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PERSPECTIVES ON…

The Shift of Information Literacy Towards Research 2.0

Tibor Koltay [a,*], Sonja Špiranec [b], László Z. Karvalics [c]

[a] Szent István University, Rákóczi út 53, Jászberény, Hungary
[b] University of Zagreb, Ivana Lučića 3, Zagreb, Croatia
[c] University of Szeged, Egyetem u. 2, Hungary

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ABSTRACT

In this paper, based on desk research, we will present the most important features of Research 2.0 in its relationship with information literacy (IL). The appearance of the Research 2.0 paradigm was brought about by numerous technological innovations resulting from Web 2.0. This may lead to transformations that could change the principles of research activities. When explaining the nature of Research 2.0 we highlight factors that hinder its wider uptake. We will also try to show that IL is changing in some of its aspects as a result of developments in the Research 2.0 domain, regardless of the fact that it is not widely adopted. The consequences resulting from the analyzed transformations in IL are of utmost importance for academic libraries, the content of their instructional activities and future information literacy conceptualizations.

INTRODUCTION

Desk research was done in order to contribute to discussions about the future of academic librarianship, and carried out based on ideas around new trends in scientific research. Our desk research combines sources and insights from a variety of discourses including speculations on the nature of information literacy, scholarly communication, studies in using Web 2.0 in research and professional literature focused on academic librarianship. To examine the relevance of our ideas, we conducted a literature-based theoretical analysis that explores the trends that explores not only the trends that have caused considerable reconfigurations of research processes and scholarly communication and research cultures, but also lead to the re-examination of themes and issues prioritized in information literacy (IL) research and practice.

Both research practices with an emphasis on scholarly communication and information literacy have been intensively discussed in academic librarianship. They reinforce the notion of the *library as the heart of the university*, an image well established in the first half of the 20th century (Euster, 2005). Information literacy has strengthened the idea of the academic library as a center of learning, while the support of faculty scholarship placed the academic library in the heart of research. However, academic libraries have dealt with research and information literacy mainly as separate entities and from specific problem angles. For instance, in dealing with scholarship and research, the academic library community focused mainly on diverse issues regarding the "output" on scholarly communication, like monograph purchasing, journal cost and electronic journal access, subscriptions, etc. (English, 2004), while the core process of research and the dynamics of change within scholarly communities received less attention (Genoni, Merrick, & Willson, 2006). Changes in researcher information behavior and in the publishing world are in turn calling for a major transformation of the role and tasks of the academic library.

The academic library community has recognized an ever-more pressing need to take these issues and developments into account and began to deal with them more intensively by publishing a white paper entitled *Intersections of scholarly communication and information literacy: Creating strategic collaborations for a changing academic environment* (ACRL, 2013). The document explores and articulates different intersections between scholarly communication related to research activities and information literacy, arguing that these intersections should be carefully considered by librarians in order that libraries become "resilient" with regard to tremendous changes occurring in the research information environment. The paper offers suggestions and recommendations for moving forward in altering the existing approaches to information and explicitly emphasizes the need to integrate into information literacy issues relating to themes surrounding research environments.

This paper is thus an attempt to examine some of the above stated issues in a more detailed way, by considering topics that need to be prioritized within IL practices. Moreover, intersections of research activities and IL are explored in the light of broader transformations within research landscapes, with the aim of directing the attention of academic librarians to those trends that may determine their future work.

THE NATURE OF INFORMATION LITERACY

The work of today's researcher presupposes a number of literacies. From among the various types of relevant literacies, at least three

* Corresponding author at: Rákóczi út 53, Jászberény, Hungary.
E-mail addresses: Koltay.Tibor@abpk.szie.hu (T. Koltay), sspiran@ffzg.hr (S. Špiranec), zkl@hung.u-szeged.hu (L.Z. Karvalics).

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types can be mentioned in this context: information literacy, scientific literacy and academic literacy.

To gain a more accurate picture of their nature, we can consider them from a bird's-eye view. Such perspective reveals three levels of literacies:

- conceptual competencies that among other things include innovative thinking, problem solving and critical thinking;
- human competencies: social networking skills, self-management and cross-cultural interaction skills;
- practical competencies: media and information literacy (Lee, 2013).

The best known literacy from among practical competencies is information literacy. It is also the one that has received the most attention from the perspective of academic libraries (Behrens, 1994; Breivik, 1999; Grafstein, 2002; Owusu-Ansah, 2003; Snavely & Cooper, 1997). On a pragmatic level, these discussions resulted in frameworks and standards, like the SCONUL's Seven pillars of information literacy (1999, 2011) or ACRL Information Literacy Competency standards for higher education (2000), which are currently being revised into a framework for information literacy (ALA, 2014). All these sources point to information literacy as a way for college and university libraries to directly support the educational mission of their institutions, align with institutional goals, and regain some of their historical centrality on campus (Saunders, 2009).

Perhaps the best known and accepted definition of IL says that information literate people are able to recognize when information is needed. They are also able to identify, locate, evaluate, and use information to solve a particular problem (ALA, 1989). This definition has been widely used and further developed by other definitions. IL education emphasizes critical thinking and the necessity of being able to recognize the quality of a given message. It is firmly positioned among other literacies despite a certain amount of (occasionally well-founded) skepticism, which in itself highlights the fact that information literacy and especially its lack has always been of greater importance to academic librarians than to any other group of "players" in the information and education arena (Bawden & Robinson, 2009). A crucial feature of IL is it's connectedness with technological changes. IL has appeared, spread and developed as a reflection of shifts in information environments and technological changes (Špiranec & Banek Zorica, 2010).

Functioning in modern society requires that we master the skills of written communication (Morville, 2005). Nonetheless, it has to be supplemented by multiple literacies that represent a response to rapid technological changes.

The complexities of the current information environment make necessary complex and broad forms of literacies that are not restricted to any particular technology and foster understanding, meaning and context (Bawden, 2001). Different literacies depend on varying social contexts and equally varying social conditions of reading and writing. Consequently, they change with time, according to changing purposes and circumstances, as well as people and tools involved (Lankshear & Knobel, 2004). For all these changing circumstances, a rapid development of information and communication technologies (ICTs) represents one of the most crucial factors.

The difference between being able to appreciate and process an aesthetically valuable piece of writing and to cope with socio-technological changes and challenges brought about by the convergence between media, telecommunication and information, and communication technologies, is considerable (Livingstone, van Couvering, & Thumin, 2008). This is one of the reasons, why the existence of the World Wide Web and then also the appearance of Web 2.0 have been playing a significant role in forming literacies. Web 2.0 is generally taken to encompass a variety of sites and tools for shared information creation and updating, and social networking and communication (Bawden & Robinson, 2009). It enables mass participation in social activities. Users and their interests are represented in mediated spaces, which also serve as an environment to activate engagement with others (Jarrett, 2008).

This being said, it seems logical to identify skills and abilities that typically characterize researchers, in particular in relation to the above described changing information environment. It is rather obvious that researchers have to possess skills associated with innovative thinking and problem solving abilities. Likewise, self-management is equally indispensable. We will show here that social networking skills are gaining importance, with differences across different contexts. Furthermore, owing to globalization and a growing international cooperation between researchers, cross-cultural skills are also surfacing as more and more significant. We may add here a selection of the vital skills, as identified by Davies, Fidler, and Gorbis (2011). According to these authors, the ideal researcher is principally characterized by adaptive thinking. Researchers are able to manage their cognitive load properly, filter information based on importance and use a variety of tools and techniques. All this must be accompanied by a specific type of mindset that allows these tools and techniques to be used in work processes aimed at desired outcomes. Sense-making is also absolutely essential, since there is no serious research without the ability to determine the deeper meaning of what is being expressed at face value. Data-based reasoning is typical in a number of research settings, coupled with the ability to translate large amounts of data into abstract concepts. As research is largely determined by computing, these abilities can fit into the framework of computational thinking. IL, as a practical competency, enables the here described necessary abilities of researcher. Sense-making, reasoning, adaptive thinking and problem solving all depend on information and thereby on IL.

A relatively new approach in analyzing the importance of IL is based on interpreting IL as a means of mastering information overload (IO). Information overload is a consequence of receiving and managing huge amounts of information in a great variety of formats and types, delivered through a limited number of interfaces (Bawden & Robinson, 2009). As a consequence, the diverse and abundant information choices that we face in almost all fields are coupled with our inefficiency in performing our tasks (Davis, 2011).

Information overload can be defined as an impediment to efficiently using information due to the amount of relevant and potentially useful information available (Bawden & Robinson, 2009). We can distinguish between two levels of IO: the macro level and the micro level. The first one is related to the limitations of physical storage and processing capacities that present an obstacle to accessing information. The micro level of IO represents a kind of failure in filtering information (Davis, 2011). We have to add here that information overload often remains unrecognized (Badke, 2010) and its very existence is questioned by some authors. However, provided that we take its existence as a matter of fact, information overload can be counterbalanced by information literacy, as it essentially enables us to efficiently process all types of information content. Apparently, it is the micro level where information literacy can be used as an efficient means of managing IO.

Nevertheless, it would be utterly naïve to presume that researchers easily (and readily) accept the need for acquiring IL. There is substantial evidence that people in general hold themselves competent and skilful in dealing with information. This is especially true with regard to their use of technology where people's aptness in using computers is often mistaken as evidence for a high level of information literacy and in this way disguises the unsatisfactory level of information literacy among the general population (Herman & Nicholas, 2010). The same may be observed among researchers (Nicholas, Huntington, Jamali, & Dobrowolski, 2008). This has been forecasted a decade ago. As Lynch (1994) indicated with the primary literature in digital form reaching a critical mass, "the natural tendency of library patrons is to use the best of what is available and to ignore even very high quality materials that are available only in printed form" (Lynch, 1994).