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Information literacy: agendas for a sustainable future

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Abstract

This paper, somewhat an incomplete historical overview and personal perspective, outlines a number of key challenges and opportunities in relation to future directions and developments in information literacy (IL) as a field of research and professional practice. It gives attention to significant foundational (selective) scholarship in the field, identifies a number of challenges in relation to theoretical frameworks, research needs, determining outcomes and impacts, and pedagogical frameworks for IL instruction. It is posited that addressing these challenges can play a role in sustaining IL as a significant educational and social agenda.

Keywords

information literacy; theoretical frameworks; pedagogy; review; research; analysis

Introduction

As an area of scholarly interest and professional practice, information literacy (IL) spans almost five decades, with its beginnings in both the burgeoning growth of information in the 1950s and 1960s and the professional opportunities enabled by this growth in term of maximising collection, access, dissemination and use of this information. Terms such as 'information society', 'knowledge society', 'knowledge economy' and 'knowledge industry' began emerging in the 1960s as nations, educational institutions and professional societies began to grapple with the cultural, social, economic and political ramifications of the growth of information and its potential as a transformative force in society (Machlup, 1962, Drucker, 1969). The rapid growth of libraries in the 1960s in the US, particularly academic libraries, also saw the development of library-based instruction (Wilson and Hermanson, 1998; Lorenzen, 2001) and the establishment of the Library Orientation Exchange (LOEX), a non-profit, self-supporting educational clearinghouse, in 1971, which was set up as a lending repository of materials developed to support library instruction. According to the LOEX website (LOEX, 2017), in 2016, LOEX had over 675 member libraries in the US, Canada, the Caribbean, Europe, Australia, and New Zealand, and continues to provide information on all aspects of instruction and IL, including digital resources, to libraries and librarians who are institutional members.

These developments provided the impetus for the emergence of the professional and scholarly arena of IL. By all accounts, the term information literacy was first used by Zurkowski in 1974 in a National Commission on Libraries & Information Science (Washington DC) report titled: *The information service environment, relationships and priorities* (Kelly, 2013). In this report, IL was posited as an individual's capacity to use information tools and information sources to address problems. This appears to be the foundation for the formation of the Presidential Committee on Information Literacy, formed in 1987 by the then President of the American Library Association (ALA) Margaret Chisholm, and charged with the task of defining IL and establishing its importance to student outcomes, lifelong learning and citizenship, as well as providing models for IL development and how it shapes the education of teachers and continuing development.

Emerging out of these deliberations was the 1989 *Presidential Committee on information literacy: final report* which defined IL accordingly: “Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand” (ALA, 1989). In conjunction with this report, it recommended the establishment of the National Forum of Information Literacy, and on establishment, it was chaired by Dr Patricia Sen Brevik. The National Forum on Information Literacy (NFIL) defined IL as “the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand” (NFIL 2012). The NFIL developed over 27 years as a collaborative of almost 100 national and international organizations working together, on various levels, to “mainstream this critical, 21st century educational and workforce development concept throughout every segment of society” (NFIL 2012). It ceased to exist as a non-profit organisation in 2015 (Weiner & Jackman, 2015).

Expansion

The growth of the NFIL was also a testament to the internationalisation and politicisation of IL. The Prague Declaration (2003) titled *Towards an information literate society* declared IL as a global human right: “it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning” (Prague Declaration, 2003, p.1). The IFLA (2005) Alexandria Proclamation on Information Literacy and Lifelong Learning (2005) urged “governments and intergovernmental organizations to pursue policies and programs to promote information literacy and lifelong learning”. IFLA/UNESCO School Library Manifesto, ratified in 1999 and now translated into more than 35 languages, established the development of IL as core work of school libraries (IFLA/UNESCO, 2015), positioning it as an educational framework for governments and educational systems.

This international focus fostered the publication of a number of international and country-specific reviews, reports and discussion papers, particularly from 2000 onwards. For example, the IFLA annual reports from 2000 provide a substantive overview of IL trends around the world, with particular focus on: resources for user education; publications, professional organisations, training programmes and communication events. These reports have documented IL initiatives in many countries, including Australia, Europe, Latin America, SubSaharan Africa, South Africa, and USA and Canada. In 2015, DW Akademie, an organisation for international media development based in Germany, published a discussion paper titled *Media and information literacy: a human rights-based approach in developing countries* (Reineck and Lublinski, 2015). Illustrated by country-based case studies, it provided an advocacy rationale and developmental framework for building media and IL programmes around the world. Examples of early country-specific reviews include Bhatt (2011), which provided a cogent survey of the IL models, standards, programmes and initiatives taken in India. A consistent thread in these comprehensive and country-specific reviews is that, while IL is becoming gradually integrated into library and education systems, the central importance of government leadership, investment and advocacy, the need for developing a research focus and collecting impact data, and IL training at all levels of education are viewed as essential social agendas. At the same time, these reviews highlight some significant conundrums which have framed some of the most recent discourses, and these are unpacked here.

What is information literacy?

It is clear to me that the whole arena of IL is immersed in a plethora of terminologies, definitions, descriptions and descriptions which begs the question: is there terminological and / or definitional confusion, and is this part of the problem with the national and international agendas surrounding IL? Is it, as Foster (1993, p.346) claims: “A phrase in quest of a meaning”? Is it, as Bruce posits (1999, p.34) a term “which clearly does not communicate its meaning”? In the first decades following the emergence of the concept, the debate centered on the distinction, if any, between terms such as bibliographic instruction, user education, information skills, library skills, library literacy, IL skills, IL skills instruction, information fluency, and research information skills, for instance? In the last decade, it is questioned how IL relates to digital literacy, media literacy, visual literacy, cyberliteracy, critical IL, radical IL, information fluency, multiple literacies, and transliteracy. Downie (2016), in exploring the concept and practices surrounding critical IL asks: “do we work to realize an information literacy that is critical, or are we aiming for a level of deftness with critical information?” (p.1). Is this terminological jigsaw a face for a territorial battleground for intellectual possession? Should this even continue to be debated? (Snaveley & Cooper, 1997).

Owusu-Ansah (2003, 2005) examined definitional contributions since the American Library Association’s 1989 seminal work on IL. He posited that ongoing debates surrounding this “often create the impressions of potential conflict when there are truly none” (2005, p.367), and that “defining information literacy continues to remain a distraction in the efforts of many librarians as they strive to determine what needs to be done by the library in information literacy education” (2005, p.367). He saw that the debates over definitions “often undermine concentration on the development of concrete solutions (2003, p.219). He concluded that “the needed clarity exists”, and “it is therefore time to devote all energies and intellectual activities to seeking earnest ways to achieve information literacy” (2005, p.372), and that “continued debate over appropriate definitions and descriptions after such extensive exploration and agreement, promises no practical benefits” (2005, p.373). He called for all librarians to focus on “action” (2003, p.219) and not to be distracted by any debate on what information literacy is. A counter-voice is provided by Kapitzke who claimed that the meaning of information literacy has “never been monolithic or fixed” (Kapitzke, 2003, p.4) and that despite its coverage in scholarly works and conferences, it is devoid of both theoretical and practical consensus.

A later examination of definitions of IL was undertaken by Mackey and Jacobsen (2011), in the context of the ongoing developments and shifts in information technology, and particularly in relation to collaborative digital environments, and “the competing literacy frameworks” that have developed as a result, and where “the connections to information literacy have not always been fully developed or recognized” (Mackey and Jacobsen, 2011, p.63). They argued that IL is a metaliteracy that supports multiple literacy types, challenging “traditional skills-based approaches to information literacy by recognizing related literacy types and incorporating emerging technologies, and that standard definitions of information literacy are insufficient for the revolutionary social technologies currently online” (p.63). They posited that a number of literacy frameworks that have emerged – specifically media literacy, digital literacy, visual literacy, cyberliteracy, information fluency - share the same discrete information skills with IL, yet give stronger attention to characteristics of critical thinking, knowledge creation, production, communication, distribution and participation afforded by the collaborative digital environment. Accordingly, they called for a “fundamental shift in how we understand information literacy itself” (Mackey & Jacobsen, 2011, p.68), reframing it as an “overarching and self-referential framework that integrates emerging technologies and unifies multiple literacy types” (Mackey & Jacobsen, 2011, p.62). In particular, they called for a “move beyond skills development to an

understanding of information as dynamically produced and shared online”, with explicit attention being given in practice to understanding format type and delivery mode as an iterative and iterative evaluative decision process; actively evaluating both the context of user-generated information, user-generated feedback as part of the information-to knowledge cycle, critically engaging with multiple viewpoints and perspectives; as well as addressing the “broader knowledge required for producing dynamic online content as an individual and in collaboration with others” (Mackey & Jacobsen, 2011, p.74).

A parallel voice was provided by Kapitzke some years earlier. Writing in the context of school education and school libraries, Kapitzke argued that IL as a set of attitudes and skills and “inside an individual student’s head” (Kapitzke, 2003, p.6) was “incompatible with emergent concepts of knowledge and epistemology for digital and online environments” (Kapitzke, 2003, p.2) and proposed “hyperliteracy” as an alternative for school libraries. According to Kapitzke, hyperliteracy refers to the “multidimensional, blended literacies that occur when the practices of critical literacy, media literacy, visual literacy, and multiliteracies fuse in hypermediated textual environments” (Kapitzke, 2003, p.11) and which would enable students to “examine the social context and construction of either the information “problem” or its “solution”, (Kapitzke, 2003, p.10), which Kapitzke claimed is excluded in traditional approaches to IL. Kapitzke claimed that in this approach, neither the constituent assumptions of the problem, its process of formulation, the subsequent solution, nor the information used in solving the problem is contextualised or problematised (Kapitzke, 2003, p.10). Kapitzke urged that school librarians need to add “critique” to their IL pedagogical practice, which would help students to pose questions such as “what role did the limited resources of the school library play in the investigation and construction of the solution”? (Kapitzke, 2003, p.11) and “what alternative explanations or expositions might have eventuated if resources from a more eclectic knowledge space were accessed? Were unofficial materials and resources, such as oral histories, Internet chat sites, Web sites, indigenous knowledges, personal testimonies, family documents, community museum artifacts, sought and used? If so, how were they juxtaposed with curricular resources? Was there concurrence or contradiction in their juxtaposition?” (Kapitzke, 2003, p.11).

A particularly troublesome aspect to me in the many clarion calls over several decades to focus on IL implementation and action centres on the assumption of “deficiency”. This “deficiency” assumption is at the heart of much IL rhetoric and practice, the notion that somehow people are deficient, incapable of surviving in this information-rich age, and accordingly need intervention and action on behalf of librarians. This is a problematic notion in my view. In an early address given at the Fourth National Information Literacy Conference in Australia in 1999 (Todd, 2000a), I highlighted the problem of IL being “the solution”. This begs the question – what is the problem? The problem, as I stated in 1999, seemed to centre on a “deficiency” assumption – the assumption that people are lacking, unable to survive the information flood. As Foster asks, is IL merely an invention by the library community, a “social malady with which librarians as information professionals are uniquely qualified to deal” (Foster, 1993, p.346). In a similar vein, Miller (n.d.) observed “the word ‘literacy’ carries with it the connotation of illiteracy, and the continuing implication that librarians are dealing with clients on a basic or even remedial level”. Specifically, in an unequal relationship between information provider and information user, not an equal partnership based on mutuality, an approach that assumes that the person is the problem - the deficiency model. This notion of deficiency is also addressed by Kapitzke (2003). Kapitzke speaks of policy documents and government reports which present IL as “an antidote to information overload and a panacea to the problem of lifelong learning within a context of fast capitalism and economic globalization” (Kapitzke, 2003, p.2). This assumption of IL presupposes that IL “bestows power on those who understand and apply its precepts and standards ... a key to prosperity for both the individual and the nation in the new economy”

(Kapitzke, 2003, p.3) and that “students lack something (that is, information) which only the teacher or librarian can provide” (Kapitzke, 2003, p.7). As another example, people who do not use libraries and information agencies are often labeled as non-users. Haider and Bawden (2007) conclude that “information poor” are essentially products of institutionalised professional library and information science discourses.

In my view, the deficiency model continues to be pervasive, and perhaps best articulated in the often long lists of specific skills that are deemed necessary to ensure people are information literate, and the underpinning implicit assumption that people do not have these. For example, in a substantive analysis of IL practice in academic libraries delivered through online tutorials, Kerr (2010) found that comprehensive attention was given to alerting students to the institutional and personal consequences of acts of plagiarism, and conveyed in a didactic tone, highlighting recent acts of plagiarism and articulating negative consequences of plagiarism (Kerr, 2010, p.133). Kerr reported that IL tutorials which focus on the citation / documentation procedures seemed to rest on an assumption of mistrust, cast in negative language, and without addressing the complex competencies of synthesis and knowledge construction which may be central issues to the plagiarism (Kerr, 2010, p.137). This also begs a difficult question. Is really the core of IL a concept and practice by librarians to create “mirror librarians”?

To stop critical discussions of what IL is, as Owusu-Ansah (2003, 2005) called for, suggests to me that the profession will continue to perpetrate the deficiency assumption that underpins IL action, at least in the educational setting. It will continue to perpetrate a discourse that positions people - library users, information seekers - as deficient and librarians as deficiency reduction agents. Not only this, by simply focusing on the action, we fail to ground IL in a theoretical foundation which gives it coherence, salience, dignity, and voice in the political policy arena. A deficiency approach as a fundamental principle of IL practice does not do this.

To have and to hold: theoretical foundations and perspectives

Speaking at the Fourth National Information Literacy Conference in Australia in 1999, I raised the concern that there was “no in-depth explication of a theory or conceptual foundation of information literacy from any educational or librarianship framework” (Todd, 2000a, p.30). I questioned if IL was in a theoretical limbo, and expressed the need of the field to articulate stronger theoretical roots of IL. I proposed that this embraces a multidisciplinary and integrated study of human cognition, human information processing, knowledge creation, information needs, information seeking behavior, and information and knowledge utilisation. These theoretical areas have a long research tradition and have developed a range of investigative methodologies. In a later paper (Todd, 2000b), I further proposed a theoretical framework for IL, situating it in the theoretical context of information seeking behavior, cognitive information processing and information utilisation as they are articulated in the information science and librarianship literature. I argued then that the rich body of research on people’s information seeking and use presents a view of people as active consumers of information rather than as passive vessels into which information is poured; IL is primarily about human information processing, a cognitive perspective; IL is built on a constructivist and subjective conception of information where information is that which enables people to construct sense of their information worlds, and that IL centers on enabling the purposeful utilisation to some effect (Todd (2000b, p.164-5). Rather than some kind of “deficiency” assumption, these key ideas represent four fundamental assumptions on which a theoretical framework for IL can be built. In this paper, I further articulated key theorists addressing the cognitive perspective of information processing, including Brookes, Dervin and Kuhlthau (Todd (1999, 2000b, p.166-170).

In documenting the growth in IL publications, Tuominen, Savolainen and Talja (2005) similarly claimed that it has been “more of a practical and strategic concept”, with focus on “normative prescriptions of information skills needed in modern society” rather than “the focus on empirical research” (Tuominen, Savolainen & Talja, 2005, p.330). underscores my contention that the field has not been founded on strong theoretical foundations, rather, a concept resting on the platform of “goodness” of libraries to deliver or rescue people. Even some 40 years after the emergence of the IL discourses in the 1970s, Tuominen, Savolainen & Talja (2005) claimed that research had not “yet probed in depth into studies and theories of information technology and its use” (Tuominen, Savolainen & Talja, 2005, p.330). Overall there appears to be little explication of the theoretical and metatheoretical foundations and metanarratives behind the concept of IL, little teasing out and debating the epistemological assumptions, and actually theorising about IL, rather than merely conceiving of IL as a set of attributes that can be taught and measured, and the articulation of competency standards (Tuominen, Savolainen & Talja, 2005, p.330).

One of the early reviews of the field by Bruce (2000) is particularly important as it specifically documents the emergence of a research tradition centering on IL. Bruce claimed that by 2000, some 25 years after the emergence of the concept, and despite research being “still in its infancy” (Bruce, 2000, p.1), IL researchers were beginning to develop a collective and collaborative consciousness, with a small number of studies completed and small number of theoretical frameworks beginning to be explored. In her analysis, she identified the characteristics of this collective consciousness: the emergence of a community of researchers and research teams; research growth beyond the predominant focus of IL in the educational sector such as school and tertiary settings, to workplace and community settings; the emergence of different ways of ‘seeing’ or ‘viewing’ IL – as a process, an amalgam of skills, using information technology, changes in people’s knowledge structures, or ways of experiencing or interacting with information. She also noted that a number of research studies were employing well-articulated theoretical frameworks, as well as raised a critically important question about the impact of IL agendas, programmes, and how the findings across the different sectors and employing different methodologies build the collective understanding of what IL is, and how it empowers people in their information worlds, whether that be learning, working or living. Certainly an analysis of the papers published in the *Journal of Information Literacy* over its ten year history shows an increasing diversification of research approaches and contexts across social and cultural contexts. Although the focus on educational contexts predominates, in line with its increasing recognition of its educational and social relevance, there is use of a wide range of methodological approaches: survey methods, case studies, a range of qualitative methods, and increasing use of mixed methods.

As I review the development of the field, I would conclude that significant work theorising IL is being done, particularly in the last decade. The foundational and highly significant work of Bruce (1997) centring on the “seven faces of information literacy” has played an important role in setting this agenda. Bruce critiqued the prevailing skills-based conceptions of IL built on a positivist view of information as a tangible object, and questioned the epistemological view of information and knowledge as accessible through attainment of systematic set of procedures or skills centering on text as primary source of information for learning. Taking a phenomenographic approach founded on variation theory by Marton (1986), Bruce (1997) developed a relational / experiential model of IL, and through her empirical investigation of people in higher education context, identified seven faces of information literacy which gave insight into interactions with the world of information as people experienced it, and which presented a picture or map of the different ways in which information is used. The seven faces of information literacy presented by Bruce were: using information technology for information retrieval and communication; finding information located in information sources; executing a

research process; controlling information through storage, filing, brain; building up a personal knowledge base in a new area of interest; working with knowledge and personal perspectives adopted in such a way that novel insights are gained; and using information wisely for the benefit of others (Bruce, 1997). This person-centric approach was not based on an assumption of deficiency, rather it examined peoples' experiences in using information, and posited IL as the sum of the different ways information is experienced. The seven faces of information literacy provided multiple conceptions of how information is used, and provided an empowerment-centred rather than deficiency-centred framework for developing people's repertoire of experiences for engaging with information. Bruce's research and theorising about IL has been important to the development of the field of IL as a theoretical pursuit, moving beyond positioning IL as an action agenda of libraries that focuses on the "improvement of student capabilities" (Bruce, 1997, p.373) specifically in relation to non-fixed listing of information handling competencies.

In calling for a richer critical scrutiny of the construct of IL, Limberg, Sundin and Talja (2012) elaborate three theoretical perspectives that have emerged in recent years. Their approach is based on a view of IL as "purposeful information practices in a society characterized by almost limitless access to information and where information practices in digital environments shape and constitute important elements in most people's lives in our part of the world" (Limberg, Sundin and Talja, 2012, p.93). They argue that the multiple definitions, standards and practices of IL are underpinned by various theoretical starting points, and a weakness in the IL literature is that these are not always made explicit. They claim the theoretical lens has a profound impact on the ways in which we teach or research IL, as well as the way that it is practiced. Accordingly, their paper presented three theoretical perspectives that represent different understandings of IL that are being used to frame theoretical discourses on IL: phenomenography, a sociocultural perspective, and Foucauldian discourse analysis. They argue that each of these perspectives have implications for teaching IL.

Phenomenography focuses on the variations in the ways that people experience particular phenomena, based on variation theory of Marton (Marton & Fai. 1999). According to Limberg, Sundin and Talja (2012), teaching IL from a phenomenographic perspective suggests a starting point that centres on the variations in learners' ways of understanding and acting on information seeking and use – rather than putting emphasis on inculcating expert lists of information skills which often imply right or wrong ways of seeking and using information; instead, teaching is directed at learners' various ways of experiencing purposeful information seeking and using information (Limberg, Sundin & Talja (2012, p.103).

According to Limberg, Sundin & Talja (2012), the sociocultural perspective stems from the writings of Lev Vygotsky and gives emphasis to the relationship between individuals and various forms of collective and institutional (particularly educational) practices. IL implies learning to communicate appropriately within a specific collective practice. This is also about being able to use physical artefacts for communication in ways that corresponds with the purpose of the practice (Limberg, Sundin & Talja (2012, p.104). The inseparable relation between action and tool is central in a sociocultural perspective, and gives emphasis to the situated nature of learning, challenging the generic aspects of learning of IL. A significant contribution to this theoretical perspective has been made by Annemaree Lloyd. In her early foundational works, Lloyd (2005), for example, argued that a generic skills approach to IL which primarily focuses on navigating a textual landscape of discipline-based discourses, not only silences other forms of knowledge and knowing, but also limits the power of IL as a social good by binding it to print and digital culture, and fails to address the collaborative, shared and social information worlds that Mackey and Jacobsen (2011) address. Lloyd's ongoing research, built on a sociocultural

perspective, shows that “meaning in information is created through the meeting between people, practices and tools... What is information is not objectively given; rather it varies between practice, situation and medium (Lloyd, 2005, 120). She argues that educational conceptions of IL which posits that information and knowledge are accessible through the “attainment of a systematic set of procedures or competencies” relate to “text as the primary source of information and knowledge, for learning and silences other access points to information and knowledge” (p 83), as well as constituting the dominant “truth” of what IL is (p 83).

Lloyd’s research (2003, 2005, 2006, 2015; Lloyd & Wilkinson, 2016) has sustained a meaningful and complex focus (both theorising and empirical research) on IL as coming to know through development of context-specific competencies that may not be solely reliant on effective access to text. This is a powerful and compelling approach. Her work examines the embodiment and transformation of information through socially constructed practices and experiences in the workplace. It shows that this is driven by the formation of social relationships or collaborative practices which contribute to the development of collective competency in practice. A key foundational study is Lloyd’s firefighters’ study (2006), as a study of IL beyond textual practices, identifies three primary sources of information:

1. textual sources, such as policy and procedures documents, which facilitate the formation of an institutional view of practice
2. social sources, such as the everyday experiential and social information of the team, which facilitate formation of an intersubjective view of practice
3. physical and sensory sources of information, such as the human body and the information of smell, which facilitate embodied learning

(Lloyd, 2006, p.575-476).

Accordingly, Lloyd has defined IL as knowledge of information sources within an environment and an understanding of how these sources and the activities used to access them are constructed through discourse. IL is constituted through the connections that exist between people, artefacts, texts and bodily experiences that enable individuals to develop both subjective and intersubjective positions. According to Lloyd, IL is a way of knowing the many environments that constitute an individual in the world. It is a catalyst that informs practice and is in turn informed by it (Lloyd 2010). Lloyd posits IL as a transformative process: the constellation of visible and invisible practices and processes that enable the transformation of and embodiment of information. It is this embodiment, enabled through practice and intervention in the workplace that facilitates a newcomer’s entry into the specialised work practices and the transformation from novice to expert (Lloyd, 2005). Lloyd’s ongoing research explores a variety of everyday contexts, for example her work in relation to refugees in the resettlement process, and refugee youth (Lloyd 2015, Lloyd & Wilkinson 2016). This work is also significant in terms of both the theoretical coherence it provides, and the building of a substantial corpus of research findings that underpin this theoretical perspective.

According to Limberg, Sundin & Talja (2012), the Foucauldian discourse analysis perspective on IL aims at “capturing the socially and culturally shaped ways of understanding information competencies and information practices (Limberg, Sundin & Talja, 2012, 110). Based on the work of Michel Foucault, discourses are knowledge formations – sets of interlinked claims, assumptions and meanings - that are constructed by members of a discourse community through the community’s set of conventions and discursive rules, either formal or implicit, by which information is sought, evaluated or used. People describe, produce and build experiences, emotions, identities and social worlds through dialogue and discourse. According

to Vakkari (1997), people live in a common reality that they largely share with the help of language. Language provides people with vocabularies which vary according to the discourses they are participating in, and which become the means by which people construct meaning or make sense in their lives (Vakkari, 1997). For example, different disciplinary discourses and fields of knowledge exhibit distinctive structures or patterns of meaning (Phenix, 1986). These patterns of meaning revolve around central questions that characterise each discipline. The disciplines have different and complex ways of 'coming to know', that is, how knowledge is gained in a discipline, and how it is validated. They have different methods of inquiry, for creating new knowledge, and for validating claims to new knowledge. Simply put, historians construct new knowledge of history in different ways to mathematicians constructing new mathematics knowledge. This has implications for IL instruction, particularly in academic institutions. Typically librarians have generated simplistic and generic models of information skills and research processes – a reductionist, one-size-fits-all approach to IL – which, from a discourse analysis perspective, is inconsistent with how different disciplines as discourse communities build deep knowledge and deep understanding. This perspective challenges us to rethink and to discuss more critically conceptions of users, need and indeed information as it is socially constructed, and to contest the nature of information competencies as uncontested phenomena.

In my view, it is critically important that the scholarly community not just continue to develop these rich perspectives of IL, but to also develop conceptual coherence with the existing body of literature on IL. Over decades of IL scholarship, the field has constructed multiple models of IL. Take a moment to do a Google image search on IL models; there are hundreds of them. Typically these portray an interrelated representation of key competencies that underpin a skills-based conception of IL. These models are either hypothetical models derived from professional association and institutional discourses and rhetoric about IL, or research-derived models based on empirical investigations of relatively small samples of students in a variety of educational contexts. Many models, once developed, are not further tested and validated as authoritative models across diverse contexts and populations. Such a plethora of models across multiple contexts raises a host of questions today: How many more models can the field deal with, and what purposes are served by creating even more models? Are these models in competition? To what extent does the plethora of IL models contribute to the reluctance of government agencies to take on IL mandates espoused by many IL initiatives? The creation of many conceptual models might seem to bestow some kind of power to the profession, but so what? At another level, the multitude of models and the ongoing drive to create more models conveys a certain lack of consensus about the field of IL. Consider this scenario: a researcher undertakes two small-sample studies of high school students' participation in IL instruction, creates a model of the stages of the research process that the students went through following the instruction, and then creates a website suggesting that this approach has a universality for all, and compels librarians to get with it. Is this the way forward?

Information literacy outcomes: Call for meta-analysis

I believe that it is also critically important that scholarly arena build a coherent picture of the outcomes of IL research based on the various theoretical perspectives. In all of the discussion about the various theoretical perspectives about IL, there is no substantive, aggregated analysis of the outcomes of IL instruction and programmes, at least for the dominant and most researched educational context that focuses on a range of skills. After decades of research, what claims can we make about IL? While there is a predominant focus on the development and acquisition of skills and attributes – derived from librarians' discourses of empowering and facilitating lifelong learning skills – there is a critical need to undertake meta-analyses of the myriad of research studies that look at the acquisition of information literacy as a generic set of functional information skills. Does the development of IL skills make a difference to the lives, learning, living and working of people? What are the effects, outcomes, impacts of IL instruction? What are the user-centered outcomes? I am not convinced that we can answer this question in a powerful, coherent and compelling way, and suggest that the absence of an empirically derived set of claims plays into the lack of national policy development surrounding IL. At this time as the *Journal of Information Literacy* celebrates ten years of research and scholarship around IL, what have we learned? What have we come to know about IL? What claims can we make with some certainty and assurance? What is the missing link here?

I admire the work of Professor John Hattie, currently Professor of Education and Director of the Melbourne Education Research Institute at the University of Melbourne. In his book, *Visible Learning* (Hattie, 2009), he presents a synthesis of over 800 meta-analyses related to student achievement to establish the key factors which improve student learning, which revolve around. Our IL field needs some kind of cogent meta-analysis, to establish some powerful claims about the effects and outcomes of IL instruction. This to me is the missing piece.

It is my view that establishing rich outcomes-impacts studies, and engaging in substantive meta-analyses of these types of studies across multiple contexts and across multiple theoretical perspectives, many different groups of people, and through multiple research and data collection approaches is what is needed to build a coherent set of empirical claims about IL. What can we claim about the value of IL instruction? The field needs to move from an inputs orientation to an outputs orientation. How does it help? While there is a lot of rhetoric surrounding the notion of helping people survive the information flood, what empirically can we say about how it helps? From a research meta-analysis perspective, we can say very little, I suspect. We have a stockpile of findings from hundreds of individual empirical studies, and what does it tell us? There is a critical need to aggregate existing findings into a cogent set of claims about IL – such claims, collectively, might constitute a theory of IL. A starting point might be aggregating and articulating the complex range of competencies that people develop through IL instruction.

In a state-wide study of 765 school librarians in New Jersey (Todd, Gordon, & Lu, 2010), participants were surveyed on their IL instructional initiatives, and asked to document what they saw were the user-centred outcomes and impacts of their instruction, and to identify the sources of evidence that they had used to make claims of these outcomes. Six categories of outcomes were identified: mastery of curriculum standards; development of resource-based competencies; mastery of research processes and learning-management competencies; development of thinking-based competencies and knowledge-based outcomes: development of affective, personal, and interpersonal competencies; and outcomes related to reading to learn and reading for enjoyment (Todd, Gordon and Lu, 2010). The outcomes identified in this study extend beyond the mastery of IL competencies to highlighting the role of this instruction in

developing intellectual agency, social agency and personal agency. This is the kind of outcomes focus the field needs, a focus that embodies empowerment, not deficiency.

Across the range of existing studies, there needs to be cogent meta-analyses of the multiple findings to establish a set of empirically generated claims / propositions about the impact of IL development and / or instruction. This needs to be done in relation to each of the theoretical lens through which IL is conceptualised. Scholars who define IL from a phenomenographic perspective need to build a cogent set of claims about IL. Similarly, scholars from a socio-cultural perspective need to take a similar approach. These sets of claims constitute a theory of IL from a particular perspective. Such claims also form the foundation for further empirical testing and for ongoing theorising about IL. Collectively, the propositions might then be aggregated as a metatheory of IL. It is this kind of meta-analysis that is urgently needed, and which will add power and rigour to IL discourses and practices, give rigour to instructional practices, and strengthen the arguments presented in national and international policy forums.

A pedagogy for information literacy?

Amidst the IL discourse, there is little exploration of what constitutes meaningful pedagogy for IL instruction / interventions. Typically teaching is built on specifying sequences of skills to be developed through instructional practices, without enveloping these in a teaching-learning discourse, developing instructional design through sound pedagogical principles developed from educational theory. While collections of 'best practices' in IL instruction exist (for example, the LOEX database), much of the discourse on IL seems to exclude discussion of the application of learning theory and pedagogical design principles. The debate surrounding the educational qualifications of librarians to deliver instruction is another challenge. It seems somewhat problematic that the delivery of IL instruction, as an educative means of addressing a seemingly complex social problem that has social survival at the centre of its rhetoric, is devoid of educational theory. This is even more challenging when the most pervasive definition of IL makes explicit reference to learning:

“Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand.”

(ALA, 1989).

Downey (2016) brings this right to the foreground by challenging the library profession to link theory and practice, moving beyond surface and at times mechanistic approaches to instruction (Downey 2016, 54) and creating meaningful IL learning experiences that are founded on critical theory and theories of transformative learning (Downey, 2016, 43).

Against this backdrop, it is my belief that IL practice needs to implement research-based and research validated instructional models derived from learning theory and instructional design principles as a foundation for effective IL instruction in the educational context. Few such models exist: Kuhlthau's model of the information search process (ISP), developed in the 1980s and refined in the 1990s, is a significant exception (Kuhlthau, 2004). Since its conceptualisation and development, the ISP model has been used as a framework and diagnostic tool for understanding the information search experience of people and as a framework for developing instructional interventions to support the information-to-knowledge journey of people in a range of library settings, particularly school and academic libraries. The model is founded on the belief

that learning is a process of personal and social construction as developed by influential 20th century educational thinkers such as John Dewey (1859-1952), George Kelly (1905-1967), Jerome Bruner (1915-2016), Jean Piaget (1896-1980), Howard Gardner (1943 -) and Lev Vygotsky (1896-1934).

According to Kuhlthau's empirical research that spans three decades, the ISP has been found to occur in seven stages: initiation; selection; exploration; formulation; collection; presentation; and assessment (Kuhlthau, 2004). These stages are named for the primary inquiry task to be accomplished at each point in the process. Each of these stages provides opportunities for instructional interventions that integrate cognitions, emotions and behaviours, and enabling people to progress on their information-to-knowledge journey. This theory of information seeking and use has been significantly elaborated and developed as an instructional framework known as guided inquiry, where teams of educators, including librarians, design, engage and guide students in a constructive journey of resource-based inquiry. Guided inquiry articulates a design process that centres on seven phases: open; immerse; explore; identify; gather; create and share; and evaluate (Kuhlthau, Maniotes & Caspari. 2012). Embodied in this design are rich opportunities for students to engage with and develop IL capabilities, engage in critical and reflective thinking on their journey of discovery and inquiry, developing deep knowledge and understanding of curriculum content, as well as personal, social and cultural agency,

Information use: The elusive term

Another key challenge that emerges from this consideration of IL in this learning context centres on attention to 'use', a key term in the IL discussion. There is a long scholarly tradition surrounding the study of information use / information utilisation in the fields such as sociology of knowledge, applied social science research, innovations diffusion, organizational change, and information user behavior (Todd, 1999). In the IL scholarship, this term is largely undefined and explicated, and when it is, its focus appears to be on accessing, finding, and evaluating information sources, rather than on giving some attention to enabling people to do something with the found information, that is, the complex cognitive processes required to engage with the found information and to transform information into deep knowledge, actions, and decisions (Todd, 2010). In doing so, IL scholarship seems to me to miss the central dynamic of the very word 'information'. The notion of human understanding is the essence of the word 'information': *inform.ere informo, informare, informavi, informatus* = inward forming. Brown & Duguid, (2002, p.18) expresses it with great simplicity and elegance: "The ends of information, after all, are human ends". The current IL discourse in my view falls short of this in that it celebrates the found, rather than the understood.

Kerr's examination (2010) of the practices of IL instruction in academic libraries supports this view. Kerr investigated the relationships between conceptions and practice of IL in 11 academic libraries in the US. Conceptions of IL were determined through an examination of mission and policy documents of these libraries, and the formalised vision, mission and goals-outcomes statements of the university of which they were a part. IL practices were determined through an analysis of 150 online tutorials utilised by these libraries to provide IL instruction. Kerr also conducted structured interviews with IL leaders at each of these libraries to develop a richer understanding of these dynamics. Kerr found considerable incongruity between widely accepted beliefs about IL and its actual implementation and practice in the academic libraries. While the public rhetoric about IL in these institutions centred on capabilities of knowledge discovery and generation, critical thinking, problem solving and lifelong learning in a globalised and connected world, practices centered on procedural skills with resources, ethical approaches to the use of information, and procedures for developing research plans with view to creating assignments.

The tutorials showed limited focus on use: the development of knowledge-based competencies of engaging with found information to build knowledge (Kerr, 2010, p.300-301). Bruce (1999) posited that curriculum designers and teachers or trainers should emphasise “conceptual skill and intellectual agility more than information technology or information location skills” and that “teaching information sources is only one facet of information literacy education” (Bruce, 1999, p.45) such as structuring information, developing personal heuristics for the application of information sources, adopting a critical approach to knowledge construction, and exercising intuitive capacities to gain new insights or understandings.

Conclusion: Agenda for a sustainable future

This is an incomplete and selective story. Piece by piece, we do need to understand the past, and to treasure it, and to interrogate with it in ways that enable us to find pathways forward. While a central belief in the ‘goodness’ of IL is an important driver of its practice and its realisation across diverse settings and contexts, it is not enough to simply continue to ‘do’ information literacy. It is the contention of this paper that constructing a sustainable future for IL as an educational, social and human agenda centres on a number of key dynamics. We are challenged to be rigorous in critically debating the conceptions and practices of IL, to unpack underpinning assumptions and beliefs about the nature of knowing, information, and how people engage with it, and to not assume that a one-size-fits-all approach is the way forward.

In doing so, we are challenged to continue to develop an understanding of IL from multiple perspectives and through multiple theoretical lens, and to develop research agendas and professional frameworks that foster this diversity. Can we live with multiple conceptions, moving beyond the tendency to seek supremacy of one conception over the other, to stop competing? The field can move forward as we realise that the diversity of conceptions, definitions, theories, research agendas and practices actually creates a coherent and robust picture of IL. We need to focus on constructing that complex picture, bringing together the rich and diverse plethora of research findings, engaging in substantive meta-analyses to establish powerful, empirical claims that can actually drive the advocacy, political and instructional agendas. This is where the answer is, and this is where the future is. Does the quest for the ultimate label actually matter, and indeed the competing for it? Is the label that has the most salience in a particular context, community or system the way to go? The current challenges actually compel us to think deeply, reflectively and openly. What is at the heart of all of this is empowerment of people, not prescription nor standard – enabling people to get on with their lives in a context where access to, and use of, information is fundamental to everyday lives.

It goes without saying that the information landscape is evolving dynamically and erratically, including the information objects, the structures, the technical systems and their power algorithms, and the shared networks. Against this backdrop, we are challenged to understand more fully what constitutes meaningful pedagogies for IL instruction, and what are the implications for the development of the pedagogical capacity of librarians, including service and post service education. The instructional journey begins at the intersection of learning theory, conceptions of information and knowledge, theoretical perspectives of IL, research findings, and life-centred outcomes. It all comes back to a saying that was instilled in me as a child: if I don’t know where I am going, how will I know when I get there? This is the JIL – the journey of IL.

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