an institutionally recognised identity. Connection to the formal statements of

work and work practices is facilitated by access to information in the form of facts, propositions or concepts, the know why of knowledge (Billett, 2001, p. xiv). Conceptual information remains abstract because it has not been actioned by the body or sanctioned as appropriate or valuable to practice by others embedded within the community of practice (i.e., the fire fighter's platoon).

Connecting to this type of information assists the newcomer with forming a recognisable, individual, workplace subjectivity, i.e., a sense of self in relationship to the formal organization and agreed practices of work (Billett and Somerville, 2004). In their preparatory learning, the novice fire fighter engages with institutionally sanctioned information and becomes an effect or product of discourse (Morris and Beckett, 2004) and is recognised as being able to act as a fire fighter according to the image of fire fighting which has been established through institutional understandings. This is a critical step to enable the novice fire fighter to enter the community of practice with a body of acceptable, but at the same time contestable, knowledge.

Novice fire fighters begin their practice in a training college, where they work closely with textual information. Through access to textual information they learn about fire fighting practices and develop a sense of professional identity. This connection facilitates an institutional understanding of fire fighting practice. Even though their training is very hands-on, their practice training remains safe because it is controlled and the risks and danger associated with "real work" are minimised. This has the effect of restricting their access to social and physical information which can be transferred in everyday practice and, at critical times, in actual practice.

Social information

Social information is located within the community of practice with whom an individual connects. Within this modality, social information is represented as tacit knowledge – difficult to articulate in textual form but highly valued by experienced practitioners. The practices of the community of practices facilitate the "drawing in" of the novice toward the community of practice and enable the transformation from peripheral participation towards full participation (Lave and Wenger, 1991). The drawing in of the novice towards co-participation occurs through the following:

- Affording: the "invitational opportunities" offered by the environment (including other people within the environment) to the novice to engage with information. These opportunities may manifest as workplace practices such as rehearsal, scaffolding, guiding, and mentoring of the new worker (Gibson, 1979; Billett, 2001)

- Influence work: mediating and interpretation the information environment to ensure that deeply shared understandings about practice, performance, and identity are developed. Influence work may manifest as narration of events, story telling or interpretation of procedural materials, or demonstration of embodied experience.

Physical information

The experienced fire fighter's body acts as a site of embodied knowledge from which novices can draw information. Embodied knowledge is "action oriented and only partly explicit" (Blackler, 1993, p. 1024). As part of the information literacy process in the fire fighting workplace, the body has primacy as an information source which can demonstrate practical thinking or know-how. Bodies act as a collector of sensory information, a site of situated knowledge, and a disseminator of

information about physical experience. The body-in-action provides its own narrative, which must be accessed through observation and realised through practice. To effectively seek information from the bodies of seasoned fire fighters, novices must first learn to recognise the body as a source of embodied knowledge. They must then develop observation skills to draw information that can then be reflected upon through the rehearsal and experiences of their own bodies (Lloyd, 2005).

In their study of students' embodied experiences, McClelland, Dahlberg, and Phihal (2002) suggest that:

> The lived body is more than the body alone, it connotes the integration of the physical body; mind consciousness and how we are in the world. We'd have no consciousness and no learning without bodies. Understood in this way, learning is a bodily affair. (p. 4)

Figure 2 illustrates the process of becoming information literate in a specific workplace. The various elements will be described in the following section.
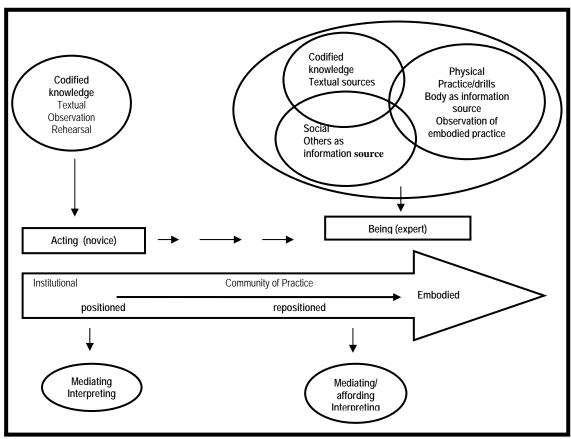

Figure 2. The information literacy process.

In learning to act, novices connect with conceptual knowledge through information practices such as locating information through textual sites, drawing information through observation of others, and the rehearsal of information through drills and practice. These practices facilitate engagement with institutionally sanctioned practices. The connection with codified knowledge assists the novice to develop a subject position which enables them to learn to act (know that). In this first stage, codified knowledge represented as text positions the novices in relation to institutional values and beliefs which are articulated through becoming informed of the rules and regulations of practice. In this modality, information is mediated and interpreted according to institutional beliefs and values. Rehearsal of rules and regulations associated with the performance of work embeds the novice within a work routine, which establishes the novice as a legitimate peripheral participant. Physical information which is drawn from rehearsal provides the novices with a source of embodied learning which will become routine or automatic.

The new worker's transition into the workplace, and towards full participation with the community of practice, is facilitated by a coupling of information from textual, social and physical sources of information which are situated and particular to the workplace context, and specific to the workplace culture. Novices are repositioned by the community of practice towards co-participation and are introduced to new sites of situated knowledge which have been constructed and are grounded in the values, beliefs, and experiences of the community of practice. In developing a relationship with sites of situated knowledge, novices learn to understand the importance of narratives about work performance and past experience, and observational practices which allow them access to information about experienced bodily learning and facilitates the development of know-how. Information practices are used by experienced workers to reposition the meaning of practice by connecting the novice with the intersubjective meanings of action and performance which are affectively and tacitly understood by community of practice. The relationship between the two facilitates the sharing of tacit knowledge, which is essential to learning and development, and draws the novice into the community of practice.

In some instances these new sites of knowledge – that are constituted from the combined social and embodied learning of seasoned practitioners – may contest previous knowledge gained through training. This requires the novice to develop reflective practices in order to reconcile information that is provided institutionally, with information that is provided with by the community of workers.

WHAT CAN WE LEARN FROM THE WORKPLACE? EXPERTS AND NOVICES – COMMUNITIES OF PRACTICE AND PERIPHERAL PARTICIPATION

The transition from novice to expert and the development of expertise provides a useful illustration for understanding what an information literate worker is and how information literacy manifests in the workplace. It also directs our attention towards the importance of a range of situated information modalities which are currently not accounted for in educationally bound information literacy programs. These may be critical to the effective transfer of information literacy practices which facilitate the transition from education to work.

A review of the literature suggests that expert performance is characterised by:

- quick and successful problem formation and resolution,
- an understanding of the structure of their field,
- the ability to interrelate individual pieces of information,
- reflecting on specific occupational practices (e.g., positives and negatives),
- an understanding of the complexities and organization of the information environment,
- an understanding of the deep structure of problems,
- an ability to apply specific judgement rules,
- an ability to think flexibly (Billett; 2000; Cornford and Anthanasou, 1995, p. 10; Laufer and Glick, 1998; Scribner, 1986; Tennant, 1999).

Expertise is constructed through the knowledge and skill which is developed through gradual and sustained practice and experience and is "built upon the experience of being a novice" (Tennant, 1999, p.170). Lave and Wenger (1991) prefer the phrase "full participant in a community of practice" to define the level of

expertise. Included in this concept is the capacity to perform new or novel work tasks, along with an ability to comprehend new understandings of situations (p. 139). The essential thing about learning, according to Lave and Wenger (1991), is that it is facilitated by participation in a community of practice.

Billett (2001) argues that expertise is "embedded – a product of extensive social practice". Underpinning the development of these characteristics is a familiarity with sources of information and sites of knowledge that are situated in such a way that the newcomer is able to "know" the environment and have an understanding of the opportunities for access to information sources and the factors which contest or constrain access to these sources.

In contrast, the literature which describes the characteristics of novices indicates that novices have:

- inflexible responses and have a received view of information,
- have a surface understanding of problem structure,
- are rule and procedure driven (i.e., use codified knowledge),
- skill development that is context free,
- an inability to interpret events in relation to workplace problems,
- require mediation from experts (Daley, 1999; Laufer and Glick, 1998)

A significant difference between expert and novices was reported by Laufer and Glick (1998) who suggest that, in the process of solving problems, experts "use information to work forward in a problem statement" while novices work backwards using the problem goal as the starting point (Laufer and Glick, 1998, p.178).

The difference in information use between the two groups is highlighted in the fire fighting study (Lloyd, 2004) and in a study of nurses by Daley, (1999). Preliminary learning in both groups occurred through formally endorsed education, which enables new workers to develop a conceptual framework about practice. In the early stages of learning about work performance, the meaning of practice remained an artificial construct which was underpinned by the rules and procedures of the workplace. An important element of novice nurse learning performance was their access to the lived experience of expert practitioners which enables

novice nurses to "link information in unique ways" (Daley, 1999, p.7). The role of observation features significantly in learning in nursing, and in fire fighting practices. Daley (1999) also reported that novice nurses were unable to recognise when they needed information (a criterion for information literacy) and would tend to "soak up" as much information as they could from others in order to form concepts about practice.

Over time, both groups rely heavily on social and physical information sources to build their knowledge, using conceptual sources as "backup". In both groups, experienced practitioners viewed peer-based dialogue as an important source of information which allows new information to be gathered and which results in them revising their understanding and, therefore, the meaning, of their practice.

The difference between novices and experts highlights the importance of situational and socio-cultural factors that impact on problem-solving processes which are critical in learning performance. In light of this, claims about the transferability of information literacy should be examined.

TRANSFERRING INFORMATION LITERACY FROM EDUCATIONAL CONTEXTS TO WORKPLACE

Does information literacy taught in one context transfer to another context? The substantial body of literature in cognitive and situated learning studies which has examined transfer of learning appears inconclusive on the issue and this is primarily related to the whether a cognitive or situated learning perspective is adopted. From a cognitive perspective, there are strong arguments that suggest that in some aspects of transfer the answer is "no". Alternatively, from socio-cultural perspectives, which emphasise co-participation and context, the answer is not so clear-cut because of their recognition of the importance of others within the workplace in affording opportunities for learning to occur. Both positions have implications for arguments about the transfer of information literacy as a suite of generic skills lifted from the education context into the workplace.

Transfer is defined by Detterman (1993, p.4) as "the degree to which a behaviour will be repeated in a new situation". While this appears a simple definition, transfer is conceptualised by Detterman as a continuum. Along this

continuum is "near transfer" which describes the transfer of skills that can occur if the context or situation is similar e.g., learning to drive a truck after learning to drive a car (Perkins and Salomon as cited in Misko, 1999). At the further end of the continuum is "far transfer" in which situations are progressively more different from the original situation or context e.g., mathematical precision may make it easier to play bridge (Salomon and Perkins as cited in Misko, 1999). However, Misko (1999) argues that this distinction may not be as straightforward as this. In a study of student's ability to retain knowledge and skills learnt in one context and to reproduce the knowledge and skills into a new context, Misko (1999) reported that "there was no guarantee that being to perform a skill in one context and at one time always means being able to transfer or reproduce the skill in another" (p.v).

The importance of situated activity has been emphasised by Greeno, Smith and Moore (1993) who draw on socio-cultural and ecological theories in their analysis of learning transfer to suggest that the conditions for transfer are dependent on "a person's having learned to participate in an activity in a socially constructed domain of situations that includes the situation where transfer can occur" (p.161). This view of transfer focuses on the situational factors, the structure of an activity, and the social interactions which occur during initial learning and transfer (p. 161). Gerber and Oaklief (2000) argue that the tendency to take an academic approach to transfer (i.e., to seek commonality in skill or competency) tends to produce an "overgeneralised, decontextualised approach to workplace learning that does not prize the relationships that develop amongst work teams …" (p.179).

Studies on information literacy transfer are still emerging. Recent research (Ellis and Salsbury, 2004) on library skills transfer indicates that library skills training which may occur in schools "does not appear to be transferred readily into the university environment" (p.191). Similarly, Hartmann (2001) reported that the school library experience was unhelpful to students moving into university environments because of different curriculum expectations.

In considering information literacy transfer, it appears that near transfer may only be possible and demonstrable when the information literacy practices, as they are currently taught in an educational context, transfer into similar educational contexts i.e., through the different

years of university education or from university or discipline oriented workplaces. Information literacy skills taught in an educational context and relating to educational practices may not be easily transferable to training contexts (i.e., Technical and Further Education) or workplace contexts that have their own idiosyncrasies in terms of practices and information dissemination which inform learning about work performance. In this respect, developing an understanding grounded in novice and expert learning may better inform our own practices and help facilitate the possibility of information literacy transfer out of the educational context and into workplace learning performance. It will also provide an understanding of what is actually being transferred and at what level of competency this is occurring.

In the fire fighter study (Lloyd, 2004), transfer from acting as a fire fighter (subjective position) to being a fire fighter (intersubjective position) is achieved through the development of information related practices which are afforded by experts who observe novice practice, identify gaps in their learning, and provide opportunities for novices to access information about the practices of work through guidance, scaffolding, and coaching (Billett 2001). They also require the novice to actively reflect on the affordances in the context of their learning. These activities facilitate the repositioning of the novice away from institutionally sanctioned sites of knowledge, and towards the sites of knowledge and the information practices that are valued by the fire fighter's platoon. These practices act as opportunities to mediate and afford information, thus enabling near transfer and transition from an institutional context to a collective practice – and the development of collective competencies.

The issue of transfer appears critical for information literacy practitioners if we are to continue to define information literacy as a critical practice and a prerequisite for lifelong learning (Bundy, 2004) outside of tertiary contexts. The relationship between information literacy and transfer has been highlighted previously (Lloyd, 2003) but remains an unexplored and problematic area of information literacy understanding; although some work is being conducted into the embedding of information literacy within the curriculum.

CAN INFORMATION LITERACY BE TAUGHT AS A TRANSFERABLE PRACTICE?

As context changes so too do the practices and processes of information literacy, and this leads to questions about whether information literacy taught in one context is transferable to other contexts which have different discourses, different discursive practices, and different views about what information and forms of access are valuable. While knowing is the sum of all its practices, being information literate is not, unless those practices situate the learner within the community. In a study of information literacy training for engineers, Palmer and Tucker (2004) argue that while information may be referred to as a generic skill because it is seen to underpin all forms of learning, it is not essentially a "global, context-free attribute" primarily because experiencing an information landscape and learning how to use the information resources available will depend on developing an understanding of the unique and idiosyncratic characteristics of the context.

Workplaces are environments that are often complex, messy, and contested, and the ability to become information literate and an effective leaner may be constituted through practices which do not reflect educational standards – where information literacy is taught (although not in all cases) as a decontextualised and abstract process. If information literacy is be considered as a transferable skill, then librarians need to consider how to develop programs which will assist in facilitating near transfer of information literacy in the novice worker. In doing so, they place the novice worker in a better transitional relationship between education and work. This requires a recasting of information literacy in terms of the requirements of workplace learning – to include developing a relationship with the modalities of information (social, physical, and textual) that are situationally relevant. This recasting extends and challenges the role of the librarian as educator to also include being a collaborator with trainers and employers to ensure that information literacy requirements of workplaces are understood and can be taught so that at least near transfer across domains becomes possible.

Kirk (2004) has suggested that the

> complexity of information use raises questions about the education and training of people for the workplace. Information literacy programs in schools, Technical and Further Education (TAFE) colleges and universities have usually assumed a limited experience of information use and a limited understanding of information. (Kirk 2004, p.197)

Similarly, Mutch (as cited in Grafstein, 2002, p. 202) has argued that the "quest for information literacy draws us inexorably into deeper questions about the nature of knowledge, pointing again to the need for it to be embedded in subject based thought, rather than being treated as a standalone specialism".

The challenge for librarians who are committed to facilitating the development of information literacy skills in learners in ways which will facilitate transfer, is to identify the situated practices that lead to workplace information literacy, and to incorporate them into their programs. In effect, librarians need to develop a climate for transfer. This will require a more in-depth understanding of the issues of transfer – the ways in which novices and experts use and apply information, and the expectations of the workplace – than has been presented in this paper. To do this requires collaborating closely with practitioners and professionals in order to understand what modalities of information are valued in the workplace and how workplace information literacy training can support the transition from student to novice worker.

Reflecting on, and understanding the practices that experts adopt to facilitate the information practices and learning performance of novices may assist with our own practices (as information experts) in facilitating information literacy programs that may assist in near transfer. This will place new workers in a better position to engage with institutional contexts of work and to understand the range of affordances which will facilitate access to social and embodied sources of information that are critical for the development of intersubjective practice. This appears to be the real challenge for librarians: to facilitate learning in students so that they can meet the expectations of the institutional context, but to also prepare them for transition into the workplace.

POTENTIAL FRAMEWORK OF IL

The following section outlines a potential framework which should be considered when developing information literacy programs. The framework is not intended to be prescriptive, but provides an outline that may assist with the establishment of conditions under which transfer is more likely to occur. The broad framework allows librarians to meet the expectations of educational stakeholders, but at

the same time establish a preparatory framework for transition to the workplace. In this framework information literacy is emphasised as a construction and reconstruction of learning, with different learning performances encouraged at each stage.

1. The preparatory (new student) stage. At this stage, learning performance is strongly related to developing an understanding of the library as an information environment and of information literacy as underpinning effective learning. Programs should focus on enabling a conceptual understanding of information literacy to develop. This understanding will be reinforced through the development of information skills which facilitate the development of practical knowledge of information access and use (related to library-based resources). The aim of this initial stage is to develop learning performance related to information skills and practices that will transfer within the learning context. Library skills such as effective searching and interrogation of databases and other information sources should be introduced.

    The key roles of librarians in this initial stage focus on developing a climate for transfer by affording opportunities for new students to develop library related information skills, demonstrating information practices and related concepts, and observing the practices of new students to identify gaps in their knowledge bases.

2. The intermediate stage. In this stage, information literacy practices focus on developing critical information literacy skills i.e., critical evaluation of information, problem-solving, reflecting on information-seeking practice, contextualising information practice in the context of a discipline or conceptualised practice (e.g., training manuals). In the intermediate stage, information literacy practices become more enmeshed with the concerns of curriculum and focus more towards discipline or competency-based approaches to information, including a focus towards the sources of information that are valued by the discipline or vocational practice. In the intermediate stage, information literacy needs to become embedded as part of the curriculum. The developments of conceptual and practical approaches to information use are still embedded in educational contexts and discipline based conceptualisation of work practice.

Key roles for librarians in this intermediate stage relate to affording opportunities for students to reinforce information skills developed in the earlier stage and to recast these practices in the context of curriculum or vocational requirements. Librarians should provide guidance of student information practice towards reflection of the use and application of information literacy practices. Observation of student practices will enable librarians to identify gaps in information literacy education.

3. The transition to work stage. In this stage, librarians need to construct a climate that will facilitate transfer from educational contexts to transitional workplace contexts. Information literacy practice at this stage alters to focus on facilitating the initial transfer from educational contexts to workplace contexts. This suggests moving beyond discipline-based understandings of work towards developing more situated understandings of information literacy practices at work. For information literacy practices to transfer, they must bear a resemblance to the actual information practices which occur at work. This means that students must be able to connect the know that, and know why of information literacy practice with the know-how which is situational.

    At this stage, collaboration with employers, trainers, other educators, and other students who are engaged in practicum or work placements becomes critical – to ensure that information literacy practices facilitate near transfer of information related competencies (such as critical thinking and problem solving) and practical skills which enable the newcomer to the workplace to engage with information access practices that relate to developing institutional understandings of work. In this sense, the librarian may be actively involved in creating information literacy programs which reflect authentic social, physical, and textual information literacy activities, in collaboration with experienced workplace practitioners whose situated knowledge needs to be enmeshed in the learning activities.

Underpinning such a program is the incremental development of skills and knowledge about content and context and facilitation of meta-competencies which would be supported by librarians as "information experts" whose role is to not only prepare students for an academic

life, but to prepare students for the transition into workplace learning by positioning them towards the sources of information which reflect the institution's requirements of work, and by providing them with a range of information skills which not only focus on textual practice, but also on social and physical information practices.

CONCLUSION

Information literacy and learning are extricably enmeshed. Information literacy is a catalyst which prepares people to learn effectively and, in the process of learning, information literacy facilitates the construction and reconstruction of the subject's positions by facilitating experience of the information environment. Through information literacy, we come to know what there is in an information environment. In an educational context, this manifests itself as a way of knowing codified knowledge, through the situated activities that relate to textual and virtual environments that engage the learner with meanings about academic performance and disciplinary understandings. In workplaces, information literacy, as a situational practice, is manifest through the coupling of codified practices (know that, know why) with physical practices (know how) and through access to shared meanings about practice which position the new worker towards developing intersubjective understandings about work performance.

The challenge for librarians is to address the issues of situational learning, and how we prepare students to learn using a range of information modalities, through the development of information literacy, which is transferable and relevant to the novice worker.

In this paper, information literacy is conceptualised as process, which facilitates a way of knowing. A model has been presented which illustrates the modalities of information, the process of transition, and the role that others play in ensuring transfer from conceptual knowing to embodied knowing is facilitated. While this model is reflective of a particular group, its importance lies in its ability to illustrate how the process of information literacy facilitates the movement from novice to expert, and to highlight the role that others play in that transition. It also demonstrates that the outcome of information literacy is not just the development of skills but a deeper connection and fluency with an information environment that facilitates a transformation from subjective workplace identity to an intersubjective workplace identity which underlies an ontological position for information literacy as a way of knowing, through the construction and reconstruction of information.

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