Information Literacy in the Academic Context: Global Trends and Local Issues

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Summary

Information literacy is generally perceived as the spiritus muovens *of learning processes, reflecting the premise of information as the basic building block of education. This idea gained relevance and new facets with the proliferation of the Web 2.0, which has brought about new, speculative and concerning issues.*
In the first part of the paper the authors will discuss the importance of information literacy in the higher education sector. They will particularly discuss and reexamine the question what it has meant to be information literate in the print era, the digital era and in the context of the Web 2.0. Taking conceptual shifts between those different information ages as a point of departure, the particular cluster of competencies needed today to support educational processes in the higher education sector will be identified. After commenting global issues the authors will present preliminary results from a local (national) survey about the inclusion and integration of information literacy elements into Croatian new higher education (i.e. Bologna) curricula.

Key words: Information literacy, higher education, information behaviour, Web 2.0, Bologna programs, Croatia

Introduction

The information literacy (IL) movement has grown dramatically over the past quarter century. The rationale for its positive perception is located within the concept of the information age that places high value on efficient and effective acquiring and use of information (Badke, 2008). According to Lloyd, information literacy has been derived from librarians' discourses of empowering and facilitating lifelong learning skills and through their discursive practices, which focus on the 'end users' developing a proficiency with information, through the seeking, interrogation and evaluation of information sources and the appropriate and ethical use of information (2005, 82). In the higher education sector, the emphasis is on acquiring, developing and demonstrating individual skills and competency which will support independent lifelong learning, critical thinking and problem solving.

Despite the potential positive impact of information literacy on learning, our perceptions of the student population and their learning performance are determined by plagiarism, horizontal information seeking, the lack of the habit of evaluating information and the cut-paste syndrome. According to numerous authors, the described anomalies are a result of information literacy inadequacy in higher education, which is leaving university graduates devoid of the very skills they require to function well within the information workplace (Maughan, 2001; Cheuck, 2002). At the root of the problem is the fact that information literacy is rarely addressed as an educational objective and therefore is not systematically covered in academic program curricula.

Correlative dimensions of information and learning environments

The process of learning begins with dealing with information; therefore information environments with libraries as their traditional proponent and learning environments created by educational institutions have always been connected and interrelated. This was certainly the case in print-based environment, when learning processes relied on print resources and the capacities of using libraries. With the transition towards electronic and hybrid learning environments the structure of capacities that have the potential to support learning processes has changed. Several new clusters of skills and competencies have emerged with the assumed potential to influence learning processes in diverse environments; Information literacy (IL) is one of them. The uniqueness of this particular literacy refers to its relevancy in analogue, electronic and hybrid environments. Current IL frameworks cover a wide spectrum of capacities such as the ability to access, evaluate, and apply information effectively to situations requiring decision making, problem solving, or the acquisition of knowledge. IL therefore refers to a set of abilities enabling individuals to "recognize when information is needed and the capacity to locate, evaluate, and use effectively the needed information"' (ALA, 1989).

Pervasive computing and the integration of ICT into learning processes have further emphasized the importance of IL as a precondition for learning success in new environments. New pedagogical paradigms are based on the premise of constant interactions with the present complex information environment, where the learner constructs knowledge rather than passively receives it. People who are learning and working in new virtual learning settings have to be independent and self-sufficient learners and users, but are faced with abundant information and unfiltered, unorganized information floods. Hence, the ability to meaningfully interact with a wealth of information is deemed more important than ever. A common response of educational systems to those new conditions in education was and still is a focus on ICT and digital literacies and the effort to integrate those into academic curricula. No doubt, these are legitimate, but not sufficient efforts. Most public policy discussion of education have centred on technologies—tools and their affordances. The computer is discussed as a magic black box with the potential to create a learning revolution. Nevertheless, computer and IT skills allow individuals to use computers, software applications, databases and various other technologies, while IL, as a broader concept, focuses on social applications of information skills and embrace questions of critical evaluation and selection of information or issues of efficient and ethical information use. Having in mind the cluster of skills, competencies and habits IL includes, its importance in educational processes can hardly be denied. The question remains whether IL can be one of the answers for current actual questions, issues and challenges higher education has to face.

The contemporary higher education context: problems and issues
"I google, therefore I am"

This quote could be attributed to any member of the *Google generation*, the *Net generation*, *Napster generation* or to the typical *digital native*. All this popular phrases are used to describe young people who intensively use technologies, services and tools that affect their information seeking behaviours, communication styles and habits. This group of users, consisting mostly of students and pupils who have grown up in an online world with little or no recollection of life before the web, for whom technology is a way of life, also represents the very audience that both quickly adopts and frequently uses Web 2.0 services. Their identification as a specific user group which is characterized by specific information behaviour is not just a matter of technology and using new tools and services; they can be differentiated by a particular state of mind that involves attitudes, emotions and preferences, thinking and learning styles. The described assumptions have been identified and discussed in a range of studies (OCLC, 2004; UCL CIBER group etc.). One of the most prominent surveys conducted recently elicited very important findings that argument the need for information literacy, such as:

- search engines fit students' life styles better than physical or online libraries (students begin their information search with search engines)
- students perform horizontal information seeking, which could be described as a form of skimming activity, where people view just one or two pages from an academic site and then "bounce" out, perhaps never to return
- the Net generation has high expectations of ICTs and has zero tolerance for delay
- they prefer visual information over text
- they do not respect intellectual property
- young people have a poor understanding of their information needs and thus find it difficult to develop effective search strategies
- the speed of young people's web searching means that little time is spent in evaluating information (UCL CIBER group, 2008).

The consequences of described transformations in the information universe and the resulting changes in information behaviour of young people are particularly present in the higher education sector. The majority of university teachers will confirm that students are reading less, referencing less, and writing with less clarity, or, to express it in the words of T. Brabazoon: "Clicking replaces thinking" (2007).

The referenced studies show that the hallmarks of university education, like understanding and application of good practice in constructing searches, establishing the validity of sources and, by extension, attributing them when appropriate, are endangered, and the consequences of these occurrences require attention and concrete actions.

The Web 2.0 in education: potentials and risks

The described issues have gained more relevance and require more attention in Web 2.0 environments. Educational institutions are beginning to inject Web 2.0 services and tools into classrooms in order to construct active learning environments where knowledge is allowed to shared, used and reused. Such trends have resulted from new perceptions of learning, which is considered as conversation and sharing and is characterized through open environments constructed with social software such as blogs, wikis, podcasts etc. Yet, despite the educational potentials of the Web 2.0, one should not ignore the large number of doubtful or dangerous implications we are starting to see. New technologies make it possible for average consumers to generate and use, archive, annotate and recirculate content in powerful new ways. Such new spectrum of user activities generates a new knowledge culture and the concept of collective intelligence as its central plank. Like-minded individuals gather online to embrace common enterprises, which often involve access and processing information. According to Levy, who has first coined the term collective intelligence, in such a world "everyone

knows something, nobody knows everything, and what any one person knows can be tapped by the group as a whole" (Jenkins, 2006, 39). The most representative marker of collective intelligence is Wikipedia. The original idea with Wikipedia was that everyone could write, but everyone could also correct and rewrite: the massive amount of readers would eventually make sure that an article on every topic would "converge" to the truth. In such a new knowledge culture, students must acquire deeper skills at assessing the reliability of information, which may come from multiple sources, some of which are governed by traditional gatekeepers, others of which must be crosschecked and scrutinized (Jenkins, 42). Students as well as educators have to be aware that learning and working within such environments involves a large number of errors. Misinformation emerges, is worked over, refined or dismissed before a new consensus emerges. Web 2.0 with its collaborative model of knowledge production and mash-up philosophy obviously has brought an end to the stability of information context by creating flat and fluid information spaces. There is enough evidence that the interlinking of learning with these new information spaces requires specific competencies, such as the analysis and identification of the context of generation of information and permanent practice of determining the authority, authenticity and accuracy of encountered information. Students must be taught to read sources from a critical perspective.

Privacy violation is a further danger the students face in their online activities, specifically when using Web 2.0 services and tools, but are rarely aware of. Moreover, students trust information on the web to easily, when searching for some information on the web they tend to accept what they have found as true information, often without looking at other sources and hence having no justification to accept the information at face value. Schools and universities have more and more problems with students who prepare essays by using material from websites or blogs just by copying pieces of information that look relevant and paste them together, without sometimes even understanding them, let alone citing them. Nevertheless, the copy-paste syndrome has not just consequences in the sense of plagiarism. As T. Brabazoon emphasizes, copy-paste, SMS, blogging and twittering undermines the capacity of "reading with understanding". To put it differently: students who keep reading only small junks of information and who compose essays by mainly copying never learn to read larger segments of complicated text. Thus, Web 2.0 may well be one of the reasons why "high quality literacy" seems to be on the decline (Maurer, 2009).

IL as the corrective of anomalies in educational processes

The problems of educational processes, however modern and technology-enhanced contemporary education may be, are a result of following massive assumptions: students somehow intuitively understand the research process, can take notes, compare arguments, evaluate information resources and organize them, regulate their own learning and do all this in an ethical manner. Although

the possibilities of the web stimulate inadequate information handling and behaviour, the problem is not Google. "The concern is that teachers and librarians are not being given a chance to instruct the literacies required to transform Google from a leisure application and into a starting point for a critical and reflexive research process" (Brabazoon, 2007, 145).

An analysis of the core key words that describe the main problems higher education is currently facing (triggering the research process, locating high quality information, accessing and evaluating information, organizing it, plagiarism etc.) shows that those can be directly mapped to key concepts that define information literacy. This does not mean that IL is the ultimate panacea for solving problems occurring in academic learning environments, but it certainly is a valid strategy and logical means for dealing with existing anomalies. This interrelation is explicitly expressed in Bent et al, who claim that IL can be thought of as "an individual's attitude to their learning and research such that they are explicitly thinking about how they use, manage, synthesize and create information, in a wise and ethical manner, to the benefit of society, as part of their learning life. In this view, IL is central to learning and research and is about changing people's learning attitudes and habits so that they understand how information fits into their learning lives" (Bent et al, 2007, 84).

IL goes beyond surface and technical skills and deals with conceptual insights, the construction of strategies, with assessment and sense-making, the formation of information and learning habits, with the ability of distinguishing between fact and fiction, fact and opinion, with providing arguments and collecting evidence. This literacy allows students not only to handle a search engine but provides the interpretative capacities to handle the results (Brabazoon, 2007).

As studies have shown, information behaviour patterns of students display a variety of plagiaristic activity from poor paraphrasing, plagiarism consisting of pasting together quotes from different sources to complete copying of unacknowledged work (Nadelson, 2007). Even where there is no or little evidence of plagiarism, teachers complain about incompetent referencing of sources. Intellectual property rights issues are certainly raised by technology and digitization because it is extremely easy to reproduce and distribute. Anyway, not the technology per se should be blamed for progress of plagiarism incidences, usually it is the student who does not know that what he is doing counts as plagiarism or he does know but lacks the skills to do anything about it (or thinks that it is acceptable practice). One of the goals of IL is the ethical use of information, which is usually achieved through educating students about plagiarism, making them aware of what constitutes plagiarism, how to reference properly, together with knowledge of the penalties for plagiarism.

The capacities a student can built within IL courses are paramount for higher education, nevertheless, it is important to bear in mind that IL is always a reflection of the current information universe and has to change parallel with the information universe. As the impact of the Web 2.0 on information environ-

ments is huge, it reflects on central conceptions of IL as well. IL programs should raise among students the awareness that information and knowledge are socially produced and distributed, and that they can therefore be effectively accessed through social relationships as well (Lloyd, 2006). Therefore, IL should also focus on social skills, on ways of interacting within a larger community, working within social networks, compound knowledge within a collective intelligence but also discern high quality information from diverse pools of collective intelligence.

Elements of information literacy in HE curricula: insights from Croatia

Due to the described correlations between IL and modern education, its congruency with contemporary educational goals (promoting critical thinking skills and developing the capacity for lifelong learning) and its potential to respond to different issues arising in new learning environments, one could expect that IL is recognized as central to the mission of higher education, and will have its expression in academic curricula.

Moreover, the integration of IL into higher education curricula is one of its main determinants and the majority of authors claim that IL cannot be realized outside curricula. In contemporary higher education systems acknowledged content that is officially endorsed by the academy has credit bearing status. Credit offerings command the attention of students, faculty, and administrators and serve as the key indicator of what an institution considers essential in the education of its students (Badke, 2008). Although there are several models of offering courses relating to information literacy, real impact of IL is to be expected if its part of the curricula and if it is a credit bearing subject. The main drivers of IL initiatives are libraries, who share the responsibility of creating and offering IL programs with teachers. Despite progress made by academic libraries in advancing their instructional activities, their teaching role continues to be predominantly restricted to limited classroom engagements. The vast majority of librarian time is spent doing one or two hour sessions at the invitation of subject faculty or providing basic generic instruction to incoming freshmen (but even this limited approach is not the rule). Few professionals in the field would argue that such minimal exposure to information literacy instruction can fulfil the goals IL.

Survey and preliminary results
In order to determine the actual state of IL within the Croatian higher education sector, the level of inclusion and integration of information literacy elements into new higher education curricula (i.e. Bologna programs) has been surveyed.[1]

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[1] The survey was initiated by the Croatian Information and Documentation Society (HIDD: Hrvatsko informacijsko i dokumentacijsko društvo http://www.hidd.hr/).

The study programs where examined and analyzed from January till June 2009. Hereafter we will present preliminary results, which include the analysis of 472 study programs (out of 963 published programs, 49%) that are offered on 71 faculties and other organizational units (academies, departments) at 6 Croatian universities (Dubrovnik, Osijek, Pula, Rijeka, Split, Zadar). Although the results are preliminary, they show a clear absence of IL in Croatian higher education curricula. The survey has hereto surfaced following results:

1. existing curricula do not explicitly offer information literacy or an integral information literacy subject
2. a number of subjects (70) contain isolated elements of information literacy, predominantly within diverse subjects relating to scientific literacy, labelled as: Methodology of scientific work, Introduction to scientific work, Introduction to research etc.
3. those different labelled subjects are offered at various levels of study (undergraduate, graduate, postgraduate), have different status (elective, obligatory), and bear various credit points (in the range from 0 to 20).
4. these subjects are conducted as lectures, lectures and seminars, and lectures with exercises, but the predominately form are either lectures or lectures with seminars
5. descriptions of the offered subjects do not indicate that the faculty librarian is somehow involved in planning or delivering the course (except in a few examples, where librarians have academic status).

Discussion

These preliminary results indicate the main issues, inadequate perceptions and fragmentary approaches not only to the IL concept but general to the development of generic information competencies as a prerequisite for lifelong learning and information handling at the workplace.

The overall absence of an integrated approach to IL is certainly an issue, particularly having in mind the anomalies occurring in contemporary educational processes. Existing limited approaches which focus on finding scientific information are neither comprehensive (41 out of 71 units are offering such contents) nor consistent (various levels, different status). The analyzed descriptions of the offered subject show that they are mainly delivered through lectures and comprise a large portion of contents relating to:

- Choice and Statement of Research Problem,
- Techniques of the research execution,
- Design of experiments and apparatus,
- Execution of Experiments, Analysis of Experimental Data,
- Basic principles of scientific categories,
- Classification of papers,
- Searching for the data in literature and scientific documents.

Science literacy significantly overlaps with the conception of information literacy. Teaching students in the scientific method and culture has long been recognized as an important part of education for those entering scientific professions. Nevertheless, IL is a much wider concept and goes beyond information retrieval and accessing scientific information. It encompasses question like:

Why is information important in our contemporary society? How do I actually inform myself? Where does information come from? Who determines that it is published? What is the difference between a scholarly journal article and a webpage and are these differences still important in a world of converging information? What are the problems and benefits that are caused by anonymity and collective knowledge creation? Why do I have to pay for some information? What is metadata, and how can it help me? What are the implications of electronic searching and electronic documents for the way we do research? How do we evaluate what we have found? What are the legal and ethical considerations?

This sample of questions indicates that IL has much wider implications and is efficiently transferable to all learning situations during ones academic career, but to workplace situations as well. It is crucial for graduated students to come to the workplace and perform adequately in the realm of information handling, information management etc. A university education is not purely about gaining specific subject knowledge; it must challenge students to view their learning as something which isn't bounded by their time at university but is part of their everyday world (Bent, 2008). Taking this assumption as a premise, one can come to the conclusion that the Croatian higher education sector has not recognized the need for information literacy and that the existing elements are not adequately represented or integrated. There is a particular need for integrating IL at the undergraduate level, since students entering higher education are usually not familiar with the research process or with plagiarism and are at the same time overwhelmed by the amount of information available at their fingertips. The preliminary results show that existing approaches are neither sufficient nor systematic and new, information literacy focused strategies are needed to face the described challenges.

Conclusion

Information literacy should be perceived as a strong plank of educational processes, be it in the print era (expressed in the notion of "the library as the heart of university"), it in the digital era or in the context of the Web 2.0. Today's students are supposed to use all these different information realms simultaneously, therefore IL which offers conceptual insights into all these different environments is crucial for learning and for avoiding pitfalls generated by these new environments. This assumption leads to the expectation that information literacy as a key competency would gain the status of a global educational outcome and

that educational institutions would express their commitment for curriculum integration of IL.

However, preliminary results from a national survey about the inclusion and integration of information literacy elements into Croatian new higher education curricula (i.e. Bologna programs) show a poor understanding of IL within this sector. Individual IL elements are scattered throughout the subject "Methodology of scientific work", which itself is offered unsystematically and at a minor number of studies. Having in mind the anomalies occurring in contemporary educational processes (cut and paste, plagiarism, accessing and evaluating information, reading with understanding, academic writing etc.) it is necessary to conceptualize new and rethink existing approaches to integrate IL as a crucial cluster of competencies into Croatian higher education curricula.

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