

INFORMED LEARNING: REALISING THE POTENTIAL OF THE INFORMATION SOCIETY IN OUR 21ST CENTURY WORLD

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Abstract

Information literacy has captured the imagination of library and information professionals. In the last twenty years significant advocacy has occurred putting information literacy issues high on the international agenda. This paper proposes informed learning (the kind of learning made possible by information literacy) as the key to realising the potential of the information society. The paper extends the concept of informed learning in the academic environment, conceptualising its broader role in the information society. In this paper the author (a) review some critical moments in the history of information literacy; (b) propose "informed learning" as the key to realising the potential of the information society in our 21st century world; (c) identify three key outcomes connected with informed learning to be gained from an emphasis on information literacy in many aspects of our social fabric: informed learners, an informed workforce and an informed citizenry; (d) draw upon insights gained from previous research to propose critical characteristics of these three groups, as well as the characteristics of the environments that support them; and (e) suggest some future directions, including the need for strengthened partnerships and research.

Keywords: Information literacy; Informed learning; Informed learners; Informed workforce; Informed citizenry

INFORMATION LITERACY AS A CAUSE; INFORMATION LITERACY AS A THEORETICAL CONSTRUCT

Information literacy has, in recent years, very much captured the imagination of library and information professionals? Why? I think the answer is very simple. Information professionals are highly aware of the transformational role that information and information literacy plays in peoples' lives. We are more conscious than most of our professional colleagues from other spheres of what it takes to be informed, to stay informed, and of how our information and technology environments can both help and hinder us as we learn, in all walks of life; whether at home with our families, in the community, at work, in recreation, or in formal educational settings. We are more conscious of the changes that can be made for the better in the world if people have both access to information and are able to learn effectively from it. We are also more conscious of what happens when information or access is denied to people. We know the value of information and information literacy to individuals, to families, to institutions, corporations, governments, economies and the arts. We understand that information literacy can contribute to better health, better education, better investment, better research, communication and creativity. Allow me to give you some examples of the power of information literacy, which may prompt you to consider your own examples:

- One Sunday my daughter had a rash. I was able to search the internet, looking for 'children's rashes', and discovered exactly under what circumstances it was necessary to seek medical attention. (This is the *information process* experience of information literacy – I used a process of my own devising, - identified a

problem, sought information, made sense of that information, and made a decision);

- Several years ago an aunt of mine was very ill. Using the internet my family was able to communicate with all its members, and establish ways of getting my aunt the medical attention she needed. (This is the *using technology for information awareness and communication* experience of information literacy);
- At work, earlier this year, we began to use a wiki to capture important things happening in our university department. As a leader, I have been able to use the wiki as a space to make available information and documents in a way that allows others to easily add to or comment on what is there. (This is the *information control* experience of information literacy, about making connections between information and learning needs);
- Recently we had to choose a school for my daughter to attend when she goes to secondary school (we call it 'high school' in Australia). I had to learn a lot about the different schools in our city and what they had to offer, I had to create a new knowledge base for myself on this matter. (This is the *knowledge construction* experience of information literacy);
- Not so long ago I wrote a grant application seeking funding for a project investigating academics views of research supervision as a teaching and learning practice, which required me to propose the character of new knowledge that might emerge from the project . As I go about implementing the project I am creating new insights into the research supervision process. (This is the *knowledge extension* experience of information literacy);
- Every day I have to make decisions about what information/knowledge I will use or not use, what information/knowledge I will share or not share (This is the *wisdom experience* of information literacy).

Understanding the power of information literacy makes it a passion and a cause, as it is for me and perhaps for you. Some of us, for whom information literacy is a 'cause', have also made information literacy an object of study. In doing so, we have learned much about the nature of information literacy, that is grounded in the experience of using information to learn in many dimensions of society. Since I have started to make information literacy an object of study I have become increasingly conscious of the different ways in which information literacy is experienced, of the different forms that information might take, and of how different contexts, different disciplines, different professions and different cultures influence the character of information literacy in that space. I will share some of the insights that are emerging as a result of making information literacy an object of study in this paper. I will especially propose distinctions that need to be made between information skills, information literacy, information literacy education and informed learning.

SOME DEFINING MOMENTS IN THE HISTORY OF INFORMATION LITERACY

The idea of information literacy gained its first major profiling in the publication of the American Library Association's Presidential Report on Information Literacy (American Library Association 1989). In 1989 the National Forum for Information Literacy was also established by Dr Patricia Senn Brevik (National Forum on Information Literacy n.d.), bringing together educational, business and government partners in the United States to promote the concept. Since that date there has been much discussion, debate and action around information literacy. The notion of information literacy has become pivotal to the role of libraries in educational sectors and increasingly in community and workplace

spaces. Information literacy programs have been created, research has been conducted, policies have been established, conferences have been held. In the last ten years information literacy has been an important theme at many conferences in the Asia Pacific region, including in Australia, New Zealand, Taiwan, Hong Kong and now Malaysia.

In the last ten years we have seen information literacy taking the international political stage, and this work is going to bring the agenda into a new era. The US National Forum for Information Literacy, the US National Commission for Library and Information Science and UNESCO have hosted two invitational meetings, in Prague and Alexandria focussed on raising international awareness of the importance of information literacy. The Prague Declaration (National Forum on Information Literacy 2003) and the Alexandria Proclamation (National Forum on Information Literacy 2005) have been vital outcomes of this advocacy effort.

More recently UNESCO has issued important papers (Catts and Lau 2008; Horton 2007), and 'train-the trainer' programs have been conducted under its' auspices. All of these initiatives are very much international and cross-sectoral, establishing the value of information literacy in all parts of society. This year, IFLA (Lau 2008) has released a publication on information literacy providing international perspectives; and as I write, IFLA and UNESCO are seeking an international logo to represent information literacy (International Federation of Library Associations 2008); and a State of the Art report on information literacy internationally is being written (International Federation of Library Associations 2007)

INFORMED LEARNING AS THE KEY CONTRIBUTION TO BE MADE BY INFORMATION LITERACY IN THE FUTURE

At the heart of information literacy is learning. Information literacy is regularly promoted as an approach to learning, a way of learning, the key to lifelong learning. What needs to be understood is that the character of learning made possible by information literacy is unique. There are forms of learning, rote learning for example, which, while vital for particular purposes, do not reflect the potential contribution of information literacy. In classrooms where the transmission of information is the dominant or preferred form of learning, the contribution of information literacy will not be realised. Information literacy makes informed learning (Bruce 2008) possible. Informed learning is using information, creatively, reflectively, effectively, and ethically in order to learn in any of life's paths. It is learning that is grounded in the effective information practices of professional, community or academic life.

Now, a lot of what I have just written may not seem to be very different from what we already know about information literacy directions. So why do we need the idea of informed learning? At present, many people use the term information literacy synonymously with every concept in the information literacy agenda - 'information skills', 'information use' 'information literacy', 'information literacy education'. We need to conceptually separate these ideas and be clear about what they mean. We also need a term, such as *informed learning*, that communicates clearly the potential contribution of information literacy. While the term may initially appear to be a tautology, not all 'learners' make use of appropriate information, nor do they always make effective and ethical use of information, all of which are vital in our rapidly evolving information environments.

As I have previously indicated: "Presently, the terms information literacy and information literacy education continue to be understood, in some places, as being about the acquisition of technological skills, library skills and information skills; while elsewhere they are used to refer to the experience of using information as we go about learning. While all these skills are necessary, sometimes we stop with the skills and do not focus on how people must use information to learn. Confining information literacy to such skills denies learners the rich potential which may be gained from the broader attention to the different ways of experiencing information use in the disciplines, professions and the community that are promoted by informed learning" (Bruce 2008).

Lana Jackman reminds us that information literacy is essentially an intellectual skill, a habit of mind necessary for negotiating our information world (Jackman 2008). So, if we add 'informed learning' to our linguistic repertoire, either in advocacy or in scholarship, we may begin to tease apart some vital elements of the agenda. Informed learning provides the language and the umbrella that allows us to focus on understanding and improving the way in which people use information as they learn.

Informed learning: is using information to learn.

Informed learners: are people who engage with the different ways of using information to learn (i.e. information literacy).

Learning: is coming to see or experience the world in new ways, this may be developing expert views or creating new ways of seeing.

Information literacy is experiencing different ways of using information to learn.

Information literacy education: is enabling students to work with the different ways of using information to learn; the educational framework that makes it possible for students to experience information literacy in new ways.

Learning information literacy: is coming experience information literacy in new ways.

Information: is anything we experience as informing; information will appear differently in different contexts and disciplines

Information use: is interacting with information; an expression or visible enactment of information literacy.

Information practices: are the practical processes and contexts within which information is used, e.g. professional development, essay writing, research, composition, internet searching.

Information skills: are the building blocks, the personal capabilities which make information literacy possible, in the same way that the ability to read and write makes literate practice possible.

Information technology: is the systems or infrastructure, including mobile devices, which enable different forms of information use. (Bruce 2008, 125)

When we see information literacy as a suite of different ways of experiencing using information to learn, we open the door to informed learning. Informed learning

encourages us to attend closely to the experience of using information to learn, both formally and informally, across all the settings in which we want people to realise the potential of information literacy. Informed learning promotes learning through effective engagement with information, the application of information practices vital to relevant settings.

Once we, as learners (in whatever role, for example, parents, citizens, researchers, employees) recognise what constitutes information in our context, and how we are using it, we can be more in charge of the information environment and how we encounter, source, control, engage with and use information. Information might take the form of pictures, sound, text; be static, moving, two – or three dimensional. It may take the form of research outcomes or community discourse; it may be an element of our physical environment, or our physical presence.

Once we learn about what constitutes information for different groups, and their experience of information use, we are empowered to help members of those groups become more effective information users.

KEY OUTCOMES TO BE GAINED FROM AN EMPHASIS ON INFORMATION LITERACY IN MANY ASPECTS OF OUR SOCIAL FABRIC

An information society is one in which much information is available. An information literate society is one where people are empowered to use information for personal, social, political or economic benefit. Creating an information literate society is likely to involve putting in place many technologies and infrastructures, policies (Catts and Lau 2008), services and educational programs. While many partnerships are required for the successful implementation of information literacy programs, of vital importance in this mix are library and information services, and especially information professionals that have strong understandings of information literacy and learning.

As we engage in this process of building the information society we must be critical about the role of technology, and be aware of the cultural contexts involved (including being aware of what constitutes information and what it means to be information literate in that society or cultural context). For example, if we want people in our local community to become more aware of health information and use it effectively, we need first to understand what they consider to be valuable information, what their preferred sources are, and how they prefer to engage with information (use it to learn). Sample sources might be people – friends, elders, nurses, doctors; paper sources – newspapers, magazines, pamphlets; electronic sources – static or interactive or something else. It is not our professional mandate about the character of information literacy, but people's real life experience of what it means to use information to learn (to be information literate) that must be our starting point. Changing peoples' ways of being information literate requires additional educational, training or change management processes.

Key Outcome 1: informed learners. The primary outcome of an information literate society will be informed learners; informed learners who are able to engage with all

seven of the '7 Faces of Informed Learning'.¹ (Examples of how these might appear in practice are provided in the introductory section to this paper).

Relevant educational programs (Bruce 2002) in schools, universities, libraries and other spaces are required to bring about this outcome. Such programs will not only introduce students to relevant information skills but will also help them link their information use and learning processes; encouraging them to reflect on what they are learning as they engage with their information environment; encouraging them to support each other as they engage with that environment; encouraging them to consider how their learning is influenced by different sources and technologies; encouraging them to understand what information processes best suit their learning needs and styles. Table 1 details the experiences of informed learners and the supportive learning environments. The role of reflection is particularly vital on the agenda and must not be underestimated. (Bruce 2008; Jacobs 2008).

Table 1: Experiences of informed learners and supportive learning environments

Experiences of informed learners	Supportive learning environments
Using technology to communicate and keep abreast of developments in the field	Make available required technologies and effective support and help mechanisms. Recognise learning, and learning to use technology, as social rather than individual practices.
Sourcing information to meet a learning need	Make available information sources and information professional assistance
Engaging with information processes to learn	Curriculum encourages and supports the use of information processes for learning
Making connections between information and learning needs	Curriculum encourages and supports reflective learning
Constructing knowledge as required	Curriculum encourages self-directed learning individually and in teams
Creating new knowledge; innovate	Curriculum encourages research-based learning
Making wise use of information on behalf of others	Curriculum encourages reflection on the implications for self and others of learning

Key Outcome II: an informed workforce: A second outcome of an information literate society will be an informed workforce. A workforce that is able to adapt to change, to innovate and to use knowledge creatively and wisely for many purposes. Information professionals (librarians, knowledge managers, information managers, record-keepers), human resources personnel (for example, workplace trainers), and technology professionals need to work together to make an informed workforce possible. This year Eilean Craig, in the National Health Services, Scotland, has developed an information literacy framework to assure an informed workforce for NHS Scotland (National Health Service Scotland 2008). Table 2 indicates what might be the characteristics of an

¹ The Seven Faces of Informed Learning are an adaptation of the Seven Faces of Information (Bruce 1997), as discussed in Informed Learning (Bruce, 2008, American Library Association 1989, National Forum on Information Literacy 2003)

informed workforce, together with the organisational characteristics required to support them.

Table 2: Experiences of an informed workforce and supportive organisational environments (adapted from Bruce 1999)

Workforce experiences	Supportive organisational environment
Using technology to communicate and keep abreast of developments in the field	Support environmental scanning and introduce contemporary information technologies, enable access to online information, both internal and external
Sourcing information to meet a learning need	Make available E-library, Corporate memory, of information intermediaries
Engaging in information processes to learn	Support information processing, packaging of materials for internal and external consumption; access to professional development and networking opportunities
Making connections between information and learning needs	Information management processes
Constructing knowledge, develop personal and corporate knowledge base as required	Build a corporate knowledge base through Knowledge management
Extending knowledge, innovating	Practice research and development
Making wise use of information on behalf of others	Value professional and corporate codes of ethics

Key Outcome III: an informed citizenry

A third outcome of an information literate society will be an informed citizenry. A community of citizens that is able to use information effectively to learn for health, financial, educational, political, recreational and other purposes. Information professionals (librarians, knowledge managers, information managers, record-keepers), technology professionals, and others (professionals in health services, financial services, legal services) need to work together to make an informed citizenry possible.

Table 3 indicates what might be the characteristics of an informed citizenry, together with the characteristics of a supportive information environment. The social character of information literacy is vital to building an informed citizenry, just as it is in education and the workplace. For example, people may practice information literacy to form 'giving circles' where people give away and receive unwanted possessions, to renew and maintain friendships, and to record their life experiences for sharing with others. A supportive information environment will focus on understanding and enhancing information practices with which its people are comfortable as well as introducing new opportunities for uptake.

Table 3: Experiences of an informed community and supportive information environments

Experiences of the citizenry	Supportive information environment
Using technology to communicate with social networks and maintain awareness in interest areas (finances, recreation, legal issues, schooling, political developments etc)	Library, govt supported and other information services, introduction of contemporary information technologies, enabling access to online information, both internal and external.
Sourcing information to meet personal needs or needs of community/social groups. People need to 'find out' about things like schools, the job market, political parties, world events, hobbies, travel info, or home services.	Free access to information wherever possible. Emphasis on open source initiatives.
Problem solving. People need to work out solutions, and identify ways of doing things that work for them, or their group, in their context. Do I start with the internet? Do I start with a phone call? What steps will work for me?	Support and educational opportunities: online, in libraries and community spaces to make people aware of the many processes and options available to them.
Getting organized. Making connections or linkages around projects at home and in the community. We need to understand how best to organize ourselves and our responsibilities.	Availability of resources and community education around: managing personal/home records, financial records, entertainment, photography, video, web-pages, computer file-structures, e-mail, web favourites, data in i-pods and mobile phones, amongst others.
Getting informed. Exploring unfamiliar territory, eg politics, religion, health, finance, legal issues, or perhaps recreational concerns, rock climbing, netball, athletics, needlework, gardening, musical instrument making or relaxation techniques	Resources and community education around: the resources we use for learning, understanding their intended audience and the purposes of the authors or designers; understanding the drivers, the motivations, the passions of significant others from whom we may choose to learn.
Innovating. We design new things and make them, or develop creative solutions. We may tell stories, create music or art. We may establish new ways of handling our relationships	A rich and diverse information environment, focussed on enhancing creativity in culture, science and personal well being.
Applying wisdom. Choose to use information for the benefit of others. Our focus is on the 'other person' or group; in our purchasing, in our cooking, in the raising of our children, in our voting or in our conversation.	An environment in which diverse values and life philosophies are valued and celebrated, raising awareness of how we beliefs influence our decisions and actions and relations with other people.

THE ROLE OF TECHNOLOGY IN INFORMATION LITERACY

What is the role of technology in information literacy? By technology I am referring specifically to ICTs, including mobile devices and social networking tools. Formally, and conceptually, we separate information literacy and information technology (ICT) literacy; however in practice the relationships between the two are complex. In this section I reflect briefly on some of the existing interrelations.

Sometimes technology contributes vitally to the information literacy experience and transforms it.

We use information in an increasingly information rich and chaotic environment that is regularly transformed by new technologies. Communication with clients takes place via e-mail and the web; journals are contributed to, and read, online; conferences are attended virtually; evidence for professional decisions is sought from a wide-array of sources including online hosts; brokers and other information professionals, especially librarians, play a vital role in ensuring the flow of reliable or high quality information; professional meetings are conducted via chat groups. Particularly in social networking spaces, new phenomena such as blogs, wikis, Second Life, You Tube and Myspace continue to change the ways in which we experience our virtual worlds. Now we also have the prospect of controlling our information environment and computers using our thoughts.

Sometimes technology makes it harder for people to be informed learners

ICTs are important and influential but often do not provide solutions for those struggling to use the technologies. Today's digital/virtual environments make it harder for people to be 'information savvy' (Lorenzo and Bzuiban 2006). The sheer volume of content and software available makes successful and creative use of what is available an ongoing challenge. A recent British report shows that while people may use technology extensively they do not have the capabilities required to make the most of their information environments. They are not information literate (Rowlands and Nicholas 2008). High levels of technology without informed learning or information skills, especially of the conceptual kind, may mean that we become poor learners. In a recent interview with an Australian newspaper Professor Susan Greenfield warned that '...modern generations may be very good at processing information but not acquiring knowledge. .. In order to find something out you have to know what you want to ask. You don't want to be in an answer rich, question poor environment any more than you want to be in an answer poor, question rich environment' (Wilson 2008)

Sometimes technology is powerless unless in the hands of an informed learner.

While many information practices are now inextricably entwined with technology, the conceptual skills involved transcend technology; the more complex forms of informed learning are less dependent on technology, and these practices must be privileged in order to ensure that when technology is available it can be used to maximum advantage. For example, a writer must seek history, context, inspiration, collaboration and review with or without technology. While technology may simplify or make the process more complex, may act as a barrier or may add new facets to the experience, the basic practices remain. A scientist must understand how knowledge has developed in her field, who has contributed, what they have contributed, the potential nature of her own contribution, what constitutes scientifically acceptable knowledge and acceptable practices for generating that knowledge; a decision maker or problem solver must have the required heuristics to engage in those processes if technology is going to facilitate or enhance their experience. Again technology may make a range of contributions, scientific information practices have evolved from scientific letter writing to the possibilities of e-research. Nevertheless, technology itself is powerless unless in the hands of an informed learner.

Sometimes, technology is simply not available

Information technology may not be within the reach of some groups, how can we help them?

We must be aware that people need to be creative, reflective and ethical information users in both ICT rich and poor contexts. While there are reasons why we might wish to provide access, lack of access to new technologies need not inhibit informed learning. We must also avoid imposing the norms of information and ICT use that have evolved in developed and hi-technology contexts. We must learn to understand the character of information that is considered important in different cultural contexts, including within relevant discipline, professional, community and other contexts. We must bring the information practices of both the privileged and underprivileged communities we serve to the fore. We must learn to understand and facilitate the information practices of people of all genders, ages, cultures, and race.

SOME FUTURE DIRECTIONS, INCLUDING THE NEED FOR STRENGTHENED PARTNERSHIPS AND RESEARCH

We need to remember that taking up the cause of information literacy is no minor matter. Building an information literate society means gaining the ear of governments and others with influence. It requires seeking funding for implementing projects; ensuring access to technology and information, the development of educational programs, fostering formal and informal learning in academic settings, in the workplace and in the community. Lana Jackman (Jackman 2008) co-chair of the National Forum for Information Literacy (NFIL) reminds us that information literacy requires 'Boundary Crossing Leadership' (The California Endowment n.d.).

What is required now to take our information literacy agenda forward?

We need to bring multiple lenses to the agenda

We need to see through the eyes of many people, to understand them and to determine ways of helping them. We need to bring the learning lens, the information lens, discipline and professional lenses to bear upon our work.

We need strengthened and shared research agendas

We need research into information literacy in specific cultural contexts, in specific workplace and community contexts. We need to understand peoples' experience to design responsive policies, programs and information environments. We need collaborative development of the research agenda, to establish a clear international community of researchers and to achieve the financial support required to take the research program forward. In addition, efforts must be made to establish links with the priorities of research funding bodies or to influence those priorities to more readily recognise the role of informed literacy.

We need strengthened partnerships

We need a broader range of partners, including business, government, education and community leaders to work together in establishing, funding and taking the agenda forward.

We also need to remember that all sectors of the community are partners, and equal partners in the quest for an informed society. We need to increase the ways in which it is possible for people to communicate with each other around information literacy issues. All our strategies for electronic communication cannot take the place of meeting each other face to face and engaging with important directions and concerns.

We need to broaden our cross sectoral engagement

By far the majority of interest in information literacy is still in formal educational arenas. The emphasis on lifelong learning in the knowledge society should have changed this by now, but it has not. The inclusion of workplace and community sectors in the conversation is still too limited.

We need to become advocates for the disempowered

As we focus on information literacy, we are confronted with the need to continue to deal with poor levels of basic literacy in society generally; and in specific parts of the world. There are still too many people who cannot begin to consider taking advantage of the higher order capabilities on offer, when reading and writing are still a challenge. We are easily lured into believing that information and technology literacy provide solutions to deep problems, and perhaps forget that in every situation not everyone is capable of taking advantage of the solutions we offer. We need to think and act upon questions like: how can we bridge the reality of today and possible futures? How can we work where we are to help people move into the possibilities of tomorrow? How can we bring about societies and people that are empowered politically, socially, economically?

IN CONCLUSION

Information literacy is an agenda to be taken seriously by leadership everywhere: in government, in education, in the workplace, in the financial sector, in the health sector, in the legal sector, in the community. Effective, creative, reflective and ethical information use brings about informed learning, and is the foundation of the evolution of our future learning organisations and communities; in short the evolution of our global future.

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