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Revised Selected Papers

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Information Literacy of LIS Students at the University of Zagreb: Pros or Just Average Millennials

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Abstract. The rationale underlying information literacy in higher education refers to lifelong learning, critical thinking and problem solving. In addition to these common goals, LIS students have to be fully aware of the importance of IL as a concept, understand its relevance in contemporary societies and have to learn about main aspects of teaching IL. Regardless of whether LIS students have attained information skills and practices by studying library and information science, or whether they have been attending IL courses, the question of transferability of IL to learning situations remains open. This paper presents a sub-study that explores the transferability of IL competencies to the overall research experience of LIS students and the application of IL competencies in fulfilling course assignments. The survey of LIS students was conducted at the Department of Information and Communication Sciences, Faculty of Humanities and Social Sciences, University of Zagreb and is a part of a wider, international survey.

Keywords: Croatia, information literacy, LIS student, transferability.

1 Introduction

The information literacy (IL) movement has grown dramatically over the past quarter century. Although the concept has entered the discourse of different disciplines, domains and landscapes, there is little doubt that IL has been the most explored and analyzed in the educational sector. In the higher education sector, the emphasis in IL initiatives and curricula is on acquiring, developing and demonstrating individual skills and competencies, which will support independent lifelong learning, critical thinking and problem solving. For LIS students, however, the rationale and goals underlying IL integrated in the course of their studies is much more substantial and wider. In addition to becoming information literate themselves, LIS students have to be fully aware of the importance of IL as a concept, understand its relevance in contemporary societies and have to learn about main aspects of teaching IL. Regardless of whether LIS students have attained information skills and practices by studying library and information science, or whether they have been attending IL courses, the question of transferability of IL to learning situations remains open.

This paper presents a sub-study that explores the transferability of IL competencies to the overall research experience of LIS students and the application of IL competencies in fulfilling course assignments. The survey of LIS students was conducted at the Department of Information and Communication Sciences, Faculty of Humanities and Social Sciences, University of Zagreb as a part of a wider, international survey.

2 Literature Review

A myriad of recently conducted studies reveals vivid interest in the information behaviour of learners and students [1-5]. A quite coherent research picture emerges from millennial case studies, which suggest that millennials have developed common (though not universal) characteristics of information behaviour. The CIBER study, an often cited and key piece of research, revealed that students are not expert searchers and overestimate their abilities, spend little time looking at a lot of sources, demonstrate little effectiveness in evaluating search results, prefer natural-language searching, trust Google and have difficulties in finding library resources [3]. Complementary results were elicited by Holman [1] who concluded that millennials do not necessarily follow organized, hierarchical structures of information gathering or processing, preferring instead “hypertext” thinking where information comes from multiple sources and is pieced together through horizontal information gathering. The same study, as well as some other sites [2], [6], showed that millennial students routinely begin their searches on the Internet, primarily at a popular search engine. Similar studies suggest that students do believe library resources offer higher quality material for use in academic work, however many cannot handle library sources effectively [1], [4], [7]. Results from one more representative studies deal with how students evaluate the information they need for course-related research and what research styles they apply [6]. Findings from this study suggest students are evaluating information from the Web, but seldom ask librarians for help when they encounter evaluation issues. Furthermore, despite their reputation of being avid computer users who are fluent with new technologies, few students in the study had used a growing number of Web 2.0 applications for managing research tasks. A major finding, confirmed in other studies, demonstrated that the most difficult step of the course-related research process was getting started.

These studies reveal a relative coherent picture and clear trends in information behaviour for learning/academic purposes. Such information behaviour potentially inhibits deep learning and critical thinking; both are defined as core goals of IL in higher education.

LIS students present a very interesting case in this regard, as they are both millennials and knowledgeable about the IL concept. The present study explores the transferability of IL competencies to the overall research experience of LIS students and the application of IL competencies in fulfilling course assignments.

3 Methodology and Sample

The survey of LIS students was conducted at the Department of Information and Communication Sciences, Faculty of Humanities and Social Sciences, University of Zagreb. It is part of a wider, international survey involving 21 countries with the aim of collecting quantitative data about LIS students' research approaches, practices, and styles and comparing LIS students' IL in different countries and societies. The survey instrument was the same for all the countries – an online questionnaire with 17 questions on IL. The questionnaire is based on the Project Information Literacy (PIL) survey instrument [4], although adapted to meet the purpose of the study. The purpose of the international survey is to find out about LIS students' research experience, information behaviour and information literacy skills, as well as to correlate them with the students' status, their age, gender and GPA. On a national level, the study consists of two parts. The first one is based on the questionnaire and in the second one it is aimed to compare IL of LIS students with the data on IL of average millennials, based on the survey results and on literature. Questionnaire was sent to 498 available e-mail addresses of undergraduate and graduate students at the Department of Information and Communication Sciences, University of Zagreb. First call was sent in November 2012, and second call in December 2012. Until the end of January 2013 response rate was 40% - 199 answers, 110 of them complete. We decided to analyse only complete answers; incomplete answers will be included in the international analysis.

The first four questions in the questionnaire regard demographic information. Those questions are single choice questions. Seven questions are 5-point choice array questions, and five are 6-point choice array questions. The last question in the questionnaire is an open-ended question. Analysis shows results for all the students. For some questions, correlations for two student groups are given (undergraduate and graduate students).

4 Results

The undergraduate course LIS study (BA degree) lasts three years in Croatia, and the graduate course (MA degree) lasts another two years. 45.5% of our respondents are undergraduate students (first, second and third year) and 55.5% are graduate students (fourth and fifth year). Grade scale in Croatia is 1-5 scale, with 5 being the best grade. GPA (grade point average) is 3 for 6.7% respondents; 4 for 75.2% respondents; and 5 for 18.1% of respondents. There are 74.6% female students and 25.4% male students in the sample. Out of 110 students, 67.3% are under the age of 25.

Asked about how often they have to do each type of assignment, they put oral presentation in the first place, followed by papers that present arguments about specific issues, interpretations of texts and literature reviews. Undergraduate students more often than graduate students have to do research that results in multimedia products (e. g. web sites or video). Both groups rarely have to do historical analyses, qualitative or quantitative research. The type of assignment depends on educators, but sometimes students can decide what to do (e. g. oral presentation or a video).

When searching information for course-related assignments, the most difficult thing for all the students is to get started. It is followed by defining a topic and finding grey literature. Undergraduate students have more problems with finding up-to-date information and deciding which database to use. The easiest parts of research for all the students are finding articles in the library's databases and finding sources "out on the Web" (e. g. Google, Wikipedia...).

Asked about what is difficult when preparing for an exam, results for undergraduate and graduate students are again similar. The most difficult for all of them is how to know whether their use of a source, in certain circumstances, constitutes plagiarism or not. It is also difficult for students to re-phrase what is already well expressed in a source. Evaluating sources, knowing when to cite and how to cite is more difficult for undergraduate students. That is expected because they have less experience and are less familiar with authorship and the moral component of copyright. Taking notes and integrating different sources from research into assignments is not difficult for both student groups.

In another question, 15 resources were offered to students and they had to mark how often they use them. Table 1 shows the ranking, from the most often used (search engines) to the least used (social networking sites). Results for undergraduate and graduate groups are similar. Undergraduate students are more likely to use video sharing sites but are less likely to use research databases available through the library Web site (e. g. LISA, WoS, EBSCO, JSTOR). Graduate students are more educated to use research databases, so they use them. Grey literature (e. g. unpublished theses) is not very popular among students when doing their assignments. Maybe students are not aware that some of the grey literature is available in the library or in the faculty's institutional repository (mostly theses – diploma, master and PhD). Blogs and social networking sites are the least popular, probably because of the common opinion that those web 2.0 services are created for spending free time, not for education.

Table 1. Resources used in course-related assignments, from the most used to the less used

Rank	Resource
1	Search engines (e. g. Google, Bing, Yahoo!, Ask.com)
2	Library shelves
3	Library catalogues
4	Course readings
5	Encyclopedias (e. g. Britannica, either online or print)
6	Wikipedia
7	Personal collection (materials you already own or buy - either print or online)
8	Research databases through the library Web site (e. g. LISA, WoS, EBSCO)
9	Video sharing sites (e. g. YouTube, TeacherTube, etc.)
10	Gray literature (thesis, reports, unpublished papers, etc.)
11	Governmental Web sites
12	Online forums
13	Slide sharing sites (e. g. Slideshare)
14	Blogs
15	Social networking sites (e. g. Facebook)

The most often consulted people for providing information during course-related assignments are classmates (undergraduate students are more likely to consult them), followed by librarians and instructors. Both groups rarely consult friends or family.

What do students consider when they find resources through library? Table 2 shows the ranking, from the most important to the least important issue. For undergraduate students it is a little bit more important if their instructor mentioned the source. Existence of footnotes, references or bibliography is more important to graduate students.

There are more differences in results between undergraduate and graduate students when using web sources. Undergraduate students need more instructors' recommendations than graduate students. Connected with the answers to one of the previous questions, it can be concluded that undergraduate students have problems with recognizing intellectual ownership – it is not so important to them if the Web site gives credit for using someone else's ideas. Also, they do not check how current the site is so often as graduate students (although accuracy of the web site is important to them). All the students rarely chose web sites based on whether they are in their native language. Table 3 shows ranking of the issues that are important to all the students when using web sources, starting with the most important issue. Librarians' recommendations are not very important to students when using either printed (previous question) or web based sources.

Table 2. Importance of the issues when finding resources in the library

Rank	Issue
1	How current the source is
2	Whether an instructor mentioned the source
3	Whether you have used this source before
4	Whether it has a bibliography/reference list
5	Whether you have ever heard of this source before
6	Whether the author gives credit for using someone else's ideas (e. g. footnotes)
7	Whether it is written in your native language
8	Author's credentials (e. g. where he/she works)
9	Whether the content acknowledges different viewpoints (i. e. not biased)
10	If there are charts - whether they have vital information
11	Whether a librarian mentioned using this source
12	Who the publisher of the source is

When working on course-related assignments, the most common practice is to develop an outline for how to proceed with the assignment. The second procedure is to figure out search terms, followed by working on one's own perspectives. Students rarely write about the same topics in different assignments, and they rarely use interlibrary loan or document delivery services. Also, students do not tend to spend as little time as possible (although that practice is more usual for undergraduate students).

Table 3. Importance of the issues when finding resources on the web

Rank	Issue
1	How current the Web site is
2	Whether the Web site has links to other resources on the Web
3	Whether the Web site has bibliography/reference list
4	Whether an instructor mentioned using the Web site
5	Whether you have ever heard of the Web site before
6	Whether you have used the Web site before
7	What the URL (i. e. Web site address) is and what it may mean
8	Author's credentials (e. g. where he/she works)
9	Whether the Web site gives credit for using someone else's ideas (e. g. footnotes)
10	Whether the Web site's design tells you it's a legitimate site
11	Whether the Web site content acknowledges different viewpoints (i. e. not biased)
12	If there are charts - whether vital information is added
13	Whether it is written in your native language
14	Whether a librarian mentioned using the Web site

One question was – what tools do you use when writing assignments. The most popular are presentation-making tools, followed by spell checkers, video sharing sites, document sharing programs, digital "sticky notes" and photo sharing sites. The least popular are micro blogs and citation-making programs. This question had the highest number of “never heard about it” answers. There are also slight differences between undergraduate and graduate students – undergraduate students more often answer that they have never heard about some of the tools. Graduate students have had more opportunities to learn about, or to be introduced to, the tools during their education.

Asked what was important to them while working on a course-related assignment, students answer that the most important thing is to pass the exam. The second important thing is getting the paper finished and in third place is to learn something new. Improvement of research, analytical and writing skills is a little bit more important for graduate than for undergraduate students.

For accessing information, students almost always use laptop computers; sometimes they use desktop computers, and rarely cellphones or tablets.

For communicating with teachers, mentors or librarians they usually use e-mail (via laptop, desktop computer or cellphone) and face to face contact; they rarely make cellphone or telephone calls; they almost never communicate via social networking sites, instant messaging or texting. There are no differences in ways of communication with teachers, mentors or librarians regarding the students' status (graduate or undergraduate).

The last question was an open-ended question – do you have any comments? Only 15 answers were recorded, mostly positive comments about the questionnaire. Very interesting is one comment that says: “I will use the questions from the questionnaire to enhance my information literacy,” (graduate student). That shows that even the questionnaire itself motivated some of the respondents to think about their information literacy.

5 Discussion and Conclusion

According to a plethora of literature, either anecdotally or research-based in nature, the web has changed students' information behaviour and expectations of the research process. Studies are oriented towards profiling information behaviour patterns, since those affect learning processes. This study contributes to research findings in this area by characterizing information behaviour of LIS students, who pertaining to their field of study, are supposed to handle their information problems thoroughly and with less difficulties than the average millennial.

The most difficult thing for LIS students when preparing their exams is how to get started. This step is the most difficult for half of the surveyed students. The results of the PIL project (in the sample were over 8000 US college students from different academic disciplines, not only LIS) show that this step is the most difficult for three-fourths of US students [4]. The conclusion can be made that LIS students have less problems with getting started with their exams, but the problem is still significant.

Porter's study of research strategies of undergraduate millennials shows that most of them begin their search with Google and Wikipedia [5]. In our sample, Google is also in first place, but Wikipedia is in sixth place. LIS students are, more than average millennials, aware of the importance of credible sources, such as libraries, library catalogues and encyclopedias.

O'Brien and Symons [2] concluded that peers have the greatest impact on students' information choices (students from different disciplines were surveyed). For LIS students in our sample, peers are also the first people to be consulted for providing information during their course-related assignments, but librarians are also very important (70% of respondents consult librarians very often).

Some findings have confirmed initial assumptions about the higher efficiency of LIS students in handling study and research tasks, primarily findings referring to abilities of using library resources like catalogues, databases or citing sources. However, other results, pertaining to the research process itself (e.g. starting research) imply that LIS students, despite being exposed to the IL concept and content during their studies, partly share the same kind of difficulties as do average millennials. The overall results show that IL contents regarding information sources as such (retrieval, finding information, citing) are more easily transferable to other learning contexts and situations than abilities referring to the research process itself. Such results signal recommendations for information literacy education, which should pay more attention to the overall research process, in particular the initial part of the process, i.e. starting research.

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