

# Supporting Information Literacy Learning: Implementation of the National Recommendation in a Science Library

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## ABSTRACT

Information literacy (IL) has been under active discussion within Finnish academic libraries from the beginning of this millennium. In the *Development Plan for Education and Research 2003-2008* The Ministry of Education emphasises the role of the university libraries in contributing to the development of teaching and studying methods, thus ensuring that graduates have good information literacy. Finnish universities have implemented several projects in order to create standards and teaching aids promoting information literacy education and learning. The first major project was "Standardising the management of information literacy 2001-2003" by the Undergraduate Library of the University of Helsinki, the aim of which was to translate the ARCL's *Information Literacy Competency Standards for Higher Education*.

In this paper we present a national project coordinated by the University of Helsinki and funded by the Ministry of Education from 2004 to 2006, the primary aim of which was to enhance integration of information literacy into

the academic curriculum. We will present the main results of the project, the current situation in information literacy education in the University of Helsinki and the future of it in Kumpula Science library.

**KEYWORDS:** information literacy, science libraries, university libraries

## 1. BACKGROUND

In 2004, University libraries launched a national project for the creation of an information literacy curriculum. The central aim of the project was to integrate information literacy into academic studies. Thus, graduates from the university will meet international competency standards for information literacy, which require an information literate individual to:

1. determine the scope of information required
2. access the required information effectively and efficiently,
3. evaluate critically the information and its sources and incorporate this new information into her or his existing knowledge base,
4. use information effectively in her or his studies

- and work, and
- understand the economic, legal and social issues pertaining to the use of information, and to access and use information ethically and legally. (Information Literacy Competency Standards for Higher Education 2000.)

The project was coordinated by the University of Helsinki and received funding from the Ministry of Education from 2004 to 2006. (Information Literacy.)

The main results of the project were:

- creating a national recommendation for universities to integrate information literacy into academic studies
- creating a joint question bank for information literacy proficiency assessment
- creating a network of library educators
- creating a joint website for information literacy (Informaatiolukutaito.)

The national recommendation for including information literacy competence in new degree structures was structured in line with Bologna Declaration, the aim of which is to harmonise the higher education in Europe. According to the Bologna Declaration the degree structure will be mainly based on a two-cycle model. The first cycle, lasting a minimum of three years, ends in a Bachelor-level degree, which should also be relevant to the European labour market as an appropriate level of qualification. The second cycle consists of Master's degrees and postgraduate degrees are third cycle degrees .

The purpose of the information literacy curriculum is to define the central elements of information literacy and to assist in the development of content for courses in information skills. The recommendation is based on the *ARCL's Information Literacy Competency Standards for Higher Education* (2000) and it describes the minimal objectives in information literacy (Information Literacy.)

### Recommendation for universities for including information literacy competency in the new degree structures

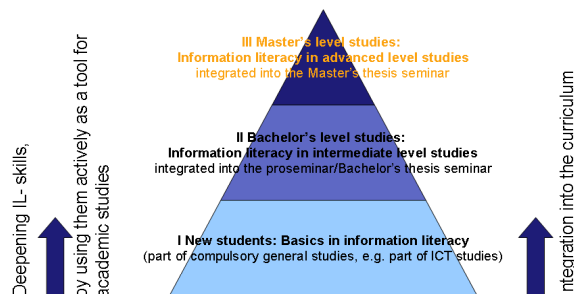


Figure 1: Diagram of the Recommendation

#### 1. New Students

Based on the recommendation the first year students get a general presentation of information sources and the organisation of information. After teaching they know the basics of information access, seeking and retrieval and the use of publications and services needed in studies. New students also learn the basics of the assessment of the reliability of materials and the ethical use of information. It is also recommended that teaching of IL should be part of compulsory general studies, for example, part of IT or ICT studies.

#### 2. Bachelor level students: Information literacy in intermediate level studies

After intermediate level studies students have learnt the primary sources of information in one's field and the organisation of information. They can conceptualise their information needs and understand search processes, strategies and methods which lead to comprehensive seeking for information on a research topic and analysis of the processes and results. Students will get an introduction to the reference practices and standards of the field and tools for bibliography management and their use in the production of academic texts. After the course they will also have a deeper insight into the assessment of the reliability of materials and the ethical use of information.

#### 3. Master's level students: Information literacy in advanced level studies

The purpose of the IL teaching in advanced level studies is to give students deeper insight into the information sources of one's field and also into the reference practices and standards of the field and tools for bibliography

management and their use in the production of academic texts. Students will deepen their knowledge about the search methods, systematic search processes and strategies which means they can conduct comprehensive search for information on the research topic and analyse search processes and results. (Recommendation for universities to include IL competency in the new degree structures.)

Based on the recommendation the information literacy teaching in bachelor level and master's level studies should be integrated as a compulsory component into the thesis seminars (Recommendation for universities to include IL competency in the new degree structures). Integration into courses ensures that students really attend information literacy sessions and do not see them as an optional add-on. It is also more useful to teach information literacy skills to students in authentic and meaningful situations within the context of learning in their own subject areas. (Skov & Skærbak 2003, 328.)

The recommended scope of information studies at all levels is 1-2 credits. It is highly important that courses are constructed and conducted in cooperation between library and the teacher of the course.

## **2. IMPLEMENTATION OF THE NATIONAL RECOMMENDATION IN THE UNIVERSITY OF HELSINKI**

At the local university level, the national project has collaborated with the University of Helsinki in a project called ICT Driving Licence. The ICT Driving Licence (3 ECTS) is a course shared by all the faculties of the University of Helsinki. The goal of the course is to make sure that each new student from all of 11 faculties will have the necessary ICT (Information and Communication Technology) skills for their studies. Faculties are responsible for the administration of the course: registration, tests and credits. The University of Helsinki libraries are responsible for the hands-on information retrieval sessions. (Helminen 2006; Juntunen et al. 2006; ICT Driving Licence.) It varies by each faculty whether there the hands-on sessions are organised and whether those sessions are obligatory or not.

Campus libraries have also organised some tailored training in information retrieval for both candidate level and master's level students. There is still a lot of variety between the University of Helsinki libraries of how the information literacy education is organised and the challenge of the future is to find the means to give equal information literacy education for all the students in the University of Helsinki.

## **3. INFORMATION LITERACY EDUCATION IN THE KUMPULA SCIENCE LIBRARY**

Kumpula Science Library is one of the Campus Libraries of the University of Helsinki, providing scientific library services for the students and staff of the departments of physics, geology, chemistry, geography, mathematics and statistics, computer science and seismology. Kumpula Campus is the second largest Campus of the University of Helsinki with its 6000 students and 1000 teachers.

Kumpula Science Library has previously been organising monthly training sessions in how to use electronic information resources of the University of Helsinki. There has also been tailored training in information resources for the students of the department of chemistry, and the library has also offered free information retrieval training on request of the on-campus departments.

In the future, our goal is to develop our information literacy education to correspond to the national recommendation. As a first phase, we will start giving the hands-on lectures of the information seeking section of the ICT Driving Licence. We have also started a pilot project in which the goal is to support the information seeking of candidate level students (introduced later in this paper as a case study). There are also plans to create tailored information seeking education for master's level students and for postgraduate students.

## **4. CASE: SUPPORTING INFORMATION SEEKING OF CANDIDATE STUDENTS IN THE DEPARTMENT OF GEOGRAPHY**

### **Context**

Kumpula science library was brought to life in 2001 as a result of combining a number of department libraries of various sizes. As expected there were as many library service cultures as there were libraries. There were a huge variety of different traditions to be melted as one library service unit. A certain amount of tradition and bondage between the library and the department was lost during the process.

One of the key services of a science library now and especially in the future is information literacy teaching. In 2001 most of IL teaching was left behind for the departments to conduct. The reasons for this were many. Perhaps one of the main reasons was that in 2001 IL teaching was not yet seen as so important an element of library work as it is seen now. Perhaps it was merely seen as a natural part of "the real science" department's curriculum. At least in Kumpula science library the distribution of work was clear; let the department's do the science and teaching and the library do the traditional library services – to provide collections and customer service.

During the 2001-2007 period Kumpula science library lost most of the contact to the IL teaching in the faculty of science. During this period the IL teaching has been more or less occasional and in the basic level – for example user guidance. Luckily as an exception there has been a long tradition of “information sources in chemistry” –course which have been the responsibility of the library.

According to the information literacy guidelines and the strategy of the libraries of the University of Helsinki the science library has finally been launching its own candidate level teaching. The main idea is to provide equal opportunities for high quality IL teaching for all students in the faculty of science. A pilot project for the students of geography started this fall (2008).

#### Pilot

The aim of our case project is to support the candidate level students in their work of candidate thesis. The main idea is to make a timely intervention in order to give the best possible support to the students. The importance of a timely intervention is well described in the classical text of Carol C. Kuhlthau (1993, 155-167). The students come from the department of geography in the faculty of science of the University of Helsinki.

The guidance will be given in two stages in their work process. The first session is designed to give a brief overview to the basic principles of information search and retrieval and also to the fundamental information sources of the subject field. The session takes place in the very beginning of the candidate seminar and is intended to support the starting process of the seminar work and the gathering of the material of the highest possible scientific quality and topical relevance. In this early stage the candidate students have not yet defined their subject area of the thesis. However, the candidate students are divided into groups along different sub fields of geography, which gives some guidelines for the topic they will eventually be working on.

The second intervention is located in a latter stage of the candidate students' work. At this stage the students are supposed to have chosen their topic for the theses and have done some preliminary work such as gathering articles and perhaps a framework for the text. This intervention will be a hands-on tutoring for the actual information seeking. The focus is on different search tactics, search environments (such as databases, search engines) and evaluating information sources. The guidance will be given in groups, which provide potential support from the peers.

This project is a pilot from which the science library gathers as much feedback as possible. Both students and

teachers will be interviewed. The aim will be a structured quality system that could be utilized in the future. Based on the experiences of the pilot the same model will be taken in action in other departments in the faculty of science. The goal is to provide equal information literature teaching for all the faculty students in a way that fits the departments' curriculum in the most functional manner.

#### Reality

The geography department has divided the candidate level seminars in five subject or interest groups: physical geography, human geography, regional studies, urban (and planning) geography and geoinformatics. The responsible librarian worked in close co-operation with the subject teacher in order to tailor the sessions to the students' and to the teachers need. As the pilot got started the need for tailoring was quite evident. The subject teachers have great independence on the structure of their teaching. Thus the expectations for the IL teaching and IL support varied greatly. The second variable factor is the group size. The total class size of geography is 50 to 55, which gives an assumption of ca. 10 students in every session. In reality the group sizes varied between 2 and 26. This resulted in need for a somewhat ad-hoc re-organising in IL teaching groups and timetables.

The third and most expected variable was the different subject fields in geography which brings out different information cultures. The traditional division in geography is in two. The physical side has a long tradition being a natural science and having strong connections with geology and biology which comes up in its methods, terminology and information sources to mention a few. The much younger side includes for example human, urban and planning geography. The humanistic tradition brings methods from social, cultural and political sciences with it and has a quite different kind of information culture. (Virrankoski 2007, 122-123)

As science geography is typically generalistic. Everything is geography if the phenomenon in question is delimited in a certain region, place or space. (Holt-Jensen 1999, 2-4) Thus every other science provides its methods, paradigms and information sources into use of geography. This obviously lays a huge challenge to the librarian as he tries to support geography students' information seeking. The topics can vary between cellular biology applications to sociological perception and so does the information need. It could be said that in some sciences there are certain information providers and information sources that are the most respected, followed and scientifically valued. In geography one can not argue that. There is no way of listing five major journals or all-embracing databases of any kind.

The challenge of huge variety in the information need became most clearly evident in the second phase of the

project. The librarian had – depending on the group size – 5-10 minutes for each student in his or her needs for information seeking support. First of all we can say that that is a too short of a time. In that time, the librarian must do at least three things. First there is an interview during which the librarian figures out the information need and the level of his or her information seeking and IT skills. Figuring out the information need includes also a quick view in what and how the student has already found. The second phase is to make an instant decision of the level of guidance given to the student. This includes choosing information sources and deciding what kind of search strategies to show and in what level. The last phase is to show at least some examples and some insight in to the technical features – in other words some search tips.

For the librarian the one and a half hour session of information seeking support is very exhausting. It is clear that the limit for the number of students being interviewed and tutored is somewhere between 8 and 10. The optimum could be ca. 4-5 students for one session. Then there would be enough time for proper interaction with the student. The ideal would include transforming the seminar topic into search strategy and well formed queries, evaluating and searching the best possible information sources and evaluating the retrieved documents. Also some discussion among the group would help to exchange search tips and other relevant experiences.

The structure of the IL support could also be altered. It seems that the majority of the students need very similar guidance. It is one option to add more user interface guidance to the first phase in order to save more time for the real hands-on tutoring in the second phase.

#### Adaptation

The pilot is still ongoing but some conclusions can be drawn using the experience so far. The group size and the time offered for each student are essential to the product's success. Also the communication between the library and geography department has given a wider perspective on how the teaching should be organized. The seminars' responsible teachers' insight is most valuable and they have been most co-operative during the whole pilot.

After the pilot has been completed the library will launch a questionnaire to gather feedback from the students and geography teachers. The main aspect here is to monitor the effect of the IL teaching and the pilot in seminar students' learning process. The library will also conduct a bibliometrical survey on how the IL teaching has affected the use of sources in the students' candidate thesis. The hypothesis is that the use of electronic resources will increase.

The combined results of the questionnaire, the

bibliometrical survey and experiences in general will be the basis for the future plans adapting the pilot to the other departments IL teaching. It is clear that the experiences and results from the geography pilot can not be automatically transferred into other departments' curriculum or different information cultures.

## 5. FUTURE

The future brings a huge challenge with it. The geography department is a rather small unit and somewhat manageable. Adapting the pilot to the whole faculty is a totally different question. There are not simply enough employees in a single library for a widespread information literacy teaching. The library must take more a coordinators role and use departments and the scientists as information specialists. The most important factor is in laying guidelines for IL teaching based on the national IL initiative.

As mentioned above the information culture varies inside geography. Nevertheless, the variety becomes huge when approaching the rest of the sciences such as computer science, mathematics, chemistry, physical sciences and geology. Also the department working cultures bring a different spice in every case. A department may have a long tradition in integrating IL teaching into departments' subject curriculum and the attitude towards the library is uncomplicated. Some departments may see IL teaching totally irrelevant to their students. It is quite obvious that there will be a lot of discussion, negotiations and tailoring waiting in the future. The product and the marketing will have to be in order before the final launching the full scale operation.

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