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Web-based Information Literacy in an academic library: the example of the Library of ATEI of Thessaloniki

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Abstract

This paper presents the development of a web based Information Literacy service, at the Library of the Alexander Technological Educational Institute (ATEI) of Thessaloniki. The purpose of the newly developed service was to amalgamate the already existing IL services, with new features and sections, providing a more constructivist approach to teaching and learning. For the development of the new service, first a questionnaire survey was conducd among the students of the ATEI in order to evaluate the existing service, complemented by a literature and case studies review; these assisted the working team to acquire a more holistic view of the current services provided, the trends and equivalent services provided by other libraries worldwide.

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1. Introduction: a quick view to information literacy through time

Information Literacy (IL) is not a new concept in libraries; on the contrary, efforts towards IL first appeared during 19th century, mainly as library instruction [1]. IL courses started in Harvard College during the 20’s [2]
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and later on, in 1886 Melvyl Dewey stated the importance of student visits to the academic libraries, escorted by their teachers as well as the importance of studying manuals. The growing interest in IL led to its world wide implementation by academic institutions.

Mainly during the 80’s and 90’s, IL was combined with the rapid establishment and use of computer networks. During that time, two major organizations were founded, the National Forum of Information Literacy (http://info лит.org/) in 1989 and the Institute for Information Literacy in 1998 [3]. Changes and development in the role of IL continued through time, along with many attempts to conclude in one definition, most appropriate. The first approaches for IL conceived as a set of skills and connects it with skills in track and use information, with use of information in order to solve problems and make decisions and with effective and efficient use of information. Throughout the decades, the role and the texture of IL changed, gaining an increasingly important role in the learning procedure and thus, the definitions formulated accordingly. Johnston and Webber [3] perceive IL as the ability to obtain the desired information under all circumstances and through any given sources, along with effective and ethical application [4]. Another current definition given from Bruce [5], states IL as “a key-characteristic of the lifelong learner-strongly connected with critical and reflective thinking”.

2. Information Literacy (IL): concepts & guidelines

Through IL, in all its manifestations, learners become competent in active thinking and advanced evaluation of the perceived knowledge. Library Science organizations have launched several tutorials, programmes, courses and manifests concerning best practices, guidelines, and implementations for IL. UNESCO has been playing a significant role in matters concerning IL, with most important the “UNESCO meeting of experts on information literacy” in Prague, in 2003. As stated by the ALA, IL is more than just “good information-seeking behaviour”, as it takes talent and ability from IL librarians to build the distinguishing characteristics which determine an information literate person. Thus, it is necessary to collaborate closely with the academic departments, in order to achieve maximum effectiveness in IL instruction.

In order to offer some essential guidelines, ALA has launched a set of objectives for IL instruction (http://www.al a.org/acrl/standards/objectivesinformation). Another attempt to put IL in context has been made by SCONUL, which summarizes the basic characteristics in seven layers that portray the difference between the proficient information literate person and the basic library user. According to these layers, IL requires good knowledge and further use of all of them (http://www.sconul.ac.uk/groups/information_literacy/papers/Seven_pillars2.pdf).

As the role of library follows the latest trends in technology and information, a new concept arises, which gives IL its basic character: this of the “learning library”. Based on the theories of Vygotsky, as mentioned in Somons, Young and Gibson [6] concerning constructivist and cognitive approach to knowledge, the learning library promotes active learning in a collaborative environment. The library becomes a centre of educational experiences, where resources, faculty members and the academic staff collaborate, in order to provide the user with the essentials of information retrieval and use. In this context, knowledge is attained under a sociocultural perspective, where the user obtains the ability to use effectively a wide range of information aside the school years.

3. Learning through technology: Web-based Instruction (WBI)

Internet and technological applications are considered primary means of the educational procedure in many cases, as they broaden and maximize the options and possibilities of information dissemination. Web-based instruction is accepted worldwide as an effective educational method, offering a plethora of advantages, enriching the educational competencies of the learners. The basic and descriptive characteristic of WBI is the fact that it is delivered through electronic mediums, it can be easily updated, transformed, upgraded and instantly shared [7]. WBI is defined as a set of strategies focusing on constructivist theories of learning, promoting collaboration and make use of all the assets WWW can offer [8].
From the instructor’s point of view, WBI serves as an additional implementation tool to traditional instructional methods, if not totally replacing them, as it allows course creation and use of various educational tools. IL librarians, becoming instructors themselves, have adopted and endorsed technological applications in order to upgrade their services and serve their patrons to the maximum extent. WBI brings an innovative perspective to library services, as it enhances the distribution of information, by eliminating time and place constraints, in addition to its considerable pedagogical potentials.

WBI has become an ideal solution for IL. Its active character allows and promotes interaction between the learner and the systems and in some cases with the IL instructor as well. As Tobin and Kesselman state [9], WBI is not just some internet pages put together, making a set of static information. On the contrary, IL online tutorials reinforce the active learning process.

WBI design requires advanced instructional methodology and design. A most attractive feature of WBI is the employment of multiple media types for the presentation of the educational material as well as other sources of information. Brown and Voltz have identified six elements which require the implementation of instructional methodology and design. These are activity, scenario, feedback, delivery, context, and impact [10]. Since lack of “face-to-face” communication is an inherent characteristic of WBI, or it exists to a very small extent, it is crucial that extra attention should be paid in details, in tools and features that would have been used and managed in traditional teaching procedure. In the design process of a WBI platform, it would be a mistake not to follow a careful design strategy, according to existing best practices and examples. For example a poorly designed or outdated interface can become a factor that may restrict user learning ability, as it diminishes his interest [11].

4. The Library

IL and higher education are two interconnected sections, which should function in accordance. Library should focus on every aspect of the academic procedure, being a centre of information access, working place for every scientific activity taking part inside the academic institution and a place of knowledge [12]. Several surveys have dignified the need for IL courses for higher education students.

The Library of ATEI of Thessaloniki (http://www.lib.teithe.gr/) was founded in 1974 and since the beginning, its purpose is to serve the goals of the Institution: the theoretical and practical education of the students for the implementation of scientific, technological and other qualifications and skills, in accordance with the participation in research programmes. The collection and services of the Library meet the needs of the whole academic community and keep up with the current trends in Library Science, in order to provide its users with modern and effective services, combining basic and traditional librarian skills, with new technological features.

In today’s demanding information world, higher education should combine a modern profile, based on knowledge management, information technologies and lifelong learning. This change in academic world challenges academic libraries regarding their educational role. As Powis observed [13], librarians are therefore required to become educators, developing skills of educational theories and practice, as well as educational design [14].

Following the constantly developing character of the Library along with the technological growth, the librarians participate in training seminars, courses and conferences, in order to enrich their skills and qualifications, in order to meet the demanding challenges of the information world. Throughout the years several changes have taken place. User studies followed these changes in order to monitor user needs. They indicated that the Library gained the respect and the growing interest of its serving community, for its continuous efforts to disseminate knowledge and assist in the educational process.

5. Information Literacy in class – IL courses

The conceptual model used for delivering IL courses to the academic community has been a matter of interest, observance and survey for librarians and educators. Extensive dialogue has taken place regarding the different design models of the IL programmes, as well as the achievement of the educational goals.
IL in-class courses offered by the Information Literacy Department of the Library. There are offered on two separate levels. First level is addressed mainly to first year undergraduate students (but not exclusively), of all academic departments at the beginning of each semester. Second level of IL in class courses aim to cover the research information needs of undergraduates at their final year, thus they are students who already competent users and are interested in concluding their final undergraduate thesis.

Although the central core of the courses is in place, particular specifics of each course are decided between the librarians and the academics, so as to respond effectively to the specific educational needs of the student curriculum. The duration of the IL courses reaches approximately two hours. The educational content is adjusted according to the subject field of every individual School out of the five (5) schools and every individual Department out of the 20 Departments of the ATEI (eg. School of Agricultural Technology, School of Management and Economics, School of Food Technology and Nutrition, School of Health and Medical Care, School of Technological Applications). The subject fields of the curricula include Automation, Library Science, Agriculture - Farming, Nutrition, Administration and Economy, Mechanics, Information Technology, Food Science, Health and Welfare.

The courses taught include presentation of the Library services and sources - both print and electronic -, guidance on the formulation of the research strategy, evaluation criteria of the sources, guidance on the compilation of a scientific paper and on the ethical use of information emphasizing on how to prepare a bibliography and use of appropriate style manuals. The Information Literacy Department has also developed an online IL course named "Orion" which is presented in the IL courses, complementing it as a most valuable tool aiming to fulfil the educational objectives of the courses.

The general scope of the IL is not only to offer the students the ability to use efficiently all print and electronic sources of the Library, but mainly to make them independent, and self-reliant, enabling them to identify their information need, organise appropriate search strategies and make effective and efficient use of their search results. Librarians design a conceptual map of a subject and work along with the students in order to de construct its elements and conclude to the best possible search strategy.

Apart from the specific IL courses, the Library is presented to first year students during the annual welcoming venue at the campus which is held by every Department at the beginning of each academic year.

6. Implementing Information Literacy through the web

Web based programmes allow participants to be self-directed and follow their own personal pace, maximizing thus, assimilation of information. For example, Orion aims to educate students in the effective use of information, overcoming the barriers of time and space. Those studying the educational material of Orion will obtain knowledge and abilities that will assist them in becoming autonomous in their information searches, evaluating the results and using them appropriately so as to complete successfully essays and reports.

The programme follows the subject categories as these have been stated and established by the Association of College and Research Libraries (A.C.R.L.) (http://www.ala.org/acrl/) and the Australian and New Zealand Institute for Information Literacy (ANZILL) (http://www.anzili.org/). It consists of five distinct subject areas which provide students with all the necessary information concerning the cycle of information use:

- Defining the information needs
- Searching and Acquiring information
- Evaluating information
- Writing
- Proper use of information

The programme follows a well structured approach to IL training. All units start by stating the purpose and the expected learning outcome. The educational material is delivered in various ways, depending on the subject area, usually theory, guidelines, examples and personal assessment via practical exercises and quizzes are included. Each unit can be studied separately depending according to student requirements.
7. Assessment

Evaluation and assessment are critical to a successful implementation of an IL programme as such, the IL course of the ATEI Library was put to the test, through a user survey. For the evaluation of the overall IL competencies of the students, it was decided from the working group to follow a quantitative research and therefore, conducting a questionnaire survey. The results of this survey, due to limitation of space in this article, will be presented in a future paper. The questionnaire was addressed to 100 undergraduate students, at the senior year of their studies, from three academic departments of ATEI.

The purpose and objective of the survey had two aspects:

- to examine whether or not, fourth year students of the Alexandrian TEI of Thessaloniki have acquired all the appropriate skills, so as to be considered information literate and to what extent
- to use the results of the survey in order to re-evaluate the existing IL service re-design and reshape it if it is in order to community needs and demands

The questionnaire was designed in such a way as to yield data evaluating student skills, such as determining the availability of needed information; defining an overall plan to acquire information; assessing the quantity, quality, and relevance of search results; evaluating the reliability, validity, accuracy, authority, timeliness, and bias of the information retrieved; recognizing the cultural and other contexts in which information is created; and understanding the impact of these contexts when interpreting the information. The results in a nutshell indicated that many of the students do not make the most effective use of the library resources. In some cases they are not even aware of the full range of library services provided. A tendency among students to use the Internet as their primary source of searching, was also recorded, in overall, the majority seems to be aware of all library has to offer, although in many instances the do not make the most effective.

8. Moving on to Callisto and future work

As a result of the survey, the library had to redesign and repackage the Orion. Orion became Callisto, a nymph who enjoyed hunting and protected hunters according to Greek mythology, as a supportive guide of users in their information hunting activities. It differentiates a lot from Orion, in that it manages to convey a lot more in-depth information to the academic community.

The layout follows a deductive logic, without a usual formatting, but with a rather modern and interactive interface. The main motto of the service is “constructing knowledge” and all its aspect are build on that, thus providing space for more flexibility and responsiveness in order to accommodate a learner-centered approach to learning. The modules included in the new service are:

- **Orion:** Orion remains the basic element and information tool. The educational material has been improved and enriched, making it a fully integrated instructional medium.

- **Orion at a snap:** For those need to fresh-up their existing knowledge or have limited time, an alternative, sorter version of Orion has been designed. It comprises of the same units, but it covers only the basic information and serves as a quick guide to IL instruction.

- **Online Tutorials:** Academic libraries have embraced the potential of WWW, by including several of its services. Two of the most popular and used services among the academic circles are Google Books and Google Scholar. Regarding their popularity, the working team decided to create online tutorials, as step-by-step guides for their use.

- **Additional sources:** Apart from the Library sources, it is important for the users to have a variety of choices, in order to cover their information needs. The service has gathered diverse sources which are addressed to both students and academic staff-researchers. Reference material, open archives, free online courses, scholarly news and information, writing tips (especially for the academic staff), etc. have been included.

- **Online sign up form:** In order to simplify the scheduling of in-class IL courses, an on line booking form is available, where academics can choose date and time at their convenience. IL librarians conduct them afterwards, to discuss the specific particulars of the course, depending on the department.
**Time line scheduling:** Among the basic purposes of IL is assisting students in achieving an acceptable level of academic writing of a scientific. Such a project demands not only effort, but also good time management. As to achieve this goal a time line form was designed, clearly defining all steps of the writing up process and the exact time needed to complete each step, until the deadline of the assignment.

During the process of choosing a suitable software (CMS) in order to cover the needs of the new service, it was necessary to define the hosting circumstances. Due to lack of technical staff which would undertake the responsibility of managing and supporting the CMS, the range of criteria selection had to be limited. It was of immense importance the ease of use in maintenance and further development of service as to ensure its viability taking into account that this chorus would fall onto the existing library staff. Needless to say the software is in accordance with current web standards.

The selected CMS was Joomla version 1.5 - with plans for an upgrade to the latest version when certain conditions are met. Joomla is an open source CMS, actively developed and easy to administer even from non-IT staff. It supports integration of custom code and it is quite SEO friendly. Its functionality can be further extended through the use of already available modules or in-house made ones.

![Callisto’s front page](image-url)

In the following months, the library will take steps of action in order the IL service Callisto to be fully implemented. These are some milestones for implementing the service:

* Creating the platform where the IL service will be developed
Establishing the new modules as described above and enrich them with content

Improving existing services

Evaluating Callisto as a service and all the individual modules

Launch the service

User evaluation and usability tests

References:

[1] Lee, R. E. (1966). Continuing education for adults through the American public library, 1833-1964. Chicago, ALA.
[2] Salony, M. F. (1995). The history of bibliographic instruction: changing trends from books to the electronic world. Reference librarian, 51/52, 31-51.
[3] Johnston, B., Webber, S. (2003). Information Literacy in Higher Education: A review and case study Studies in Higher Education, 28:3, 335-352.
[4] Behrens, S. J. (1994). A conceptual analysis and historical overview of information literacy. College and research libraries, 55:4, 309-322.
[5] Bruce, C. (2003). Seven faces of information literacy: towards inviting students into new experiences, slides presentation, QUT. Available at: http://www.bestlibrary.org/digital/files/bruce.pdf (last accessed 14/10/2012).
[6] Vygotsky, L. (1978). Mind in Society: the development of higher psychological processes. London, Harvard University Press. As mentioned in Simons, K., Young, J., Gibson, C. (2000). The learning library in context: community, integration and influence. Research strategies, 17, 123-132.
[7] Rosenberg, M. J. (2001). E-learning: strategies for delivering knowledge in the digital age. New York, NY: McGraw-Hill Companies, INC.
[8] Relan, A. and Gillani, B.B.. Web-Based Information and the Traditional Classroom: Similarities and Differences. In Khan, B.H.,(Ed.), Web-Based Instruction, 1997b, Educational Technology Publications, Englewood Cliffs, New Jersey.
[9] Tobin, T., and Kesselman, M. (2000). Evaluation of Web-Based Library Instruction Programs. INSPEL, 43, 67-75.
[10] Brown, A.R, Voltz, B.D. (2005). Elements of Effective e-Learning Design. IRRODL, 6 : 1. Available at: http://www.irrodl.org/index.php/irrodl/article/view/217/300 (last accessed 14/10/2012).
[11] Boling, E.S., and Sousa, G. (1993). Interface Design Issues in the Future of Business Training, Business Horizons, 36:6, 54. In: Henke, S. (1997). Evaluating Web-Based Instruction Design.
[12] Nugget, C. and Meyers, R. (2000). Learning by doing: the freshman-year curriculum and library instruction. Research Strategies, 32:1, 147-155.
[13] Powis, C. (2004). Developing the academic librarian as learning facilitator in M. Oldroyd (Ed.) Developing Academic Library Staff for Future Success. London: Facet, 2004.
[14] Koulouris, A., Manessi, D., Giannakopoulous, G., & Zervos, S. (2012). Institutional repository policies: best practices for encouraging self-archiving. Procedia Social and Behavioral Sciences (to appear)