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# Chapter 1      Towards an alternative model for information literacy

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In recent years information literacy has emerged as a significant issue in higher education. What is meant by information literacy, the changing nature of the world which has generated the need for information literacy, and strategies for fostering information literacy have been the subject of considerable discussion. *Information literacy: a phenomenography* contributes to the conversation through proposing an alternative 'relational' model for information literacy to stand alongside the 'behavioural' model which presently dominates information literacy scholarship. It is with the progressive development of the new model that this thesis is concerned. The model unfolds through the initial chapters with a review of developments in 1) describing information literacy, 2) information literacy education and 3) information literacy research, including proposals for a relational treatment of these. This is followed by a report of an empirical study, the outcomes of which are central to the relational model, then by a discussion of the contribution made by the research outcomes and the new model to the three major facets of information literacy scholarship.

The empirical research, conducted to establish an initial core for the new model, was a study of higher educator's conceptions of information literacy. The focal question addressed was: What are the varying ways in which higher educators conceive of information literacy? The research approach adopted for the study was phenomenography, a Swedish approach which has had a considerable impact on thinking about teaching and learning in higher education. Phenomenography developed from a desire to understand how students approached learning

tasks and how they conceived of learning. From this work emerged the phenomenographic 'project' of describing conceptions and a 'relational approach to teaching and learning' which have informed this study. In addition, descriptions of the varying ways in which some aspect of the world is conceived have come to be described as its phenomenography (Marton 1981a, p.181). Thus the centrepiece of the relational model proposed may be described as a phenomenography of information literacy.

The purpose of this chapter is to establish the background to this study of the meaning of information literacy. It explores the historical and continuing emergence of information literacy, the limitations in our present understandings of the phenomenon, and leads into the remainder of the work using the following headings:

- Why has the idea of information literacy taken root?
- The rise and spread of the information literacy movement
- Information literacy related challenges to higher education
- Information literacy under scrutiny
- What was the research problem?
- Towards a relational model of information literacy
- Establishing the boundaries of the study
- Synopses of the remaining chapters in this thesis

### **Why has the idea of information literacy taken root?**

The concept of information literacy has its roots in the emergence of the information society, characterised by rapid growth in available information and accompanying changes in technology used to generate, disseminate, access and manage that information. Since the publication of the American Library Association's *Final Report* (1989), written by a group of librarians and other educators, the concept of information literacy has been widely adopted by the information and education professions. This interest in information literacy is largely a result of its close association with the idea of lifelong learning:

Ultimately information literate people are those who have learned how to learn. They know how to learn because they know how information is organised, how to find information, and how to use

information in such a way that others can learn from them. (American Library Association Presidential Committee on Information Literacy 1989, p.1)

The importance of information literacy to lifelong learning has captured the imagination of higher educators all over the world in a way that the earlier concepts of 'user education' and 'information skills' did not. In Australia, Candy, Crebert and O'Leary (1994), in their report *Developing Lifelong Learning Through Undergraduate Education*, highlight the importance of information literacy both as part of the profile of a lifelong learner and as an important element of the teaching-learning process. The emphasis placed on information literacy is revealed in their declaration that:

...access to and critical use of information is absolutely vital to lifelong learning, and accordingly no graduate - indeed no person - can be judged educated unless he or she is information literate. (Candy, Crebert and O'Leary, 1994 p.xii )

In South Africa Behrens (1992, 1994) and Gevers (1995) also endorse this relationship between information literacy and lifelong learning, and this endorsement has led to considerable activity in South African universities related to information literacy education as it has previously, particularly in the United States and Australia.

This association with lifelong learning explains the growth in interest in information literacy. Other explanations must be sought, however, for why the idea initially germinated and took root. The foundation for such explanation is the importance of the 'world of information' to information professionals. For many, changes in the world of information have been a sufficient justification for the introduction of the concept of information literacy. It is, in part, an understanding of this world, which is considered necessary to ongoing learning.

At least two models of the information universe, as it is in the late twentieth century, have been developed for teaching purposes and published. The first is a model which represents an information professional's mental map of the information environment (Rubens 1991, pp.278-9). This two-part mental map is comprised of the pre-bibliographic terrain, which includes institutional answer providing sources, and the bibliographic terrain, which includes bibliographic answer providing sources. The second is a model derived from exploring the life-world of information users (Huston 1990, p.694). The three information universes in this

model are the universe of everyday information, comprising natural communication networks; the universe of scholarly knowledge, including 'natural and designed' communication networks, and information storage and retrieval systems, comprising designed and rational communication networks. Huston (1990, p.693) also introduces the idea of the 'information web', as another way of describing the information universe and differentiates between the webs of networked researchers, librarians and novices. Fundamentally, she argues, it is the need to communicate which underlies the existence of the information universe. The webs are seen as 'communication systems' which 'individuals must navigate in order to obtain data that they can forge into information' (Huston 1990, p.693).

The need for the use of the term *information literacy* has also been attributed to overzealous librarians determined to promote the cause of library or information-based education. Nonetheless the genesis of the concept has come from the need to describe something very real. That 'something', has been the information literate individual, the ideal 'information consumer' in a rapidly and continually changing world of information. These changes in the world of information are characterised by increases in the volume of information, changes in information technology and changing communication patterns. Towards the end of the twentieth century these changes are accelerating and likely to be ongoing. People, to function effectively in their personal and professional lives, need to understand and interact effectively with their ever changing information environment. Recognition of this need, often described in terms of 'empowerment' of the individual, contributed further to the emergence of the concept of information literacy.

Also influencing the emergence of the concept were barriers to information access. The information explosion itself constitutes a barrier to information access, as do the costs of information searching, the limited availability of information sources, ignorance that new tools for information retrieval exist and poor skills for using the tools that are available (Dennis 1990, pp.39-40). These barriers, which potentially prevent people from exploiting their information environments, underline the need for a concept such as information literacy.

Consequently, information literacy is recognised as important in private life (Curran 1990, 1993; Owen 1995) and in the workplace (Behrens 1992; Doyle 1992; Takle Quinn 1991). It is now considered necessary to educate students, both undergraduates and research students, to cope with the changing information environment, and to provide professional development

opportunities for those who must foster information competence. In broad terms students and staff in higher education institutions must be helped to be information literate. Until now, as libraries are regarded as a 'significant public access point to this universe of information', it has been predominantly librarians who have claimed responsibility for playing 'a key role in preparing people for the demands of today's information society' (Breivik 1991a, p.33). This scenario is changing, however, as lecturers and staff developers are developing greater interests in the possible contribution of information literacy to education.

### **The rise and spread of the information literacy movement**

The information literacy movement has grown out of a concern with the potential role of libraries and librarians in education, in both school and tertiary settings. This concern first emerged in the late 1960s, in relation to school settings, alongside early developments in computer-based information technology. Although the first mention of the term 'information literacy' is usually attributed to Zurkowski (1974), much of the rhetoric of information literacy began to appear in the mid 1960s. Roe's (1965 a,b; 1969 a,b) discussion of these matters, for example, resembles today's discourse on information literacy. He links 'the intimidating growth of knowledge and the age of rapid technological change' with the need to 'learn to learn' (Roe 1969a, p.196) and points to the need for:

- children to be taught to be self reliant, able to obtain information for themselves, weigh evidence, make responsible decisions;
- libraries to provide the resources required for students to work on in the process of learning-to-learn;
- a closing of the gulf between those teachers who have little understanding of libraries and librarians and those librarians who have little understanding of education, its objectives, problems and methods;
- courses for teacher librarians to integrate the study of librarianship with the study of education;
- courses for teachers to be oriented towards 'the active use of libraries in teaching and learning and ...(focus) on practical experience in the use of library materials as a critical feature of teaching method...'; and

- the need to address the poor image of libraries and librarians. (adapted from Roe 1969a, pp.196-8)

Roe (1965b) outlines the problems which keep libraries and librarians from ensuring a critical role in education and identifies possible remedies, including:

- lobbying of administrators and government by pressure groups and influential individuals (p.192);
- revised strategies for teacher training (p.194);
- revised strategies for librarian training (p.196); and
- the determined perseverance of exceptional individuals (p.199).

Although we recognise, today, that libraries are only one component of an individual's information networks, all of these, thirty years later, continue to be critical strategies for achieving the adoption of information literacy programs. Furthermore, it seems that the intrinsic value of information literacy is no longer as easily recognised. Whereas Roe pointed to the emergence of the information society as impelling serious attention to 'fashionable talk about children 'learning to learn'' (1969b, p.184), librarians and others now appeal to the learning to learn discourse to ensure that their call for information literacy education is heard.

Paul Zurkowski (1974) first used the term *information literacy* in a report to the U.S. National Commission on Libraries and Information Science titled *The information service environment, relationships and priorities*. In this report Zurkowski advocates the establishment of a national program aimed at achieving information literacy within a ten year time frame. He describes information literacy in terms of an individual's capacity to use information tools and primary sources to address problems. The idea was, a few years later, defined as being about individual and organisational awareness of 'the knowledge explosion and how machine-aided handling systems can help identify, access, and obtain data and documents needed for problem solving and decision making' (Horton 1983, p.16). It has also been described as a core competence needing 'cooperative information skill curriculum development between educational sectors and in collaboration with stakeholders' (Burnheim 1992, p.195).

Rapid and widespread acceptance of the concept of information literacy since the release of the American Library Association *Final Report* (1989) has led to renewed emphasis on

information literacy in all education sectors. Information literacy is making a significant impact on educational curriculum as the relationship between information literacy and autodidactics, that is 'the independent pursuit of learning without formal institutional structures' (Candy 1991, p.411) is recognised. Today the meaning of information literacy has broadened considerably and the term represents a convergence of interests in the need to educate those who must live and work in our information society.

Since the 1970s the importance of information literacy has been represented by librarians committed to serving the information society and bridging the gap between the information rich and the information poor. In the late 1980s and 1990s, interest in information literacy mushroomed on all continents: America (ALA 1989; Doyle 1992, 1996; Farmer and Mech 1992), Europe (Hartsuiker 1986; Petterson 1994), Australia (Booker 1993, 1995, 1996; Kirk 1986), Asia (Breivik 1992), and Africa (Behrens 1990, 1992, 1994).

The international move towards information literacy is seen in the publication of United Nations' guidelines for the training of teachers in the integration of libraries and information skills into curriculum (Hall 1986). This document, which focuses on schools, identifies three areas for implementation of programs: 1) information skills and teachers' professional development, 2) information skills and the school library, and 3) learning how to learn and the school library. It includes case studies illustrating the implementation of such strategies in Zimbabwe, England, and the U.S.

In Britain, during the 1980s the British Library Research and Development Department gave priority to 'research examining the nature of information skills and illuminating the problems of teaching and learning those skills' (Kuhlthau 1990, p.23). The focus of attention here was also on schools; a range of reports on information skills and curriculum arose out of this work (for example, Hounsell and Martin 1983; Marland 1981). Perhaps the most enduring outcome was Marland's (1981) taxonomy of information skills, which continues to underpin information skills and information literacy programs.

Also in Europe considerable developments were taking place in the university sector where the importance of information skills instruction, particularly in relation to libraries was being increasingly recognised. Fjällbrant (1988, pp.229-30) contributed to the transition of user education programs from being targeted at orientation to education. Her implementation, at the

Chalmers University of Technology in Gothenburg, Sweden, of subjects designed to introduce postgraduate students and researchers to electronic and other information networks continues to be regarded as a model. With the emphasis being on education and the evaluation of information, Fjällbrant and her colleagues were targeting information literacy goals as they are understood today although the term itself was not being used. In the school sector, however, in the Netherlands, information literacy was an articulated goal in the mid 1980s. Computer and information literacy were the focus of a range of curriculum innovations (Hartsuijker 1986).

In the southern hemisphere, Australian librarians and educators have been protagonists for information skills and later information literacy education. In the late 1970s and 1980s the trend towards information skills education in schools compares with trends in Britain, with some state departments of education releasing guidelines to assist teachers working with information skills (see, for example, Education Department of Tasmania 1984; New South Wales Department of Education 1988). Kirk (1986) traces the steps in the school sector towards an emphasis on information literacy. She notes evolving concerns for literacy, computer literacy, technological literacy and the early establishment of the relationship between information skills and learning skills.

During the early 1990s, the release of a range of Government reports focussing on the need for information skills paved the way for intensive interest in information literacy in all education sectors (Hazell 1993), including the Jones, Ross, Carmichael and Mayer reports. This interest in information literacy has found a focal point in two conferences, held in Adelaide in December 1992 and 1995 (Booker 1993, 1996). The first conference held in late 1992 brought together teachers, librarians, academics and industry representatives to discuss future directions. The second, held in 1995, brought together a similar group to discuss recommendations for the articulation of information literacy curriculum across sectors.

In the university sector aspects of information access and management were taught throughout the 1980s and into the early 1990s under the guise of reader, or user education. A discernible shift towards information literacy has since occurred. This shift in direction has been augmented by interest from lecturers, a level of interest which has resulted in CAUT (Committee for the Advancement of University Teaching) grants being awarded to projects concerned with information literacy (see, for example, Appleton 1993; Birkett 1993;



McKinnon 1993). More recently, the previously mentioned *Developing lifelong learners through undergraduate education* (Canly, Crebert and O'Leary 1994) identified information literacy as a key characteristic of lifelong learners and an essential element of undergraduate curriculum.

Early developments of the information literacy movement in the United States are documented by Breivik (1991b, p.226). The publication of *Nation at Risk* in 1983, targeting educational reforms whilst ignoring issues associated with the information society and the role of library and information professionals, triggered advocacy for information literacy. Breivik asserts that the first U.S. educational reform report to acknowledge the role of libraries in education was published in 1985, but that the view of the library profession's involvement was limited.

Rader (1990a, p.19) points to the importance of the bibliographic instruction (BI) movement in the evolution towards information literacy. Two major landmarks in the development of bibliographic instruction are therefore important to the emerging understanding of information literacy. The first Bibliographic Instruction 'Think Tank', held in 1981, discussed the role and strategies of librarians and libraries in learning; the second 'Think Tank', held in 1989, determined that information literacy was a broader concept than bibliographic instruction. By the early 1990s the emphasis of library instruction in schools and higher education had begun to shift from a Bibliographic Instruction to an information literacy focus (Kuhlthau 1990).

Up until the mid 1980s the most significant events in the development of information literacy in the U.S. were in the school sector. In 1987 the focus shifted to include tertiary institutions, with the convening of a national symposium for leaders in higher education, including librarians, to explore the role of libraries in the search for academic excellence. An important outcome of this symposium was the establishment of the ALA (American Library Association) Presidential Committee on Information Literacy in the same year. This was followed in 1988 by the publication of *Information Power: guidelines for school library programs*, and the *Final Report* of the ALA Presidential Committee in 1989. Also in 1989 the National Forum of Information Literacy was convened to act as an umbrella organisation for the promotion of information literacy (Breivik 1993).

In the tertiary sector the integration of information literacy into curriculum began to receive the serious attention of lecturers (Farmer and Mech 1992). Prior to this the information

literacy movement had largely been adopted by those involved in bibliographic instruction. Not surprisingly changes in bibliographic instruction programs to encompass the many and varied aspects of information access and management meant that the term 'bibliographic instruction' no longer adequately conveyed the nature of the designated programs.

Other geographic regions, with the exception of South Africa (Behrens 1990; Marais 1992; September 1993), have been comparatively silent in the ongoing information literacy conversation. This silence does not suggest lack of interest as Breivik (1992), for example, mentions interest generated by Hannelore Rader in China. We may expect other nations to contribute to the conversation through the literature and other forums in coming years.

### **Information literacy related challenges to higher education**

The concept of information literacy has considerable significance to the higher education community. Along with other educational sectors, this community must ensure that its members are empowered to utilise the changing information environment both within the academic context and in the wider community. Further, the changes in the world of information, which are present in the microcosm of the scholarly community, need to be accounted for in both research and teaching-learning contexts. The aim is to ensure relevant and timely research outcomes and graduates who are able to contend with the world of information independently.

The notion that information literacy is important to learning in higher education has been stressed many times during the early to mid 1990s:

- Information literacy is a key characteristic of lifelong learners (Candy, Crebert and O'Leary 1994).
- Information literacy is an essential focus of undergraduate curriculum (Candy, Crebert and O'Leary 1994).
- Information literacy is a core competence which needs to be developed with increasing sophistication in the journey from school to work (Burnheim 1992, p.195).
- Information literacy is important to the improvement of the teaching learning process (Simmons 1992, p.15).

- Information literacy is emerging, as one of the most critical literacies for an educated person in the 21st century (Farmer 1992, p.103).
- The threshold issue for colleges and universities in the Middle States region is the need for a campus-wide commitment to information literacy as a strategy that will improve the immediate learning experiences of each student in every discipline and one that will enhance the student's lifelong learning (Commission on Higher Education 1995, p.1).

Information literacy is important to higher education curricula both in terms of the '*what*' and the '*how*' of learning. These terms, used by the advocates of a relational approach to teaching and learning, refer to the *content* and the *process* of learning. In relation to information literacy education the '*what*' refers to the content of learning about information literacy, that is meta-learning about information literacy. Students need to understand what information literacy is, as well as learn to engage in the processes of effective information use. This latter aspect, the '*how*' of learning, refers to the implementation of teaching-learning strategies which enhance information literacy whilst simultaneously developing substantive knowledge. Approaches presently used for information literacy education will be discussed in chapter four.

Alongside the importance of information literacy sit a series of challenges to higher educators. The first of these stems from difficulties noted by Glass Schuman (1990, p.4), who assigns the idea of the information society, a society in which individuals have access to, and are empowered by, the volumes of information being generated, to the realms of fantasy. Her pointing to the difficulty which people have in dealing with the information society, together with the overwhelming experience of library anxiety (Mellon 1986) and information anxiety (Wurman 1989), bring into focus the major information literacy related challenge to higher education:

- *To graduate students who are information literate.*

This challenge, of graduating information literate students, brings with it two further challenges:

- *To provide access to the increasing number and manner of information resources and systems to staff and students.*

- *To provide opportunities for students and staff to learn to use information effectively.*

Challenges of providing access bring with them problems of deciding what services should be provided to discrete groups in the academic community. These services are usually provided by a Division of Information Services, or equivalent, comprising such units as computing services, the university library, and audio-visual services. Although a wide range of information sources and systems is usually available, funding constraints often require that limitations be placed on the availability of some systems and services.

In university libraries for example, services such as interlibrary loans and access to a full range of commercial online databases, are often only available to university staff and research students. Undergraduate students are usually limited to the resources available within their own library or library system; although as commercial live databases are charging more competitive rates these are also being made available on a limited basis to undergraduates. Similarly telecommunications networks such as AARNet and the Internet may not always be accessible to undergraduate students. This scenario is usually acceptable where traditional academic curricula are taught, without emphasis on information literacy education. When information literacy education becomes a priority at all levels of higher education, then the widening of access to all students is critical. This makes the challenge issued to libraries relevant to other information service providers in the university: '...a library that does not transcend its own limitations falls into the same entrapment of classroom and text book learning' (McCrank 1992, p.493).

Challenges of providing opportunities for learning to use information effectively are directed at curriculum developers, lecturers and librarians involved in curriculum design, implementation and evaluation. Students need to learn 'to survive in information rich environments' (Eisenberg and Small 1993, p.263). Designing these programs poses further challenges for educators.

- *How should information literacy programs be designed, implemented, evaluated? Do students' information literacy needs differ at different levels, and if so how?*

- *What is the role of libraries and computer centres in the design, teaching and resourcing of information literacy education, and furthering the experience of information literacy?*

The challenges at undergraduate and postgraduate level may differ. Postgraduate students experience an initiation into the world of information as part of their induction into research culture. This initiation can be seen as a learning experience during which their experience of information literacy is likely to change. Undergraduates and other coursework students are not likely to become familiar with the world of information related to their discipline/area of professional interest unless their courses are structured to provide them with the relevant opportunities. The challenge in postgraduate education is therefore to foster the experience, in a research context, which necessarily forces students into encountering the challenges of the information environment. For undergraduates, the challenge is to provide them with contexts which will require them to encounter the information environment. In both undergraduate and postgraduate education there is an ongoing challenge to ensure that experiences gained in the academic environment are transferable to professional and other contexts.

Both information services divisions and educators generally, however, are responding to these challenges whilst our understanding of information literacy, particularly the different ways in which it is experienced, is still limited. Our limited insights into information users' experiences make it difficult to communicate the nature of information literacy and make it difficult to design and evaluate information literacy programs (Arp 1990). An overview of the limitations in our understanding of information literacy is presented in the following section.

### **Information literacy under scrutiny**

Despite the widespread acceptance and use of the idea of information literacy in a range of educational forums, the idea of information literacy has been scrutinised, and challenged, several times since the mid 1980s. The meanings we presently have access to, which will be the focus of attention in following chapters, come from scholarly descriptions of information literacy, information literacy education programs and some research studies. Nevertheless our understanding of information literacy is problematic. The term *information literacy* is:

... not well defined by theoreticians and practitioners in the field, and so a great deal of confusion will occur unless we continue to articulate the parameters of this question.' (Arp 1990, p.49)

Amongst practitioners and scholars of information literacy and information literacy education there is lack of precision in use of the term. This is evident in the uncertainty about the distinction between information literacy, bibliographic instruction and library skills programs. This uncertainty points to a lack of clarity about the nature of information literacy, and the difference between this phenomenon and its predecessors, such as library literacy. Evidence for this uncertainty is found in periodic use amongst practitioners, and in scholarly writing, of *information literacy* alongside other terms, such as 'information skills', 'library skills' and 'bibliographic instruction'. Examples are found in a range of document types, from journal articles (Fatzer, van Pulis and Birchfield 1988) to curriculum guides (Cody, Grassian and Jacobson 1993; Gratch 1992). The following phrases are extracted from these documents:

...information literacy/library skills;

...library/information literacy instruction (Fatzer, van Pulis and Birchfield 1988, p.77); and

...library/information literacy skills instruction (Gratch 1992).

In the introduction to a new Bibliographic Instruction course syllabus:

'...information literacy or user education or bibliographic instruction';

and in the objectives, '...bibliographic instruction/information literacy' occurs (Cody, Grassian and Jacobson 1993). These other terms, in most critical writing, are not considered the same as *information literacy*.

Lack of precision in the use of varying terms, such as those above, is compounded by varying use of *information literacy* itself. A range of definitions and descriptions of information literacy is found in contemporary literature on the subject, and discussion about the differences between information literacy, library skills, computer literacy and bibliographic instruction programs continues. These issues are discussed in detail in chapters two and three.

Some writers in this field acknowledge this terminological confusion, including Lawrence McCrank (1992) who details some of the different uses of the phrase, while others point to our

present relatively fragmentary understanding of the concept. Others recognise that the skills and competencies which may be said to comprise information literacy are undefined (Kwasnik 1990, p.127), and that the 'concept and definition of information literacy continue to emerge' (Ford 1991, p.314). McCrank (1991, p.42) emphasises that those who are committed to furthering the cause of information literacy are 'doomed to partial success unless the concept undergoes further definition, refinement and delimitation of its objectives'. Our lack of understanding is partly due to the recent and continued emergence of both the phenomenon itself and scholarly understanding of it. It is not surprising, given this background, that some scholars have reached the conclusion that 'information literacy is indeed a phrase in quest of a meaning' (Foster 1993, p.344). Another author comes to the same conclusion that information literacy is another way of expressing one of the outcomes of a sound general education. All that is different is the nomenclature - and perhaps the toys' (Cavalier 1993, p.20).

The terminological confusion described above is accompanied by scepticism on the part of some scholars regarding the validity of the concept of information literacy (Coons, Schlabach and Barnes 1989, p.4), and criticism of existing descriptions (Foster 1993). Vareljs (1991, p.1) asks: What is information literacy? Is it simply the latest buzz word...? White (1992, p.78) similarly does not favour the phrase, and Foster (1993, p.346) regards its use as primarily 'an exercise in public relations'. Lack of conviction about the term information literacy is not a denial of the phenomenon which it labels, it is possibly symptomatic of the lack of a sufficiently deep understanding of it.

Problems of meaning are accompanied by discrepancies in the paradigms associated with information literacy. Although researchers are leaning towards qualitative approaches (Doyle 1992), and constructivist approaches to teaching and learning are being preferred by educators (Todd 1995, Kirk 1995), the primary picture of information literacy prior to the development of the relational model, was painted in terms of attributes of individuals. In addition, these understandings were predominantly the views of information literacy scholars and researchers rather than the views of information users. Fundamentally, the only picture of information literacy which was available was framed in the declaration that information is objective and literacy is a characteristic of individuals. New ways of thinking about information (Dervin 1994) must be allowed to transform our understanding of information literacy as well as our teaching practices. Similarly, contemporary scholars of literacy are arguing for a move away from the idea of literacy as the 'unified "possession"' of an individual or as a set of

transportable skills, and toward the idea of literacy practices-that...shape...the everyday lives of individuals and communities' (Freebody 1994).

Clearly a coherent framework for information literacy is required which reflects changes in thinking about information and literacy and which may better serve the needs of practitioners interested in reflective, problem-based and resource-based approaches to teaching and learning. Although the relational model of information literacy may not be completely consonant with some of these approaches, given its emphasis on changing ways of conceiving of phenomena, it is not in conflict with them.

The research presented here, is the second substantial work concerned with the meaning of information literacy. The first was completed by Doyle (1992), at about the same time that the ground work for this study commenced. Doyle used the Delphi technique to achieve a consensus definition of information literacy amongst a large pool of information literacy scholars. So why was the second study, my own, conducted? The two studies, although sharing very similar intentions - to enhance our understanding of information literacy - are very different in character. Doyle's study served particular political ends. She sought to work within a paradigm acceptable to curriculum authorities in the United States and to provide outcome measures for assessing learning. My study also has a political purpose. It is intended to bring our understanding of information literacy into a new educational paradigm which has slowly been gaining acceptance in the higher education community. The major differences between Doyle's approach to information literacy and the approach captured in the relational model are found in Table 1.1.

As this study progressed, further evidence was found in the literature to support the idea that it was reasonable to seek variation in people's experience of information literacy. For example, Plomp and Carleer attribute problems in relation to developing information and computer literacy programs in Netherlands' schools to varying interpretations:

Information and computer literacy as a label for a new domain may mean different things to different people. This can be partly a consequence of not being well informed about the goals and content of (information and computer literacy), but also because what is being conceived as (information and computer literacy) is still developing. (Plomp and Carleer 1987, p.58)



Table 1.1 Contrasting characteristics of alternative pictures of information literacy

Doyle's (1992) picture of information literacy	The relational picture of information literacy
derived from scholars' views	derived from users' experiences
derived from seeking consensus	derived from seeking variation
derived using the Delphi-Technique	derived using phenomenography
recommends constructivist approaches to teaching and learning	recommends relational approaches to teaching and learning
sees information literacy as measurable	does not see info. literacy as measurable
sees information literacy as definable	sees information literacy as describable
sees information literacy as quantifiable, asks how much has been learned?	does not see information literacy as quantifiable, asks what has been learned?
portrays information literacy in terms of attributes of persons	portrays information literacy in terms of conceptions, ie subject-object relations
focuses on personal qualities of the individual apart from the environment	focuses on personal qualities in relation to the environment

Curran and Cavalier both supply further evidence to suggest that their thinking about information literacy differs from that of those with whom they interact:

Information literacy does not mean knowing how to read. It does not mean knowing how to use the information place. Many people however do not understand this. In their confusion they announce at meetings that their libraries are heavily into information literacy because of some computer-assisted tour that they have created. (Curran 1993, p. 258)

When I asked a Pro-Vice Chancellor of a university in Sydney, did she know the term information literacy, she disappointed me by saying 'Yes, I do'. While she was not actually able to define the term, she thought it probably meant effective use of libraries. (Cavalier 1993, p. 19)

### **What was the research problem?**

The aim of this study was originally to enhance our understanding of information literacy through describing conceptions of information literacy amongst a group of information users,

that is higher educators. In order to approach this task it was clear that new ways of thinking about describing information literacy, information literacy education, and information literacy research were required. To capture the dominant paradigm, and the alternative one being proposed, two information literacy wheels were created. As the study progressed, the wheels came to represent alternative models for thinking about information literacy. Thus the initial aim of the study broadened to constructing an alternative relational model for information literacy, to which the empirical study contributed one part. The focal problem addressed in the empirical study is described further in this section, and the alternative models are presented in the next.

The empirical part of the study, wherein data was gathered from a group of participants for analysis, sought higher educators' conceptions of information literacy. Marton describes the set of conceptions uncovered as representing the 'collective intellect' of a population:

The collective intellect can be seen as a structured pool of ideas, conceptions underlying the possible interpretation of reality, and it is enhanced steadily as new possibilities are added to those previously available. (1981, p.181)

Conceptions of information literacy may be defined as qualitatively different relations between individuals and some aspect of their information environment which could not be predetermined. Varying conceptions are also often described as different ways of seeing, experiencing or understanding a phenomenon. The set of conceptions taken together, represent the phenomenon being studied. Higher educators were chosen as participants because their varying experience of information literacy may be expected to shape that of higher education graduates.

My study had the following purposes stemming from its primary aim:

- to identify varying conceptions of information literacy amongst one group in the higher education community that interacts extensively with information;
- to develop descriptions of information literacy which reflect the experience of information literacy amongst the study's participants;
- to develop deeper and/or new understandings of information literacy as a result of the variation identified;

- to ascertain the implications of the variation identified for stakeholders involved in teaching and learning information literacy in universities.

Engaging in such a study required three changes in approach to information literacy. These were changes in relation to ways of describing information literacy, ways of teaching information literacy and ways of researching information literacy. These three changes, discussed below, provided an internally consistent framework within which to conduct the empirical study into varying experiences of information literacy.

### **Towards a relational model of information literacy**

Scholarly understanding of information literacy is informed by writings focussing on descriptions of information literacy, information literacy education and a limited number of research studies. These understandings have been cast in a framework which regards information literacy in terms of attributes of individuals, which sees learning to be information literate as acquiring the relevant attributes, and which focuses on researching the views of experts. To date these views have been mainly informed by behaviourist and information processing paradigms. They are depicted as an information literacy wheel in Figure 1.1a.

Uncovering varying conceptions of information literacy required a different framework within which to approach information literacy in all three areas: descriptions of information literacy, information literacy education and research. The empirical study, therefore, was framed within three changes in our ways of thinking about information literacy, each of which was eventually translated to form a key element in the relational model of information literacy. These are also graphically depicted in an alternative information literacy wheel in Figure 1.1b.

Each of the proposed changes is described below:

- (1) *Towards a relational view of information literacy.* This involved a change from describing information literacy in terms of attributes (skills, knowledge and attitudes) to describing it in terms of varying conceptions or experiences which are defined in terms of relations between people and aspects of the world.

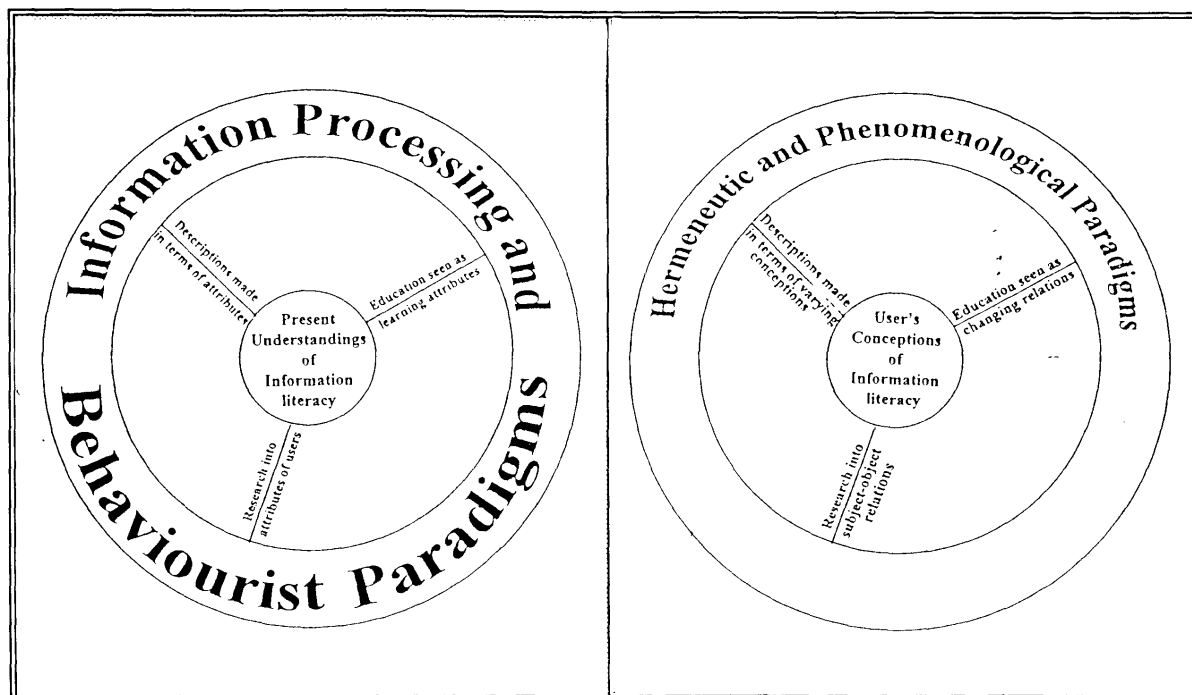


Figure 1.1a Dominant paradigms informing understandings of information literacy

Figure 1.1b Alternative paradigms informing understandings of information literacy

- (2) *Towards a relational view of information literacy education.* This involved a change from viewing learning information literacy as the acquisition of attributes to viewing it in terms of changing conceptions or ways of experiencing aspects of the world.
- (3) *Towards researching relations between users of information and aspects of the world.* This involves a change from researching both the understandings of experts and information users to researching conceptions, or the varying relations between people and aspects of the world.

These shifts, which will be examined in detail in subsequent chapters are grounded in an experiential, or phenomenological, world view. Although the shifts have been initiated to frame the study of higher educators' conceptions, when the alternative information literacy wheel is considered as a potential information literacy model, its central core is clearly empty. The central core of the wheel representing the dominant paradigm is readily available, in the form of lists of attributes of information literate people. The outcomes of the study, described

in later chapters, allowed the completion of the wheel and its transformation into an alternative model for information literacy.

The completion of this study is significant for the following reasons. It has:

- yielded descriptions of information literacy, in the form of conceptions, which are based on information users' experiences;
- enhanced our understanding of how information literacy appears to people;
- paved the way for trialling an approach to information literacy education based on seeing learning as changing conceptions;
- paved the way for continued application of the phenomenographic approach in information literacy research;
- provided a basis for awareness raising about differences in conception amongst tertiary educators; and
- provided a basis for enhancing communication amongst educators who may conceive of information literacy differently.

The primary contribution of the study, however, is in the adoption of a conceptual framework which views information literacy relationally, that is in terms of varying conceptions. The study makes a contribution to the theory of information literacy, both in adopting such a framework and in devising descriptions of information literacy which are consistent with that framework. This contribution has immediate implications, listed above, for information literacy education in higher education institutions. It also has wider implications for information literacy education generally, for the professional development of librarians and other educators, and for future research efforts.

### **Establishing the boundaries of the empirical study**

Having commented on the significance of the empirical study, I must also establish its boundaries.

Firstly, the empirical research conducted was intended to explore one of the problems associated with information literacy. The primary question is one associated with meaning:

What are the different ways in which information literacy is experienced by people? The outcomes contribute to the relational model of information literacy. What curriculum developers and researchers may do with this model, although of interest to the study, is of secondary importance.

Secondly, the study inquires into how information literacy is experienced, not into what it is. The question being posed is 'What are the different ways in which information literacy is conceived, that is, seen, experienced, or understood? not 'What is information literacy?' However, if we accept that a phenomenon 'may be seen as a complex of the different ways in which it can be experienced' (Marton 1992, p.4), discovering the varying ways in which information literacy is conceived provides insights into the latter problem.

Thirdly, the various conceptions discovered belong to the context from which they are derived, that is the academic culture of higher education institutions. Descriptions of these conceptions portray the varying experience of members of the group who belong to that culture. The conceptions do not belong to individuals or the discrete groups which make up the culture. The study does not address the question of whether the experiences of the various sub-groups differ.

Fourthly, conceptions of information literacy identified in this context are a subset of those belonging to the larger context in which information literacy is experienced by a wide range of people in wide range of situations. Although the conceptions identified here are likely to apply to contexts other than the higher education arena, the phenomenon will need to be explored in those contexts to discover further variation in the experience of information literacy.

Finally, the conceptions were discovered as a result of interviews which took place in 1994. Although it is unlikely that the categories describing them will be rendered obsolete, it is likely that ways of conceiving of information literacy will change over time. In the context of continuing rapid change in the world of information it is difficult to predict how information literacy may be conceived in the future. It is not within the boundaries of this study to do so.

## Organisation of the thesis

My thesis which develops a relational model of information literacy and reports the empirical study which contributes to that model, reflects an emerging picture of information literacy. In each chapter pictures of information literacy are presented, against the backdrop of the relevant literature belonging to the moments in time with which the chapter is concerned. Thus, the second, third and fourth chapters examine developments pertaining to information literacy advocacy and scholarship that were available in early 1994, the time when I was beginning to form the relational model. At that time most available literature was dated 1993 or earlier.

On completion of the data analysis, the outcomes of the study were discussed in relation to the earlier literature review and documents that had since become available. New directions for information literacy are therefore proposed, together with the complete relational model, in the seventh chapter, within the context of developments in information literacy scholarship available up to early 1996.

The remaining chapters of my thesis are organised as follows:

### *Chapter Two: Historical and contemporary descriptions of information literacy*

Chapter two deals with the first spoke in the information literacy wheel: descriptions and definitions of information literacy. It opens with a review of concepts influencing the idea of information literacy, such as information technology literacy, library literacy, computer literacy and information skills. It then reviews the varying ways in which the concept of information literacy is understood from the early 1970s to the close of 1993. The chapter concludes with a summary of paradigms influencing contemporary approaches to information literacy and proposes the use of an experiential paradigm which allows information literacy to be described from a second-order perspective. This becomes the first element of the relational model of information literacy.

### ***Chapter Three: Information literacy education***

Chapter three deals with the second spoke in the information literacy wheel: information literacy education. It describes predecessors to information literacy education, including library instruction and bibliographic instruction, then examines contemporary approaches to information literacy education to the close of 1993. The chapter concludes with a summary of educational theory underpinning contemporary approaches to information literacy education and proposes, as an alternative, the relational view of teaching and learning, involving changing ways of seeing the world. This becomes the second element of the relational model of information literacy.

### ***Chapter Four: Information literacy research***

This chapter focuses on the third spoke in the information literacy wheel. It reviews the background to research into information literacy focussing particularly on the area of information needs and uses. It then examines existing research into information literacy and highlights research directions recommended in the literature, again to the close of 1993. The last part of the chapter argues for a change in research approach from exploring the characteristics of people, to describing their conceptions or ways of experiencing aspects of the world. This becomes the third element of the information literacy model framing the subsequent inquiry into higher educators' conceptions of information literacy.

### ***Chapter Five: Thematising conceptions of information literacy***

Chapter five examines the research approach called phenomenography and the specific techniques designed to uncover tertiary educators' varying conceptions of information literacy. Included in the chapter are descriptions of the participants in the study, the data gathering instruments and the pilot study through which these were trialled. The analysis techniques used for identifying conceptions from the data gathered, the form of the research findings, and the basis on which these findings are defended, are also described.



### ***Chapter Six: Descriptions of conceptions of information literacy***

This chapter contains the outcomes of the empirical study, the beginnings of a core for the new relational model. The chapter opens with a description of the collective experience of information literacy amongst higher educators in the form of an outcome space. The section outlines the variation in the conceptions uncovered and describes the logical relations between them. A detailed analysis of each conception, including its structural and referential components, in the form of categories of description, follow.

### ***Chapter Seven: New directions for information literacy***

This final chapter summarises the research outcomes. It reviews the significance of the study and the contribution made to the theory of information literacy, information literacy education and the future research agenda. It establishes new directions for information literacy scholarship based on the completion of the relational model for the phenomenon. Attention is focussed on implications for higher education stakeholders with responsibility for teaching and learning, staff developers and researchers.

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## Chapter 2      Descriptions of information literacy

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In this chapter I examine descriptions of information literacy that were available in the literature before I commenced the empirical study. These descriptions form the first spoke in the *information literacy wheel* introduced in the previous chapter. They represent prevailing trends in writing about information literacy, and are likely to influence the views of those responsible for information literacy education. Most importantly, they demonstrate the considerable variation in how information literacy is being treated in the literature. Then, towards the close of the chapter, I argue for the first of the three shifts in thinking about information literacy which frame my empirical study into higher educators' varying conceptions of the phenomenon. This is the change from describing information literacy in terms of personal attributes, to describing it in terms of experiences or conceptions.

To understand the range of contemporary descriptions of information literacy present in the literature, it is first necessary to know something of other concepts that have influenced, and are continuing to influence them. These, and the varying descriptions of information literacy are examined under the following headings:

- Conceptual influences on information literacy
- Varying descriptions of information literacy
- Towards an alternate approach to describing information literacy: from attributes to conceptions.

## Conceptual influences on information literacy

The idea of information literacy has been influenced by five other concepts associated with elements of the emerging information society: information technology literacy, computer literacy, library literacy, information skills, and learning-to-learn. These concepts, depicted in Figure 2.1, all coexist with the idea of information literacy and are themselves subject to ongoing discussion about their meaning. Each one is also systematically differentiated from, or incorporated into, contemporary descriptions of information literacy. This has led to *information literacy* sometimes being used as a substitute term for one of the other concepts. Information skills, library skills and information technology skills, for example, are at times interpreted as information literacy.

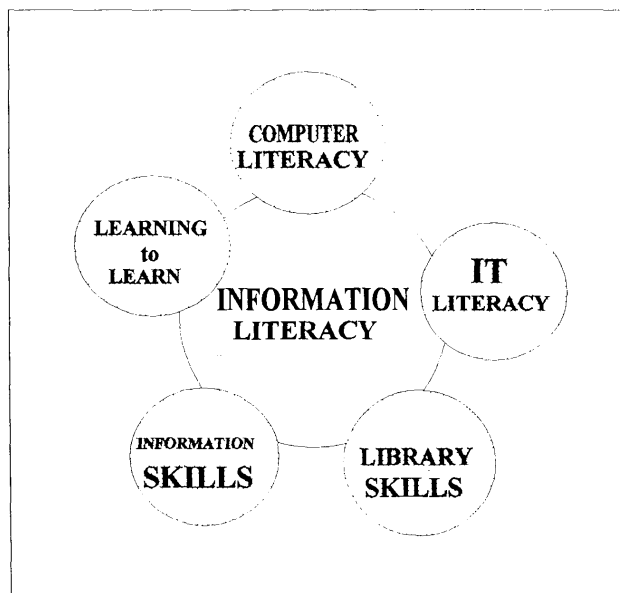


Figure 2.1 Concepts influencing and co-existing with information literacy

That the various terms should be clearly differentiated from information literacy, however, is '...not mere semantic fussiness. Well-intentioned people are often confused on this issue' (Curran 1993, p.262). It is as much to distinguish between these ideas and information literacy, as to demonstrate their relationship with that phenomenon, that these ideas are now elaborated. The impact of the conceptual influences on our understanding of the phenomenon will be seen in the next section of this chapter which reviews varying approaches to describing information literacy.

## ***Information technology literacy (ITL)***

Associated with the information age are the many technologies being developed and used for producing, managing, storing, disseminating and accessing information. Some of the more familiar of these include personal computers and their associated software, mainframe computers, telecommunications, CD-Rom, online databases and interactive videodiscs. Making an impact on higher education since the early 1990s have been facilities such as the Internet, gophers, Archie, Veronica, World Wide Web (WWW) and Wide Area Information Systems (WAIS). All these are used in many facets of society including the higher education sector where their intended function is to support teaching and learning, research and scholarly communication. The concept of information technology literacy, which has emerged in parallel with other concepts such as information skills and information literacy, focuses primarily on a person's ability to use these new and continually changing technologies.

In the *Encyclopedia of Library and Information Science*, information technology literacy is described as knowledge:

In the broadest sense, ITL is the knowledge which allows an individual to function efficiently and effectively in whatever circumstances one finds him/herself in a technologically oriented society. (Penrod and Douglas 1986, p.76)

When that description is elaborated, eight competencies are identified which together, Penrod and Douglas argue, comprise a definition of information technology literacy. These are the ability to:

- operate and communicate with technological devices;
  - understand how subsystems fit together to form systems or networks;
  - understand documentation and how to utilise applications software;
  - understand the basic jargon or terminology of information technology;
  - solve problems through the use of technology;
  - identify and use alternate sources of information;
  - discuss the history and future of information technology; and
  - have some insight into the ethical and human impact issues of information technology.
- (Penrod and Douglas 1986)

Thematised, or brought into focus in this description are the technologies, typically electronic technologies although this is not made explicit, which help people to use information. Many

elements of information literacy, as it is described in the literature, such as valuing information, being able to identify information problems, evaluating information and understanding what happens as knowledge is transformed in various stages of its life cycle, are not recognised as important elements of information technology literacy.

Of particular interest, however, is the inclusion of the sixth ability: 'identify and use alternate sources of information'. Its presence in the definition of information technology literacy points to an area of overlap between this concept and the ideas of information skills and information literacy. The ability to identify and use information sources is usually, as will be seen later, identified as an important part of the information skills taxonomies that underpin information literacy curricula. For some scholars, however, the idea of information literacy is so closely aligned to information technology literacy that the terms are treated as synonymous, that is information literacy is simply used as a new label for information technology literacy.

### *Computer literacy*

'Computer literacy is an understanding of what computer hardware and software can do' (Kuhlthau 1990, p.16). In this sense it is a component of information technology literacy. There is, however, a range of definitions of computer literacy, and some disagreement about what it includes, for example whether or not computer literacy includes a knowledge of programming (Levin 1983).

The concept is often associated with the use of personal computers, but may be interpreted as having a broader meaning. Over the years there has been a shift in orientation from describing computer literacy in terms of operating computers to a focus on their application and use (Kuhlthau 1990, p.16). Following is a selection of goals that capture the broader dimensions of computer literacy:

- being able to program computers;
- knowing how to use software packages;
- understanding about the structure and operation of the computer;
- knowing about the history of computers;
- understanding the economic, social and psychological impact of computers;
- developing literacy in a personal computer environment; and
- being able to turn naturally to the computer for problem solving. (Trauth 1986, p.252)

The relationship between computer literacy and information literacy is also complex. In some descriptions of information literacy, computer literacy plays a prominent role, usually involving a claim that information literacy goes beyond computer literacy (Horton 1983). Many advocates of information literacy point out that not all information is available through computers and that 'computer-stored information is only as good as the sources from which it is taken' (Breivik and Gee 1989, p.12). Computer literacy is, however, usually recognised as 'a subset of information literacy' (Breivik 1993, p.13).

### *Library literacy*

The concept of library literacy, or library skills, can be defined as the ability to use libraries. There are two main approaches to interpreting the concept of library literacy. The first of these is a narrow interpretation which focuses on a person's ability to retrieve information from library resources. Behrens (1990, p.355), for example, claims that 'library skills concentrate on the mechanics of obtaining information...The skills required are essentially lower-level location skills, not higher level intellectual skills'. In this view library skills are seen as the ability to use the range of tools for accessing information available through libraries. These may include the library online catalogue, other electronic databases, microfiche, videodiscs, Internet sources and so on; indeed in most university and other libraries a broad range of information technologies can be encountered. The focus, however, is on the effective use of the tool, and the location of the information required, rather than on problem solving, evaluation and other elements of the process of using information.

The second approach adds to familiarity with location skills, the notion of interpretation skills within the library context. Interpretation skills involve using information once it has been found. They encompass critical thinking, particularly the ability to evaluate and synthesise information. In this second approach to the idea of library literacy, location and interpretation skills are inseparable (Kuhlthau 1990, p.15). Unfortunately, the recognition of process skills beyond locating information as being an essential part of library literacy is not 'commonly acknowledged' (Kuhlthau 1990, p.15).

When library skills are recognised as incorporating the broader skills of information use, which are engaging in formulating information problems, finding, managing, evaluating and synthesising information, then the concept comes close to the ideas of information skills and information literacy. The context in which the skills are used, and the particular nature of the

tools through which information is found, are the differentiating factor, making library literacy a subset of the other two. In describing a broader view of library literacy Kuhlthau suggests that the library be seen as an information system within which students can learn the essential components of other information systems (Kuhlthau 1990, p.15). Essentially, the library is considered a microcosm of the world of information; once learned about, students are able to apply their understanding of information systems to those beyond the library.

This broader view of information literacy may explain why it is that some librarians refer to library skills as information literacy. For them, the library is one context within which information literacy can be learned, and then applied in future to other contexts. This claim can only be defended, however, when an appropriate process approach is taken to teaching and learning library use.

### *Information skills*

The idea of information skills dates from around the mid 1980s. It was around that time that most of the relevant taxonomies were developed. This makes the term *information literacy* somewhat older than the term *information skill*. Nevertheless, the idea of information skill has competed strongly with that of information literacy, and continues to do so. In general, the term *information skill* may be said to focus on the intellectual processes of information use. Although the idea has mainly been promoted by those with an interest in teaching library use, the processes involved are decontextualised and thus made relevant to learning in contexts outside the library. Where these skills are taught in relation to the use of library resources, it is stressed that they are not intended to be specific to libraries, nor to any one library or its collections. The skills are described as 'information-based, not library-based' (Kirk 1986, p.84). This approach recognises that the skills are applicable to the library context, but that they can also be used in other information settings.

Not only do the processes reflect an abstraction away from library use, they also reflect an abstraction away from information technology. The ability to use information technology, while required in some applications of information skills, fades into the background in the taxonomies describing them. Both libraries and information technology are seen only as sources of information relevant to one aspect of the overall process.

The close association of information skills with library skills is seen, however, in the early references to *library and information skills*. Perhaps the most famous information skills taxonomy, the 'Big Six Skills', was designed as:

...a library and information skills curriculum designed around (1) the information problem-solving process and (2) Bloom's taxonomy of cognitive objectives. The emphasis is on developing a logical, critical thinking approach to information problem-solving and not on those skills associated with merely locating and accessing information sources. (Eisenberg and Berkowitz 1988, p. 99)

The six skills proposed by Eisenberg and Berkowitz are:

- **Task definition:** determining the nature of the information problem and defining the purpose for the information search.
- **Information seeking strategies:** determining the type of sources and strategies for acquiring the sources required to meet a previously defined information task.
- **Location of & access to information:** finding sources and retrieving specific information from sources.
- **Use of information:** applying information to defined information needs.
- **Synthesis:** integrating, structuring and repackaging information to meet defined task.
- **Evaluation:** judging the information problem solving process and whether the information need was met. (Eisenberg and Berkowitz 1988, p. 101)

A few years later, Eisenberg and Small (1993, p.269-270) similarly describe information skills as comprising 'information acquisition methods, information seeking process and information problem solving skills'. More specific aspects involve topic analysis, information seeking, storing, evaluation and presentation. All of these components are included in most information skills taxonomies. Another such taxonomy, which appeared before the Big Six Skills, is that developed by Marland. Marland's taxonomy is based on questions which need to be addressed when working with an information problem:

- What do I need to do? (formulation and analysis of need);
- Where could I go? (identification and appraisal of likely sources);
- How do I get to the information? (tracing and locating individual sources);
- Which sources shall I use? (examining, selecting and rejecting individual sources);
- How shall I use the resources? (interrogating resources);
- What should I make a record of? (recording and storing information);
- Have I got the information I need? (interpretation, analysis, synthesis and evaluation);



- How should I present it? (presentation, communication and shape);
- What have I achieved? (evaluation). (Marland 1981, cited in Behrens 1990, p.356)

Many information skills taxonomies (for example, Marland 1981; Irving 1986; and Kirk 1986) have influenced heavily descriptions of information literacy. For example, the ALA (1989) description of information literacy draws from them extensively. It will be seen later in this chapter, that in some interpretations no distinction is made between information skills and information literacy. As is the case with other concepts which I have described, *information skill* is often simply relabelled *information literacy*. Alternatively, information skills may be considered as one aspect of information literacy.

### ***Learning-to-learn and lifelong learning***

The ideas of learning-to-learn, self-direction in learning and lifelong learning are not unconnected. All of them have captured the attention of information literacy scholars and practitioners. Learning-to-learn involves developing those skills which lay a foundation for self-direction and lifelong learning (Candy 1991, pp.317-342).

The idea of learning how to learn has become important across the educational sectors. It has been applied in primary schools, secondary schools, colleges and workplace learning programs. Gibbs (1983) defines learning-to-learn as '...a developmental process in which people's conceptions of learning evolve.' In creating this definition he is careful to discriminate between learning-to-learn and learning to study or acquiring study skills. Candy (1991, p.320) refers to Gibbs' interpretation as focussing on the 'higher order aspects of learning-to-learn'.

Mumford (1986), focussing on the need for managers to continue to learn, describes learning-to-learn as being about understanding one's own learning processes. This is similar to the idea of learning-to-learn as being about acquiring self knowledge and being able to address questions like '*How do I learn best?*' and '*Where do I learn best?*' (Naisbitt and Aburdene 1985, p.134). According to Naisbitt and Aburdene learning-to-learn prepares people to continue to learn in our society that is continually changing, necessitating the regular updating of skills and knowledge. Learning-to-learn is therefore a prerequisite for lifelong learning.

In some approaches to learning-to-learn, learning through information gathering plays an important role. It may be this focus which makes the concept of learning-to-learn attractive to those writing about information literacy. A number of anecdotes illustrating learning-to-learn, which capture this focus, include descriptions of an adult learning-to-learn from new acquaintances at a conference, a child learning-to-learn from library resources, and a journalist learning-to-learn by 'gathering information piece by piece, source by source, formulating and testing hypotheses' (Naisbitt and Aburc ene 1985, p.134). For many, these illustrations would serve as descriptions of learning to be information literate.

### ***Summary of concepts influencing the idea of information literacy***

The five concepts influencing information literacy that I have reviewed above, are apparently simultaneously discrete and interrelated. Computer literacy, for example has been recognised as a subset of information technology literacy. Information skills overlap somewhat with information technology literacy and library literacy. Information skills and computer literacy are not outside the boundaries of learning-to-learn. Some interrelations between these concepts and information literacy have also been touched on. The relationships between these concepts and information literacy will be explored further in the next section which examines the varying ways in which information literacy is described.

### **Varying descriptions of information literacy**

The concept of information literacy has been interpreted in varying ways since the early 1970s when it was first considered. Two decades later, in response to the need to gain consensus among scholars, the following definition was developed using the Delphi Technique:

Information literacy is the ability to access, evaluate and use information from a variety of sources. (Doyle 1992, p.5)

A more recent definition is even more concise:

Information literacy is the ability to use information... (Curran 1993, p.258)

As a rule, however, information literacy scholars prefer to describe information literacy rather than to define it. The American Library Association's statement, reproduced below, comes closest to what may be considered an authoritative description, in the sense that it is regularly referred to by scholars and practitioners:

To be information literate, a person must be able to recognise when information is needed and have the ability to locate, evaluate and use effectively the information needed... Ultimately information literate people are those who have learned how to learn. They know how to learn because they know how information is organised, how to find information, and how to use information in such a way that others can learn from them. (ALA Presidential Committee on Information Literacy 1989, p.1)

Critical features of this description are the focuses on information skills and lifelong learning, which are grounded in knowledge of the world of information, the capacity to navigate that world and communication skills. The description has nevertheless been criticised for its strong library orientation (Lenox and Walker 1992, p.4), and is by no means the only available description of information literacy.

The tendency to describe information literacy is accounted for as follows:

Information literacy is difficult to define but easier to describe because it is an abstraction, an ideal, and an interlocking set of skills and knowledge that is characterised by an ability or behaviour rather than a specific subject domain. (Lawrence McCrank 1992, p.485)

The tendency towards description is evident in Bjorner's summary of the characteristics of information literacy, which she claims to be widely accepted in the evolving understandings of the phenomenon:

- To be information literate is an acquirable characteristic of an individual.
- Information literacy is action-oriented; it is demonstrated in problem-solving and decision-making which enable others to learn from an information-literate individual.
- Information literacy operates in a broader arena than just a single discipline; an information literate individual can always find information needed for a new task or decision, and skills are useful in occupational as well as personal activities.
- There are skills involved in the demonstration of information literacy and the skills once learned can be used throughout a lifetime.
- The skills involved include finding and using information.

- An information literate person is able to deal effectively with new technologies to handle information. (Bjorner 1991, p.151)

Given the diversity of concepts that form the background to information literacy, and the ongoing changes in the world of information, it is not surprising that information literacy has been, and continues to be, understood in a range of ways. I have chosen to analyse the variation in how scholars are describing information literacy because these differences are of special interest to the empirical study which will be described later. They are of interest not only because they represent the thinking of scholars about the phenomenon, but also because people's conceptions, or experience of information literacy, may reflect elements of these understandings, at least in part. It is not unusual for researchers investigating conceptions to discover that people's conceptions resemble contemporary, and historical, scholarly thinking about the phenomenon being studied.

In what follows I examine the different ways in which information literacy is described in the literature arising out of scholarly reflection on the subject, as opposed to descriptions of education programs or research studies. I have focused mainly on contemporary literature, from 1990 onwards, simply because most of the discussion has been taking place since then. Material from earlier attempts at describing information literacy is included to provide a historical perspective. The historical development of the concept of information literacy is important because, as I have already pointed out, contemporary conceptions, or understandings of a phenomenon, are often found to reflect its history.

Although the following descriptions of information literacy are qualitatively different, they are not intended to be mutually exclusive. Authors writing about information literacy may focus on more than one of the different interpretations at different times. These different interpretations are shown below in an 'arrowgraph', after which each is described in detail. An arrowgraph is a tool commonly used by thesaurus developers to graphically portray the relationships between terms. Here it is used to portray something of how the various interpretations of information literacy are related to each other and to its companion concepts described earlier.

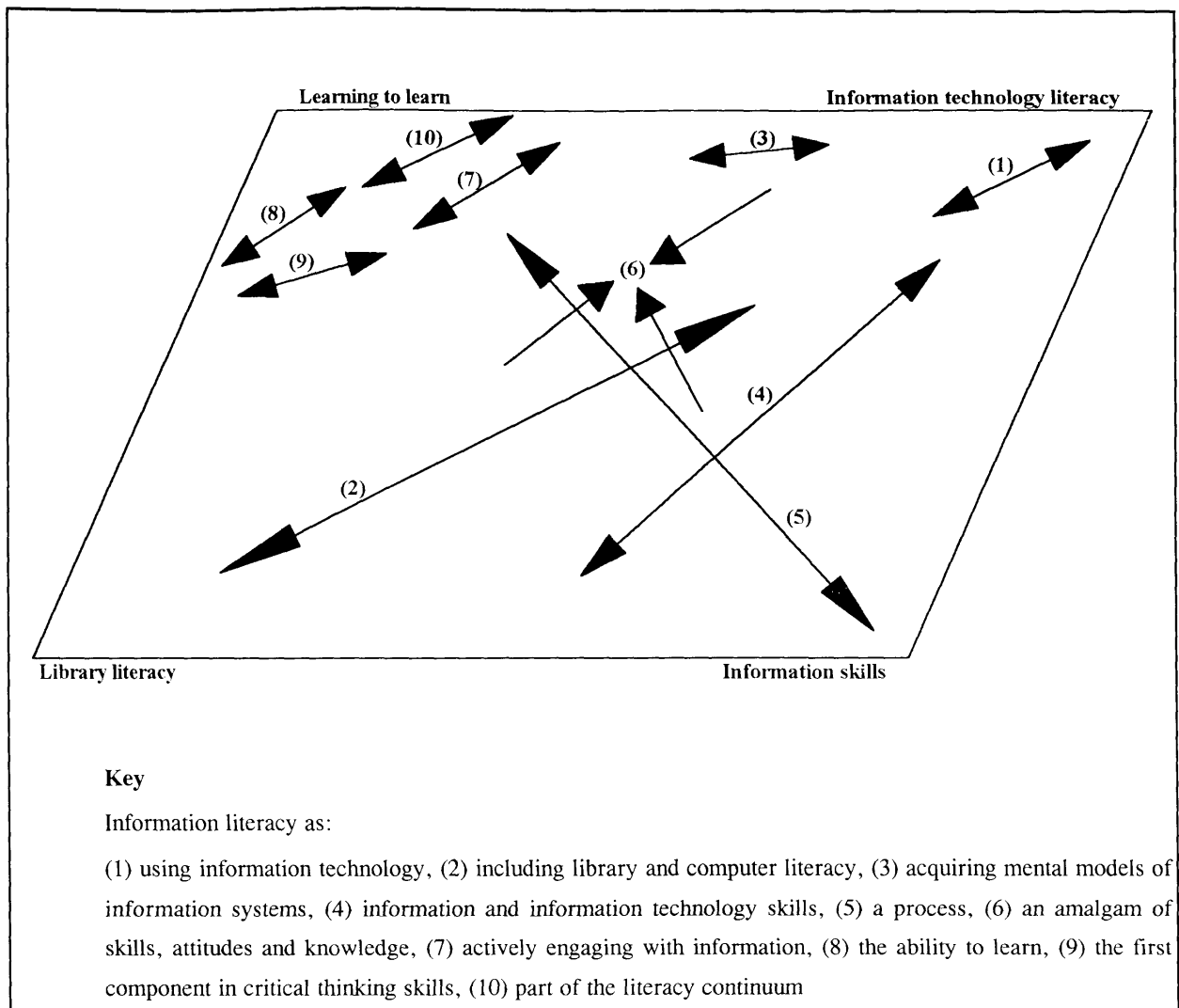


Figure 2.2 Arrowgraph showing proximity of interpretations of information literacy to related concepts

### *Information literacy as using information technology*

This way of describing information literacy closely resembles the idea of information technology literacy discussed earlier. It is very much a systems-based approach, with its advocates focussing on the technology-based information systems of various kinds together with the knowledge and skills required to use them. Horton (1983) describes information literacy as involving awareness of the knowledge explosion and how technology can help with information related tasks in problem solving and decision making. Specific systems and services he lists include online databases, electronic mail, abstracting and indexing services, telecommunications services, government information sources and library networks (Horton

1983, p.16). The focus is very much on information technology, knowledge of what is available, and the motivation to use it. In this approach computer literacy is a 'prerequisite to information literacy' (p.16). Skills and competencies required for using information, the processes that are focal points in some other descriptions, recede into the background.

The focus on the ability to use information technology as a key element in information literacy is also highlighted by Johnston (1986) and Demo (1986). Demo (1986) describes information literacy as an intellectual skill that enables the mastery of new communications and information technologies such as microcomputers, cable television, electronic publishing, fibre optics, satellite communication, videotext, online databases, CD-Rom and robotics. Similarly Johnston (1985) focuses on the need to master technological tools, for example microcomputers, electronic mail, bulletin boards and commercial database searching, as well as the skills necessary for survival in an electronic environment. These include finding, manipulating and scanning electronic text, wordprocessing, keyboarding and using idea organisers (Johnston 1986).

As can be seen from the arrowgraph (Figure 2.2) information technology literacy is one of the major areas of convergence for the various interpretations of information literacy. A resurgence of interest in this approach has also occurred since the Internet and its associated technology has become more widespread.

### *Information literacy as including library and computer literacy*

Although there has been a push for generic, that is non-library specific, definitions of information literacy, the term continues to be used interchangeably with 'library-based research' (McCrack 1992, p.487). In general, this involves some emphasis on the computer driven information sources available in libraries. Consequently information literacy is sometimes described as a combination of library literacy and computer literacy. Kuhlthau (1990, p.14), for example, defines information literacy this way. The approach to library literacy being drawn upon here is that which includes higher order skills of information interpretation and use as well as the locational skills. Similarly, Ford focuses on the role of computers in information provision and management and the skills required for effective use of academic libraries (Ford 1991, p.313).

A variation of this approach is that which describes information literacy as an extension of library and computer skills. Authors so describing information literacy are working at extending the boundaries of information literacy, recognising that information might come from places other than libraries and be accessed from sources other than computers. In this interpretation library and computer literacy are seen as necessary but insufficient for information literacy (Behrens 1990, p.355; Breivik 1993).

Despite the label for this view of information literacy, its advocates are not necessarily system oriented as opposed to information user oriented. Kuhlthau, in particular, favours a strong process approach to information literacy arising out of her interest in how users engage in using the library for research (see for example Kuhlthau 1993).

### *Information literacy as acquiring mental models of information systems*

Huston (1990) puts forward an interpretation of information literacy that differs significantly from the other descriptions presented here. For Huston, the idea of information literacy revolves around seeing the world as a configuration of information systems. The information user, to be information literate, must understand that information systems are the products of the need to communicate, and must also develop appropriate mental models of those systems:

...a fundamental definition of information literacy must acknowledge the value of knowing how to navigate systems that affect our everyday existence - like complex social, political, economic and work environments. (Huston 1990, p.692)

This view rejects the idea that information literacy comprises processes or behaviours. It suggests instead that particular mental models of information systems are required to ensure information access:

...individuals desiring information access will have to extend their own expertise; and this requires that they acquire the considerable conceptual knowledge necessary for thinking like expert searchers. (Huston 1990, p.695)

For Huston, it is acquiring those mental models which constitutes information literacy.

### ***Information literacy as a combination of information and technology skills***

The view of information literacy as a skill dominates the historical and contemporary literature on the subject. The earliest descriptions of information literacy as skills-based were relatively underdeveloped. They pointed, for example, to the skills and techniques required for 'using the wide range of information tools as well as primary sources' (Zurkowski 1974). Minor variations on this theme include Burchinal's description of information literacy as a 'set of skills' that are applicable to employment as well as private activities (Burchinal 1976, p.11) and descriptions of information literacy as the mastery of search and evaluation processes (Kobasigawa 1983, cited in Henri and Dillon 1992).

In the mid 1980s information literacy was also described in relation to library skills with the caveat that information literacy involves understanding and evaluating information and is not dependent on libraries as a source (Breivik 1985, p.723). Breivik provides an extended description of information literacy *skills*, characterising information literate students as those who can:

- understand processes for acquiring information, including systems for information identification and delivery;
- evaluate the effectiveness of various information channels, including libraries, for different kinds of needs;
- master basic skills in acquiring and storing their own information; and
- consider public policy issues relating to information, for example copyright, privacy and privatization of government information. (Breivik 1987, p.46)

In the late 1980s there continued to be a strong emphasis, in this approach, on library use for the development of information literacy. Thus information literate individuals were described as having acquired a 'lifelong habit of library use' (ALA 1989, p.4).

In the early 1990s this way of describing information literacy continued to reflect the skills-based approach of the 1970s and 1980s. Rader's (1990a,b) description of information literacy is virtually identical with that provided by Breivik in 1987. There is a heavier emphasis, however, on 'survival in the age of information and technology' (Rader 1990a, p.20), and the context of the 'global electronic environment' (Rader 1990a, p.21). Information literacy is here considered to incorporate computer literacy (Behrens 1990, p.355; Rader 1990a, p.20).



Kwasnik (1990) presents a variation to this type of description, claiming that the necessary information and technology skills are at present undefined. They do, however, include 'attention to and selection of data, the individual processing of data in the human mind, and skills which enable the individual to interact with the environment'. Some skills she sees as required include:

- the acquisition, through experience, of a large body of knowledge, within which to integrate new knowledge;
- an ability to organise existing knowledge conceptually, to remember it, to recognise it, to reorganise it;
- conceptual flexibility;
- an ability to not only analyse a problem into its components but to also view it in a larger context; an ability to switch from one viewpoint to another; and
- to use the above to define one's information requirements effectively, ...to translate an inchoate information need into the language of a system (computer, library, index) so the system can be used to advantage. (Kwasnik 1990)

### *Information literacy as a process*

This approach is one in which information literacy and the processes labelled 'information skills', earlier in this chapter, are seen as the same. It is characterised by the claim that information literacy is the ability to apply information skills to a range of situations. The processes of information literacy outlined by adherents to this view (Bjorner 1991; Henri and Dillon 1992, p.106) may be directly equated with earlier descriptions of information skills.

The information literacy process approach may be represented through Bjorner's description of information literacy as the capability to:

- recognise an information need;
- be motivated to satisfy that need;
- develop a strategy to find the needed information;
- carry through the strategy; and
- organise, evaluate and utilise the information in a satisfactory fashion. (Bjorner 1991, p.151)

The six skills, or processes outlined by Kirk and Todd can be seen to draw heavily on

Marland's taxonomy reproduced earlier:

- defining the tasks for which information is needed: what do I really want to find out and what do I need to do?
- locating appropriate sources of information to meet needs: where can I find the information I need?
- selecting and recording relevant information from sources: what information do I really need to have?
- understanding and appreciating information from a range of sources, and being able to combine and organise it effectively for best application: how can I best use this information?
- presenting the information learned in an appropriate way: how can I most effectively present this information?
- evaluating the outcomes in terms of meeting needs and increases in knowledge: did I achieve my purpose and what have I learned from this? (Kirk and Todd 1993, p.129)

The idea of information literacy as a process is very strong in the literature. It is a core understanding which is accepted by many scholars. Thus information literacy is described as extending 'the process of learning information skills to all ages and at all times' (Rader 1990a), the ability to apply a model of information gathering behaviour to new situations with the skills to go about it (MacAdam 1990), and the 'ability to select and apply information skills and strategies' (Henri and Dillon 1992, p.106). Eisenberg and Small (1993) describe information skills, which are the processes of locating, accessing, using analysing and presenting information, as research skills.

Information technology and library literacy do not feature in this approach. Skills in these areas are incidental to, rather than central to the process. Describing information literacy as a process has greatest affinity to describing it as the ability to learn.

### ***Information literacy as an amalgam of skills, attitudes and knowledge***

Differing from the view of information literacy as a process, or as a skill, is the view of information literacy as involving a combination of skills, attitudes and knowledge. Based on the framework provided in Bloom's taxonomy, this approach to information literacy focuses on the need for skills, attitudes and knowledge (Nahl-Jakobovits and Jakobovits 1993). It brings together emphases on information and technology-based skills encompassed in the

approaches just described, with emphases on values and various kinds of knowledge about the information society, its systems, tools and sources. Thus Lenox and Walker (1992, p.4) add to information and critical thinking skills the capacity to 'challenge the validity of information,...seek corroboration before adopting information,...understand the political social and economic agendas of information creation and dissemination'. Kuhlthau (1990, p.17) describes information literacy in terms of knowledge, skills and attitudes such as 'persistence, attention to detail and scepticism'. Gratch summarises this approach in describing information literacy as comprising four components:

- an attitude that appreciates the value and power of information;
- an awareness of the diversity of information forms and formats;
- an understanding that information is not necessarily knowledge until it has been analysed, questioned and integrated....; and
- a process to access and assess information critically and effectively. (Gratch, cited in McHenry, Stewart and Wu 1992, pp.55-56)

Information literate individuals are described as able to 'organise their own information searches, evaluate information, build their own online databases and know how to manage electronic files' (Rader 1990a, p.20). Information technology literacy is also a marked feature of this approach, with individuals being required to contend with developments in the information environment and associated technological change (Ford 1991, p.314).

### ***Information literacy as actively engaging with information***

One of the earliest approaches to information literacy came as a response to the flood of fragmentary, and often decontextualised information presented to people through the mass media. In this sense it is similar to the idea of media literacy (Aufderheide and Firestone 1993). Hamelink (1976) argues that the presentation of fragments of information to the public by the mass media 'keeps people from shaping their own world' (p.120). 'A new information literacy is necessary for liberation from the oppressive effects of the institutionalised public media' (p.120). In his interpretation, information literacy is seen as an alternative way of using information in which the individual shifts from being a passive recipient of predigested information, to achieving personal power in the information context (p.122). In this approach there is no focus on information technology or skills for accessing information. The focus is rather on the individual taking an active role in engaging with the information environment.

Hamelink's approach is influenced by the thought of Paulo Freire and is similar to that adopted by Huston (1988) in developing programs for educating information users. It is also opposed to the economic rationalist influence which pervades descriptions of information literacy as perceived by Curran (1993). In the latter, the welfare of the nation, rather than the individual is stressed. This type of description has since received very limited attention in contemporary writing about the concept.

### ***Information literacy as the ability to learn***

Unlike the description of information literacy as engaging actively with information, this approach is skills-based like some of those previously described. However the focus goes beyond the skills to the personal outcomes for those who have mastered them. Thus information literacy is described as a 'characteristic of self-directed independent learners who are prepared for lifelong learning' (Breivik 1987, p.46).

This description is reflected in part by scholars of self-directed learning who describe information location and use as a characteristic of individuals with this trait (see, for example, Candy 1991). The reasoning underlying this approach is that information literate individuals, those who have the requisite skills, attitudes and knowledge, have acquired key attributes required for learning.

For some, information literacy is seen as more than just one among many characteristics of learners; it is equated with the capacity to learn. Emphasis is placed on equipping individuals for lifelong learning with the appearance that no more than information literacy is required. The description of information literate people as 'those who have learned how to learn' (ALA 1989, p.4) reflects the thinking of such scholars. Behrens, for example, describes the information literate person in vivid, if not gender neutral, terms:

The ability of the information literate person to handle information effectively will positively affect his quality of life. He has learned how to learn, is thus able to operate dynamically in his own education and therefore has control over the way in which he communicates, works and lives. (Behrens 1990, p.357)

This idea is reflected in the titles of monographs appearing in the early 1990s such as *Information literacy: learning how to learn* (Vareljs 1991) and *Information literacy: developing*

*students as independent learners* (Farmer and Mech 1992). For authors taking this focus, information literacy becomes a tool for personal empowerment (ALA 1989; Behrens 1990; Lenox and Walker 1992).

### ***Information literacy as the first component in the continuum of critical thinking skills***

Kuhlthau (1990), Lenox and Walker (1992), among others, point to the role of critical thinking in information literacy. Critical thinking skills that need to be mastered, according to Kuhlthau (1990) are those listed by Beyer:

- determining the factual accuracy of a statement;
- distinguishing relevant from irrelevant information, claims or reasons;
- detecting bias;
- identifying unstated assumptions;
- identifying ambiguous or equivocal claims or arguments;
- recognising logical inconsistencies or fallacies in a line of reasoning;
- distinguishing between warranted or unwarranted claims; and
- determining the strength of an argument. (Beyer 1985, cited in Kuhlthau 1990)

Breivik (1991a, p.226), however, takes a different stance, describing information literacy as the first port of call in the application of critical thinking skills, arguing that it is an essential first step to be able to identify and retrieve an 'adequate, accurate and up to date body of information'. Breivik's argument is that appropriate solutions to problems are not likely to be found if the problem-solver's information base is inadequate.

### ***Information literacy as part of the literacy continuum***

Whereas most approaches treat information literacy as a qualitatively different kind of literacy, such as visual literacy, social literacy or science literacy, this approach describes the phenomenon as part of the literacy continuum (Arp 1990; Behrens 1990, p.355; Breivik 1991b, p.29; Breivik and Gee 1989, pp.22-23). In this sense information literacy is seen simply as an extension of traditional literacy requirements for the information age; in which case, as Arp (1990) argues, the term is redundant. Alternatively, information literacy is regarded as an overarching literacy, incorporating all other types of literacy. Breivik (1991c,

pp.10-11), for example, claims that with the attainment of information literacy 'all other literacies will have been achieved'.

**Towards an alternate approach to describing information literacy: from attributes to conceptions**

In previous sections of this chapter I have described a range of interpretations of information literacy found in scholarly description. These descriptions form the first spoke of the information literacy wheel representing the present dominant approach to information literacy (See Figure 2.3a). I now turn to examining the main features and limitations of these descriptions and argue for describing information literacy as experiences, or 'conceptions' (See Figure 2.3b).

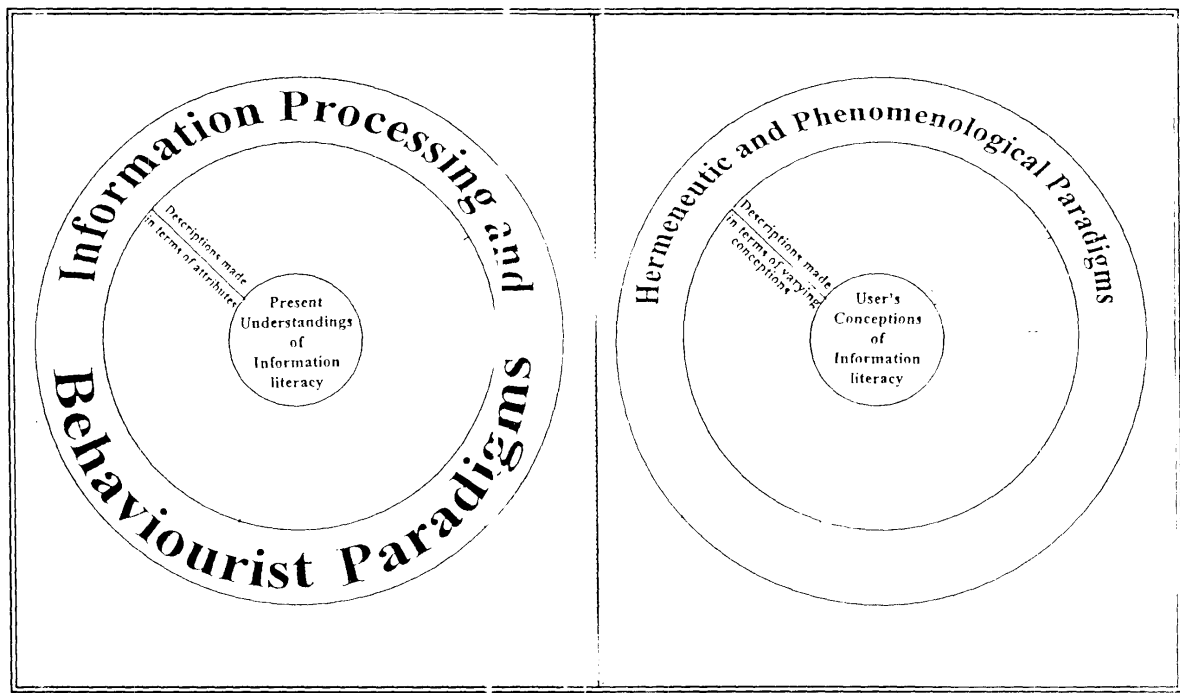


Figure 2.3a      Describing information literacy as attributes of people

Figure 2.3b      Describing information literacy in terms of people's conceptions

Although not explicitly stated by the authors concerned, the varying descriptions that I have examined are most strongly influenced by behaviourist and information-processing paradigms. Except for the critical approach evident in seeing information literacy as engaging actively

with information, and the constructivist approaches that may underlie the 'mental model' and 'learning-to-learn' perspectives, contemporary critics either lean towards behaviourist and information processing approaches or draw on the work of others who use them. It is the very adoption of these approaches, to a greater or lesser degree, that has led to the descriptions that dominate our picture of information literacy. These are descriptions which emphasise attributes of individuals, that is knowledge, skills and attitudes, or processes of information use which individuals need to master. The tendency to describe information literacy this way, may be partly due to the relative familiarity of the skills-based curriculum models that can be derived from the descriptions. These curriculum models will be analysed in the following chapter.

As the various authors do not usually make explicit their theoretical positions, it is not possible, or fair, to label any of them as having adopted a single position. It is possible, however, to identify the major views that have influenced thinking about information literacy to varying extents:

- **Dualism** Strictly interpreted as 'the hypothesis that mind and body are separate entities' (Sutherland 1994, p. 127), dualism can be reinterpreted in the context of information literacy scholarship as an approach to the world which involves seeing the information user as separate from his or her environment. This has led to descriptions of information literacy which are framed as attributes of individuals without accounting for how they interact with elements of the information environment. The information user is described as having particular capabilities, whilst the relation between the individual and his or her world is ignored. For example, in some instances information literacy is described as being able to use modern information technology. How the person approaches, or interacts with that technology is not a concern.
- **Behaviourism** This has been defined as 'a psychological theory based on the analysis of observable behaviour' (Rowntree 1981, p. 22) that has led to descriptions of information literacy which are informed by Bloom's taxonomy, and therefore framed as various forms of knowledge, skills and attitudes. The information user, to be described as information literate must exhibit behaviours that demonstrate these abilities. A wide range of the descriptions of information literacy analysed in the previous section fall into this category; they are identifiable through their emphasis on skills.

- **Information Processing** Usually associated with 'the organisation, manipulation, duplication and distribution of information using computers' (Verma 1993, p.83), information processing theory has influenced a range of disciplines leading to the formulation of linear processes to assist in various forms of problem solving. This approach has led to descriptions of information literacy which are framed as sets of information skills and processes which individuals should adopt. As a rule, these are in the forms of linear descriptions of the process, which if followed will result in the desired outcome, that is information used effectively. The description of information literacy as a process, a very influential one, leans towards this position, although many educators adopting it would use it within a constructivist framework.
- **Constructivism** Defined as 'the doctrine held, among others by Piaget, that complex mental structures are neither innate nor passively derived from experience, but are actively constructed by the mind' (Sutherland 1994, p.91), constructivism has focussed on critical thinking, decision making and problem solving as well as a broader interest in learning, which feature in some descriptions of information literacy. This view has had a greater explicit influence on teaching and learning programs preceding information literacy, as will be seen in the following chapter, than it has had on information literacy and information literacy education itself. At present its influence on thinking about information literacy continues to grow, but has not displaced the skills-based approaches which dominate.
- **Economic rationalism** This has led to the view that information is a commodity that must be efficiently accessed and managed for the profit of the individual, the economy and society. Information literacy is, in this view, seen as the ability to maximise economic advantage. This view permeates much of the justification for the need for information literacy, and is in sharp contrast with the interest in personal and social empowerment which also underpins arguments for information literacy

The resulting descriptions, couched mainly in terms of skills, attitudes and knowledge, are the result of an attempt to fit our thinking about information literacy into the frameworks that have until recently dominated the disciplines of information science and education. These descriptions have been used, to date, to promote the concept of information literacy and to underpin information literacy education programs. They have been developing since the early 1980s and have been becoming progressively more sophisticated. Unfortunately, these



descriptions are the result of the use of particular theories to describe a phenomenon about which very little is actually known. This may, in part, explain the general dissatisfaction with the concept noted in the first chapter.

***What are the problems associated with the prevailing descriptions of information literacy?***

The American Library Association's (1989) *Final Report* on information literacy captures the essence of contemporary descriptions. Some limitations of these descriptions are, therefore, highlighted in Foster's criticisms of that report's portrayal:

- they do not allow us to recognise those who are information literate;
- the elements of knowledge and skills involved, such as 'knowing how knowledge is organised' and being able to use information, are overgeneralised 'to the point of uselessness';
- the abilities to locate, evaluate and use information are not viewed contextually; and
- they do not successfully differentiate between the use of libraries and other information environments, that is the descriptions fundamentally mean that 'information literate people are those who know how to use libraries'. (Foster 1993, p.344)

Other limitations of the various descriptions of information literacy are that they:

- are largely based on intuitive recognition and anecdotal reporting rather than any systematic investigation (Kirk and Todd 1993, p.129);
- do not distinguish between information literacy in the academic environment, in the workplace and in everyday life;
- represent an attempt to decontextualise the descriptions to make them universally applicable, without having first examined the nature of information literacy in specific contexts;
- do not capture the varying ways in which information literacy may be experienced;
- explore skills, resulting in a focus on the characteristics required for completing a task, rather than focussing on the experience of the task itself (Sandberg 1991, p.2);
- do not take into account the individual's idiosyncratic ways of operating; and
- describe characteristics of individuals rather than the relations between people and their information environments.

The *information skills* or *process* view of information literacy shares the above flaws and is subject to more specific limitations. It is:

- linear in nature, and therefore does not suggest anything of the recursive and reflexive nature of information use; for example it may still be necessary to retrieve information when information is being 'packaged' for communication;
- difficult to differentiate from general problem-solving and research processes;
- unable to portray the need for some elements, such as evaluation to occur at all stages of the process.

In summary, these descriptions of information literacy have gained acceptance without having been subjected to any rigorous testing. As a rule, they have not been derived from observation of the processes of information users; nor have they been examined to determine the extent to which they are applicable or to determine the types of problems to which they might be applicable.

Continuing within the current framework would mean that, to understand information literacy better, we would seek to further explore the skills, knowledge and attitudes which may be required. These attempts would be aimed at consolidating objective definitions of information literacy, accompanied by lists of attributes in the form of skills to be learned, units of knowledge and statements of value to be internalised; all intended to allow the measurement of information competence (see, for example, Doyle (1992)). Although the process approach to information literacy seems unlikely to generate such difficulties, one amplification (Bjorner 1991) generated a list of thirty-four competency statements.

Such an approach would also be fundamentally at odds with the very idea of information literacy, which suggests that knowledge and skills are quickly dated, and that information literacy involves being able to learn and relearn in the face of constant change.

### ***What are the benefits of adopting a relational approach to describing information literacy?***

To further our understanding of information literacy requires an approach to describing it which will allow us to focus on the phenomenon itself, as it is experienced by people interacting with the world of information. Philosophers belonging to the phenomenological

schools have coined a phrase which captures this kind of intention: *to the things themselves* (Husserl, cited in Ihde 1986). Their goal is to better understand phenomena through studying afresh the ways in which aspects of the world appear to people, without encumbering their insights with previous understandings of the phenomenon being studied. If we accept the idea that information literacy is phenomenal, in other words that it is something which is experienced by individuals, then it becomes possible to seek to understand the nature of information literacy without recourse to the understandings which have been linked to the concept to date.

Describing information literacy in terms of the varying ways in which it is experienced by people, that is their conceptions, is the alternative which I propose. This alternative recognises the argument that as information literacy belongs to the family of literacies, the starting point for understanding it should be through the viewpoint of the literate:

...defining literacy objectively is difficult since we are unable to study it except from the viewpoint of 'literate' participants in a 'literate society'. (Kwasnik 1990, pp.127-8)

Studying information literacy from the viewpoint of people who could be considered to be highly effective information users in particular contexts, is the first step towards a relational view of information literacy. Within the relational approach any phenomenon is seen as 'the logically structured complex of the different ways of experiencing an object' (Marton 1993). Information literacy, therefore, may be described as a complex of the different ways in which it appears to people/is seen, experienced or understood. These different experiences of information literacy, are the qualitatively different relations between people and some aspect of the world, known as conceptions.

Conceptions, which I will discuss in detail in the fifth chapter, are not found in the mind of an individual, nor are they a characteristic or capability. They are defined as relations between subjects and objects. The simplest examples of this are described by Ihde (1986). Ihde explains that when any multistable phenomenon, such as a picture of a cube, is experienced as something different, this is because the person, or subject, is 'reaching out to' or focussing on the object in particular ways. The conception of, or way of experiencing the cube is not a characteristic of the person or the cube; it is a characteristic of the relation between them.

This approach to information literacy is significantly different from the one usually adopted. It is:

- **experiential**, based on the lived experience of people interacting with the world around them;
- **relational**, it focuses neither on the person, nor on the object of interest, but on the relation between them; and
- **second-order**, it represents the views of information users, through their discourses, rather than the views of experts.

The major implication of this view is that from this perspective, information literacy is neither dichotomous (Arp 1990, p.47), nor part of a continuum (Breivik 1991a), but about qualitatively different ways of interacting with the world. Further, a description of information literacy would be framed in terms of the various ways in which people conceive of it, rather than in terms of personal characteristics.

There are several reasons for adopting a relational approach to describing information literacy:

Firstly, it has been argued that 'essential aspects of human competence', of which information literacy is one, are not reducible to a list of attributes (Sandberg 1994, p.20). For Sandberg, clearer insights into what constitutes competence are gained when the idea of competence is interpreted in terms of ways of conceiving of what it means to be competent in a particular situation. This does not mean that attributes need be dismissed, but rather that attributes are 'an integral part of .... conceptions' (Sandberg 1994, p.34).

Secondly, experiences, or conceptions, are more fundamental than attributes. They govern both the way in which a task is accomplished, and the attributes used in accomplishing it (Sandberg 1994, p.3). This means that examining conceptions of information literacy may change our understanding of the attributes involved, and that describing attributes is a task which can only be secondary to identifying the conceptions which constitute information literacy.

Thirdly, this approach allows us to describe information literacy as it is experienced, within particular contexts, before attempting to generalise about its characteristics. In my empirical study, universities have been selected as the initial context within which to explore conceptions of information literacy.

Fourthly, conceptions are wholistic descriptions of ways of experiencing, or thinking about phenomena. They focus on a person's interaction with elements of their information universe, thus making the structure of the phenomenon underlying the concept explicit.

The research approach which will allow conceptions of information literacy to be identified is phenomenography. This approach will be described in detail in the fifth chapter. In the following chapter I review information literacy education, the second spoke in the information literacy wheel.