

# **Sustainable Collaboration – a Method to Integrate Discipline-Sensitive Information Literacy Modules at Programme Level**

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## **Abstract**

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Information literacy development among students has been a subject of interest among researchers and librarians for many years. A unanimous understanding, as a result of research and professional experience, is the importance of a contextualized approach and sustainable collaboration between faculty and librarians.

The Borås Model, a collaborative model for the development of information literacy among students, describes how responsibilities can be divided and how actions can be shared to create embedded Information Literacy (IL) modules in university programmes. At the University of Borås, faculty and librarians collaborate according to this model since 2009.

As a starting point the librarians discussed how to design IL elements to enable the students' development of information literacy gradually during their time of study. The suggested recommendations are based on the experience from teaching information searching, from observations of how students behave in these situations and from reference work in the library.

The focus will be on learning and understanding to help the students to develop an analytic and reflective attitude to information, to information sources and to search results, enabling them to adopt their search behaviour to the changing environment of information sources and information publications. They will also be introduced to important information resources that they will need in their profession.

The implementation of the model is still in its cradle. This paper describes the implementation process at the Registered Nurse Programme and the Systems and Computer Science Programme, showing how the suggested recommendations were adopted to the actual needs of the programmes. At the Textile Design Bachelor Programme, the overall planning of the IL modules is presented, and the first module will start from autumn semester 2010.

## Introduction

The University of Borås consists of six departments, offering education in Library and Information Studies, Business and Informatics, Fashion and Textile Studies, Behavioural and Education Sciences, Engineering and Health Sciences, representing disciplines with different traditions concerning scientific publications, different technical languages and different research methods.

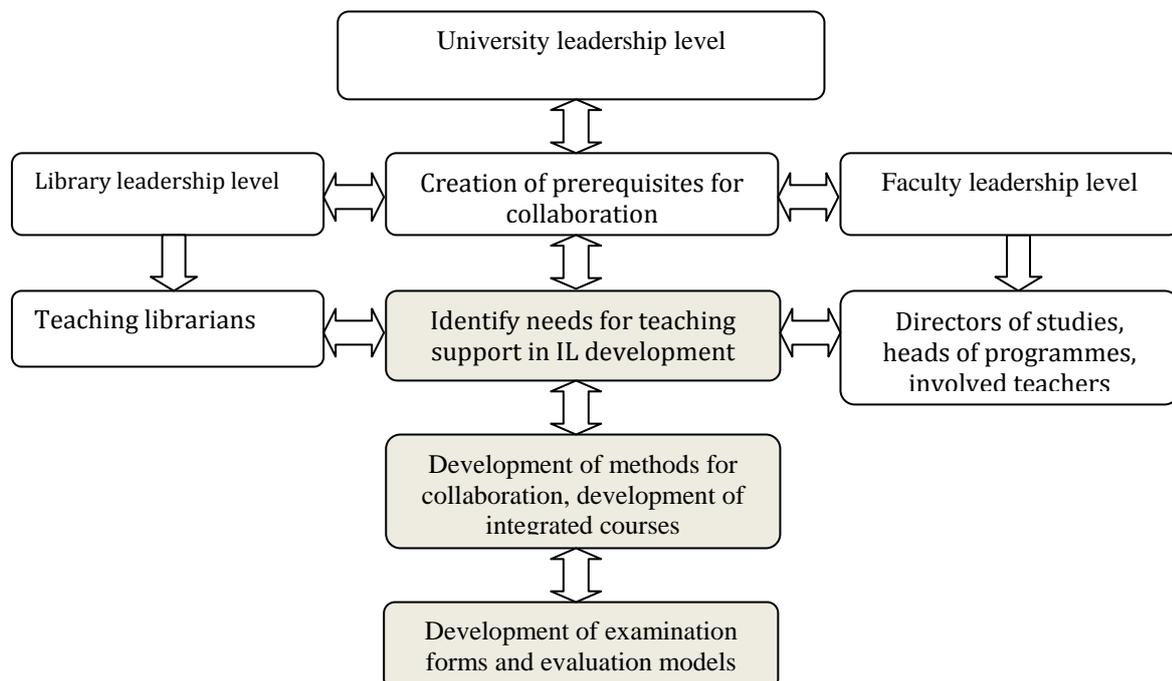
Over the years the Library has experienced a great variety of working relationships with university departments and teachers to support students' development of information literacy. Some of these have been initiated by library friendly teachers, others were created due to intensive work by librarians. Some worked very well and were performed in a context that aroused interest among the students, others were meaningless "one shots" and in between is the whole spectrum of different relationships and attempted ways to integrate information literacy into academic curricula mentioned by McGuinness (2007).

## The Borås Model

In the Strategic Plan 2009 – 2012 (Högskolan i Borås 2008) the University of Borås stated the importance of information literacy development among students. The Borås Model, a model of how the library and the university departments can collaborate to facilitate development of information literacy (IL) among students, is the outcome of a project run by the Library & Learning Resources and the School of Library and Information Science at the University of Borås during 2007 to 2008 (Süld & Bytoft Nyaas 2008). The model is a top-down-model and the Rector of the University of Borås in early 2009 decided that it should be implemented in all programmes at the University.

### The Borås Model:

The University of Borås' collaborative model for the development of student information literacy



In order to be meaningful, information literacy training requires integration at the subject level where its development supports learning in the subject itself. It is also important that teaching is recurrent and gradually more advanced throughout the curriculum. Therefore, the overall responsibility to promote and facilitate sustainable collaboration between the university departments and the library is shared by the heads of departments and the Library Director.

Together with the directors of studies and heads of programmes the librarian makes an overall planning at programme level, to identify in which courses elements of information literacy development is best needed.

To promote long-term collaboration together with gradually more advanced IL elements and the consolidation of information literacy as an integral part of education, learning outcomes is included in official course plans for the relevant courses.

IL elements are weaved into programmes in ways that encourages students to view the seeking, evaluation and use of information as an important and knowledge building aspect of courses. Important information sources for the students professional work is also included.

Examinations in information literacy play a significant role in student learning but focus in such examinations must be concentrated on understanding and learning and not on the measurement of skills. Examinations are also an important aspect of course evaluation and the further development of courses.

The grey toned boxes in the model signal professional development. Through collaboration teachers and librarians will gain insight into each others' professional domains which will, in turn, be fruitful for quality development in education.

### **Implementing the Borås Model**

The content of the IL modules must be allowed to differ between the programmes, but essential is that IL elements must become gradually more advanced throughout the curriculum. Central information sources, as well as different aspects of the search process like describing an information need and how to use relevant search techniques and search strategies, will be included in all modules and might even, for some programmes, form the main content. Depending on the discipline, students will need to become familiar with specific information sources like business and market information databases, statistics and law. Engineers will need to search technical descriptions, rules and regulations, while art and design students have specific needs to find inspiration and ideas from images and videos.

To prevent plagiarism, departments give instructions in academic writing and referencing integrated with IL modules and some departments give lessons on relevant referencing styles.

Here follows a presentation of three cases, from three different programmes, to exemplify how the implementation of the Borås Model has proceeded. First, there is a description of the situation prior to the Borås Model and experiences that the suggested levels are based on. This is followed by a comparison between the IL elements in the Registered Nurse Programme and Computer and Systems Sciences Programme,

accompanied with a description of the overall plan for the IL modules at the Textile Design Bachelor Programme.

### **Gradually more advanced IL elements - based on experience from Registered Nurse Education**

The recommendations for the workshops are based mainly on experience from information literacy sessions at the Registered Nurse Programme, on observations of how students perform their searches and the questions they ask in class or in the library.

Prior to the Bologna Process and the development of the model, some of the teachers at the Department of Health Sciences are what McGuinness (2007) refers to as “heavy users of library instruction for their courses”. As a result, some registered nurse students were repeatedly offered library instruction in their courses. The communication between the teachers and the librarian, as well as between the teachers themselves, was however poor. As a result, the IL elements were not contextualized and often had similar focus and content. During the Bologna Process information literacy was included in learning outcomes on all levels at the School of Health Sciences at Borås, and IL modules were integrated in courses throughout the curriculum. Experience from these IL elements has been very useful both for the creation of the model and for the development of gradually more advanced IL elements.

For years librarians have noticed and tried to help nursing students struggling to find relevant research articles, this continued also after the Bologna Process and occurred regularly early in their first semester. There was an outspoken demand from faculty and teachers that the nursing students, at an early stage of their education, needed to learn how to search and read scientific articles. To prepare the students for this task, the librarian gave a lecture and a workshop to guide and support the students through their search process. But students still had difficulties in performing a qualitative search and often selected a random article. Many students consulted the library, asking for help to find as they said, “any scientific article on nursing”. These students also repeatedly asked librarians for help to find textbooks and other publications from their lists of required reading. This experience resulted in the following understanding: students need to learn about publications, how to identify them, how to find them and also the different kind of information they contain. Besides, to perform a search process, from defining and describing a problem to selection and evaluation of search results, is highly advanced. Good knowledge about search techniques, information sources and about publications is required to be able to make a reflective choice.

After the Bologna Process, the next IL element was integrated in a course including activity based education in the second semester. As an assignment, the students were asked to focus on a nursing situation, to formulate a query and to search one peer reviewed journal article about the problem defined. In this assignment, they were also asked to give a short description of the search process and to reflect on the search result and this assignment was examined by the librarian. The students generally managed well to focus on a specific problem related to the situation, and they managed well to write a search question. They had, however, difficulties in limiting the number of hits and often chose an article among hundreds. One student wrote in the assignment, “The article that I chose does not cover my defined problem, but there was another situation

...” (our translation). Again, the students generally failed to find an article relevant for their described focus, but they usually managed well to formulate a research questions.

Integrated in the methods and theory course registered nursing students had a third IL element. Few students however attended the lecture and the workshops, saying that they had already attended two lectures on information searching and knew how to perform searches. This tells us how important it is to be very specific about a focus for the different IL modules, to add IL elements on gradually more advanced levels and to connect to previous IL elements. As a result the following levels were formulated:

- Level one will focus on document types and analysis of information found in references and database records. Search techniques and database structure will also be discussed.
- Level two will focus on *citation pearl growing*, alternatively on searching on medical or technical terms.
- Level three will focus on discipline sensitive information or resources.
- Level four will prepare the students for their work with bachelor thesis, and cover the whole spectrum of relevant information sources, techniques and strategies, including analyzing information needs, evaluating search results and citing and referencing.

### **Information Literacy Modules according to the Borås Model – a comparison between Registered Nurse Education and Computer and Systems Science**

The Registered Nurse Education had IL elements in courses throughout the curriculum prior to the Borås Model. A meeting with directors of study, course coordinators and involved teachers therefore focused on how to adjust the existing elements to the Borås Model. This resulted in a decision to follow the levels suggested by the librarian. Learning outcomes already existed, but to clarify the focus in each IL module for the students, criteria were added in the course handbooks.

In the first IL module the focus is on publication types and analysis of information found in references and database records, on search techniques and on database structure. Most courses on the programme have long lists of required reading, consisting of a variety of document types like books, journal articles, book chapters and official papers. These are well suited for analyses of references and information about where and how to find the printed or electronic documents. A list of relevant articles for a class on reading and analyzing scientific articles was added and offered more exercise to the students.

In accordance with the model, a decision was made to design an assignment to make the students analyze and reflect on the way they searched and on the search results. The assignment is corrected by the librarian. Two problems had to be considered: the large number of assignments to be examined and the communication between the students and the librarian. The solution is a self-correcting multiple choice test on the learning management system. Beside questions about references and search operators the students are asked to search in different ways and to look for specific information in the database records.

In the second semester the nursing students attend a microbiology course. In this course the teacher has asked the students to search a number of scientific articles about infectious risks. The students received no guidelines or requirements about this task and there was no evaluation of the result of their performed searches. Now the students were given a reference to a review article on the subject and the librarian gave a lecture on citation pearl growing. The students can use any information in the database record about this article, like words in title, abstract, subject headings or references to search additional articles on the subject. There is no assignment for this search session.

The next course for these students includes activity based education. The workshop, preparing the students for the information searching assignment, starts with discussions on the students' experience from the microbiology course. The IL module in this course focuses on the use of subject headings to perform a precise search. In the assignment the students are asked to reflect on the search process and the search result in relation to the research question. A recurrent reflection among the students this last semester was " ... when I used subject headings, all articles on the hit list were about the same subject ..." (our translation). Their search results rarely exceeded 20 hits.

The nursing programme, only, has reached to the fourth level. Here the IL module was integrated in the method and theory course. In this course the students need to search information in databases and on the Web to find both academic and non-academic sources. Critical thinking is an important part of the course, both related to search results and to evaluation of the sources. The reference tool EndNote was introduced to these students as a tool to collect and store references and to create bibliographies.

Students on the Computer and Systems Science Programme have their first IL module in the first semester. Discussions with the heads of programme resulted in a decision to follow the suggested levels. These students normally have only one or two titles required reading, usually books, on each course. The teachers produced a list of classical literature as additional reading for a written assignment in the course. Different publication types are represented among the titles, books, book chapters, conference papers and journal articles, and the students are asked to analyze references, locate publications in the library or on the Web, and to analyze database records. The IL module is examined through an assignment on the learning management system similar to the one for the Registered Nurse students. These first year students were introduced to EndNote for storage of references in the EndNote Library.

For these students the second IL element is weaved into a course on object oriented programming. The students are asked to choose a specific design pattern and to search scientific articles about this pattern. The design patterns have individual names and the students were asked to focus on one design pattern. During the search session the librarian noticed how the students failed to try alternative approaches when they performed their searches. Some design patterns have names like *command*, *state* and *strategy*, and in combination with a tendency to focus too much on a single design pattern, several students failed in finding relevant information. When discussing this with the teachers, a decision was made to introduce the citation pearl growing method even for these students, and to give them one or two articles from which they can find information to take their search process forward.

The third IL module for the systems architect students will focus on the use of communities as a learning and communication resource. The librarian is not involved in this module.

The fourth IL module will be weaved into the theory and method course but the specifics are yet to be discussed.

Reactions from students, who were introduced to EndNote, were very positive. Therefore, instructions in EndNote will be integrated in all IL modules for first year students at the Registered Nurse Programme and at the Department of Business and Informatics.

### **Textile Design Bachelor Programme**

The School of Textiles performs education and research within textile design, fashion design, textile science and textile and apparel business management. The teaching is mainly based on multidisciplinary collaboration, for instance between textile designers and textile engineers where creativity of art and design is combined with technical innovations. This kind of cross professional collaboration is also what many textile design students will meet in their future professional life, whether they will be working at an architect's office, an interior design office, in the public sector or in the manufacturing industry. The textile design education includes artistic, practical and theoretical elements. The majority of the students' work, like the bachelor thesis, has main emphasis on creative, artistic and practical abilities and is most often presented in visual form with additional written texts. Traditionally written academic reports rarely or never occur.

Typically, art students prefer browsing through the library shelves, scrolling through books and magazines when searching for information and inspiration rather than searching the library catalogue, a kind of visual approach instead of word based searching (Frank 1999, Stam 1995). Considering this, the way of organizing printed media within art and design may be especially important for these users. Displaying books and magazines with attractive and inspiring covers, rather than keeping them strictly organized by subject, could work as a pedagogical effort by the library. The library plan to reorganize these collections to answer to art and design students' ways of searching information and inspiration.

Discussions between the head of programme and the librarian resulted in the following: essential IL abilities are information searching on the Web, in library catalogues and subject databases, evaluation of information and communication in verbal, visual and written form. Knowledge on different kinds of publications and on image copyright is also essential. It is important for the student of the Textile Design Bachelor Programme, as well as for the professional working designer, to put their work into a historical and contemporary context. The information they might need for doing this positioning and research is information on artists, designers, companies, markets, on textiles and other kind of materials, handicrafts and artistic techniques as well as facts and images from exhibitions and fashion shows. It was decided to implement IL modules throughout the curriculum, starting autumn 2010.

The first IL module, during the first year of education, will be in a course about textile and fashion design history and aesthetics. As an assignment, the students write a text about specific textile and fashion designers and their artistic methods. Information

searching, primarily on artists' and designers' names, is an essential part of the study task and the instruction will focus on searching for books in library catalogues. It will also include an introduction to different publication types, referencing, citing and the evaluation of sources. As a complement, a library tour focusing on their subjects of interest and also a demonstration of selected journals and magazines will be included to give the students a visual impression of the library collection and of different publication types. To examine the IL element, a multiple choice test on the learning management system, focusing on searching and locating books, has been discussed.

During the second year, an IL module will be implemented in a course that focuses on sketching techniques and development of the students' ability to visualize their own design objects. This includes an assignment in which the students have to study sketching techniques developed by different artists, architects or designers. These techniques should be presented and discussed in relation to the student's own techniques. The task requires information searching, both for books and for journal articles and the instruction will focus on more advanced information searching like formulating a search question, more advanced search techniques and search strategies. The students will also write a short description of their search process which will be examined by the librarian.

In a course during the third year, the students work in individual projects with product development. The course emphasis is practical and it also includes theoretical elements where an IL module is appropriate. This module will focus on advanced information searching in a wide spectrum of information sources, and on evaluation of information. The content of the IL module is not yet discussed with the course coordinator, it will however answer to the information need for the theoretical elements of the course, and prepare students for the thesis process.

The overall planning is done and the next step will be discussions with course coordinators and teachers about learning outcomes and the content of the IL modules.

## **Conclusion**

The Borås Model has facilitated the collaboration and the development of IL modules at programme level at the University. Faculty has given a positive response to the model and the collaboration to facilitate students' development of information literacy. Despite the willingness from all parts, there are still problems to solve and it will take time to reach mutual knowledge and understanding for each others' professional domains. We need to build fruitful forms of collaboration to achieve this. At the Department of Nursing the head of programme, course coordinators, teachers and the librarian meet regularly to discuss their own experiences, students' assessments and the overall outcome of the courses. This is the occasion when changes and adjustments are made, but the biggest advantage with these meetings is the coherence and the general overview it creates for all involved parts. A similar meeting was arranged with the heads of programme and the course coordinator at the Computer and Systems Science Programme with good results and the Library will promote such meetings with all programmes in the future.

Another challenge to deal with is the fact that students do not develop information literacy through only a few embedded elements of information literacy during their time

of study. It is necessary to involve all teachers and librarians to establish an ongoing process where students practice searching, evaluation and use of information throughout their education.

### References

- Frank, P. (1999). Student artists in the library: An investigation of how they use general academic libraries for. *Journal of Academic Librarianship*, 25(6), 445.
- Högskolan i Borås (2008). *Forsknings- och utbildningsstrategi 2009-2012*. Borås: Högskolan i Borås.
- McGuinness, C. (2007). Exploring strategies for integrated information literacy. *Communications in Information Literacy*, 1(1), 26-38.
- Nyaas, E. B., & Söld, K. (2008). Fiksa framtidens informationskompetenta studenter blir anställningsbara. Ett samarbetsprojekt mellan BHS och BLR., *Mötesplats inför framtiden, 15-16 oktober 2008*. Borås: University of Borås. Library and Learning Resources.
- Stam, D. (1995). Artists and art libraries, *Art Libraries Journal* (Vol. 20, pp. 21-24).