

# Coping with risk in the library

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Paper submitted to:  
The International Conference at The Royal Library and University of Copenhagen, August  
16-18, 2006 - Creating Knowledge: Empowering the Student Through  
Cross-Institutional Collaboration

## *Abstract:*

The study programs of Health Promotion at the University of Bergen have introduced mandatory information literacy modules for students at BA and MA levels. As the major element of risk in literature search, students recognise the possibility of choosing literature that lack sufficient validation. Students cope by applying strategies for information search that refer to perceived expectations from different authoritative voices within the learning environment, the academic librarians representing one among different voices. The paper shows how teaching academic librarians may include or exclude voices of relevance to students learning and empowerment.

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## *Addressing coping strategies*

*'I need to trust my ability to critically choose sources to search'*

*'What if the texts I read is judged as irrelevant to my supervisor's research?'*

*'I struggle to achieve a complete overview. When is enough, enough?'*

These quotes reveal well known concerns postgraduate students have about the risk involved in finding and choosing literature for their master's projects. As the major element of risk in their literature search, students recognise the possibility of not finding, or of choosing and applying literature that lack sufficient validation within their field of study, and as a consequence of this to reduce their possibility of obtaining good results. I approach this element of risk, that is, the possible unintended consequences of choices in the processes of searching for, evaluating and choosing information resources for problem-solving. Students seek to avoid possible unintended consequences of their choices but apparently they apply different strategies when coping with risk. Some try to update their knowledge of potential sources of information, others try to interpret their supervisors discipline based preferences or they seek what they hope will be an ensuring overview of their topic of study.

Information literacy (IL)<sup>1</sup> courses address these strategies. However, students' statements show that they choose information sources, work out search terms, they evaluate hits, choose literature, and rewrite their assignments, all in reference to perceived expectations of different authoritative voices within their learning environment, the academic librarians representing one among different voices. There is little to be found in the research literature about how we may negotiate different voices when addressing coping strategies. Therefore I find it interesting to discuss how different voices may influence coping strategies as part of IL courses, and how we may respond to this when planning and teaching. As I will claim in this paper, the impact of different voices is influenced by different epistemological orientations operative in the communicative field of teaching IL. Thus, I will focus on how we, in communication with our students, construct knowledge about literature search in a particular Information Literacy module. This is a module that is integrated with a masters program organised around the method of Problem-based Learning (PBL). My hypothesis is that to

facilitate learning in the library, we need to be aware of epistemological connections between the teaching of information literacy and the learning activities accommodated for by faculty in the wider study context.

I will start by defining the concept of risk in relation to the concepts of empowerment and collaborative learning as made relevant by the context of learning methods in current higher education in general and the method of Problem based learning in particular. Throughout the paper I will relate these discussions to a specific example. I will therefore continue by a presentation of the master program in Health Promotion at The Research Centre for Health Promotion, the Faculty of Psychology, University of Bergen, within which the library is responsible for an integrated module of information literacy. I will then discuss different approaches to information search in user education. First, I will present a case study dealing with orientations stemming from different epistemological stands within academic librarianship. Second, I will present different approaches identified in the reflections and evaluations handed in by the master students. In the final discussion I will argue that the voices investing coping strategies with meaning should be negotiated by what will be designated as communicative teaching.

### ***‘Moments of risk are moments of learning’***

The so called Quality Reform of Norwegian higher education ‘Do your duty, demand your rights’ (Kirke- utdannings- og forskningsdepartementet, 2001) was implemented by the start of the academic year 2003. For all institutions of higher education in Norway this led to far reaching structural and educational changes.

At a structural level established studies were restructured and new studies were established as module based bachelor and masters programs. At a pedagogical level the reform enhances the implementation of a greater variation of learning methods. Due to the slogan ‘Do your duty’, students are expected to take on a more active role towards their own learning. This is to be facilitated by the accommodation of a greater variety of learning methods such as problem-based learning, writing across curricula, interactive ICT discussions and supervision, and portfolio assessment. Problem-based learning is the core method applied by The Research Centre for Health Promotion at the Faculty of Psychology.

In the Norwegian context of academic librarianship new approaches to learning and teaching within higher education has found its resonance in the development of different programs of teaching information literacy. Students are not any longer solely to be viewed as individual library users in need of basic searching skills. Students are also to be met as members of a further learning environment within which they take part in problem solving activities.

Teaching information literacy is about empowering students. One definition offered is that empowerment is the 'bringing into a state of belief one's ability to act effectively' (Ashcroft in Duhon-Haynes, 1996, p. 3). Thus empowerment rests on the premise that human beings have the capacity to make choices. In terms of the educational process, empowerment urges us to enable students to develop knowledge, skills, attitudes and the self awareness needed to take responsibility in the field of academic work. However, both teaching staff and students do not act solely on a hyper rational basis. Research reveals that information searches are not uni-linear and rational processes (Sundin, 2005; Talja, 2005). Carol Kulthau (2004) partly addresses this issue by formulating emotional aspects involved in information search. But there are also wider socially structured conditions of thinking and action to be considered. We are not mere transmitters and receptors of objectified knowledge *about* fields and topics; we are constructing and appropriating knowledge by joint interpretations made within institutionalised structures of thinking and of prior internalised knowledge. According to the social psychologist James Wertsch (1991), tools such as search engines, library catalogues and databases are institutionalised objects that we think (and act) *by* and not merely *about*. They are mediational means. How we think about these tools and how we communicate our thoughts about them and apply them is restrained by the available ways of doing so within the actual social settings. I shall thus understand teaching and learning as socially situated phenomena.

When we learn how to apply and utilise different tools available in the library, we make sense of the tools relative to what we may conceptualise as 'the consciousness of every day life'. The concept designates our subjective way of perception in the world within which we act (Leithäusser in Cederstrøm, 1993, p.42). By our everyday consciousness we turn products of human activity into naturalised phenomena perceived as given. Thus, our consciousness of everyday life typically hinders critical reflection. This is so because it aims at bringing us in continuance with the world, leaving out and blurring the edges and contradictions potentially confronting us.

The PBL model fits well with presuppositions found elsewhere. That learning departs from relations between the occurrences of contradicting objects in our external reality and our subjective perceptions of them (Weber, 1995). (p.32), that is from disturbances to our everyday consciousness. Historically, PBL emerged from different perspectives on how students acquire knowledge.<sup>ii</sup> An integrated perspective having impact today is constructivism. In their book *Foundations of problem-based learning* Savin-Baden and Major (2004) underline three aspects of learning when they say that constructivism ‘posits that understanding comes from interactions with the environment, cognitive conflict stimulates learning, and knowledge occurs when students negotiate social situations and evaluate individual understanding’ (Savin-Baden & Major, 2004, p. 29).

First, students learn by interacting with their environment. This environment is complex. What we experience as our objective world, emerge from different social contexts. The students interact with each other, with their academic supervisors, with librarians, colleagues at work just to mention a few.

Second, conflict and contradictions are vital to learning in that ‘cognitive conflict stimulates learning’ (Savin-Baden & Major, 2004, p. 29). Thus, following my claim that risk is perceived whenever contradictions occur in the objective reality and are recognised as such, moments of risk perception should be addressed as moments of learning.

Third, negotiations take place within and between social groups. By negotiations established and internalised knowledge and competencies are challenged, changed and restructured. These negotiations are dialogic (Dysthe, 1995). That is, by intra-psychological dialogue, prior and new knowledge connects in the individual mind. By inter-psychological dialogue new understanding is socially structured.

The method of PBL systematically frames inner dialogue by social dialogue. PBL thus departs from principles of collaborative learning. Within models of PBL, students work is organised in teams. Members of the PBL teams are responsible for one another's learning as well as their own. Collaborative learning thus differs from cooperative learning. In the former the participants involved are jointly responsible for the product of their work as opposed to the latter where participants take a limited share of what is to be the final result.

Therefore, in teaching the IL module described below, our task is not to convey isolated knowledge about library tools but rather to take part in the facilitation of collaborative processes of creating knowledge. It is by these processes we are challenged to negotiate different voices and different coping strategies. In the following I will scrutinize alternative approaches to literature search and literature evaluation as applied by teaching staff and by students in IL courses. The main questions are: In what sense of the term do we empower students to cope with risk in their search for information as part of subject-specific problem solving? What may the implications of different approaches be in terms of the learning processes we facilitate? Before I turn to these questions I will present the IL module taught within the master program of Health Promotion.

### ***The Masters Program in Health Promotion, spring 2006***

The Research Centre for Health Promotion at the Department of Education and Health Promotion, the Faculty of Psychology, University of Bergen, offers one bachelor program and two masters programs. One of the master programs is an international M.Phil. The other is a Norwegian master. The following descriptions refer mainly to the Norwegian master.

Relative to the former system of higher degrees programs in Norway, the centre has been fairly progressive in their teaching methods. Problem-based learning is applied as the key method of learning across courses in all three programs. Portfolio assessment is introduced. Furthermore, IL constitutes an integrated compulsory module of all programs of study within the field of Health Promotion.

The actual integration of IL in the programs of study is twofold. First, all IL modules are, in context of the plans of study, defined by both general and specific learning objectives. Second, the PBL learning teams bring their ongoing assignments to scheduled seminars and workshops in the library.

The learning objectives were designed in collaboration between the academic librarian and the teaching staff at The Research Centre for Health Promotion. Whereas the information literacy standards (Lupton, 2004; The Association of College and Research Libraries, 2000) formulate decontextualised learning objectives, it was important to the research centre to

reformulate them to fit the context of Health Promotion as a field of scientific study. The resulting plan of study contains three general learning objectives of which IL constitutes the third. It states that students should 'be able to search and evaluate literature and information from different sources with reference to scientific methodology' (Research Centre for Health Promotion, 2006, p. 1). Thus, in the plan of study Information Literacy is established as part of the research methodology.

The basic introductory module of the plan is called *Foundations of Health Promotion* (HEFR 330). This module is divided into four themes. These are 1) *Health promotion – concepts and ideologies*, 2) *Perspectives in public health*, 3) *Public policy* and 4) *Information literacy* (my translations). Each theme is described by specific learning objectives. The agreed objectives for IL are:

- To know sources of relevance to the field of study
- Be able to determine the nature and extent of the information needed for the task at hand
- Be able to find relevant information needed to clarify one's research questions
- Be able to access needed information effectively and efficiently and knowing how to search in subject-specific sources with appropriate search strings based on special subject features.
- Be able to change search strategy to ensure that the amount of information is sufficient to solve the task at hand
- Be able to evaluate information and its sources critically and to incorporate selected information into the knowledge base and value system pertinent to the field of study. (Research Centre for Health Promotion, 2006, pp. 7-8, my translations)

The designing of courses and workshops followed these agreed objectives. The academic librarian was responsible for the content, while the timing was carefully worked out in collaboration with the teaching staff at the research centre. The main principle of planning was to design sessions that answered to the activity within the further program. Students should always bring their actual ongoing work to scheduled courses and workshops in the library.

The IL module was divided into three courses. By the first two courses students were to become familiar with the necessary tools. The third course was designed as a workshop.

The first course of the IL module was scheduled in January. This two hours introductory course was titled 'Sources in Health Promotion'. At this point the masters students were also introduced to the method of PBL. Following this introduction they also started working on the first PBL scenario. In the 'Sources in Health Promotion' course the students had a brief lecture on IL as related to PBL. They received brief instructions on selected databases combined with group-based searching activities based on the information needs they worked out in the PBL team.

During the weeks that followed this course, the students had the opportunity of attending one-to-one or group-based supervisions with their academic librarian.

As part of their portfolio the master students wrote mandatory annotated bibliographies. The first bibliography was due in February. They started their work on annotated bibliographies by attending their second course of the IL module. Combined with brief lectures on critical reading and on annotated bibliographies they were introduced to the reference management tool EndNote.

The Research Centre wanted the students to get started with the proposals for their master theses as soon as possible. In March they organised a one day research conference. At this conference the staff presented ongoing research at the centre and the students were encouraged to choose a topic for their thesis. Shortly after this conference the students attended the third course of the Information Literacy module. This was a six hours workshop entitled *Project development – literature search and writing*. The workshop combined brief lectures, group work and plenary discussions. The attending students worked three hours the first day of the workshop. The second day was held free for reading and writing. The third day they spent another three hours together in the workshop.

At the start of the first day of the workshop each student wrote a brief reflection note on the challenges of literature search. The reflection notes were handed in. At the start of day three the tutor presented points of shared challenges revealed in the notes. These were discussed in relation to the discussions and work done by the groups so far.

The actual workshop started by the oral presentations given by each student of the topic of his or her planned project. Some students presented well defined and grounded research questions. Others presented loosely formulated ideas about their topics of interest. Nevertheless, all of the participants were asked to write down their presentations. The rest of the day combined brief lectures and sessions of group discussions and responses. The lectures thematised the process of defining information need according to different textual levels in academic writing. The lectures and the project presentations were discussed within the groups as part of the students effort of identifying information needed for further elaborations. They worked out search terms and searched different databases, indexes and catalogues. The students were finally asked to choose two readings of different genres and of apparent relevance to their planned projects. Challenges and problems were brought up in a plenary discussion towards the end of the day.

The students spent day two reading and annotating the sources they chose. Back in the workshop on day three, the students presented their annotations to the group. They also attended a brief lecture on critical evaluation of sources. Based on their presentations and the responses given by the groups they refined their information needs, they mapped out new search terms and combinations of terms, and they searched different sources for further information and literature. Towards the end of this last day of the Information Literacy module the students rewrote their topics or research questions and attended a brief lecture on academic integrity.

Table 1: Timing of learning activities within the program of study

Master in health promotion	
<p><u>HEFR 330</u></p> <p>January</p> <ul style="list-style-type: none"> <li>• Distribution of the first PBL- scenario</li> </ul> <p>February</p> <ul style="list-style-type: none"> <li>• First annotated bibliography</li> <li>• First essay</li> </ul> <p>Mars</p> <ul style="list-style-type: none"> <li>• Research seminar</li> <li>• Project proposal seminar</li> </ul> <p>Mars – June</p> <ul style="list-style-type: none"> <li>• Essay on the field of study</li> <li>• Research proposal</li> </ul>	<p><u>Information literacy module:</u></p> <p>January: <i>Sources in Health Promotion</i> (2 hours)</p> <ul style="list-style-type: none"> <li>• Brief lecture: Information Literacy and PBL</li> <li>• Demonstrations: Sources in health promotion</li> <li>• Exercise: Searching (related to the first PBL scenario)</li> </ul> <p>February: <i>Reference management and critical evaluation of sources</i> (1 + 2 hours)</p> <ul style="list-style-type: none"> <li>• Brief lectures: Annotation and critical reading</li> <li>• Hands on course: EndNote</li> </ul> <p>March: 3 + 3 hours - <i>Project development – literature search and writing</i> (workshop)</p> <p>Day 1: (3 hours)</p> <ul style="list-style-type: none"> <li>• Brief lectures: Genre, levels of writing, the process of writing and searching,</li> <li>• Group work: presentations of research topics, defining information needs, searching, writing, choosing literature.</li> </ul> <p>Day 2: individual work</p> <p>Day 3: (3 hours)</p> <ul style="list-style-type: none"> <li>• Brief lectures: Critical evaluation of the sources, Academic integrity</li> <li>• Group work: Presentation of critical reading, elaborating information needs, searching</li> </ul>

## ***Orientations for teaching***

Integrated Information Literacy modules like the one presented is challenging both at an organisational level and at a pedagogical level.

First, timing is crucial. The courses given in the library should fit well with the activities provided for in the respective program of study. One must therefore establish well structured meeting points for joint planning of the teaching.

Second, both our role as teachers in the library and our pedagogical awareness shift. The pedagogical foundation of the courses in the library needs to cohere with the educational ideology that permeates the further program of study, in our case the method of PBL. The focus on pedagogy in general and the epistemologies underpinning applied learning methods in particular may challenge the way we understand our role as teaching academic librarians.

In his article *Webbaserad användarundervisning – ett forum för förhandlingar om bibliotekariers professionella expertis*, Olof Sundin (2005) scrutinizes 31 web-based literature search tutorials produced and published by teaching staff at academic libraries at Nordic institutions of higher education. Based on a textual analysis of the 31 web-based products Sundin presents four ideal typical approaches to library instruction. Furthermore Sundin argues that the different approaches connect to different areas of librarian's competences. As the tutorials are products of librarians work, I will take the following as a pointer to different perceptions of roles operating within the teaching profession of academic librarianship, and the way these roles connects to different views of knowledge production.

The first ideal type is termed source oriented instruction. The approach rests upon the competences found in classic librarianship (Sundin, 2005, p. 40). Knowledge about source content is given highest priority. Instruction is all about explaining the internal structure of bibliographies, indexes, catalogues. Sources are addressed in a decontextualised manner in so far as they are represented as individualised cognitive structures detached from their milieu of origin and use. Sources are thus depicted as storage rooms of knowledge.

The second approach described by Sundin is the so called behaviour oriented user instruction. Sources are still viewed as the most important component of doing literature search, but

within this approach the proper order of searching different sources is addressed. A typical strategy of information search will be to start by searching basic sources like dictionaries and encyclopaedias and to move on towards more advanced sources like journal indexes and peer reviewed research journals. The approach presupposes expertise in advanced searching skills. An important learning objective is the ability to construct advanced search strings. In the same way as with the first approach, questions of application and validation of sources within different academic communities are excluded from this kind of instruction.

Third, Sundin constructs the ideal type of process oriented search instructions. Here the user is addressed as the crucial element of any information search. This approach takes into consideration that literature search is congruent with the overall process of doing research. By splitting up the search process, strategies for finding and evaluating literature relate to isolated stages. At the beginning our searching should provide us with an overview of information relevant to our topic. We then seek to delimit for the purpose of posing fruitful research questions or hypothesis. We move on by in depth searching and critical evaluation of sources related to the writing process. Thus the user should cope with searching as a part of the process of research and academic writing. Teaching within this approach presupposes that the academic librarian possesses general knowledge about the stages involved in a research project, and that he or she can structure students' effort according to them.

Finally, Sundin partly raises a critical voice towards a clear tendency to convey representations of knowledge and information as detached from knowledge productive communities in the first three approaches. Based on empirically identifiable traits in the web-based tutorials he describes a communicative approach to teaching library research for academic assignments as a fourth ideal type. Searching for, evaluating, choosing and applying information recourses are questions of social navigation.

The approach here furthered by Sundin affects our fundamental interpretation of Information Literacy as a program objective of teaching library use. It should draw our attention to how social mechanisms of power operative within fields of research and research communities have an impact on practice, including the way we use libraries. The information scientist James Elmborg claims that Information Literacy in its broader sense should be defined with reference to recent expansions of literacy theory. As a working definition he suggests that 'Literacy is the ability to read, interpret, and produce 'texts' appropriate and valued within a

given community' (Elmborg, 2006, p. 195). Thus the validation of information is a process by which information receive quality stamps from a multitude of authorities; the producer, the publisher, the database in which it is stored, the users, the librarian, the research community, the supervisors. For the teaching staff in academic libraries this means that empowering students by teaching information literacy should be a case of increasing our sensitivity to the socio-cultural conditions of information production, mediation and usage. This sensitivity is crucial if we want to facilitate collaborative learning.

In the following section I will present the approaches and coping strategies revealed by the students. Different conceptions of knowledge and subsequent coping strategies may point to possibilities we have to engage our students in processes of collaborative development of information literacy.

### *Students' strategies*

Apparently students who are at the outset of their master's project apply different strategies when searching for information. As we have observed in the section on teaching librarians, different approaches to information and information search relate to different ways of conceiving knowledge.

The students who participated in the described courses and workshops evaluated them at the end of the workshop held in March. Prior to the workshop they also handed in a reflection note. In the reflection note the student's were asked two questions:

- 1) What are the challenges you experience in your current academic writing?
- 2) Which are the challenges of searching for and of choosing literature for your writing assignment?

In the subsequent evaluation they gave their opinions about the courses as they relate to the concerns raised in the reflection notes. The responses reveal two alternative conceptions of knowledge. Students may understand information as equal to knowledge. By this conception they are searching for ready made knowledge of unmediated applicability to their own texts. As the case was with the source oriented orientations of tutoring, they see databases as knowledge storage rooms. The second potential conception revealed by the reflection notes

and the evaluations however, problematise the relation between information in the context of sources and knowledge in the context of their academic writing.

In the following section I outline different coping strategies stemming from these two different views.

#### First view: Information equals knowledge

Some students expect to find information that is given in its relevance to their own writing. Knowledge is conceived as represented in the information they are looking for. A common expectation occurs by this; that it should be possible to obtain a fairly complete overview of the literature that deal with the research question the students pose in their own research proposals. By the information literacy module students may expect to learn how to find and isolate information that reflects frames of references matching their own subject specific problem at hand. It is thus perceived as important by students, as one student puts it, to identify 'specific literature dealing with the topic I am writing about. It will make it easier to analyse and to argue'.

Students who act due to this epistemological orientation experience uneasiness about the difficulty of finding the relevant representations. When reflecting upon the challenges of searching a student typically reports that 'I struggle to get a proper overview of my research topic. The hits I get when searching just seem too random'. Another student reports that he is insecure about whether 'I have found the right reviewed articles'. They perceive risk as the possibility of not finding representations backing up their own particular problem construction.

In the material we find two ways of coping with this.

*The first strategy* is to make sure that findings are in keeping with the hints and recommendations given by lecturers or supervisors. In their evaluations they say that the most important quality mark of information is whether they recognise references from their supervisors' research. When asked about criteria for having confidence in search results these students typically report that they mainly search for references mentioned by their academic superiors. These students aim at developing skills in citation searching across different databases.

*The second strategy* students apply is to evaluate findings by the formal quality marks of their sources. The reliability of doctoral dissertations is for instance unquestionable. When it comes to information in general, the formal criteria they apply are mainly that the databases and indexes should be strictly subject-specific and that they should be containing refereed articles and research reports. These students may narrow down the potential range of searchable sources early in the process. When they evaluate the courses they express appreciations about learning how to recognise the mentioned criteria. However, after the workshop, they also express anticipations pointing to the ability of being critical towards established research. This anticipation involves a feeling of critical risk. They are concerned about the consequences of ‘digging up sources that are critical towards the perspectives of the supervisor’. Thus, the students starting out with this approach seem to be likely to develop their understanding of information and information search. They move towards the strategies corresponding to the one described below.

#### Second view: Information must be recontextualised

Most of the students actually show signs of deconstructing approaches in their reflections and actions. They understand knowledge as representations stemming from ongoing academic efforts of knowledge creation. One student typically expresses her deepest sigh when reporting that ‘I really feel the increasing expectations of backing up the arguments I develop by sound referencing’. When reflecting upon the challenges of searching a student also typically reports that she feels ‘insecure whenever I find contradicting research results.’ They perceive risk as the possibility of failing whenever they realise that they have to argue against established research.

*The third strategy* stems from this constructivist student epistemology. In the reflection notes and in the evaluations they give no clear cut answers to the question of how to cope with feelings of insecurity. They rather convey their effort to combine different strategies. When asked who the most significant authorities are when it comes to choosing literature, they typically mention different persons and authorities, such as fellow students working on related topics, supervisors, researchers established in the literature, as well as the academic librarians and their own independent ability to search different sources. They take subject specific contradictions as the starting point for discussions, literature search and critical evaluation of sources.

What the evaluations reveal is that students' perceptions of risk correspond with different conceptions of knowledge. Furthermore, perceptions of risk seem to initiate coping strategies that connects to different learning methods. Students acting by the first view call for source-oriented user instructions. Students acting by the second view call for discussions where they can relate their subject-specific problems at hand to different search strategies.

The strategy belonging to the second view is the strategy ideally privileged by the collaborative PBL and communicative oriented IL modules. In the following final section of this paper I shall point out connections between the epistemological aspects of these approaches and the questions of empowerment.

### ***Communicative teaching and learning***

The teaching staff at The Research Centre for Health Promotion encourages their master students to identify subject specific problems critical to their eventual future work in the field of practice, and to identify critical debates within the academic field of Health Promotion. In PBL teams, and when they work out research proposals for their master's project, students collaboratively translate such problems to researchable claims, questions or hypothesis. An integral part of this work is to search for information, to evaluate information and eventually to apply information in the process of academic writing.

Thus, what the students actually do in the library is done according to expectations across different social settings. They are interacting with social agents who are carriers of different norms and values affecting their information search and their evaluation of information. This is of relevance to the communicative approach. Within social fields information may have different currency as symbolic capital (Bourdieu, 2002). The validation of information as the outcome of social negotiation is subject to power relations. Certain theoretical debates may for instance be highly valued by the preferences of a particular research community. In the field of praxis on the contrary it may be deemed as standing in the way of practically applicable knowledge. If information is validated as knowledge through communication, how do we guide students in the light of such differences? Or more precise, how do we create the communicative space for social negotiations? In the following I will argue that what is made communicable in context of IL modules is a question of inclusion and exclusion of voices.

One common theoretical grounding of Information Literacy courses is found in the work of Carol Kulthau (2004). Information search is described as a process characterised by the tension between feelings of uncertainty and of control. The information searcher starts without any clear idea about where he is heading, or what the exact result of his information search should be. Rather, precision and increased control is a matter of repeated searching and refining. Courses are commonly designed to familiarise students with this process. They are mainly prepared and taught according to the process approach ideal typically described by Sundin.

The process oriented approach, along with the source oriented and behaviour oriented approach, tend to isolate learning processes by leaning on a cognitive epistemology. The individual learner constructs representations by systematic confrontations with an external reality. Nevertheless, there are always elements of social constructivism in IL teaching. In interaction with the students we are building scaffolds in order to support their learning (Vygotsky in Wertsch, 1991). We play the role of more capable peers in the process of information searching. The students, on their part, interact with the tools, with the teacher and with each other by reference to knowledge and problems at hand also stemming from their field of study or their field of professional practice. The question really is; in what regards are the scaffolds we are putting up made mutually relevant by communication within IL courses?

In collaborative learning a fundamental presupposition is that knowledge is developed and internalised not by the individual learners' cognitive processing of static packages of information. Rather knowledge is constructed and reconstructed by the social negotiation of interpretations made within and across social groups. It is this kind of social epistemology that distinguishes the model of PBL, and also the communicative approach to teaching information literacy. A version of the social constructivism corresponding to the communicative approach stems from the work of Michael Bachtin. His work on speech genres reveal mechanisms of power inherent in human communication (Bachtin, 1986; Bachtin & Holquist, 1981). How we make sense of both symbolic and physical objects when communicating them is subjected to speech genres operating within institutional settings. Different speech genres give privilege to specific meanings. Our voices are shaped by the speech genres available in the situation of speech. And as the expressivity of utterances is

subjected to voices, interpretations we jointly construct and convey are subjected to privileged genres in the situations.

By this discursive perspective we are able to scrutinize how different voices are given different strength when it comes to our power to attach meaning to tasks at hand. Due to operating genres of speech in children's peer groups for example, the utterance 'clever student' may carry the meaning of 'teachers pet'. When uttered in the teachers' staffroom it will carry a very different meaning. This goes for situations in higher education as well. The meaning of subject-specific terms and concepts may change by the expressivity given within situations of speech in the library instructions. Subject-specific terms are for instance converted to thesaurus terms corresponding to the internal structure of databases. In the context of information retrieval this is deemed valuable for the purpose of limiting the amount of hits in the universe of information overflow. In the context of different programs of study the terms may however be closely associated with the value of identifying dominating debates within the field of study.

I believe that the facilitation for different coping strategies is a question of genres conditioning our communication. If we take either of the different described orientations to teaching IL as the program for our teaching, we will accommodate for genres giving precedence to different described coping strategies. If we for instance rest content with a source oriented approach we give privilege to the expressivity attached to utterances within the genre of source based validations of information. We may actually encourage students to limit the range of potential sources to search. If we rest content with the process oriented approach we may give privilege to the expressivity generated by utterances within the genre of reproducing established authoritative voices, like those furthered by supervisors or lecturers. We thereby risk encouraging students to work their way toward increased control, as described in the process approach, by steady refining search within the limits set by academic superiors.

These are all ways of empowering students by 'bringing into a state of belief one's ability to act effectively'. Empowerment should however encompass social processes of power and negotiations. Fourie (1999, p. 383) points out this by referring to a statement noting that in the empowerment process '(...) A can influence or affect B so that A and B's interaction produces more power or influence for both of them.' This is what we hope for by turning to a

communicative approach. We are not aiming at silencing voices in the empowerment process. Rather, we are aiming at enriching the space for communication by opening up for different genres. The students revealing a conception of knowledge connecting to the social constructivism of the communicative orientation may activate different genres in the workshop. They take part in negotiations generating different nuances of meanings attached to the tools available in the library.

Information Literacy modules, as supportive arenas for problem-based collaborated learning, should seek to provoke perceptions of risk and create moments of learning by exploring different coping strategies.

But how do we do this?

The Information Literacy Module that was developed in collaboration with the Research Centre is one possible attempt. Our attempt presupposes three things:

First, in planning the module we accommodate for the same epistemological foundations as within the model of PBL applied by The Research Centre for Health Promotion at the Faculty of Psychology. Our aim was consistency in conditions of communication across the different settings. This includes awareness of the social validation of knowledge inherent in knowledge construction.

Second, we must take the effort to activate a multitude of voices. User education offered in the library may easily be designed as fragmented modules of cooperative learning. The library offers ready made modules to be reflected in the final products students submit. The teaching librarian here possesses knowledge and competencies that should be conveyed to the students. The library subsequently takes on the role as supplier of knowledge about searchable sources and searching techniques. We aimed at going beyond this in order to thematise information search and critical evaluation of the sources in correspondence with processes of research and academic writing. Furthermore, as academic librarians we construct what we consider to be important scaffolds for learning to become information literates. In the very task of setting up scaffolds we wanted to include the students. Within the current context of higher education in general and the Masters program in Health Promotion in particular students should take on an active role towards their own learning. By the applied PBL model the master students

collaboratively develop subject-specific problems at hand. In order to support this kind of collaborative learning we blended different methods also in the IL module, like group discussions, individual writing, brief lectures and demonstrations, hands on information search, presentations and discussions of students' ongoing assignments.

Third, we needed to challenge the way we think about the role we play in teaching within institutions of higher education. The challenges of teaching integrated modules of information literacy illustrate points put forward in the literature on the changing role of academic librarians as supporters of learning. The different orientations outlined by Sundin correspond to the shift from transmission-style pedagogy to task-focused pedagogy in the wider learning environment at the University.

As teaching academic librarians we are today on the move away from the role as instructors to the role as 'scaffolders or facilitators of learning conversations' (Roberts & Levy, 2005, p. 24). The different potential epistemologies and strategies revealed by the students thus remind us of the possibilities we have to fulfil our subsequent 'commitment to engaging students in the process of dialogue, feedback, reflections, collaboration and participation in learning communities' (2005, p. 24). A communicative approach represents one possible response to this challenge. Grounded in a discursive variant of constructionism it enables us to be aware the power relations inherent to the validation of information within and across different communities. Questions of relevance and validity are not solved by system internal criteria such as peer review, impact factor, and knowledge about the logical structuring of indexes and databases alone. These questions are also to be answered by practises established within the further learning environment students work within; PBL, ongoing research, work life. By opening up for new voices in information literacy education, we may accommodate for new learning.

A brake with internalised ways of thinking will probably foster perceptions of risk on our part as well. But as moments of risk perceptions are moments of learning, this should be a quite rewarding experience.

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<sup>i</sup> Following the Chartered Institute of Library and Information Professionals (CILIP) an information literate is a person who recognises when and why information is needed, how information is found, and how to evaluate, use and communicate the information according to existing ethical rules (Abell et al., 2005). Information Literacy thus expresses a general learning objective for IL education.

<sup>ii</sup> See Savin-Baden & Major (2004) for relevant perspectives such as Piaget's cognitive development theories and humanist theories of self-development.