

HISTORICAL ANALYSIS OF THE DEVELOPMENT OF INFORMATION LITERACY¹

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Abstract

The genesis of information literacy as a concept is outlined and its development is related to an historical framework with the aim of providing a better understanding of the process of development and adoption of information literacy ideas. The paper suggests a tentative historical framework for understanding the emergence of information literacy and its development particularly within the tertiary education system. It also highlights a few works which emphasise the importance of a more individualised approach to the design of information literacy interventions.

Keywords: Information Literacy, history, development

Introduction

The genesis of the term “information literacy” (IL) is well-known: almost every dissertation, paper or other work about information literacy records that the term was first used by the President of the Information Industry Association, Paul G. Zurkowski, in 1974 in a paper written for the National Commission on Libraries and Information Science, then an independent agency of the United States of America. This gives the impression that the coining of the term is something of a starting point for the topic but this

is a misconception. Zurkowski’s paper is entitled, “The Information Service Environment Relationships and Priorities” and it is the fifth in a series of related papers discussing the role of information in social and economic development in the United States of America (Zurkowski 1974). Zurkowski makes clear that the concept of IL was nascent in many minds at the time of writing: he provides a title for the Prologue: “The goal: achieving information literacy”, suggesting that this is a form of words that would resonate with its readers. Furthermore, William Badke, in

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a reminiscence published in 2010, discusses from personal knowledge the work of Zurkowski against the background of the time (Badke 2010). Badke explains that the context of the paper was concerned with the consequences of the increase in the volume of published material – the so-called “information explosion” – and ideas about how the necessary skills to cope with what was rapidly becoming evident as “information overload”. As with many subjects, it is only after a significant period has elapsed that one can begin to understand the development of the concept in the context of the conditions and imperatives of the time.

Information literacy has been viewed as a multi-faceted concept; definitions of the term have been relative to uses within the confines of various disciplines, workplace environment, and other similar concepts and their application to information technology. Perceptions of the term as an emerging concept have tended to focus more on issues of access to information, skill or competence in information handling, critical thinking and problem-solving abilities. Behrens’ (1994: 309) historical analysis of the concept relates that the exponential growth of information re-directed attention to issues of information handling and brought to the fore the need to re-examine the traditional role of libraries and librarianship through user education programmes. Since the coining of the term, “information literacy” as a concept has been variously interpreted by different authors. The purpose of this paper is to suggest a tentative historical framework for understanding the emergence of IL and its development, particularly within the tertiary education system. It is in no way a comprehensive historical review of the literature – that awaits further work and a larger canvas – but, rather, a selection of papers considered as marking significant stages in the development of IL as a subject of discourse.

Method

The antecedents to IL can be traced far back in the development of the professional discipline of librarianship and information science and can be said to form a “prehistory”, which is followed by a “protohistory”. Historians use this latter term in

several ways, but one that is especially useful for our purpose is to describe a period after the formation of a society but before the society produces its first histories; in other words, before there is a language that is adequate to express ideas about its culture (Anonymous, 2011). In this sense, in identifying a “protohistory” we are considering the period immediately after the term “information literacy” had been coined and trying to identify the emergence of crucial ideas. Thereafter, the aim is to identify what seem to be major developments and to group them by contribution to our understanding of what forms IL. A clustering emerged from a “thought experiment” based on the contents of a comprehensive review of the literature on IL (Lawal, 2012). From this, a tentative framework describing the development of information literacy was developed.

The tentative framework

- Prehistory – the antecedents of IL.
- Protohistory – a period immediately following the adoption of the term, as concepts begin to be formed.
- Experimentation – a period when many approaches are tried but before there is an understanding of cause and effect.
- Formalisation and codification – a period when strategy begins to emerge as effective approaches become evident.
- Theory and pedagogy – a period when a deeper understanding of the learning process emerges and IL development is linked to theories of education.
- Experientialism – a period when challenges to, and development beyond, the prevailing theories and practice of IL take place.

It is not intended to suggest that the development of IL has necessarily followed a neat, step-by-step, process: rather, there have been periods of recursion involving the last four components of the framework. During these periods, there have been further experiments, leading to improvements and modifications that have then had to “bed down” before wider adoption.

Prehistory

It is difficult for us, in the twenty-first century, to appreciate that the concept of the librarian as having any role in the educative process is, in itself, of modern origin. Still less apparent in the early history of the profession is the notion of the librarian as an initiator and facilitator of a learning process. There is certainly evidence for instruction in the use of a library – a concept that came to be known as “bibliographic instruction” – as noted by Ewert (1986) but, beyond this essentially practical approach there is little until the concept of popular education becomes part of social discourse. In 1876, Melvil Dewey considered the higher role of the librarian: “The time is when a library is a school, and the librarian is in the highest sense a teacher” (1876: 5). Whatever the view taken, it is certain that the writings of Dewey had a considerable influence on the development of a professional identity, including a strong association with education, in both North America and the United Kingdom and, by association, in the countries where the form of professional education consciously adopted American or British models.

Experiments with teaching methods also had a strong influence. For example, in 1934, the American Library Association Conference on National Planning for Libraries took note of a change from solely classroom-based group education to forms which could incorporate project-based study and individual work in the school library (American Library Association, 1935). In 1940, [Bennett] Harvie Branscomb, supported by a grant from the Carnegie Corporation, conducted a study of the use of college libraries and concluded that they were underused and that academic staff made little significant use of the resources in supporting their teaching (Branscomb, 1940). This finding, supported by parallel research in North America and elsewhere, encouraged the development of bibliographic instruction, mostly using large-class teaching; attendance at such courses was often made obligatory. Many consisted of a short series of lectures, with no obvious link to academic work or research. A prevailing problem was the lack of a widely-accepted conceptual framework and this resulted in criticism of the amount of curriculum

time consumed and the eventual abandonment, or weakening, of many programmes.

Similarly, as mass media began to develop in the 1950s and facilities to view them became more common in education institutions, interest in using them in the context of learning and teaching grew, resulting in experiments in constructing customised learning. Further development of library, or bibliographic, instruction continued during the 1970s but was largely library-based: this severely restricted its impact and hampered development.

Protohistory

Zurkowski’s paper thus appeared at a time of growing concern about how to cope with the plethora of information becoming available, how to select and channel such information to sustain economic and social development and, generally, how to ensure that people had access to relevant information. As Paul Königer and Karl Janowitz (1995) wryly observed, the population was “drowning in information, but thirsting for knowledge”. Although Zurkowski was addressing principally the needs of industry and government, the ideas that he explored and the suggestion of the need for the development of a plan by the National Commission on Libraries and Information Science to achieve an information literate population in the United States by 1984 caught the professional imagination. Here, also, the new term “information literate” – later developed as ‘information literacy’ – was used to embrace a variety of research, academic and socially-useful skills without including the term “library”, the employment of which several commentators had come to suggest was problematic because of the negative connotations sometimes attached to it. For example, Bill Crowley (1998) commented that

“Many library and information science faculty members want to drop the word ‘library’ and emphasize ‘information’ in our professional education. The motivations for what might be termed the ‘dump the library’ movement are complex, reflecting both an admirable concern for the future employment of graduates and an understandable – if self-

serving and ultimately doomed – effort to enhance our status in higher education” (p. 48).

There was fertile ground, some professional support and apparently strong social reasons for devoting resources to developing the new concept of IL.

Experimentation

With the insights gained from the successes and difficulties of the library or bibliographic instruction period, development of the ideas behind IL was quite rapid but centred around individuals and institutions. The prevailing model was the in-library course or workshop, mainly in academic libraries and schools. The latter was driven, especially, by the belief that IL as an educational programme could have greatest effect if it could enrich the learning experience of children in the classroom and in the library. Such learning would then be carried with them into higher education, the workplace and society. The essence of such a period is of purposive turmoil: many ideas have to be tried; there is a rapid churning of activity and many claims and counterclaims – but little actual evidence of properly-evaluated studies and assessment of implementation. Such work requires a body of experience to compare and contrast and this takes time and experiment to amass.

Formalisation and codification

Progress in the development of a new concept depends, critically, on persuasion and adoption. Few people or organisations would be willing to devote resources to trying an approach unless there was some evident recognition of the validity and usefulness of the approach by others: this can only come about through a process of formalisation, where agreement is reached on what the approach constitutes, and codification, where its components and their interactions are defined.

One of the key difficulties for the advocates of IL was establishing the difference between this subject field and what seemed to be closely-related fields, such as library and bibliographic instruction. The matter was further complicated

by the growing awareness of the role that computers were likely to play in the workplace and, even, in education. This brought forth an area of confusion which has persisted for a long time: is “getting to know computers” also part of information literacy? In 1996, an article by Shapiro and Hughes, they noted, “. . . some of the most vital questions about the emerging phase of our society - some of its most important economic, social and political issues - are turning out to be about both information itself and about the information infrastructure” (Shapiro & Hughes, 1996). They went on to distinguish between various “literacies”:

- Tool literacy: being able to make productive use of information technology.
- Resource literacy: understanding the form and means of accessing information from various sources.
- Social-structural literacy: knowing how information is related to social structures and the means of its production.
- Research literacy: being able to use information technology tools for productive research.
- Publishing literacy: being able to express and communicate ideas to a wider audience.
- Emerging technology literacy: the ability to adapt and keep up-to-date with technological developments in the use of information.
- Critical literacy: or the ability to evaluate information and its sources.

This helpful clarification encouraged the formalisation of the field and its eventual codification. Further work on the recognition and development of an underlying theory emanated mainly from within the higher education sector, of which the definition developed by the Association of College and Research Libraries (ACRL) (2000) was especially influential. It defines the qualities of an information literate person as the ability to:

- Determine when information is needed.
- Access the needed information effectively and efficiently.

- Incorporate selected information into one's knowledge base.
- Use information effectively to accomplish a specific purpose.
- Understand the economic, legal and social issues surrounding the use of information and access and use information ethically and legally.

The ACRL definition embraces many of the core elements of the “literacies” listed by Shapiro and Hughes.

Similar frameworks were developed by a Task Force on Information Skills in the United Kingdom (Standing Conference of National and University Libraries [SCONUL] 1999); SCONUL, known since 2001 as the Society of College, National and University Libraries, has produced a complete revision (Society of College, National and University Libraries Working Group on Information Literacy, 2011). In the Australasian region, information literacy frameworks of a similar kind were developed (Council of Australian University Librarians [CAUL] 2001), later being issued in a considerably expanded form as a revised edition (Bundy, 2004). The development of this framework served as a guiding principle for implementing IL programmes in various educational institutions. A common element of these frameworks is that they each identify access, acquisition, evaluation and manipulation of information as necessary steps in the information seeking process. Also, each framework discusses an identification of information need as a necessary element of IL and emphasises the value of the ethical use of information (Lau, 2006). The differences between the frameworks, however, is that while the ACRL's definition sets information literacy within a social scenario, SCONUL's model places greater emphasis on the recognition of information need and the steps involved in the information seeking process are more contextualised to the academic environment. The Australian and New Zealand Framework on the other hand was largely adapted from the ACRL framework and incorporates two additional standards which include principles that embrace social responsibility through a commitment to lifelong learning and community participation (Andretta & Cutting, 2003). This brings it even

closer to the Shapiro and Hughes view of “literacies”.

Theory and pedagogy

Evidence that there could be major differences of opinion over the value and, even, the conceptualization of the meaning of IL emerged from the work of, among others, Boon, Johnston and Webber (2007), whose findings noted that most of the commentary had originated from librarians and provided a counterbalancing view by also considering the opinions of academic staff. This revealed an, hitherto unexpected, richness and complexity of view that would need to be accommodated in the design of IL if such interventions were ever to be broadly accepted by academics (Boon et al., 2007). Librarians had to remind themselves that, with the best of intentions, they were attempting to work within an academic workspace and timetable, control of which was jealously guarded by academics.

Some of the criticisms of the concept of IL are rooted in arguments which suggest that conceptualizations of the term and the various frameworks and models developed tend to place more emphasis on the individual rather than groups, are pre-occupied with measurement and assessment of skills and seem to ignore the environment or context in which learning occurs (McCrack, 1992; Snavely & Cooper, 1997; Owusu-Ansah, 2003). Furthermore, some commentators have argued that much of the literature of IL practices tend to exclude the ideological, historical and cultural context of information knowledge and production. In their view, they contend that IL can also evolve in the course of conducting specific work related tasks (Tuominen et al., 2005). In this regard, Lloyd and Williamson (2008) observed that variations in the experiences of IL specifically in the workplace are consistent with Paul Zurkowski's naming of the concept in 1974, as one that is related to issues of complexity of information use within a specified context.

Such apparent confusion within the field inevitably resulted in resistance from many academics when attempts were made to persuade them of the value of including an IL component within their courses or as an adjunct to the

curriculum. Quite apart from the difficulty of demonstrating that IL had a positive and beneficial effect on academic progress of students, there was evident epistemological and terminological uncertainty amongst practitioners. Unless IL could be placed successfully within the educational paradigm and linked to the theory base of education, further progress and adoption within the academic curriculum would be hindered.

A taxonomy of educational objectives (Bloom et al., 1956; revised by Anderson & Krathwohl, 2000), compiled by a group of academics prominent in the field of education theory, had exerted considerable influence over the field and was widely respected, despite some criticisms of the original over the lack of rigour of its taxonomic process (Moreshead, 1965). It is not surprising, therefore, to find that the *Taxonomy* was one of the first sources to be consulted in an attempt to build a theory of IL. The *Taxonomy* is peculiarly suited to defining a pedagogy for IL, in that it identifies learning objectives and allocates them to the cognitive, the affective and the psychomotor domains of learning; thus it provides a perspective on knowing (cognitive), feeling (affective) and doing (psychomotor), which maps quite effectively into the aspects of IL defined by researchers such as Shapiro and Hughes (1996) and the various frameworks for IL that have been promulgated. Additionally, implicit in the *Taxonomy* is a holistic view of learning, which encourages recognition that IL should be strongly related to the whole learning process and, ideally, linked directly to the tasks undertaken by learners.

Practical expositions of this approach can be seen in several of the frameworks, such as the “Big Six” approach developed by Eisenberg and Berkowitz (1990) and subsequently revised and extended. This framework prescribes a structure that can be related to the objectives defined in the *Taxonomy*:

- Task definition (cognitive).
- Information seeking strategies (cognitive).
- Location and access (affective and psychomotor).
- Use of information (cognitive, affective and psychomotor).

- Synthesis (cognitive and affective).
- Evaluation (cognitive).

The work of Carol Kuhlthau has had a lasting significance: the Information Search Process (ISP) model (Kuhlthau 1985) also has strong links with the *Taxonomy* in that it clearly identified the affective aspects of the process of IL:

- Initiating a research assignment (Feelings: apprehension, uncertainty).
- Selecting a topic (Feelings: confusion, sometimes anxiety, brief elation, anticipation).
- Exploring information (Feelings: confusion, uncertainty, doubt, sometimes threat).
- Formulating a focus (Feelings: optimism, confidence in ability to complete task).
- Collecting information (Feelings: realization of extensive work to be done, confidence in ability to complete task, increased interest).
- Preparing to present (Feelings: sense of relief, satisfaction and disappointment).
- Assessing the process (Feelings: sense of accomplishment or sense of disappointment)

This may be said to have focused attention on the rationale for searching and suggested that the process is quite individualistic – although each searcher may go through the affective aspects in the ISP model, each experiences them in a way that is unique and particular to that person. The process of searching undertaken will be critically affected by prior experience: a good or bad outcome from using a particular source, a positive or negative response to assistance with the search from a professional librarian, even the degree of comfort in the environment where the search is conducted – all of these can have a strong influence on choices to be made when conducting searches in the future. The ISP also suggested that the success of assistance in the form of personal intervention by a professional librarian or through a group process, such as a workshop on IL, strongly depended on the degree to which the intervention addressed the needs of the individual.

This tended to rebut some of the criticisms of IL, as being individualistic, as noted earlier.

Within the field of IL a tension was becoming evident. On the one hand was theory and some evidence that suggested that the most effective interventions were those that were designed to address individual needs but, on the other hand, there was the recognition that the human resources to provide anything more individualistic than a “triage” system, where those needing guidance are sorted into a priority order based upon the perceived level of support needed, were not readily available. In South Africa, for example, the move towards massification of tertiary education first introduced by the post-1994 Government of National Unity, combined with an education system that was (with few exceptions) producing students inadequately prepared for entry to tertiary education, placed a great strain upon resource provision of all kinds (Jansen, 2003; Mohamedbhai, 2008). This has continued to be a challenge in managing library and information services and in providing adequate support for the development of IL.

The position in many countries is similar: one of the more worrying aspects of the present economic uncertainty is that resources for maintaining and developing library and information services will be severely constrained. Although a manager of any enterprise must behave and make strategic choices based upon relative resource scarcity, there is a point beyond which the maintenance of an *effective* service becomes impossible.

In considering the “mind space” of those working in IL, the work of Christine Bruce (2000) has been of seminal influence. She proposed five dimensions of awareness, or “consciousness”, about information literacy research:

- Locus of the research -- in which academic sector(s) does information literacy belong?
- Perceptions of information literacy -- how is the topic seen by others?
- “What” is being investigated -- what concepts and processes are intrinsic to information literacy?

- “How” is information literacy, or its components, to be studied -- what are robust techniques for its research?
- In what ways is information literacy influenced by other disciplines and does it have any effect on other disciplines?

These dimensions have been of lasting use in discussing and typifying the development of IL research, together with identifying gaps in knowledge and potentially-fruitful areas for research.

Experientialism

The final category of the tentative historical framework represents a new approach to the design process of IL interventions, aimed at addressing a fundamental problem: many students choose not to attend sessions, even if attendance is considered compulsory. Many reasons may be adduced, from laziness to pressure of other academic work, but a deeper analysis has suggested that the problem is psychosocial. Put simply, the design of an IL programme must embrace difference: not every student or academic has the same needs. Added to this, most IL programmes are designed by teams and, for this process to be successful, collaboration needs to be managed so that diversity of thinking can be captured rather than avoided. Experiments at the University of Pretoria, South Africa, have highlighted the importance of attempting to “measure and understand individual thinking preferences and areas of thinking avoidance as well as the impact on teaching and learning” (Scheepers et al., 2011). Making use of the Whole Brain Model, developed by William “Ned” Herrmann, and its associated Herrmann Brain Dominance Instrument (HBDI) (Herrmann, 1999), the design approach has explored the four key dimensions identified in the HBDI:

- Analytical thinking: logical, fact-based, quantitative.
- Sequential thinking: organisation, planning, detail.
- Interpersonal thinking: feelings, emotions, kinæsthetics.
- Imaginative thinking: holistic, intuition, integrating, synthesising.

The result is a much deeper understanding of the principles and practice of design of IL programmes. However, it remains to be seen how well these insights can be incorporated into the practical delivery of IL programmes, given the ever-present constraints upon the availability of resources.

There is, also, an “elephant in the room” in the form of changes in the use of Information and Communication Technologies (ICT). It is not so much that one technology is being replaced or supplanted by another but, rather, that the technologies are offering more ways in which information can flow or be channeled in our societies. The use of social media, for example, provides a subtle change in relationships, as users also become suppliers of information (though not necessarily knowledge, nor wisdom!). How this is to be incorporated into the IL frameworks is still being explored.

Conclusion

The struggle for IL to gain recognition and sustainable funding continues in many institutions. Despite the very evident difficulties many (perhaps, most) students and even some academics have with information use, IL is not universally recognised as a key component in the academic curriculum. In part, this is because it is a relatively recent development and because it is notoriously difficult to identify precisely the benefits that may accrue from its practice. The development of frameworks, codification, the search for sustainable theory and experimentation must continue but the problem is “chicken and egg” – without adequate funding these activities will dwindle but sustainable funding depends on being able to demonstrate value. The next phase must, therefore, be a, largely experimental, approach to developing a set of verifiable measures of effect and imputing value to such measures.

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