

# How do Teachers Experience Students' Information Literacy?

Paper for Creating Knowledge IV, Copenhagen, August 16-18, 2006

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## **Abstract**

This paper is based upon a study recently presented in a report *Universitetslärares syn på studenters informationskompetens vid Linköpings Universitet*<sup>1</sup>.

Within the University different disciplines and different pedagogical angles are taught. Diverse methods of teaching pose diverse demands upon the information literacy of students. The students information seeking is often governed by the lecturers' attitudes to information seeking and library use. The library gives a number of different information seeking courses. Most of the courses are scheduled but don't result in any academic credits. Our own experience is that students who ought to develop their knowledge of information seeking often give priority to other courses due to a tight schedule. This paper will show the need of enhanced collaboration between faculty and librarians in order to develop the students' information literacy. University faculty and librarians need a venue, an opportunity to discuss and develop students' information literacy.

Ten lecturers within Linköping Institute of Technology the Faculty of Arts and Sciences and Educational Science have been interviewed. The aim of the project is to study university lecturers' views on students' need of information literacy, in order to get a basis for developing models for collaboration between faculties and librarians. Another aim of the project is to find ways for Linköping University Library and Centre for Education and Teaching (CUL, Centrum för Undervisning och Lärande) to cooperate in order to meet the pedagogical needs of the faculty.

The results shows that the interviewed faculty consider information seeking important for the students, but the lecturers do not consider information literacy as a part of graduate thesis work. Thus is the information seeking viewed upon as a tool, and not as a part of the learning process. The interviews also show a scattered view on the responsibility for the students' information literacy. The faculty tend to shift the responsibility to someone else. The faculty and the librarians are in need of an arena for communication on information literacy as a part of the learning process. CUL could be that arena as it already is the University centre for the faculty pedagogical courses.

## **Design and aim of the study**

The study focuses upon the information literacy skills of the interviewed lecturers, their view of the students' information literacy and how they would like to collaborate with librarians and the library. The results could serve as a starting point for CUL and the University Library

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<sup>1</sup> Perselli, Ann-Katrin och Kajsa Gustafsson Åman, *Universitetslärares syn på studenters informationskompetens vid Linköpings Universitet*. (CUL-rapport nr 11). Linköping: Centrum för Undervisning och Lärande, 2006 (in print 2006-06-28)

in the task to develop models for collaboration between teachers and librarians. One example is developing curricula containing information literacy goals.

The interviews with ten university lecturers at Linköping University took place in May-June 2005. The lectures are employed at three of the four faculties of the university; Linköping Institute of Technology, the Faculty of Arts and Sciences and Educational Science. The Faculty of Health Sciences has practiced Problem Based Learning (PBL) since 1986 and the library is well used both by faculty and students. The Faculty of Health science was omitted from the study since it already has a well developed collaboration with the library and the faculty.

The interviews had a duration between 45 minutes and 1, 5 hour. We used an interview guide with fourteen questions as a starting point and was followed up with attendant questions.. On several occasions the interview became a dialogue. The interviews were taped and the transcriptions and notes were approved by the interviewee. The interviews were analyzed during the following autumn and were concluded in June 2006 in a report.<sup>2</sup>

As a theoretical basis for the analysis we used Christina S Doyle's<sup>3</sup> and Christine S Bruce's<sup>4</sup> models of information literacy as well as the Swedish Higher Education Act<sup>5</sup>, chapter 1 S. 9, concerning the aims of basic higher education. The models have been written in sections below (fig 1) and the categories have been numbered. These numbers are used further below in the diagrams as a way to identify the models different parts.

Christina S Doyle	Christine S Bruce	Higher Education act Ch. 1.,S. 9
The information literate;	Information literacy is divided in conceptions (faces)	The undergraduate education shall provide the student with;
1:1 Recognises that accurate and complete information is the basis for intelligent decision making	2:1. Information technology conception	3:1. ability to independent and critical judgement
1:2. Recognises the need for information	2:2. Information sources conception	3:2. ability to independently discern,
1:3. Formulates questions based on information needs	2:3. Information process conception	3:3 formulate and solve problems
1:4. Identifies potential sources	2:4. Information control conception	3:4 ability to meet changes in working life
1:5. Develops successful search strategies	2:5. Knowledge construction conception	3:5 search
1:6. Accesses print and technology-based sources of information	2:6. Knowledge extension conception	3:6 and evaluate knowledge in a scientific level
1:7. Evaluates information	2:7. Wisdom conception	3:7 follow the development of knowledge
1:8. Organizes information for practical application		3:8 exchange knowledge even with persons without special knowledge within the area <sup>6</sup>

<sup>2</sup> Perselli, Ann-Katrin och Kajsa Gustafsson Åman, *Universitetslärares syn på studenters informationskompetens vid Linköpings Universitet*. (CUL-rapport nr 11). Linköping: Centrum för Undervisning och Lärande, 2006 (in print 2006-06-28)

<sup>3</sup> Doyle, Christina S. *Information Literacy in an Information Society. A Concept for the information Age*. Syracuse, N.Y. 1994

<sup>4</sup> Bruce, Christine S. *Seven Faces of Information Literacy*. Adelaide: 1997

<sup>5</sup> Higher Education Act (Law 1992:1434), Ch 1., S.9

<sup>6</sup> Translation and dividing: Kajsa Gustafsson Åman. Official translation: <http://www.sweden.gov.se/content/1/c6/02/15/40/d894190c.pdf>

1:9. Integrates new information into an existing body of knowledge		
1:10. Applies information in critical thinking and problem solving		

Figure.1. Three different concepts of information literacy. In our analysis we have used these categories as an instrument to filter the answers on question 8, 6 and 9.

### **What have we obtained?**

The study shows several results; below we are examining some of the most important ones. We consider them important as they show obstacles for the students' information literacy and how they could be handled. Some of the findings are illustrated with diagrams.

### **The students' information literacy according to the lecturers**

The result shows that the lecturers expect the students to be capable to seek information for their graduate thesis. The lecturers have listed what they consider to be important skills for the students when they seek information. We also asked the lecturers what signifies a good graduate thesis and how information should be handled in the thesis. When we compared the answers to the two questions we found a low connection between what the teachers consider as important information seeking skills and what they actually assess when they examine the graduate thesis. Furthermore the results shows that the lecturers expect students to acquire information literacy during their studies without really considering the tools and opportunities the students would need. The students are expected to gain their information seeking skills by them selves, to put it in a sharp manner.

In our interviews we posed three questions in connection to the information literacy of the students;

- Question 8: How do you want a student of yours to seek information for a graduate thesis?
- Question 6: What should a student know of information seeking?
- Question 9: What does a qualitative good graduate thesis contain?

We read the answers and structured them into the different categories of information literacy by Christina S. Doyle, Christine Bruce and the learning goals of the Higher Education Act Ch. 1 S. 9 (fig. 1). The responding teachers answered question 6 with a set of skills, for example, the student should be able to find articles, this implied that the student also should be able to use the technology, to find a source and to access the database, in this case categories 1:6, 2:1 and 2:2 in diagram 1 and 2. We accordingly filled the answers into the different categories. The results were processed by excel and made into diagrams 1, 2 and 3 to illustrate the differences of the answers.

We are fully aware of the fact that there were only ten interviewees and that this in by no means a statistically measurable result but it gives an indication that is worth to consider.

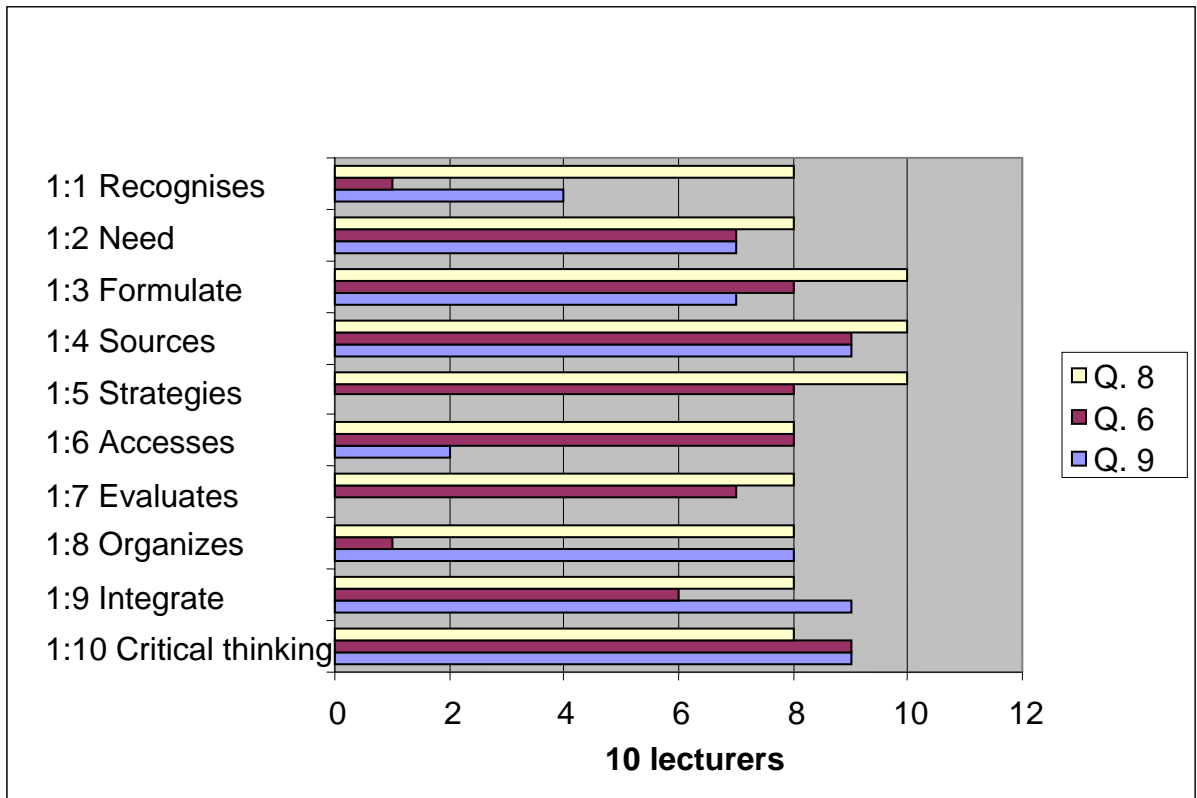


Diagram 1. Students expected information literacy according to Doyle

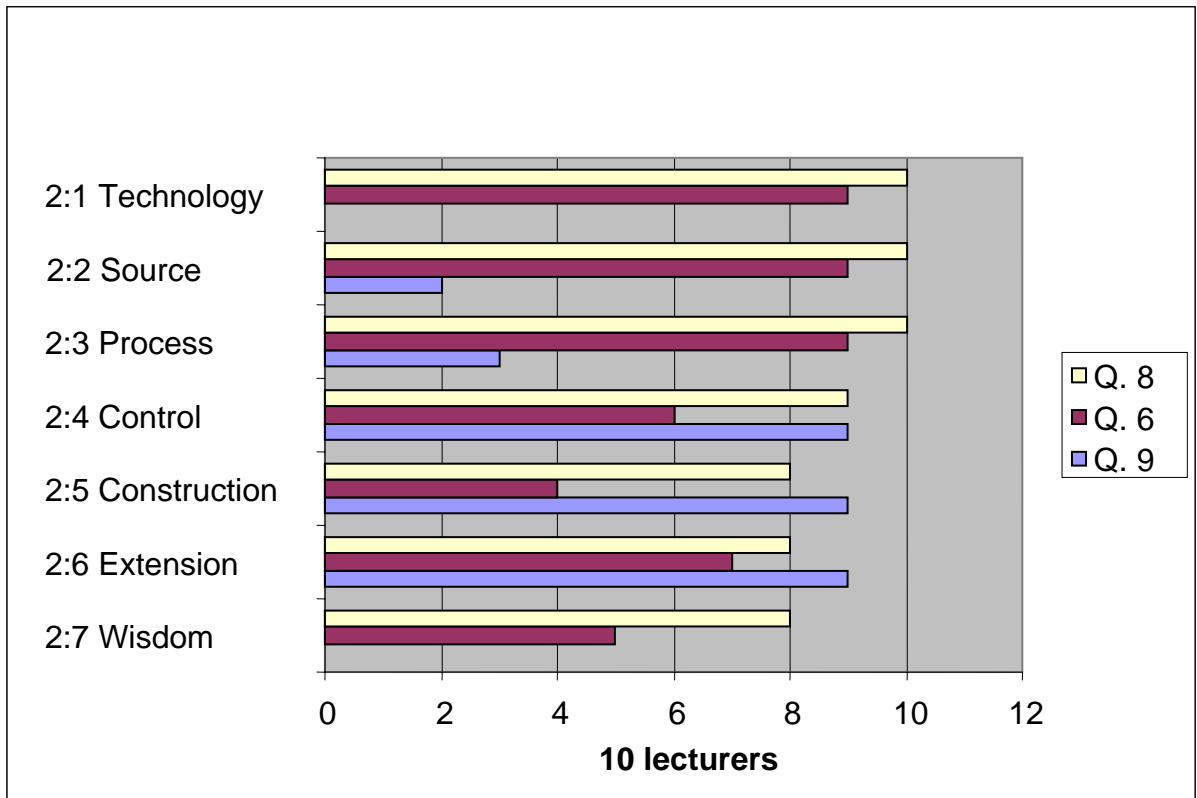


Diagram 2. Students expected information literacy according to Bruce

The lecturers' answers to question number nine what a qualitative good thesis should contain did not correspond with how they want the students seek for information. We can see in the diagrams that the lecturers want the students to focus upon knowledge of databases and the traditional "hands-on-knowledge" on information seeking such as formulating questions and strategies and identification of sources. The answers on question number 8 are score high in the categories 1:3, 1:4, 1:5 (Diagr. 1), 2:1, 2:2, 2:3 (Diagr. 2). Doyle and Bruce both see these abilities as a base to start from when information literacy is developing. But when we ask question number nine, (what a thesis should contain) the lecturers answered differently in comparison to question eight. On question nine we obtained high score on the categories 1:4, 1:9, 1:10 (Diagr. 1), 2:4, 2:5, 2:6 (Diagr. 2). We interpret this as that the lecturers wants the students to focus on integrating new information into the existing body of knowledge and organising the references.

Doyle and Bruce both mean that development and use of information is a more advanced use of information than the development of questions and identifying the best sources that they see as a more basic skill. We imply that the answers shows a lack of connection between what the tutors tells the students and what is expected as a result in the thesis. This lack of connection could be troublesome if it means that the students are meant to develop more advanced information literacy but only gets support for the basic abilities. The step between the basic knowledge and the more developed knowledge of information literacy can be difficult to take without support from the lecturers and librarians.

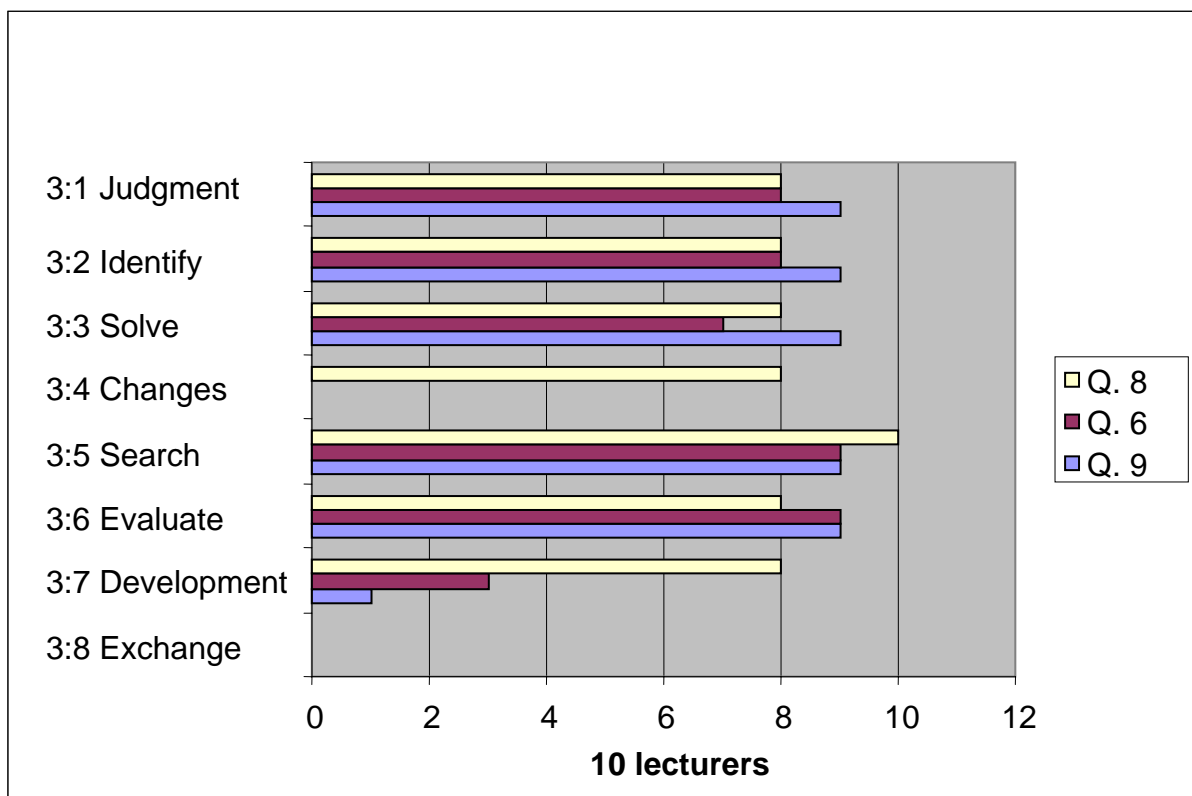


Diagram 3. Students expected information literacy according to Higher education act Ch. 1., S. 9

When we structured the answers according to the Higher Education Act, Ch 1, S. 9 (Diagr. 3), the outcome was not as obvious, but we could see that the lecturers omitted the laws' de-

mands that the students should be able to meet changes and to be able to exchange knowledge with people outside the competence area (3:8). None of the interviewees mentioned those competences.

None of the lecturers mentioned information literacy to be a natural part of a qualitative good thesis. When a student is searching information for the graduate thesis and struggling with formulations, searching words and evaluating articles. That is a part of the knowledge process. The process to search information is at the same time a journey of knowledge within the subject for the student. In order to find information you have to know and learn what to search for, how to formulate the search words and which words to use. We believe the lecturers don't observe this way of gaining knowledge because they focus upon the graduate thesis. We mean that the students should be made aware of their information seeking process in order to see the different ways of learning. Then they can find conclusions around information seeking and develop their technology and strategy. We would like to develop the students' learning tools in order to help them to focus and refine their information literacy. It would help them to take the step between the basic skills and the more developed skills. One tool could be to analyze their own information seeking process while conducting the thesis. This analyse would give the student awareness of the processes. A librarian could examine the thesis analyses. This is already done at the lower levels of the Environmental Science Program at Linköping University.<sup>7</sup>

Many of those abilities that Doyle, Bruce and the Higher Education Act, Ch 1 S. 9, see as a part of information literacy are not viewed as such by the lecturers. It is possible that they see these abilities as other parts of the academic learning process and thus have not considered this when we, librarians, asked our questions. If that is the case, our meaning is that it is time for the lecturers to widen their view upon information and see information seeking as a part of the learning process.

### **Responsibilities for the students information literacy**

The interviewed lecturers' views upon where the responsibility for the students information literacy lays differs between those employed at the Institute of Technology on one hand and the Faculty of Arts and Sciences and Educational Science on the other hand. The lecturers at the Institute of Technology show a tendency to hand over the responsibility to a higher authority, for example, the University board or the Programme board. Lecturers at the Faculty of Arts and Sciences and Educational Sciences consider the responsibility to be divided between at least three parts; among those the library and, not the least, the student. Our respondent group is a small group but the results correspond with those of Hansson and Rimsten.<sup>8</sup> Their report shows upon the tendency of lecturers and university management to hand over the problem to someone else when concerning the development of the students' information literacy. We agree with Hanson and Rimsten in their conclusion that the responsibility needs to be settled.

### **Lecturers and librarians**

The information literacy of the lecturers has usually been developed by themselves as doctoral student. Time and support to develop the abilities in information literacy is usually inadequate. Several of the lecturers say they have the ability that covers their needs. They do not

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<sup>7</sup> Åman, Kajs Gustafsson, *Integrering av informationssökning – ett lyckat försök*. <http://www.hb.se/bhs/motesplats/B&I-konf2004/pdf/GustafssonÅ.pdf> (2006-06-30)

<sup>8</sup> Hansson, Birgitta och Rimsten, Olle, "Someone else's job". *Måluppfyllelse av 1 kap. 9 § Högskolelagen avseende studenters informationskompetens*. Örebro, 2005

have any interest for further education in information literacy, because they don't have time and, maybe, because they don't want to expose their lack of competence. Some of the lecturers turn to librarians to get help with more thorough searches in the beginning of a new research project, for example. Many use their informal social network, developed as doctoral students.<sup>9</sup> All university teachers have not finished their dissertation. Newly employed teachers could need support when getting acquainted with the information system of the university library. Several lecturers consider information seeking as a daily activity. They mean that the road to information literacy could be troublesome, you are assumed to automatically know how to control information seeking being a teacher or lecturer. Some of the senior researchers also points to the lack of time to follow the continuous change of the electronic resources. Their suggestions are some sort of running courses to keep the knowledge in information seeking up to date. Unfortunately, we as librarians have very bad experience from that type of drop-in-activity. Both faculty and students tend to come in a higher number when an appointment is done. It should also be in the interest of the university that the lecturers keep up with the technological development and thus is not hindered in their information support. To guarantee the quality of the education the teachers should have disposable time in their duties for continuous education within information seeking and literacy. Information literacy is the fundament of lifelong learning.

## Collaboration

The teachers' suggestions on collaboration with librarians are scarce, probably due to the lack of knowledge of the library services apart from lending books and journals. The opportunities are unknown and unthought-of. There are also organisational difficulties and status differences of which makes it more difficult with collaboration between the two parties.<sup>10</sup> Three examples of this type of impediments are; spontaneous meetings are made more difficult as the library often is situated in a separate building far away from the teachers workplaces; librarianship is viewed as a service job by the teachers while they see their own work as focused upon producing and spreading knowledge; finally and third: librarians tend to see the lecturers as relatively illiterate within information technology and seeking strategies. All these factors could be managed, once seen as a reality.

There are several examples of well integrated information seeking educations at Linköping University; the programmes of law, economy and environment are such examples.<sup>11</sup>

## Conclusion

Our study shows the need of communication between lecturers and librarians around the question of students' information literacy, the learning process and around responsibility and collaboration. A possible arena for the dialogue and collaboration around these pedagogical questions at Linköping University would be CUL. At present CUL have pedagogical courses for the teachers. In the interviews the teachers asks for pedagogical education for doctoral students and newly employees with more practical suggestions on education, but also a possibility for reflection and discussion with other teachers. In these pedagogical courses librarians should take part in the discussions about students' information literacy and its connection to

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<sup>9</sup> The dissertation of Lars Seldén shows the importance of formal and informal networks and their use for doctoral students. Seldén, Lars. *Kapital och karriär. Informationssökning i forskningens vardagspraktik*. 2 uppl. Borås, 2004

<sup>10</sup> Christiansen, Lars, Mindy Stompler and Lyn Thaxton. "A Report on Library-Faculty Relations from a Sociological Perspective." *Journal of Academic Librarianship*, (2004) 30:2, s 116-121

<sup>11</sup> Åman, Kajsa Gustafsson. *Ett första steg. Början på en integrering av informationssökningsundervisning i miljövetarprogrammet*. I: *Process och produkt. 5:e universitetspedagogiska konferensen vid Linköpings universitet. 15 november 2001*. (CUL-rapport nr 3) s 135-145. Linköping: 2001.

learning. The library strives to have the information seeking instruction integrated with the subject education. Information seeking education unconnected to the “core education” tends to be considered as uninteresting by the students and therefore a waste of time. CUL could be an arena for librarians and lecturers to meet to plan and discuss the continuum of information literacy for students.

The most important arena for these questions at Linköping University is the subject librarian, who is a communication link between lecturers and institution and the library.<sup>12</sup> The subject librarian, however, does not have possibilities to work with the general structures. It is in the work with the university structures and views of knowledge that CUL could be a vital arena.

## Suggestions

Finally we give some suggestions upon ways that could ease collaboration between lectures and librarians. Some of these suggestions are already in progress.

- Curricula for the different educational programs should be adopted according The Higher Education Act, Ch 1 S. 9, in order to achieve its goals. The responsibility for this work should lie on the educational boards and not only on the individual teacher, as it often is today. If students’ information literacy development is an individual agreement between teacher and subject librarians it is likely to be a more vulnerable system. The Bologna process is changing many programs and educations. That makes it a good time to make a survey on the programmes and make room for the information literacy development and make it a part of the structure. This work should of course be made in collaboration between teachers and subject librarians. As discussed above it is vital that the information seeking courses are integrated with the curriculum in order to make it a whole.
- To make it easier for the different educational programs, the library should write descriptions of their own courses that could be accessed from the students’ program homepages. This should be made in order to make the role of the library educational part in the program more legible both for teachers and students. The subject librarians already offer opportunities to enhance the teachers’ information literacy. This work should be more supported from the faculties and institutions and made part of a structure more than a private agreement between librarians and teachers.
- CUL already gives pedagogical courses for the faculty with opportunities for reflections upon teaching. We would want information literacy and the learning process to be a part of these pedagogical courses. CUL is already the University arena for pedagogical development and it is natural to develop it further.
- When new staff is introduced to the University an introduction course is supplied. The library has a small part of this introduction but we would like this to increase. The subject librarians should get introduced and have opportunity to present the library services.

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<sup>12</sup> Linköping University sees the contact librarian as “the ear of the library” in the contact between the library and its users. *Strategisk plan för informationsförsörjningen vid Linköpings universitet*. 2006-2010. Dnr LiU 821/04-10, 2005-05-30 Linköping: Linköpings universitet, 2005. s.11  
[\[http://www.liu.se/basfakta/styrdokument/strategier/informationsforsorjning.pdf\]](http://www.liu.se/basfakta/styrdokument/strategier/informationsforsorjning.pdf) (2006-01-17)

To summarise these suggestions; we would like the library to be an integrated part in all educational programs and in the university infrastructures, from the highest to the lowest level. Information literacy is a complex process and it is a vital part of a university. A university has much to gain from being information literate. One teacher in the interviews even saw it as a business concept. Linköping University – the information literate university!

## **Literature**

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# Supplement

## *Interview guide*

1. What is 'information' to you?
2. What is 'information seeking' to you?
3. How do you seek information?
  - a. As a researcher/scientist? To your in-service training?
  - b. As a lecturer, planning a new course, for example, create a new list of textbooks?
4. 5-10 years ago, how did you seek for information at that time?
5. How do you investigate the quality of an article or source of information you have found?
6. What should a student know of information seeking?
  - a. Which advices do you give?
7. What do you think about the students' use of information?
8. How do you want a student of yours to seek information for a graduate thesis?
9. What does a qualitative good graduate thesis contain?
  - a. How do you know that the student has searched for information?
10. Who is responsible for students' development of Information Literacy?
11. What do you think the library could help with or learn the students?
12. Which help do you need from the library?
13. How would you like to cooperate with a librarian or the library?
14. Is there any need of information seeking courses at CUL?
  - a. If so, which?
15. Have I forgotten anything?