From Library User Education to Information Literacy: some issues arising in this evolutionary process

Michael Wooliscroft
University Librarian, University of Otago, New Zealand
Immediate Past President, COMLA

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Introduction

In the paper I focus on various definitions of information literacy, how it has evolved from library user education, and the aims of various information literacy programmes. I emphasise that information literacy is a signal skill for lifelong and flexible learning situations. I indicate the key role of librarians in information literacy and identify some barriers to librarians' effective involvement in and delivery of these programmes. I do not cover pedagogical elements such as methods of teaching information literacy and nor do I discuss the *particular* content of such programmes though I address generic elements.

Information literacy is not some entirely new phenomenon. The term "information literacy" first appeared in library literature during the 1970s and it is now sometimes wrongly employed to describe library user education and bibliographic instruction. However, information literacy programmes do a great deal more than tell how to use the Library. Information literacy is vitally tied to the strategic value and use of information.

For the purposes of this paper I will talk about those programmes which ensure that people (of school age and up) are taught about information not only available within the library in print and digital form, but are also provided with the context in which information is created, located and utilised in the wider world of information and knowledge.

The ever expanding volume of information available through print and digitised formats has the capacity to both stimulate and overwhelm. The digitising of information and the development of IT based tools to access, manipulate and deliver information available in electronic formats is an element of what has been called the Information Age. The vast quantity of information available in a variety of media and the fact that especially through the Internet much information has not been through a process of peer review or scholarly editorial process before being widely disseminated means that it is imperative that users apply critical thinking to the information gathering and evaluating process if their own work is to withstand scrutiny.

The Concept and Continuum of Literacy

1990 was declared by UNESCO "International Literacy Year, and the 1990s the decade in which illiteracy would be addressed so extensively and effectively that it could be wiped out. It is now clear that however effective some literacy programmes have been illiteracy will not be eradicated by the year 2000.

Many educationalists and information professionals recognise that there are in reality various types of literacy. There is IT (information technology) literacy, cultural literacy, functional literacy, information literacy, voter literacy, work-related literacy, and probably many more. [See Annex One] Some writers such as Witbooi[1] state that these are just the application of basic literacy skills to particular spheres of interest. Witbooi presents a continuum on which the various gradations and applications of literacy can be placed. [Annex Two]

Behrens, also suggests that literacy is an evolving concept and proposes that it should be regarded as a continuum which incorporates the concept of information literacy. She states...

> ".. the skills of being able to read and write alone will not enable an individual to cope effectively with the economic, political, social and cultural dimensions of urban living. If one considers literacy in the sense that it relates to an information society, people who are presently regarded as being literate are possibly not literate on a level which will enable them to function in such an evolved society." [2]

I believe that Information Literacy as it has evolved in Australia and North America goes beyond the application of basic literacy skills to a specific field.

The Information Age

Information has always been a valuable commodity but as the amount of information created has proliferated it seems that rather than information being devalued (as would happen with currency in excess) there is an increasingly high value placed on information as a means of enabling progress and enhancement of virtually every sphere of endeavour. Access to information is one of the dominant factors in living well. The need to determine what information we need, where to obtain it, how to select and evaluate it and utilise it to advance individual and collective progress is of critical importance.

We aware of much being written about the 'Information Age', the 'Information Explosion'. A number of authors write convincingly of the demise of the book - contributing to its very survival as they do so. And while much has been written of the rapid expansion of publishing in digital form still whole forests fall so that information in print can be published and disseminated. Print publication is still expanding at ever greater rates. The paperless society has thus far at least proven a myth. Users around the world readily print off the digitised information appearing

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[1] Witbooi, S.L. *Neo-literates as information users: problem or challenge?* South African Journal of Library and Information Science, 63 (1) 1995 p.20

[2] Behrens, Shirley J. *Literacy and the Evolution Towards Information Literacy: An Exploratory Study.* South African Journal of Library and Information Science, 58 (4) 1990 pp.353

on their screens - wisely so - for print on paper is read three times faster than the same information appearing on a screen.

For two of the last three years I have travelled around parts of the United States of America looking for harbingers of a dramatically new library of the twenty-first century. I have not seen it yet in spite of identifying a number of libraries which see themselves at the leading (and even bleeding) edge of the transformation to increasing amounts of digital information and the associated hardware and software required to store, organise, and access this. Print is still clearly predominant though I do not doubt that during the next twenty years there will be a continuing evolutionary shift away from the preponderance of print to greater quantities of digital.

Fink and Loomis, recognising this, state:

> "The availability of hardware and software has not *fundamentally* changed the function or even the appearance of libraries. However, it *has* dramatically changed the role of librarians. ... We must be - can only be - explorers, scouts and pathfinders, navigating unbounded, evolving sources of information to map the way for users who are now fellow searchers."[3]

But has it not long been thus? With some exceptions (those librarians of special collections) the bulk of us over recent decades (even subject librarians) have been unable to keep entirely abreast of the literature of specific subject areas as well as those people (academic, professional and lay) researching in those specific areas.

The Learning Society and Lifelong Learning

We know that often the choices by which individuals can be empowered to learn, what, when, how and where they like, throughout their lives, is constrained in practice. Information literacy may well provide an important connection between the information society and the learning society. Information literacy skills assist people to learn and re-learn, to train and re-train as the various vicissitudes of living in a rapidly changing world require them to be adaptable and flexible with speed and competence in ways barely imaginable a few years ago.

Cropley states that lifelong education involves:

> "the conviction that all individuals ought to have organised and systematic opportunities for instruction, study and learning at any times throughout their lives."[4]

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[3] Fink, Deborah and Abigail Loomis. *Meta-Learning for Professional Development*. in Teaching Electronic Information Literacy: A How-to-do-it Manual [edited by] Donald A. Barclay. (How-to-do-it Manuals for Librarians, no. 53) New York, Neal-Schuman Publishers, 1995. p. 3

[4] Cropley, A. J. *Lifelong Education: A Psychological Analysis*. Oxford / Hamburg, Pergamon Press / Unesco Institute for Education, 1977. p. 21

and he argues that artificial barriers between levels and types of education should be eradicated. There is an increasing realisation that much and maybe most significant learning (certainly of life skills) occurs outside the education system *per se*. People achieve this through their homes, community and recreational organisations, workplaces, various media, friends and acquaintances. Candy states that integrating the educational system in terms of levels and breadth leads to:

> "the emergence of a 'learning society' - a situation of virtually limitless and seamless learning opportunities, where people naturally and unselfconsciously participate in learning throughout their lifespan, and where 'any social system (family, neighbourhood, organisation, agency, community, state, nation or world) can be conceptualised as a system of learning resources'"[5]

Candy further states that the signal feature of the learning society:

> ".. is the absolute freedom of choice of the learner: the deliberate and conscious attempt to recognise and honour the sovereignty of the learner and to equip each person with the skills of self-directed inquiry so that they can choose their own pathways through the myriad learning opportunities they confront. And one of the key planks in the platform of self-directed inquiry is information literacy."[6]

The ability to continue learning throughout one's life is a key survival tool in a world of change. There is a burgeoning amount of information and in some subject areas it dates very quickly. It is also likely that many young adults entering the workforce now will have at least five changes of occupation before they retire and so will need to access and master new areas of knowledge to perform well. It is no longer sufficient for young people assume that education is solely a pre-employment matter and to leave their formal education never again to reflect on the considerable developments taking place in almost every area of knowledge. Not to apply some of that new and relevant knowledge to that which they are engaged upon in both their work and personal lives would be short-sighted at least and even dangerous.

Candy states that:

> ".. information literacy is not simply a response to the demands of the information society, but an important set of intellectual accomplishments that can aid in the realisation of the 'learning society'. "[7]

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[5] Candy, Philip C. *The Problem of Currency: Information Literacy in the Context of Australia as a Learning Society*. The Australian Library Journal, 42 (4) November 1993, p.289

[6] Candy, Philip C. *The Problem of Currency: Information Literacy in the Context of Australia as a Learning Society*. The Australian Library Journal, 42 (4) November 1993, p.290

[7] Candy, Philip C. *The Problem of Currency: Information Literacy in the Context of Australia as a Learning Society*. The Australian Library Journal, 42 (4) November 1993, p. 278

Information literacy is a set of skills allowing people to make the most of both formal and informal learning opportunities. The skills can be transmitted through the education system and through public libraries in their role as agencies for lifelong learning, although most current programmes appear to be within the context of tertiary education.

Since a signal characteristic of the present time is an overwhelming amount of information it is imperative that people develop a mind-set that predisposes them to continue learning throughout their lives to keep abreast of relevant developments thus remaining engaged in a real sense to the world about them. High order information skills are becoming mandatory to function efficiently.

Candy, Crebert and O'Leary state that:

> "Access to, and critical use of information and of information technology is absolutely vital to lifelong learning, and accordingly no graduate... can be judged educated unless he or she is information literate."[8]

This has consequences for librarians, teachers and students at all levels of education.

Flexible Learning

Flexible learning is an educational response to the need for lifelong learning generated by the learning society, and information literacy provides essential skills in the context of flexible learning.

Many tertiary institutions are quite quickly moving from the bi-polar mode of internal/external delivery of education to a model which allows both internal and distance students a great deal more choice as to how, when and where they will pick up the course content. Some models even go so far as to include all of the following tailored to suit the needs of individual (or groups of) students:

- differing venues blurring the traditional choice of internal/external
- differing times of delivery
- differing paces of learning
- differing content of courses and papers
- differing assessment methods
- differing use of resources (including different media)
- differing use of technology
- acknowledgement of the culture of the individual student
- acknowledgement of previous educational attainment of the individual student resulting in different entry points

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[8] Candy, Philip C. The Problem of Currency: Information Literacy in the Context of Australia as a Learning Society. The Australian Library Journal, 42 (4) November 1993, p. 278

- differing exit points
- strategic liaisons with other education providers (including non-traditional and community organisations)

Flexible learning is gaining ground in many countries. George and Luke list some reasons for the momentum behind this mode of learning in Australia:

> "• access and equity considerations, particularly in terms of outcomes
> • diversification of the student population
> • valuing of more student centred forms of teaching
> • a renewed emphasis on the characteristics of graduates, particularly with respect to the needs of industry
> • the need to provide learning opportunities throughout life which are directly linked to the economy."[9]

These authors state that the move toward flexible delivery can be seen as the response of the education sector to the Information Age citing that forms of educational delivery appropriate to the mass production ethos of the industrial age are no longer appropriate. They see the characteristics of the new work environment as including:

- integration rather than demarcation of tasks
- multi-skilling and re-skilling rather than mono-skilling
- professional coalitions rather than division of labour

Information technology, at first used to reinforce the mass production mode is now being recognised as an enabler allowing a new mode of education catering for a considerable variety of individual student-centred needs to be met.

The new requirements of flexible learning go well beyond changing teaching practice and they impact on libraries, IT services and education administration. Virtually nothing remains the same. It is a change so profound that it is really of the magnitude of a paradigm shift. Apart from changes in teaching practice (including assessment and delivery) the change to flexible learning places the library even more centrally in the teaching and learning processes, thus necessitating closer collaboration between teachers and librarians and requiring that students develop information literacy skills. Within universities, there has been a traditional pre-eminent focus on course content. In the new mode, the processes of education become of equal importance. In this mode information literacy, as George and Luke point out

> "plays a major role in addressing the process concerns of education. It is seen as an enabling process, a meta-skilling which is critical to flexible delivery methods

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[9] George, Rigmor and Rosemary Luke. *The Critical Place of Information Literacy in the Trend Towards Flexible Delivery in Higher Education Contexts.* Australian Academic and Research Libraries. September 1996. p. 204

> in formal contexts and the ongoing personal pursuit of knowledge beyond the walls of the university."[10]

Flexible learning aims to maximise the use of information resources so that the teacher's contribution becomes simply one of many resources. The teacher moves from being the central imparter of information to being a facilitator to a broader spread of information from which the student is required to choose the most relevant, the most accurate, the most robust. Analytical and evaluative skills become even more essential in this mode of learning. Information literacy provides the student with the required skills to make best use of the information resources available and to integrate these into successful course outcomes.

One of the critical aspects of the shift towards flexible learning is the matter of re-defining the relationships in the teaching and learning environment. There are considerable opportunities here for closer collaboration between librarians and teachers in order that students can gain information literacy skills.

Information Literacy - Some Definitions

Breivik and Gee, two of the leading authorities on Information Literacy propose that the definition is an evolving one:

> "The definition of literacy has continued to evolve as society's need to acquire information evolves. Most scholars of literacy recognize the importance of its social, cultural, political, and economic context. ... In the midst of the information explosion, the ability to access, retrieve, and evaluate information should constitute a significant part of today's definition of literacy."[11]

The definition is then explained in more detail:

> "The characteristics of information literacy are an integrated set of skills (pertaining to research strategy, and evaluation), and knowledge of tools and resources. These characteristics are developed through the acquisition of attitudes relating to persistence, attention to detail, and caution in accepting the printed word and single sources. Furthermore, the characteristics are: time and labour intensive; need-driven (that is a problem-solving activity); and distinct from but relevant to literacy and computer literacy."[12]

One might add in here that the caution applying to acceptance of the printed word is applied (with even more justification) to a great deal of information appearing on the

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[10] ibid. p. 207

[11] Breivik, Patricia Senn and Gordon, E. Gee. *Information Literacy: Revolution in the Library*. New York, American Council on Education / Macmillan Publishing Company, 1989. p. 23

[12] Breivik, Patricia Senn. *Putting Libraries Back in the Information Society*. American Libraries, 16 (1) (1985) p. 723

Internet which has not been through a process of peer or editorial review before being widely disseminated.

That statement goes on to suggest what information literacy is not limited to:

> "Information literacy is not only knowledge of resources; it is not dependent on the library as the sole source; and it is not only information finding but also understanding and evaluating that information."[13]

Information literacy is not synonymous with IT literacy. IT literacy does not give a person the skills to become information literate. IT literacy is a sub-set of information literacy. To become IT literate only allows the skills necessary to effectively manage the hardware and software which will allow access to that information which is in electronic or digitised form.

In the same manner, a person who is library literate cannot be regarded as fully information literate. Library literacy is a sub-set of information literacy. Libraries are not the only information and knowledge resources available. To term a library orientation programme a course engendering information literacy skills is misleading. Library skills, as Behrens[14] notes, tend to focus on the ways of locating information or the instrumental aspects of retrieval. They do not usually cover the broader contextual elements and the higher-level analytical skills necessary to effectively mine and utilise information in a manner which will withstand appropriate scrutiny.

A number of authors, grappling with the concept of information literacy do so by defining an information-literate person. The American Library Association defines such people as those who:

> "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." [15]

That ALA document goes on to state:

> "Information literate people are prepared for lifelong learning."[16]

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[13] ibid

[14] Behrens, Shirley J. *Literacy and the Evolution Towards Information Literacy: An Exploratory Study.* South African Journal of Library and Information Science, 58 (4) 1990 p. 355

[15] American Library Association Presidential Committee on Information Literacy. *Final Report.* Chicago, The Association, 1989. p.1

[16] ibid

Rader, expanding on the ALA definition, cites information literacy as:

> "understanding the processes and systems for acquiring current and retrospective information, such as systems and services for information identification and delivery;
> "the ability to evaluate the effectiveness and reliability of various information channels and sources, including libraries, for various kinds of information needs;
> "mastering certain basic skills in acquiring and storing one's own information in such areas as databases, spreadsheets, and word and information processing."[17]

Libraries are certainly acknowledged here as simply one of a number of sources even though for many they will remain a major source.

Doyle, drawing on an expert panel provided the following list of attributes:

> "An information literate person is one who:
> - recognises the need for information
> - recognises that accurate and complete information is the basis for intelligent decision making
> - identifies potential sources of information
> - develops successful search strategies
> - accesses sources of information, including computer-based and other technologies
> - evaluates information
> - organises information for practical application
> - integrates new information into an existing body of knowledge
> - uses information in critical thinking and problem solving"[18]

Here the very important concept of knowing when one needs information is introduced and this is the vital first step on any information-seeking path for while it might seem obvious to practitioners working in the information setting there are many (ourselves included from time to time) who are unaware of the basic need from which to spring to higher levels of attainment.

Bruce, drawing on Bjorner, states:

> "The information literate person implements information processes. ...

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[17] Rader, Hannelore B. *Bibliographic Instruction or Information Literacy -1990.* College and Research Libraries News, 51 (1) 1991 pp.18-20

[18] Doyle, Christina S. *Outcome Measures for Information Literacy Within the National Education Goals of 1990. Final Report to National Forum on Information Literacy. Summary of Findings.* Eric Document: ED 351033, 1992. p. 2

> General processes include recognising and accepting an information gap, responding positively to the need for information, constructing alternative strategies to reduce the information gap, evaluating and selecting a strategy, acting on a strategy, assessing the effectiveness of a strategy (that is, evaluating the information found), using information (that is, synthesising and communicating information) and storing the information for future use.
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> "More specific processes include, for example, the ability to design and implement strategies for the location of on-line and print information sources; the ability to design and implement strategies for the retrieval of information from community-based resources that are not part of formal, organised information networks; and the ability to use applications software for the management and communication of information. These processes involve a synthesis of information location, critical thinking and communication skills. ...
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> "They are familiar with the way the world of information is structured, how to gain access to formal information networks and how to access information that has not yet entered into that arena. Familiarity with the world of information also involves understanding the system of scholarly information, indexing theory, and issues such as intellectual property and other political, social and economic agendas associated with information creation and provision."[19]

One of the key words in the above quotation is "strategy". The strategies employed to find information, to analyse and to employ are all indicative of someone light on their toes, someone proactive, or at least certainly active, prepared for what circumstance may offer and alert to how they can best advance themselves, their family, their community (of whatever sort) or their nation.

The Aims of Information Literacy Programmes

So what are the skills which are developed from such programmes?

Marland presents his taxonomy of information skills proposed for secondary school use upon which others have developed similar models:

"1. What do I need to do?
(formulation and analysis of need)
2 Where could I go?
(identification and appraisal of likely sources)
3. How do I get to the information?
(tracing and locating individual resources)
4. Which sources shall I use?
(examining, selecting and rejecting individual resources)

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[19] Bruce, Christine Susan. *Information Literacy: A Framework for Higher Education*. The Australian Library Journal, 44 (3) August 1995. p. 161

5. How shall I use the resources?
   (interrogating resources)
6. What should I make a record of?
   (recording and storing information)
7. Have I got the information I need?
   (interpretation, analysis, synthesis, evaluation)
8. How should I present it?
   (presentation, communication, shape)
9. What have I achieved?
   (evaluation)"[20]

Oberman and Strauch[21], writing in 1982 on "bibliographic" education press for a move from purely technical skills to a contextual approach and the development of a conceptual framework of principles. The critical and evaluative approach to information, wherever found, was stressed and the gulf between bibliographic instruction, library education and the broader contextual issues and the higher evaluative analysis of sources of information was made clear.

Kumar and Kumar[22], in 1983 stress the need to supplement practice and techniques of user education with theory and methodology. The application of general principles was considered important so that the skills acquired could retain their usefulness well beyond the immediate learning requirement.

Irving, in 1985, suggests the following range of skills:

> ".. those associated with reading, writing, searching, retrieving, organizing, processing, thinking, analysing, and presenting. Above all it includes the skill of formulating questions and hypotheses - knowing what there is to know about, and what questions to ask in order to find out."[23]

Irving hits the button when he emphasises "knowing what there is to know about, and what questions to ask in order to find out." We might all know this to be true and many people encounter feelings of inadequacy when visiting doctors for many doctors are not good at communicating what their patients need to know. And because the field of medicine is fairly esoteric to most of us we are unaware not only of

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[20] Marland, M. ed. *Information Literacy Skills in the Secondary Curriculum: The Recommendations of a Working Group Sponsored by the British Library and the Schools Council.* London, Methuen Educational, 1981. pp. 30-37

[21] Oberman, C. and K. Strauch. *Theories of Bibliographic Education: Designs for Teaching.* New York, Bowker, 1982.

[22] Kumar, G. and K. Kumar. *Philosophy of User Education.* New Delhi, Vikas, 1983.

[23] Irving, A. *Study and Information Skills Across the Curriculum.* London, Heinemann Educational Books, 1985. p. 22

what we have a right to know but also of what questions to ask so that the relevant information can be communicated to us.

Kirk, in 1987 [24] produced a taxonomy covering a similar process to Marland's which appears as Annex Three. This one was also produced for school use.

Bruce, 1995 [25] states that information literacy programmes should include a range of similar activities while not putting them in the form of a sequence of logical steps. He is the first (of this selection) to include familiarity with IT hardware and the impact of IT as an enabler for manipulating chosen information and presenting it in a way pertinent to the chosen outcome is clearly expressed while "all their accompanying apparatus" (in relation to a variety of media) is in reality a rather large catch-all which might include servers and hardware which apart from PCs and printers may be of little benefit though the software may well impact on search strategies.

Durack, writing on introducing new users to the Internet warns:

> "Novice network users - like many television viewers - may easily fall into the trap of taking everything they read, see, or retrieve from the Net as THE TRUTH. ... almost everyone with a computer and a connection can "publish" whatever they want to on the Net. The lack of gatekeepers - one function of the print-based publishing community - has both advantages and disadvantages. On the good side, people have access to ideas and information that otherwise might be unavailable; on the other hand, no one entity is responsible for verifying facts and evaluating the usefulness of files to ensure any standard of quality, so there is a lot of junk out there in addition to the gems. "[26]

One wonders why some students think that everything they access on the Internet has a verity superior to other sources. In fact, in many instances it is but flotsam and jetsam floating shallowly upon the deep sea of knowledge. The development of a critically questioning approach to all information is essential.

In 1996, Eisenberg and Berkowitz developed the Big Six information literacy model [27] and Eisenberg and another co-author cite it as becoming, within America at least,

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[24] Kirk, J. *Information Skills in Schools.* Australian Library Journal 36 (2) 1987 p. 86

[25] Bruce, Christine Susan. *Information Literacy: A Framework for Higher Education.* The Australian Library Journal, 44 (3) August 1995. p. 163

[26] Durack, Katherine T. *Introducing New Users to the Internet* in Teaching Electronic Information Literacy: A How-to-do-it Manual [edited by] Donald A. Barclay. (How-to-do-it Manuals for Librarians, no. 53) New York, Neal-Schuman Publishers, 1995. p. 87

[27] Johnson, Doug and Mike Eisenberg. *Computer Literacy and Information Literacy: A Natural Combination.* Emergency Librarian 23 (5) 1996, p. 12

one of the most widely-used models of information literacy. [Annex Five] I reserve my judgement on that given it is such a recent model. Like the earlier taxonomic approaches it sets out a systematic approach to information problem-solving. It is designed as a set of skills that are transferable across the educational spectrum, employment situations and subject areas. The authors acknowledge that although there is a logical flow to the above steps, information problem-solving is not always a sequential process. However, they state, it is important that the various steps must be completed at some point.

The Librarians' role in Information Literacy and the challenges to that role

Libraries have long been acknowledged as signal resources supporting teaching, learning, and research. They are the chief contributor to the 'repository of knowledge' characteristic of a university which sets it aside from other institutions of higher learning. Even these times where the "ownership/access" debate is frequently aired, and the proponents of "just-in-time" debate with those of "just-in-case" the reality is that it is not a case of "either/or" but of "both/and" and librarians in these more complex times have an enhanced role assisting users to find relevant information in the most appropriate format in a timely fashion (and at an acceptable cost to the user or the funding institution or both).

The introduction of technology into teaching, changes in scholarly communication patterns, the increasing variety of media, more demanding students requiring services to be available as, when and where they want them, all require that librarians ensure, even more than ever, that they are user-focused, user-friendly, and able to assist users to gain information literacy skills which will enable them to be to a greater degree self-sufficient.

The library is, of course, not the only place for accessing information though it is expected to remain the principle source for many to access local resources which are owned and leased, and those which are obtained from a distance in response to individual requests. The librarian's role in managing information and knowledge resources and in constantly re-examining the appropriate balance of ownership and access, and which medium to hold or access is one of continuing challenge, stimulation and even delight.

The Editor of The Australian Library Journal wrote in a report on the Sydney *Information Online and On Disc '97* conference in January 1997...

> "Martin Marlow from BH Blackwell introduced the term 'knowledge choreographer' but whether we are moving towards a stately ballet or a wild contemporary dance is yet to be seen. ...
> "As the choreographers, our [i.e. the librarian's] job will be to ensure seamless access. However, the choice of different formats for different resources assumes a clientele with a level of knowledge to cope with them. By knowledge I mean the information literacy skills - not simply the computer competency in handling

electronic formats."[28]

Is it necessarily librarians who will teach? Cowley and Hammond writing in 1987 noted that while librarians in the tertiary sector are enthusiastic about user education that enthusiasm is not necessarily shared by teachers or students.

> "The lack of acceptance of user education, though often caused by indifference and lack of understanding, does take the form of outright resistance from a minority of faculty who feel strongly that a student's use of the library and access to literature and information should be guided by the individual tutor. There is suspicion of the librarian's motivation in wishing to be involved and little sympathy for the notion of collaboration between the academic and librarian. ...
> ".. some librarians hold the view that the limited resources available should be directed at the academic staff rather than the student in the hope of achieving a level of understanding which might lead to greater collaboration."[29]

Cowley and Hammond also point to the words of Urquhart[30] who thought that the desire of librarians to become involved with user education was an attempt by librarians to gain improved status.

Breivik[31], a proponent of librarians' intensive involvement in information literacy programmes acknowledges the political problems of staking a claim and suggests that a small pilot project might be the best way of persuading less enthusiastic colleagues to reconsider their stance.

For Bruce, the collaborative approach is seen as essential for success:

> "Initiators of information literacy programs require the collaboration of lecturers (discipline experts), librarians, computer scientists, media specialists, and possibly community stakeholders. It is imperative, therefore, that the responsibility for information literacy is shared and implemented in a climate of collaboration."[32]

She provides a useful warning that information literacy cannot be achieved from one

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[28] Levett, John. *Reports from Information Online and On Disc 97: Sydney 21-23 January 1997.* The Australian Library Journal 46 (1) February 1997. pp.68-69

[29] Cowley, John and Nancy Hammond. *Educating Information Users in Universities, Polytechnics and Colleges.* (British Library Research Reviews, no. 12) London(?), The British Library, 1987. p. 1

[30] Urquhart, J. A. *The Information Chain. UK Serials Group Conference, 1982.* London, UK Serials Group, 1983. pp. 164-165

[31] Breivik, Patricia Senn. *Planning the Library Instruction Programme.* Chicago, American Library Association, 1982.

[32] Bruce, Christine Susan. *Information Literacy: A Framework for Higher Education.* The Australian Library Journal, 44 (3) August 1995. p. 163

discipline and states that:

> "It is the cumulative experience from a range of subjects and learning experiences that creates the information literate person."[33]

Bruce lists a number of strategies for information literacy education within the university context:

> "• integrating an information literacy component into curricula, articulated through a course or groups of courses
> • integrating an information literacy component into one or more selected subjects only
> • introducing special subjects at one or more levels of a course dedicated to aspects of information literacy
> • special cross- or intra-faculty workshops for research and teaching staff providing updates on information literacy, tools, systems and technologies and information literacy education
> • extracurricular opportunities for students provided by faculties, learning support counsellors or the division of information services
> • continuing education subjects or workshops for graduates and members of the wider community."[34]

As important as a pilot project and the questions of philosophical, methodological, intellectual content and pedagogical basis of information literacy programmes is the need for the librarians involved to be equipped to be effective teachers. Generally, librarians have been skilled in providing assistance to individual users bringing individual problems but group teaching of generic information literacy skills requires rather different communication skills.

Townley and Myers, referring to papers by Boisse, Webster and Metz, consider other issues related to the teaching role of librarians in information literacy:

> "For librarians to succeed as teachers of information literacy, library administrations will need to play an active role in modifying professional roles. Administrators will have to create an environment where librarians can address scholarly information in all formats so that the whole information spectrum is presented, especially electronic information, and librarians will have to work to expand their direct role in teaching information literacy. While both of these changes are evolutionary, together they constitute a new paradigm for libraries and higher education."[35]

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[33] ibid. p. 164

[34] ibid. p. 164

[35] Townley, Charles T. and R. David Myers. *Managing Electronic Information Literacy Education* in Teaching Electronic: Information Literacy: a How-to-do-it Manual [edited by] Donald A. Barclay. (How-

Making a plea for the development of electronic information literacy they state:

> "To library personnel, the plan [for electronic information literacy] should represent movement from answering simple reference questions, providing point-of-service assistance, and delivering bibliographic instruction to supporting action-based education and teaching electronic information literacy. Within the library, the plan is most likely to succeed if it stresses the goal of information literacy rather than library literacy; if it emphasizes development of life-long information skills; and if it deals with short-term information and reference needs in ways that reduce demands on library personnel."[36]

Townley and Myers are too limited in their brief. Sometimes the best information source will be in print form and restricting their information literacy programme to include only the electronic will be as misleading as limiting it to print sources, or the library. The most relevant and accurate information in the most appropriate format for a particular need may still be that in print, or in person, or, of course in digital form. Their emphasis on providing for short-term information and reference needs is also counter to the main thrust of those working in the information literacy field who aim to communicate generic skills which will be available over time for a variety of purposes, though I would not wish to underestimate the importance of students seeing a particular and immediate need for the skills that are being imparted.

What is needed, of course, is for libraries to be appropriately resourced in staffing and other means to enable their participation to an appropriate level in information literacy programmes and the relationship of the library to the institution's learning and research outcomes must be constantly promoted.

Lincoln University, has since 1991 offered a curricular course in information literacy and remains the only tertiary institution in New Zealand to do so. An Information Studies Librarian position is part of the Library's establishment, and that position is compatible with the Library's philosophy on information literacy teaching which includes the following principles:

> "• Every contact with a Library user should be treated as an educational opportunity. Therefore all staff have some teaching responsibility although the degree varies considerably.
> • Teaching information studies is most effectively performed by practising librarians who are also keeping up to date with the rapidly changing information field.
> • Student learning in information studies is most effectively achieved by problem based learning. This is the approach which is used in formal

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to-do-it Manuals for Librarians, no. 53) New York, Neal-Schuman Publishers, 1995. p. 163

[36] ibid. p.166

teaching. It is extended into one to one contact at the Library Information Desks, when students are dealing with real enquiries and are most likely to learn.
- Library staff involved in formal classroom teaching are encouraged to develop their teaching skills through courses.
- Information education programmes are part of a total package and are owned by all Library staff."[37]

Bruce refers to a number of ways wherein librarians and their close information services colleagues can exercise leadership:

"• demonstrated commitment to the initiation of information literacy programmes
- promotion of information literacy through newsletters and annual reports
- developing a program of principles, goals and objectives
- developing strategies for the effective evaluation of learning outcomes"[38]

The libraries' role in information literacy must of course be implicit not only in the strategic planning documents and business plans of the library and any division of information services to which it belongs but must also be given due authority in the planning documents of the wider institution. Bruce goes on to state that whether librarians are involved as teachers or not they must be involved in the "development, implementation and evaluation of curricula".[39]

Barriers to Information Literacy Programmes

It may seem strange, given the compelling evidence supporting the need for information literacy skills, that such programmes, both non-curricular and curricular, are not more evident especially in institutions of higher education. In part this is because it requires an attitudinal change on the part of all stakeholders in higher education in particular - administration, academics, students and even librarians. One is tempted to wonder whether some librarians are loathe to pass on the skills which they have in high order, fearing that they will be seen as redundant if they do so. Yet librarians, as practitioners par excellence in the field of information and knowledge, will always be on the cutting edge of the management of the developing information and knowledge field, and thus will maintain and constantly enhance their leadership position.

For teachers, the attitudinal shift, as Farmer sees it, is to move from being "disseminators of information in the classroom" to being "facilitators who empower

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[37] Laird, June and Ainslie Dewe. *Information Teaching in the Ivory Tower.* New Zealand Libraries, 47 (5), March 1993. p. 97

[38] Bruce, Christine Susan. *Information Literacy: A Framework for Higher Education.* The Australian Library Journal, 44 (3) August 1995. p. 168

[39] ibid. p. 168

students to become autonomous learners through resource-based learning outside of the classroom."[40]

A considerable barrier for librarians is the reluctance of many teachers to acknowledge that librarians have a legitimate educative role and that they, too, can be accomplished teachers. In addition, libraries need to develop or access spaces which are appropriate for communicating these skills. There is no doubting that when collaborative partnerships can be established with teachers information literacy programmes are more likely to be assured the support necessary for them to become a vital part of the educative process.

For students, Farmers sees the challenge as being ".. to turn away from being passive and dependent learners and become active and independent learners who are able to bring to the classroom information they have critically selected and analyzed."[41]Most importantly, Farmer urges active partnerships in "a genuine learning community."[42]

While time is frequently given as a reason for not developing information literacy skills the time invested in acquiring these skills has a high return value for both the users and the information professionals communicating those skills.

Information literacy programmes need to be integrated into the curriculum if they are to have best effect rather than being seen as an optional extra. However, it is recognised that for many information literacy courses will continue to be offered outside the formal curricula and so it is even more important to ensure a high quality product so that students are attracted to it and gain these important skills in a manner which they find stimulating and quickly see the relevance of these skills to ensuring that they perform better than their fellow students who do not take such programmes. The long-term relevance of these skills transforming students into more able members of the information society and enabling them to perform capably in lifelong learning will be evident in time.

Conclusions

In the Information Age the concept of literacy needs to be expanded to embrace information literacy. The ability to view information in its widest context, to determine needs, and then locate, evaluate, organise and apply it are key skills.

Librarians are well placed to have a key role in information literacy programmes as tutors and teachers of both non-curricular and curricular papers as well as providing knowledge of and access to the world of information (not just the resources found in

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[40] Farmer, D. W. *Information Literacy: Overcoming Barriers to Implementation.* in Information Literacy: Developing Students as Independent Learners. D. W. Farmer and Terrence F. Mech (eds.) (New Directions for Higher Education, no. 78) vol XX, no. 2. 1992. p. 104

[41] ibid.

[42] ibid.

or through the library) and to apply high level evaluative skills to these resources.

In this way librarians can certainly enhance the relevance of our profession but the main purpose is to communicate skills which we have developed already, to perform well professionally, and to offer services of excellence to our users. These professional skills have now become highly desirable life skills for our users and essential to both flexible learning and lifelong learning programmes.

The general outlines of information skills as provided in this paper can be applied as a basic structure to many fields of knowledge, to many levels of education and to many sites.

Librarians are not only openers of doors and gateways to information; we are not only navigators of the seas of information; we are not only choreographers of the dance of knowledge; explorers, scouts and pathfinders, but we are also key enablers, able to empower our users to become more self-sufficient in developing information gathering and evaluating skills which will assist others to be well resourced for changing life circumstances.

Annex One

LITERACY - DEFINITIONS

UNESCO's technical definition of 1951:

> 'A person is literate who can with understanding both read and write a short simple statement on his everyday life' (Carceles, 1990:6).

This definition lacks the ability of computation and a social context in which the individual has to function. This is catered for in UNESCO's cultural definition of 1962:

> 'A person is literate when he has acquired the essential knowledge and skills which will enable him to engage in all those activities in which literacy is required for effective functioning in his group and community, and whose attainments in reading, writing and arithmetic make it possible for him to continue using these skills towards his own and his community's development' (Literacy as a..., 1965:6).

Basic literacy is when

> a person can read as well as a thirteen year old (Unesco) or has had schooling for at least seven years (i.e. completed primary schooling).

Census surveys equate basic literacy with at least five years of formal schooling.

Conventional literacy can be defined as

> the ability to read, write and comprehend texts on familiar subjects and to understand whatever signs, labels, instructions and directions are necessary to get along within one's environment.

Functional literacy is defined as

> 'the possession of skills necessary by people to fulfil their own self-determined objectives as family and community members of social, religious, or other associations of their choosing, i.e. to be able to cope with the complexities of today's world' (Hunter & Harman, 1979:15), **OR**
>
> 'a person is functionally literate when he has command of reading skills that permit him to go about his daily activities successfully, or to move about in society normally, with comprehension of the usual printed expressions and messages he encounters'
> (United States National Reading Center).

Semi-literacy is when

> 'a person can read with understanding, but not write, a short simple statement on his everyday life' (Unesco, 1957:20).

The neo-literate is

> 'any adult or adolescent who has at some period acquired the basic technique of reading, but has not yet developed his/her skill to the point where he/she can read with speed, fluency and complete understanding' (Richardson, 1983:9).

Illiteracy is

> the inability to read, write or count for a useful purpose.

Kotei (1977:261) refers to 'semi', 'demi', 'neo', 'proto', and other gradations of literacy and illiteracy. The conclusion in defining literacy is that such a definition should go beyond the mere ability to read and write; it should see literacy as enabling and functional; it must be accompanied by understanding and insight; be related to the life of the learners and contribute to the growth and development of his/her community.

[Witbooi 1995 amended]

Gradation of Literacy **Application of Literacy**

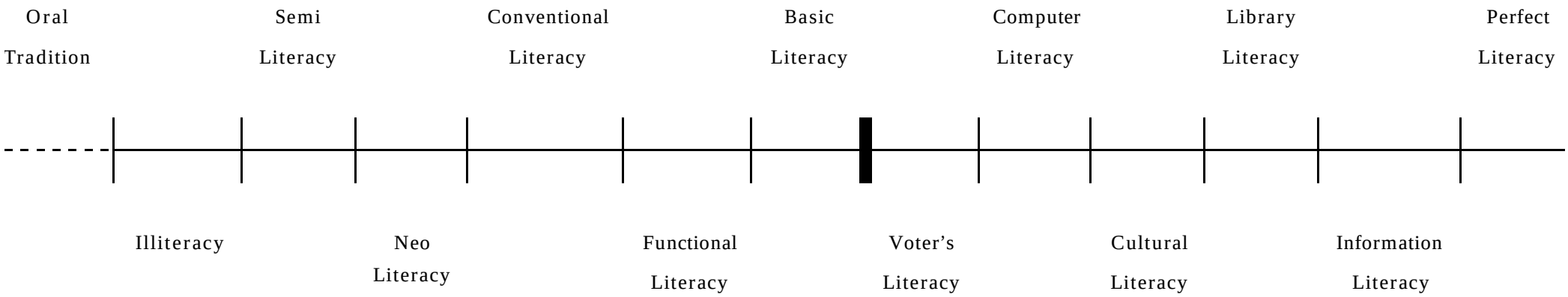

Figure 1 Continuum of literacy [Witbooi 1995]

Annex Three

KIRK'S TAXONOMY OF INFORMATION LITERACY 1987

"1 Define purpose
clarify information task;
review personal skills and knowledge

2. Locate sources
develop a manageable search plan;
gather sources

3. Select data
locate data in sources;
assess relevance of data;
assess credibility of data;
record relevant and credible data and sources

4 Process information
combine data into units of information;
combine units of information into a structure;
review structure

5. Present information
decide how to present information;
present information

6. Evaluate the information task
review the content of the completed information task;
review the steps taken in the information task;
evaluate the learning outcomes of the completed information task"[43]

Annex Four

BRUCE'S INFORMATION LITERACY PROGRAMME ELEMENTS

"• understanding the nature of the information society

- acquiring values that promote information access and use
- being able to implement the processes of identifying an information need
- locating, retrieving, evaluating and synthesising the information required
- developing a high level of communication skills, including the ability to communicate with colleagues and information professionals
- developing a sound knowledge of information sources, including network sources, and strategies for using them
- developing the ability to manage the information retrieved through the appropriate use of, for example, word processors, spreadsheets, and bibliographic management software
- developing a familiarity with the hardware of information technology, books, newspapers, videos, compact discs, computers and all their accompanying apparatus."[44]

Annex Five

THE BIG SIX SKILLS INFORMATION LITERACY MODEL

The framework for the entire curriculum is the Big Six skills information literacy model developed by Mike Eisenberg and Bob Berkowitz. The Big Six skills approach is one of the most widely-used models of information literacy. [See also AASL position paper on information literacy]. The Big Six represents a systematic approach to information problem-solving. It is a set of skills that is transferable to school, personal, or work applications, as well as all subject areas across a full range of grade levels. According to the Big Six approach, whenever a student has an information-oriented problem, it is appropriate and useful to initiate the following six steps and substeps.

1. **Task Definition**
   - 1.1 Define the problem.
   - 1.2 Identify the information requirements of the problem.
2. **Information Seeking Strategies**
   - 2.1 Determine the range of possible sources.
   - 2.2 Evaluate the different possible sources to determine priorities.
3. **Location and Access**
   - 3.1 Locate sources (intellectually and physically).
   - 3.2 Find information within sources.
4. **Use of Information**
   - 4.1 Engage (e.g. read, hear, view) the information in a source.
   - 4.2 Extract information from a source.
5. **Synthesis**
   - 5.1 Organize information from multiple sources.
   - 5.2 Present information.
6. **Evaluation**
   - 6.1 Judge the product (effectiveness).
   - 6.2 Judge the information problem-solving process (*efficiency*)"[45]

Although presented in a logical order, the Big Six approach does not assume that information problem-solving is always a sequential process. In completing tasks and solving problems, students may locate and use a source (steps 3 and 4) and later loop back to figure out exactly how they will handle the situation (step 1). In other situations, students may decide to use one source at a time, going through steps 2-5 a number of times. However, to successfully solve information problems, students must successfully complete the various steps at some point.

[Eisenberg & Berkowitz]