Information Literacy in Academic Environment

Literature review

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I. Aims and objectives of this literature review

The idea of this literature review is born during the preparation of Module LI 752 (The reflective information practitioner), when for the first time I faced the various problems and areas of studies linked to teaching and information literacy. I enjoyed very much the topic, and I imagined the possibility to realize a learning program in the real life, in my working environment. So, to have a deeper insight of information literacy, I started collecting articles about various aspects of it.

A second step in the development of this idea came in Newcastle, during the study school, where my ideas about the literature review and dissertation where still confused: conversations with tutors and colleagues have been a great stimulus in going on with this idea, and trying to root the subject of information literacy in my working environment, a university library, in the Italian context.

A third step, which it has been for me another great stimulus to continue the research, is represented by my workplace colleagues general behavior towards this topic, when I first attempted to introduce it to them: and I found a very open and interested behavior towards the idea of an applied research in our library about information literacy, and I felt their willingness to learn more about it. This is also a push to think about information literacy as a potential area of research for my master dissertation.

In fact, I am interested in deepening the relationship that information literacy can create into the university environment: the triangle formed by librarians, students and teachers.

Each corner of this triangle has its own vision and perceptions about what information literacy skills are or should be. Often, from my practical experience, I saw that these visions and perceptions do not coincide, but before starting a specific investigation on these visions and perceptions (which could maybe become part of my research topic in the dissertation), I feel the need to clarify some basic concepts about information literacy and about librarians in the academic environment.

For these reasons, and in order to build a solid knowledge basis on this broad area of studies, the general aim of this literature review is to identify trends and developments in information literacy for academic libraries.

In specifics, the topic has been examined with the following objectives:
- ❖ To build an assessment of the information literacy (IL) definitions
- ❖ To design an overview of the IL international panorama
- ❖ To investigate how IL affected role of academic librarians
- ❖ To find out the academic libraries' stakeholders' perceptions about IL (in particular, students, librarians and teachers)
- ❖ To identify IL current assessment methods and techniques
- ❖ To identify trends in IL instruction programs for university libraries.

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II. Definition of information literacy

For decades there has been a big debate on the definition of IL, and even if in the last few years the Association of College and Research Libraries (ACRL) statements seems to be broadly accepted, "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" (Owusu-Ansah, 2005).

The concept of information literacy has been formalized in the United States since the early 1990s. It appeared as a result of the big progress in information technology and its impact on information accessibility. With the rapid progress in communication technology, the library shifted its mission from that of a repository of human culture to that of a "facilitator" of human culture. As a result, librarians' mission has moved from the preservation of knowledge to that of educators. In its definition of IL, ACRL states that IL is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000).

IL evolved over a long history of library traditions namely library orientation, library instruction or bibliographic instruction. The common characteristic of all the definitional efforts in information literacy was recognition of a lack among information seekers and users, which the library saw a need and commitment to rectify: librarians saw students and most information seekers as lacking in their knowledge and awareness of the information universe in which they operated. That lack of knowledge extended to both print and electronic resources, but was even more critical in the electronic environment.

The trend over the past 30 years has been a shift from the concept of orientation to instruction in the use of the collection and services of a particular library to a set of concepts that implies principles of library organization, the nature and organization of library resources (both print and electronic), and processes of information seeking evaluation and communication (ACRL, 2004).

In parallel with the focus on the concept of IL, the role of faculty and educational resources in the teaching and learning process has received wide attention. Faculties are viewed not only as deliverers of information but also as facilitators to help students learn how to approach and use information resources effectively. The Institute of IL states, "Increasingly, faculty create environments that challenge students to learn about a topic or solve a problem using information resources students have located. This resource-based mode of education has created a greater need to teach students how to access and evaluate appropriate information resources and use them effectively" (ACRL, Institute for Information Literacy, 2004).

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III. The international overview

III.1 Information literacy in USA, Europe and Australia

Internationally, information literacy has become a hot issue for which librarians around the globe are showing serious concern, and are willing to share their experience. In 1990, the Australian Commonwealth's Report on library provision in higher education institutions in Australia examined the role of libraries of higher education in preparing those training for the professions in IL.

Library associations have also played an effective role in supporting IL programs. In 1993, at the IFLA Conference in Barcelona, a round table on user education was proposed. The subsequent creation of the IFLA round table provided an established forum for librarians from around the world to share expertise on user education and IL (Ford, 1994).

In 1997, the ACRL task force working on IL standards for higher education institutions issued its "Competency Standards", which the ALA approved in January 2000 (CRL News, 2001). These standards are designed to be used by librarians in discussing IL programs with administrators and academic departments. They suggest institutional goals or performance outcomes. Within the competency standards, IL "forms the basis for lifelong learning. It enables users to master content and extend their investigations, become more self-directed…assume greater control over their learning… (and) develop a meta-cognitive approach to learning, making them conscious of the explicit actions required for gathering, analyzing and using information" (CRL News, 2001).

Another very important contribution by ACRL related to information literacy was the creation in 1997 of the *Institute for IL* within its program for librarian professional development, and institutional best practice and community partners' initiatives.

Also in the year 2000, the American Library Association (ALA) Special Presidential Committee on Information Literacy Community Partnership was created. These ALA and ACRL contributions have their big impacts on the institutions of higher education in shaping the IL programs.

Incorporating the concept of IL in the curriculum of institutions of higher education and schools has also become a global issue. According to Ford, ten years ago countries such as Australia, and The Netherlands were incorporating the concepts of user education and information literacy into their school and higher education curriculums (Ford, 1994). Many library educators believe that IL should not be limited to one age group or one educational level. Many are of the opinion that user education is a continuous process which should be performed for all groups. It has been observed that in order to ensure that users are equipped with sufficient methods of accessing, evaluating information from a variety of sources and synthesizing the information into a coherent whole, training can be organized around a level of difficulty of information and or of user educational background (Fidzani, 2000).

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III.2 Information literacy in developing countries

Developing countries face a number of problems which stand in the way of developing their IL programs. The three major problems confronting these countries are the traditional educational system, the low literacy rate, and the low level of publishing. Than there is the issue of IL divide versus digital divide, a new perspective in considering developing countries' difficulties in access to information.

Traditional educational system

Education creates a dynamic workforce and well-informed citizens that are able to compete and cooperate globally – opening doors to economic and social prosperity (The World Bank Group, 2003).

According to Ashoor, the educational system in many developing countries is often, based on memorizing instructor's notes, and it does not provide citizens the opportunities to improve their living conditions. Moreover, the ratio of faculty to students is disproportional, educational institutions lack basic facilities such as functional classroom buildings, appropriate computer labs and library facilities. Furthermore, the system does not encourage student initiatives and critical thinking. In comparing the educational system of developing countries with that of the developed countries, in developing countries students lack the qualities of independence, of self direction and even of simple curiosity in their attitudes to learning. To this can be added that the core of the present problems lies in the fundamental flaw in the educational system of such countries, which adopted rote learning approach and have remained unchanged since time immemorial (Ashoor, 2005).

Low literacy rate

Developing countries also suffer from low literacy rates. The World Bank Group reports that in 2000, 115 million school-aged children were still not in school, 56 percent of them girls and 94 percent were in developing countries – mostly in South Asia and Sub-Sahara Africa (The World Bank Group, 2003). Developing countries that have the lowest literacy rates in the world including Nepal with a literacy rate among adults of 28 percent, Eritrea 25 percent, Somalia 24 percent, Burkina Faso 19 percent, and Niger 14 percent, will not be able to introduce IL programs in their educational institutions. In the Arab world the situation is also problematic: according to a recent UNESCO statistical report, one man in three in the Arab states is illiterate and one woman in two. The report states also that the countries where female illiteracy is the highest are Iraq, Morocco, Mauritania, and Yemen (UNESCO, 2002).

Low level of publishing

The low level of "publishing" production adds another problem in planning IL in developing countries. According to the 2001 statistical report published by the International Publishers Association, in 1997 book production in developing countries was very low in comparison to that of the developed countries. For example, in 1997 Indonesia produced only 5,000 book titles, Peru 3,478, South

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Africa 5,592, and the Philippines 5,093 book titles. On the other hand, book production in the developed world in the same year was reported to be: in Italy 45,844, in Japan 65,438, in Russia 45,026, in Spain 54,943, and in the USA 64,711 (International Publisher Association, 2001). These statistics show clearly that reading materials are very scarce in developing countries, and accordingly IL faces a serious problem.

Digital divide or IL divide?

About developing countries, one of the most globally discussed and studied topics is nowadays digital divide. But, at this proposal, there is one interesting new point of view in the recent literature: according to Alan Bundy[1] "library professionals and their associations […] need to use evidence based advocacy to governments and educators that the information literacy divide, not the digital divide is the critical issue of the information age." (Bundy, 2002). He argues that national information strategies make the fundamental mistake of assuming that the information and digital divides are synonymous and can be solved simply by investments in ITC. But the issue of information divide at local and global levels is much more complex than to be susceptible to one technological solution.

Always according to Bundy, also in USA there are an increasing number of critics of this rush to technological school "at the expenses of investments in the development of information literate students. […] These investment areas [that should be taken into consideration] include teacher training and development, information literacy integrated into the curriculum, and professional librarians able to be proactive information navigators, as well as the map makers of the information universe" (Bundy, 2002).

Bundy's analysis is confirmed also by the international agencies for cooperation trends in financing projects on digital divide: for example, the G-8 Kyushu-Okinawa Summit in July 2000 issued the Okinawa Charter on the Global Information Society and established a Digital Opportunity Task Force (DOT Force) which reported to the G-8 countries in Genoa in July 2001 and an action program is underway. The DOT Force is attempting to mobilize action that will contribute to bridging the digital divide, securing participation by non-members of the G-8 countries, and integrating ICT initiatives more firmly within development initiatives.

The United Nations agencies, including the International Labor Organization (ILO), the International Telecommunication Union (ITU), the UN Economic and Social Council (UNESC), the United Nations Development Program (UNDP), the UN Economic Commission for Africa (UNECA), and the UN Educational, Scientific and Cultural Organization (UNESCO), are emphasizing the importance of ICTs for development and they are taking steps to address the "digital divide". The Organization for Economic Co-operation and Development (OECD) is seeking improved means of establishing dialogues with developing countries on policy frameworks for ICT use in areas such as e-commerce and e-government. The World Trade Organization (WTO) and the

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[1] University librarian at University of South Australia and past president of Australia Library and Information Association.

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World Intellectual Property Organization (WIPO) are also focusing on the implications of the global spread of ICTs.

A selection of initiatives that aim to support countries in building effective knowledge-driven strategies by taking advantage of the potential of digital technologies is listed in Mansell's analysis on organizations involved in bridging the digital divide (Mansell, 2002).

It will hopefully come a time when international organizations will shift their efforts from the bare ITC to a more complex approach involving also information literacy.

IV. The changing role of librarians: from conservation to education

With reference in particular to USA, Australia and Europe, nowadays the Information Age offers a great number of resources available to user in a fast and easy way: in these years everybody can see that information grows enormously, but this not automatically leads to an increase of the meaning: on the contrary, in parallel also difficulties in detecting relevant/quality information are becoming more evident.

Information professionals are the ones who can and have the responsibility to add value to information, in order to help students and orientate them in such a delicate subject in our times of globalization. Even if it seems that in general information professionals, and in particular academic librarians, already moved many steps in the direction of IL, and also had some precious results, nevertheless there are still some scholars that, despite the progress over the past decade, think that information literacy is a "distant, if not a receding, goal" (Bruce, 2001).

The majority of the scholars, anyway, demonstrate great interest in this area of studies: every year Anne Marie Johnson published an accurate bibliography on library instruction and IL, and already in 2003 the bibliography started with this sentence: " If anyone had doubts, it is apparent that the field of library instruction and information literacy is, indeed, an established field of research." (Johnson, 2003).

IV.1 New skills to be developed

In the professional literature for librarians and educators it is possible to find in these last few years less articles dealing explaining what IL is, and many more articles giving interpretations of what skills librarians should develop to become competent and effective in the IL process. The implementation of IL training programs will force librarians to face a series of changes or evolutions in their professional life. Among these changes, three main difficulties are enlightened in particular:

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❖ **IT skills**: "The need for computer-literate librarians with stellar research skills is growing rapidly. [...] You cannot assume that the nature or scope of the profession remains what it was when you entered it." (Obe and Griffiths, 2003). Librarians will have to deal with a range of issues related to treatment of electronic resources (definition, selection, catalogue, preservation, accessibility, etc.), which are maybe usual for some Countries but new for example in many Italian libraries. Also electronic publishing and development of tools for open access can be new professional challenges for librarians, who more and more will go in the direction of meeting new groups of users' needs (like distance learners). [2]

❖ **Educational skills**: Librarians will have to learn how to teach: although some academic libraries have already established a "training" role in universities, substantial technological, pedagogical and cultural changes occurring within the higher education sector now demand that reference librarians become educators. This complex role demands more than pedagogical knowledge, advanced teaching skills and an ability to develop, deliver and facilitate effective learning experiences. It also requires that the teaching librarian functions as an educational professional; that is, as one who can engage in educational debate and decision-making processes, influence policy, forge strategic alliances and demonstrate diplomatic sensitivity.

❖ **Collaborative skills**: "Many authors note that these underlying changes to society's view of the role of information literacy result in the need for librarians to rethink and extend their collaborative skills beyond those they have used in traditional interactions with teaching faculty." (Scales, J., M. Greg, et al., 2005). Librarians will have to collaborate more with university teachers and administrators, in order to integrate IL instruction into the curriculum. Collaboration it has been a prominent theme in academic literature especially in the years 2002-2003, when several articles gave suggestions for collaborative possibilities[3], in recognition that IL promotion and instruction cannot be accomplished by librarians alone, on the contrary it requires a multitude of partnerships. Linked to the collaboration theme, some years ago there have been some researches that now maybe can be considered out of date in other Countries, but I believe that they represent still "a foot in the door" if applied the Italian scene: in these researches, faculty members' perceptions toward IL have been analyzed, and it is interesting to see that some surveys reveals that many faculty members believed information literacy skills were an important

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[2] The difference with other countries is visible for example in the Country Report for UK by Andrews, A. M. and D. Ellis (2005), where the growing emphasis on IT skills in the profile of the information professionals is statistically analysed.

[3] In 2004 10 percent of the articles in the year's bibliography (Johnson and Jent, 2004) addressed this theme. It is possibile to find in academic letterature many examples of good practices and reflections on collaboration (for example Buchanan et al., 2002; Grafstein, 2002; Nimon, 2001; Nimon, 2002; Thompson, 2002)

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part of students' education, but that relatively few provided the instruction on their own courses. Reasons and meanings are explored (Leckie and Fullerton, 1999; Cannon, 1994), especially in relation to USA context.

IV.2 Outstanding experiences referring to librarians' role

Among many articles related to the changing role of librarians into university faculties, two of the most interesting suggestions come from practical experiences: the Australian QUT Library's Information Literacy Program (Australia is nowadays one of the outstanding voices in IL theorizations) and the San Diego State University (SDSU) Freshman Success Program (USA).

a. QUT Library

"QUT Library provides leadership in developing and fostering the essential information literacy knowledge, skills and understanding of the QUT community. The university-wide information literacy program promotes critical thinking and equips individuals for lifelong learning. In partnership with academic colleagues, the Library enhances curricula and creates learning environments which support QUT's teaching and learning goals." (Peacock, 2001)

The QUT library's Information Literacy Program delivers a comprehensive generic curriculum and a diverse range of discipline-specific information literacy classes and integrated courses to undergraduate and postgraduate students, staff and external client groups. QUT's teaching librarians assume responsibility for the design, development and delivery of the library's information literacy programs, initiatives and resources. They also "work in close partnership with faculty and support staff from other areas within the university to facilitate student learning and ensure the achievement of teaching and learning objectives across the curriculum" (Peacock, 2001).

I found the program particularly interesting because of its variety in target groups and objectives, but most of all because it is based on a preliminary study conducted on librarians, about their professional development needs.

This project explores the skills required to "engineer the metamorphosis from librarian to educator and learning facilitator" (Peacock, 2001). It examines the implications for librarians in terms of evolving roles and responsibilities, changing expectations and staff development, and highlights potential barriers to ongoing success. It is a powerful basis for insight and reflection.

b. San Diego State University

The San Diego State University experience is based on teaching IL and critical thinking to freshmen undergraduate. It is interesting because it created a connection between critical thinking, IL and the context in which students are living: as values, both critical thinking and IL can help counter the effects of the "consumerism, superficiality, and knowledge fragmentation" characterizing the post-modern condition. In Harley's opinion (Harley, 2001) today's students are susceptible to what can be described as post-modern condition, which can be

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manifested as "preference for the convenient and expedient, an emphasis on outward appearances, and a reliance on subjective thinking" (Harley et al, 2001).

In this project the role of teacher/librarian assume an even more complex shadow than in other projects, because it involves the need to teach valid criteria to be used not only to critically analyze sources, but also in general to make informed decisions in daily life.

This project encourages librarians to consider a lifelong value-based approach as they evaluate their instructional services.

V. Perceptions about IL instruction experience

Librarians

If on one hand several scholars wrote about difficulties and skills to be achieved in teaching IL, on the other hand several librarians who made teaching experiences commented in enthusiastic ways. In general all of them recognise the result of a "better understanding of the needs of students" (for example Blakeslee, 1998; Donnelly, 2000; et al.) and of an improvement of reference service to students.

These librarians also noticed that their teaching experience ameliorated the relationship with the other component of the university, at all level of the institution, making evident that librarians can contribute as participants in campus-wide programs for students.

One librarian, after some years of teaching experience, noticed: "I have a better understanding of students' abilities, struggles, accomplishments, hopes, and concerns. This understanding has been reflected in the enhanced quality of my interaction with all students, at the reference desk, in the classroom, and elsewhere." (Haley, 2001)

Students

Even if students research habits and skills have been deeply studied, and even if many theories and models have been produced in order to assess how much useful IL instruction programs are for students, and how they can become more effective, the topic of students' perceptions towards IL seems not to be one of the most analyzed. In fact it seems that librarians and scholars studied more students' performances than students' expectations or perceptions[4].

It would have been interesting finding some examples of questionnaires asking students about their difficulties in using information resources, but in the professional literature only few papers refer to this kind of researches: my impression is that often this kind of knowledge about "the target" is given for granted. It is common, in fact, to find evaluations or interpretation of students'

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[4] Among the documents referring to students' performances, there are some interesting suggestions to librarians teaching research strategies: for example, it possible to find sets of guiding questions for undergraduate students to ask in order to better research skills (Bodi, 2002; Griffith and Brophy, 2005; et al.).

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thoughts, without any reference to how this statements have been developed. For example, according to Sonia Bodi, "students search in a haphazard, unplanned way, happy to find whatever" (Bodi, 2002). Also in researches where students are directly asked about their searching experiences, like in the two wide surveys recently conducted to evaluate the United Kingdom's national academic sector digital information services and projects (Griffiths and Brophy, 2005), the research focus is always students' performance, and no question is asked about their expectations.

Teachers

A part from the area of studies that involves collaboration between librarians and academic teachers, that refers to teachers and other academic staff as a counterpart with whom librarians need to cope (more on this aspect has been said in chapter IV.1), there are not, as far as it was possible to search, papers about teachers' perceptions towards IL.

Teachers are necessarily very much involved in the IL process, especially when the IL instruction program is designed and integrated in a subject course. But their collaboration to IL process, even if fundamental, has not been analyzed above the practical aspects.

For example, information skills requested to students to accomplish a task are often taught by an IL instructor librarian, but evaluated by a teacher: in many researches, teachers' ideas on what students' skills should be are given for granted, and they are not directly involved in any kind of enquiry about it (for example Palmer and Tucker, 2004; Dugan and Hernon, 2002; East, 2005; Nieuwenhuysen, 2000; Rockman, 2002; Cunningham, 2002; et al.).

VI. Information literacy standards and learning outcomes assessments

Several national IL assessment effort appeared in the last few years, many articles in recent publications dealt directly with students' learning assessment and IL, and even more articles made mention of the need for it. Assessment became an important topic of discussion, both on the practical and on the theoretical sides, as a key component of outcomes-based IL activities.

Students learning outcomes assessments involves more than just measuring students expectations (service quality and satisfaction). Assessing students' learning and development means finding out how well students achieve educational objectives, and this is one of the primary means by which institutions demonstrate their institutional effectiveness.

Among the most important and helpful documents concerning students' learning outcomes assessment effort, there are:

❖ *Information Literacy Competency Standards for Higher Education*
❖ *Standards for College Libraries 2000 Edition*

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❖ *Task Force on Academic Library Outcomes Assessment Report (1998)*

All these documents are produced by Association of College and Research Libraries (ACRL). Many other suggestions and practical guidance for librarians dealing with education and teaching are available on the *ACRL Information Literacy* web site, a major source of information in Academic IL, at: http://www.ala.org/acrl/il/index.html.

Briefly, students' learning outcomes assessments are observed, reported, and otherwise quantified changes in attitudes or skills of students on an individual basis because of contact with library services, programs or instruction.

Academic librarians, through assessments, can both evaluate their own work as educators and enlighten the role of library into the academic environment. One of the most cited articles on outcomes assessment clearly states this concept: "Academic library instruction […] is used to improve information literacy skills, and libraries are employing learning outcomes assessment to measure changes in the individual as a result as their interaction and encounters with the library. The outcomes will illustrate and demonstrate, to some extent, the academic library's value as an institutional teaching and learning partner." (Dugan and Hernon, 2002).

Also in an academic institutional perspective, some researchers produced *assessment guides*, to assist institutions to integrate assessment into their culture so that over time it becomes a systematic and organic practice (for example, the Assessment Guide described in Maki, 2002; other examples in Rockman, 2002). Through these instruments, librarians can collect evidence to show the library's impact on university.

Among the more common techniques used to collect the data for assessments, there are represented both quantitative summative techniques (pre and post tests, questionnaires, surveys…) and performance-based assignments.

VII. Trends in providing information literacy instruction

To meet the challenges of IL, librarians realized that they have to shift their focus from the general library orientation and course related instructions using the traditional learning methods to a set of critical thinking skills involving the use of information. The common theme we can find in the professional literature is to promote IL skills with the objective of teaching students the critical thinking skills so that they become independent and life long learners. To enhance this concept, the Council of Australian University Librarians (CAUL), the main forum for cooperation between university libraries in Australia has adopted the US IL Standards for higher education with the addition of some modifications. The modifications covered two new standards: the new standard *four* addresses the ability to control and manipulate information, while standard *seven* represents

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information in the intellectual framework that provides the potential for lifelong learning (Austen et al., 2002).

Globally, trends in teaching objectives, methods, and content have changed little in the past few years. According to a survey of IL instruction in Canadian academic libraries, instructional librarians continue to face numerous challenges, particularly with regard to limited resources and faculty and student attitudes (Julien, 2002).

Currently, institutions of higher education follow a variety of approaches in teaching IL. Some provide online IL instruction. Others, offer IL courses. And there are those who provide course-integrated IL. The most common online instructional tool is the web-based guide such as pathfinders, and webliographies. However, the IL guide tutorial, which is an interactive, web-based program designed to introduce students to general information literacy concept and resources, has also gained popularity in recent years (Sheer and Pasqualoni, 2002). The IL courses range from for-credit to non-credit, from required to elective, and from distance to face-to-face. They can involve integration with a core curriculum, specific discipline or course, or general information skills (Donnelly, 1998).

As mentioned above (see Cap. VI), in its efforts to promote the concept of IL world wide, the ACRL has created the ACRL IL web site. The site provides links to IL programs in universities around the globe. Among universities that have published their IL home pages and made them accessible through the world wide web are those of Australia, Canada, Lithuania, Malaysia, South Africa, Sweden and the United Kingdom. In the USA, the web site of Florida International University Libraries provides IL links to IL programs of many colleges and universities in the US. The ACRL is urging academic institutions to join this web site by publishing their IL home pages.

VIII. Conclusion and ideas for further developments

The professional literature is rich of many different views on information literacy, and many different examples of its application. Drawing a brief state of art is not easy, but for sure there are some clear issues to point out:

❖ The definition problem, discussed in the past years, now seems not to be a prominent subject anymore, and the librarians community seems to have accepted the Association of College and Research Libraries (ACRL) statements.

❖ There is a big difference between developed countries and developing countries in terms of possibility to apply information literacy to real situations, at the extent that some scholars recently introduced the concept

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of *information literacy divide*, and they claim it should substitute in many cases the concept of digital divide.

❖ Many efforts have been dedicated to researches on librarians' job profile changes, from a traditional role of conservators to a modern role of educators, and on the professional skills which librarians need to develop. Among these skills, in the last years the collaboration skill between librarians and other academic bodies has been the critical issue. Many practical suggestions came mostly from USA, Great Britain and Australia, where academic institutions already have quite a long experience in information literacy programs.

❖ A new topic of investigation is represented by assessment, especially students' learning outcomes assessment, and several experiences have been already reported.

❖ In methodologies for IL instruction, not many things changed during the years, and librarians continued to experiment all the possibilities (tutorials, lessons, interactive programs, etc.), even if web-based program designed to introduce students to general information literacy concept and resources has gained popularity in recent years.

❖ The area of research regarding the academic libraries' stakeholders perceptions towards IL is not receiving attention by scholars and, in the large majority of the analyzed papers, teachers' an students' perceptions and expectations towards IL instruction programs were given for granted.

From this literature review is evident that Information Literacy is a complex and wide research area, composed by many aspects, and my impression is that in the near future researchers will continue studying this topic with great interest: there are still many aspects to be analyzed, like again students' learning outcomes assessments methods and research skills assessments. For sure the IL instruction methodologies will continue to be explored and tested in the next years.

The IL aspect that interested me more is linked to the academic library's stakeholders' perceptions and expectations: I read with great interest researches about students, librarians and teachers in relation to critical thinking, but I can see that in this particular area still there is space for research. Students' searching behavior, students' knowledge habits, students knowledge needs, what teachers think student should know, what librarians think student should be able to do, what students think they need to know and to be able to do. These are open questions born from this literature review, an interesting area I would like to deep in my dissertation, applying it to an Italian context, where awareness about IL still as to grow. I saw in many reports that these research questions are an important stage in the IL process, and that answer to them means to build the necessary knowledge of the context needed in order to plan effective IL instruction programs.

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IX. Critical account of information sources and seeking strategies used for this literature review

Information sources

As I had to study for this research being abroad and often moving because of my job, I could not carry with me many books, so I tried to concentrate my work more on the available digital resources. In this way in could download and carry with me many documents, and read them also off-line.

The information sources used for this literature review are mainly:

❖ E-Journals: I found very useful Lisa, Zetoc and Emerald Full Text, which gave me the possibility to access full text articles always up-to-date and to download them in digital format. The e-journals I more frequently consulted are: Journal of Academic Librarianship, Research Strategies, Library Trends, Australian Academic and Research Libraries, Library Quarterly, Reference Service Review, Journal of Library Administration, Education for Information, Library Review.

❖ OPACs and Meta OPACs: the one I used most is Karlsruher Catalog.

❖ Bibliographies: among the existing bibliographies on IL, two are the ones I found more useful, both of them by Anna Marie Johnson (Johnson, 2003; Johnson and Jent, 2004). With the help of these bibliographies it has been possible to scan many publications reading the abstract, to have a general idea of the kind of existing material, and to make a pre-selection.

❖ On-line directories and web sites, especially ACRL IL web site. Also international organizations like UNESCO, EU, UNDP, OECD, etc. have part of their web sites often dedicated to IL, rich of useful reading lists and links to other specialized web sites. The visit to these web sites offers a panorama of the international efforts in developing IL worldwide, and a picture of the up-to-date trends. These sites are also important sources of information I order to find reports on practical experiences, especially the ones located in developing countries.

Research strategies

In chronological order, the construction of this literature review implied the following phases:

❖ ***Establish a set of keywords***: at the beginning the research area was very broad, so I started with keywords as information literacy, librarians, job, teaching, Google generation, research skills, instruction. The association

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of some of these keywords in scanning OPACs, catalogues and databases gave me the basis in terms of documents to start with.

❖ *Languages*: I choose to search mainly documents in English, a part from a few in Italian, because most of information sources I have access to are in English, and because USA, Great Britain and Australia are the Countries where most of the researches are conducted in the field of information literacy. Also international institution, which have been an important actor of my research, express in English their contributions and reports, being English the language of the globalized communication in the actual world.

❖ *Record the interesting articles in a database*: I used Endnote database, and I tried, after the reading, to assign one or two keywords to each article, in order to be able in a second time to find out what I already collected on one particular aspect of IL. This phase, that I though it would have been easier (because I am used to catalogue materials and index them), in fact it has been more difficult than I expected. The main difficulty was to set a clear and not too big group of keywords, a thesaurus clear enough to define all the different aspects of IL, which are many.

❖ *Narrow the research to specific topics*: once I understood the general shape of the IL research area, I choose some specific aspects to analyze. The choice has been made taking into account IL main focuses found in the collected documentation, and spontaneous questions that arose while I was reading the material. In this phase I redefined my searching parameters, using keywords as teachers, librarians, students, perceptions, questionnaire, survey, collaboration, research habits, knowledge needs, critical thinking, standards, information literacy experiences, case-study, trends. At the end of this phase, I collected about 90 full text articles and books divided into 8 groups of documents.

❖ *Full text collection strategy*: after finding an interesting article, I download it in PDF format and saved it in a folder on my computer. This folder contains 8 directories, which broadly correspond to the main focuses of my research:
   1. IL definitions
   2. IL instruction experiences
   3. role of librarians
   4. students
   5. teachers
   6. IL standards
   7. learning outcomes assessments
   8. developing countries.

Then I printed, recorded the article in Endnote and indexed it. After I archived the   paper articles in big cartoon folders.

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❖ ***Monographies collection strategy***: I asked for interlibrary loan through Northumbria University Library Catalogue.

❖ ***Design of a virtual map of the topic***: during all the research, I wrote some notes about my findings and drew a virtual map of the topic. This draw helped me in fixing some ideas about the general structure of the topic and in seeing connections among its different aspects.

❖ ***Final bibliographical selection***: in order to present an homogeneous and compact bibliography, at the end of the research I operated another selection on the bibliographical collected data, keeping only the ones deeply related to the topic, and eliminating the ones which seemed too general or not enough linked to the topic. From about 90 records, I selected 71 records for my final bibliography.

Criteria for selection of relevant documents
Some criteria have been applied to the selection of relevant documents:

❖ Author well-known or frequently quoted in bibliographies or cited in articles: after a while, I recognized the frequently quoted or cited authors, and I tried to read directly their writings.

❖ Account of direct experiences: I collected all direct experiences I found, notwithstanding if they were related to big and famous university libraries or to small experimental projects, because I think that all direct experiences accounts are valuable and can teach something on the practical side. The I selected the ones I could consider particularly interesting to cite, or because they were very complex (like QUT Library, in Peacock, 2001), or because they introduced a new philosophical framework in the topic (like Haley et al., 2001).

❖ Authors who suggest a new approach: especially in one case (Bundy, 2002), I took into account the fact that the author suggested a completely new idea or concept.

❖ National or international institutions: I tried to collect all the contribution given by these institutions to the subject, as they are representatives not only of research groups but also of powerful policy makers.

❖ Contemporary studies: I tried to find recent information, experiences and contribution, in order to make my research up-to-date as much as possible.

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Criticism

Scholars have the maturity to cope with the ambiguity and self-doubt inherent in research. They are gratified to find nothing written on their topic; students are devastated. (Bodi, 2002)

As a general consideration, from this literature review I understood that, even if information literacy as a research area offers a very rich professional documentation, it seems that the particular aspect I became most interested in (students, teachers and librarians expectations and perceptions towards IL) is not a prominent theme, to be euphemistic. Trying to feel gratified instead of devastated, I will take this as a stimulus to continue researches in this area and to attempt a case study analysis in my dissertation.

Looking closer at my methodology, I can say that if I had to re-start from the beginning another literature review, I would try to avoid to underestimate the interlibrary loan timing: I would try to get first the books and only after I would dedicate attention to the full text articles, which in any case are there ready to be accessed anytime. Timing in general is an aspect I should have considered more in planning my work for the literature review: there have been some unexpectedly slow and difficult phases, like, as I already mentioned, the design of a suitable thesaurus in order to index documents. Only now I see that phase as an obviously crucial phase in my work (and now I am satisfied with the fact that I dedicated some time to it, even if this slowed me down): to define the right keywords means to think deeply about the topic of investigation, to put limits, and in a way to give a shape and a structure to the research as a whole.

Languages is another aspect that I probably underestimated: I could have searched articles also in French, in order to have another European voice different from the British one. This idea came to me too late to be realized, but I can take it into account for the future.

The other aspects of my research strategies seem to me quite appropriated: I managed to find the core focuses of the topic I was studying, and even if I see that many other documents can be read about it, now I feel comfortable enough to design a sort of map about information literacy in academic environment.

I appreciated Endnote as a recording tool, and I think that this literature review gave me the opportunity to start a basic bibliographical research also for my dissertation: it will not be necessary to start all from the beginning, but I will have some platform to launch my research from.

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