What Matters? Shaping Meaningful Learning through Teaching Information Literacy [1]

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The point of departure for this article is an assumed gap between the different communities concerned with the practices of teaching or researching information literacy. Its purpose is to discuss some critical features of teaching information literacy identified in three previous research studies with a view toward understanding how they support meaningful learning outcomes and what the implications of this understanding are for information literacy education. The analysis is framed by a sociocultural perspective of learning that views information seeking and learning as social practices set within the discursive practice of school. The findings indicate that teacher/student interaction with a focus on learning goals and content is a vital condition for students' meaningful learning. Focus on the object of teaching, away from information seeking skills toward an emphasis on the quality of students' research questions, on negotiating learning goals between pedagogues and students, and on the critical evaluation of information sources related to the knowledge contents of students' assignments improves learning. The conclusions are that observing such critical features of information literacy in teaching may allow the discursive practice of school to be reshaped in favour of more genuine research-based learning. A second conclusion is that there are mutual benefits in a closer interaction between the communities of teaching and researching information literacy.

Introduction and purpose

The *practice of teaching* information literacy is a topic of longstanding and current interest to library and information professionals, especially in school and academic settings. The *concept* of information literacy is a topic of growing interest among researchers (for example, Bruce 1997, 2003; Sundin 2005). While the theme of the professional literature, adopting an information expert's perspective, often is to describe and recommend appropriate ways of teaching information literacy to groups of users, researchers tend to focus on analysing, deconstructing and theorizing the concept of information literacy (e.g. Bawden 2001; Marcum 2002; Pawley 2003; Tuominen, Savolainen &

Talja 2005). The different themes in the two bodies of literature indicate a dichotomy between the two communities of researchers and information professionals respectively, manifested in the professional interest in mediating information literacy and the research interest in conceptualizing information literacy.

However, there is a growing body of literature reporting findings from empirical studies of information literacy and the related field of information seeking and learning set within a substantial theoretical framework that furthers research-based knowledge on information literacy (Alexandersson & Limberg 2003; Boon, Johnston & Webber 2007; Bruce 1997; Limberg 1999; Limberg, Alexandersson & Lantz-Andersson 2008; Lundh & Limberg 2008; Lupton 2004; Sundin 2008; Webber, Boon & Johnston 2005; Williams & Wavell 2006a, 2006b). A basic assumption of this article is that this type of study carries a particular potential to illuminate and inform practices of teaching information literacy, and that this potential is not fully utilized (Limberg 2005; Limberg & Sundin 2006).

With a departure point in the above mentioned gap between the different communities of research and professional practice, the aim of this paper is to pool research findings from a series of empirical studies on information seeking and learning, for the purpose of discussing some critical features in teaching that make a difference for more (or less) meaningful learning. The research questions of this paper are: 'How do the critical features, identified in three research studies, encourage and support high quality knowledge formation via information seeking and use?' and 'What are the implications of those findings for information literacy education?'

Theoretical framework

The theoretical framework of our analysis and discussion is set within a sociocultural perspective of learning, claiming that knowledge and information are given meaning in relation to the discursive practice of a particular system or institution, that is a particular cultural context, for instance school (Alexandersson & Limberg 2003; Sundin 2005; Säljö 2004, 2005). Learning is seen as taking place through communicative interaction between people and between people and artefacts, such as books, computers, index terms, search engines on the Web, etc. In this instance, the sociocultural perspective implies information seeking and learning as social practices set within the discursive practice of school. The sociocultural perspective also frames our understanding of information literacy, in this case, as tied to the particular context of education and thus insisting on textual representation and publications as artefacts, whether mediated in print, electronically via the Internet or via tools such as databases. This sets our study in the information literacy landscape of formal education (Lloyd 2006). In the article, information literacy is viewed as a set of abilities to seek and use information in purposeful ways related to the task, situation and context in which information seeking practices are embedded (Limberg and Sundin 2006). This implies that information literacy varies with the content and context in which it is situated (Boon, Johnston & Webber 2007; Sundin 2008; Webber, Boon & Johnston 2005).

Norm and assessment

The discussion will be conducted through contrasting various approaches to teaching and learning seen as communicative interaction and variation in experiences reported in the studies and relating them to more or less meaningful intended learning outcomes. This brings out an ever-present norm in education, implying that there are better or worse ways of understanding a phenomenon or demonstrating an ability related to a specific problem or situation. This hierarchical norm is linked to intended learning outcomes and accomplishment of certain learning goals linked to assignment, curriculum, etc.

One basis for the discussion of more or less meaningful intended learning outcomes in this article is related to learning objectives as stated by teachers or librarians within the context of the empirical studies. On a more general level, the normative stance may be related to more general curricular goals formulated in school or national curricula or international documents such as the *Recommendations of the European Parliament on key competences for lifelong learning* (Commission of the European Communities 2005). Such documents emphasise the importance of students developing competences such as digital literacy, information literacy, communication skills, etc., related to con-

siderations about productivity and competitiveness in the world of work as well as social cohesion and democratic citizenship in the Knowledge Society. Within an educational framework, the norm is linked to more or less complex or scientifically correct ways of understanding something, shaped by the cognitive authority (Wilson 1983) of teachers, science and academia.

Previous research

Information literacy education still tends to emphasize tools (technical such as computers and intellectual such as Boolean operators) for seeking and finding information, in spite of the fact that universal access to information is typical in today's society (Limberg & Folkesson 2006; Sundin 2008; Williams & Wavell 2006b). Already ten years ago, Bruce criticized information literacy curricula for clustering around information technology and information sources, while other aspects of information literacy, identified and described in her study, were rarely apparent in user education (1997, 172–173). In the current literature, there is a tendency to insist more on the selection and use of information, especially the critical evaluation of sources. Current research on the mediation of information literacy likewise emphasizes the role of context, implying, for instance, that relevance is always related to a particular situation (Limberg & Sundin 2006; Simmons 2005; Tuominen *et al.* 2005) and that the meaning of information is negotiated within different communities of practice (Sundin & Johannisson 2005).

Recent empirical research on information literacy has some traits in common which form a background for the purpose of this paper. These traits concern emerging understandings of the *complexity* of information literacy in comparison with traditional skills models, and the importance of *context*, interpreting information literacy as a social practice shaped by the wider context in which it is practiced (Sundin 2008). Empirical studies that underpin such understandings of information literacy have explored views of information literacy from different perspectives, not only librarianship, and compare librarians' ways of mediating information literacy with views and experiences from the perspectives of other communities of practice, like teachers (Limberg & Folkesson 2006; Lundh & Limberg 2008; Williams & Wavell 2006a), lectur-

ers (Boon, Johnston & Webber 2007), and students (Lupton 2004). In an LIS language, these perspectives may be labelled 'user perspectives'.

Differences between teachers' and librarians' conceptions of information literacy were found in studies by Boon, Johnston and Webber (2007) and Williams and Wavell (2006a) as well as differences between information literacy conceptions of UK academics from different disciplines (Webber, Boon & Johnston 2005). The most notable difference between traditional librarian-generated models and English academics' conceptions of information literacy is the lack of a 'recognised information need' among academics, according to Boon, Johnston and Webber (2007). According to Williams and Wavell (2006a) teachers' conceptions tend to give more emphasis to linguistic understanding and making meaning from information in comparison with existing models of information literacy, often generated within librarianship.

In a study of user education in the form of web-based tutorials of information literacy produced by Scandinavian universities, Sundin (2008) concluded that from the users' point of view, user education might benefit from an increased emphasis on the perspective of the users and on the conditions of various information practices set within different contexts. Williams and Wavell (2006b) identified challenges in teaching information literacy, created by a tension between a conventional teaching skills-focused approach and the realisation of the complex nature of information literacy. Teachers and librarians who participated in this research project identified a need for a shift from a teaching focus on skills and techniques in favour of a focus on enquiry and the learners.

In summary, these studies tend to abandon the idea of information literacy seen as generic skills applicable across disciplines and contexts in favour of a view of information literacy as a social practice shaped by the culture and context in which it is embedded. A need of refocusing on the perspective of users or learners is another common claim in these studies.

Three empirical studies

The studies referred to in this paper were directed at exploring the interaction between information seeking and learning, when students carry out independent, problem-based assignments, where

they are required to seek, find and use information from a wide variety of sources (Alexandersson & Limberg 2003; Limberg 1999; Limberg & Folkesson 2006). Altogether the empirical material, collected 1993–2004 through interviews and field studies, is derived from 285 students in 12 classes (grades 2–12, 8–19 year-olds), 24 teachers and 12 librarians in 11 schools. The examples treated in this article were selected from secondary and upper secondary schools. Two studies (Limberg 1999; Limberg & Folkesson 2006) adopted a phenomenographic approach, using interviews as the main data collection method. In phenomenography, the research interest in studying and mapping variation is one basic element (Marton & Booth 1997). The focus on variation has provided research findings that offer insights into pedagogues' and learners' various ways of interacting with tasks and knowledge contents as well as with each other and with different technological tools. The third study used a sociocultural perspective of learning (Säljö 2005; see also above under Theoretical framework.)

The studies adopted either a learning perspective, directed at students' learning processes and outcomes [2] or a teaching perspective [3] focusing on teachers' and librarians' experiences of teaching information seeking. In all three studies information seeking is considered as embedded in, but discernable from, the wider process linked to carrying out a learning task (Kuhlthau 2004; Limberg 2007).

Findings

Major findings from the different studies have been reported earlier (Alexandersson & Limberg 2003, 2008; Limberg 1999; Limberg & Folkesson 2006) and the specific interest of this paper is to analyse and discuss cases of information seeking, teaching and learning, characterised by meaningful learning outcomes. As a background for the discussion, an awareness of some of the common patterns of the findings is relevant.

Common patterns

For many students information seeking is equivalent to seeking information on the Web, looking for facts or 'the right answer' in order to assemble a report for submission in due time. Information seeking is commonly understood as fact-finding,

implying that there are facts to be found, compiled and reported (Alexandersson & Limberg 2003; Limberg, Alexandersson & Lantz-Andersson 2008). An overall finding is that students, and sometimes their teachers, are oriented toward procedure rather than knowledge content and learning process. Technological tools were found to strengthen the orientation toward procedure rather than encouraging or supporting understanding of complex issues, in spite of access to vast amounts of information and potential to communicate globally via these tools. This implies that the interaction between students and pedagogues, students and artefacts, and between students themselves was directed at pressing the right keys, finding the right web pages or portals, and doing various parts of an assignment in the right order for accomplishing the task. Illuminated by the sociocultural perspective, the view of information seeking as fact-finding and the focus on procedure rather than process and content are shaped by the discursive practice of school, where there are, by tradition, right answers to be found and reproduced, and where the purpose of assignments are to get them 'done' (Limberg, Alexandersson & Lantz-Andersson 2008; Limberg 2007).

However, the interesting findings to be discussed in this paper deal with situations when patterns were different, and where students searched for and used information for meaningful learning outcomes related to the intended knowledge contents of a task. Theoretically, this implies that the discursive practice both shapes conditions for learning in schools and that actions may transcend school practice which may thus be reshaped through conscious activities.

Specific patterns

The critical features identified through the analysis and synthesis of findings from the three studies are; (i) The quality of students' research questions which emerges as a crucial factor for guiding students through information seeking and use. (ii) The importance of observing a range of different dimensions of information seeking as objects of teaching and learning, such as the assessment of relevance, the concept of enough, and a critical approach to sources, including information use. (iii) The importance of teachers and librarians interacting with students about the specific knowledge contents

of learning tasks, including challenging students' knowledge, as well as negotiating learning goals between teachers and students.

In the following, we shall focus on these features to scrutinize some significant examples.

Research questions for learning assignments

Teachers' interaction with students to shape good research questions appears as crucial for meaningful learning through this type of assignments. The general findings indicate a prevailing pattern that research questions for problem-based assignments tend to be formulated by students as simple factual questions, like 'when', 'how many', 'where', 'what' leading student to seeking discrete pieces of factual information. This implies that students try to shape their questions according to their experience of the practice of doing school tasks. Different types of research questions, that is, more genuinely problem-based questions tend to require particular attention in the interaction between pedagogues and students. More often than not such questions are based in students' personal interests in their research topics, and sometimes consciously shaped and supported by teachers' interaction with students.

Students' personal interest in research topic

Findings indicate a strong relationship between the quality of students' research questions, their information seeking, and the gradual development of their understandings of the issues they are working with. An example of a strong personal interest is Albin (boy, 8th grade, 15 years) who explored the question 'Why am I so tall?' His information seeking was characterised by browsing the Web, using Google and searching a wide variety of other sources, clearly focusing on reasons for differences in human height. From an information expert's point of view, his information seeking was neither smooth nor sophisticated, but aspects of evaluating and organising information were salient.

A personal interest in the topic of an assignment need not be evident from the beginning but may develop during the process of information seeking. In our material, Erica (girl, 8th grade, 15 years) had chosen 'homosexuality' as her research topic. During her initial browsing of information sources she stumbled upon a statement about homosexuality seen as a disease, which aroused her interest and led to a broad and deep investigation about different views on homosexuality from the 1970s onwards.

> Erica: I read somewhere that some people thought that homosexuality was some kind of disease so I wanted to find something about that, I looked for it in Bonnier's Medical book but I didn't find anything. (Field notes 2002 03 06)

This example seems to illustrate a feature of Kuhlthau's process model of information seeking. According to Kuhlthau an increasing interest in a topic during the process of information seeking is linked to students' feelings after the critical phase of focus formulation (2004). In the example of Erica (above), this information encountering (Erdelez 1997) seems to have led to focus formulation – not the other way round. Both Albin and Erica developed sophisticated knowledge about the complex issues that they were researching. [4]

Teacher interventions for formulating research questions

The findings clearly indicate the important implications of teachers' and librarians' ways of interacting with students as regards the formulation of research questions. Actively bringing out the notion of research questions in class in different ways appears to have contributed significantly to the quality of students' information seeking and knowledge construction. In one class (25 students, 18–19 years) working with a controversial political issue, the teacher devoted several hours to supporting the students' formulation of research questions. The assignment goals were that students learn enough to be able to form a well-grounded opinion about the political issue, through analysing various viewpoints based on substantial factual knowledge. The students worked in groups, each group of five students analysing, problematizing, probing and testing possible questions on a subtopic related to the overall topic of the controversial issue. The teacher took active part in this phase of the work, circulating between the different groups, helping them to formulate questions which were not too broad, nor too narrow, but broad enough for allowing meaningful investigation. Students were encouraged to browse information for finding possible angles or perspectives on their topics. In his regular feed-

back to students, through log-books and in class, the teacher commented on the quality of the research questions and, if needed, gave some advice for ways of improving certain questions or following up on them during the work process (Limberg 1999).

In an interview, another teacher underlined the difference between the point of departure for an assignment as 'choosing a topic' or 'asking a question'. Insisting on the importance of teaching students about how to formulate research questions that had a personal bearing for the students, she described how students would be working at shaping possible answers to their questions – not finding ready-made answers (Limberg & Folkesson 2006, 88).

Significant characteristics of these approaches to teaching ways of formulating research questions are that they treat this as a problem common to the whole class and open up for students brain-storming, sharing experiences and ideas, and breaking different views and interests against each other, browsing information and thus creating rich material for smaller groups of students to continue working with their specific research problem. Consistent advice to students and references to their particular research questions throughout the assignments are characteristic of this approach to the issue of research questions for doing problem-based learning assignments.

A critical approach to information

A prerequisite for supporting students' critical approach to sources seems to be that the general guidance on critical evaluation is complemented with advice related directly to students' own specific tasks. Findings indicate that instruction on the critical evaluation of information sources on a general level has little impact for 15-year-old students. They have great difficulties in capturing the meaning and applying it to their own work. The quotation below illustrates teacher/student interaction on a concrete level and linked to students' own work:

Teacher: What material do you have?

Student (writing a paper about the Incas): Pages from the Web.

Teacher: Then look at them and think about who the author is and if this person seems credible. Find out if it's a

private person or if it's from a university, etc. Write down where you found it.

They look together at one of the sources.

Teacher: This seems to be a credible person, he works at X University, even if he's not a professor of history, you may have reason to believe that he is not a liar … that's the way you should check all your sources. (Field notes 2002 03 06)

The example above is quite typical of teacher or librarian/student interaction in the way that it focuses on formal ways of critically assessing the authority of sources, but does not concern the contents of the web pages.

The next example illustrates teacher efforts to support 16 year old students' competence in source evaluation focusing on the content of information.

Teacher: In class, my students have been asked to present different concepts in Judaism. And then they must use different sources. I have purposely directed them toward different sources. – But when they come back they say; 'Just look, this says one thing, and that says something else, both cannot be true'. And they make me accountable for the differences between contradictory statements in different sources. – And then they look in the textbook and say with surprise 'This book says nothing … I know much more now.' (Interview 2003 06 03)

This citation shows that teaching students to develop a critical approach to information is quite complicated. One difficulty, expressed by this teacher, is that students get worried when they discover that they cannot straightforwardly trust encountered texts. We may assume that through many years of school experiences, students have learnt to trust texts and expect to find correct information in various sources. They may experience it as considerably more demanding to have to evaluate information and assess different sources for understanding a complex issue.

In the studies there are examples of successful results from systematic teaching in the critical evaluation of information. The librarian quoted below sounds both proud and somewhat sceptical about the achievement.

It also means that sometimes they [students] ask questions [in the library] and I can tell them, but then they question me; 'that's only what you say'. Feels a bit hard to be

questioned. It can become absurd if they don't trust anything. (Interview 2002 05 20)

This librarian seems to be used to being a cognitive authority for students and somewhat uncomfortable with their changed critical approach. The quote is a yet another example of the complexity of teaching and learning a critical approach to information and of outcomes of such efforts.

Negotiating knowledge contents and assignment goals

Striking results from our studies are the importance of teachers and students focusing strongly on content in learning assignments as a condition for students' knowledge formation through independent problem-based tasks. This stands out as crucial, since we identified a general pattern of disregarding content and instead focusing on technology, procedure, and the 'right' order for proceeding through an assignment. The contrast between different observed foci led to the conclusion that teacher/student interaction with a focus on learning goals and content is a vital condition for students' meaningful learning.

It is obvious from our studies that the ways in which teachers conceptualize an assignment and students' ways of understanding this same assignment differ. For instance, in two classes (grade 8, 15 year-olds) students worked with a task, where the goal, as formulated by the teacher, was to learn to write an academic essay. The students were free to choose any topic for their essay, but they should treat the topic for composing and writing an essay, including a problem statement, data collection, presentation of findings and conclusions. The teachers held a consistent focus on aspects of the academic essay and directed their instruction at the various parts of the essay to help students grasp and carry out this task. In spite of this teacher focus, it was obvious that for many students – not all – the task concerned their topic, not the art of writing an essay.

Albin, who was exploring the question 'Why am I so tall?' was deeply captured by his topic and fascinated by the information he had found relevant to his investigation. He needed to be reminded by his teacher about the constituent parts of an academic essay, as illustrated in the quote below.

My teacher has just shown me the different parts that should be a part of the essay and I found out that I had forgotten the method… so that's what I'll be doing now, and then I have the discussion to do… and after that I'll compare myself with my brother… height, that is. (Field notes 2002 04 10)

The overall findings from this study was that for students to actually reach a qualified learning outcome of this task, it was essential to combine the idea of producing a text in the genre of an academic essay based on a topic that they found genuinely interesting. The task was challenging both for students and teachers, since it actually transcended the discursive practice of school, where much writing is characterised by the compilation of facts.

In Limberg's (1999) study on upper secondary school students' information seeking and learning, the teacher expressed, both in an interview with the researcher and in class directly to his students, that one essential goal of the assignment was that students would understand that there are no neutral facts, that all facts carry values. He further underlined that the students were not primarily supposed to learn to seek and find information sources but;

> … ways of analysing information for constructing knowledge and ways of handling viewpoints different from one's own, and ways of drawing conclusions about… especially to understand problems from others' points of view, that are different from one's own, you know… That's what I think is essential. (Upper secondary teacher)

Talking about his assessment criteria he emphasized that he considered a range of various aspects of students' work but that the quality and depth of analysis of the issue under study was crucial and would be decisive for his grading of students' reports. Throughout the process of this assignment, the teacher kept reminding the students about this essential learning goal. During this study, patterns of interaction between students and between students and teacher emerged indicating that students were well aware of the requirement not to pile up facts in their reports but instead to use information for analysing and reasoning about the controversial issue, which was the topic of their assignment. In this study 20 out of 25 students reached fair or highly sophisticated learning outcomes as assessed according to criteria that were consistent with the expressed learning goals.

These learning outcomes were related both to information seeking and use and to the topic of the assignment. Talking about neutral information, one student said;

> I doubt whether there's any objective information at all, except acts of law and such… but parties and writers who have opinions, when they try to write objectively… their personal opinion shines through. It's not hard to discover.

Constant feed-back on the knowledge contents of the assignment and students' process of knowledge construction tends to be linked to the negotiation of learning goals and appears to be significantly supportive for students' learning of knowledge contents and subject matter as well as for developing critical approaches to information selection and use.

Discussion

Summarizing the findings on the ways in which the critical features of teaching support high quality knowledge formation via information seeking and use, we need to recognize the lack of emphasis on information skills instruction and the slanting toward other aspects of information literacy. These aspects concern information use rather than information seeking, and strongly emphasise the role of the pedagogues interacting with students about evaluating information and relating information to the knowledge contents of assignments. The early phases of the information seeking and learning processes tend to focus on the formulation of researchable questions rather than on identifying an information need and selecting appropriate search terms. This emerges as quite different from traditional information literacy education and more consistent with enquiry based learning approaches, advocated by Williams and Wavell (2006b).

Similar to our previous research, the sharpened analysis presented in this article indicates that aspects of information literacy such as the critical evaluation of sources and dimensions of information *use* are essential to take into account as teaching content (Alexandersson & Limberg 2003; Limberg 1999; Limberg & Folkesson 2006). In our findings there are good examples of systematic teaching of a critical approach to information. However, as regards the use of information for knowledge formation we identified this as impor-

tant but nevertheless we lack convincing examples of such teaching. This seems to be an area worthy of further research and development.

Our findings are consistent with the recent body of research referred to above, emphasising the complexity of information literacy, and viewing it as tied to situation, content and context. Our analysis clearly confirms the findings of Williams and Wavell (2006b) that suggest a shift from a teaching focus on skills and techniques in favour of a focus on enquiry and the learners. Our findings on the importance of negotiating learning goals between pedagogues and students further underpin the need for taking the knowledge contents of students' assignments into serious account. This illustrates that the communicative approach to information literacy education identified and described by Sundin (2008) in the context of undergraduate education might be equally relevant for the mediation of information literacy in school contexts with younger students.

What constitutes meaningful learning outcomes will obviously be an issue for further discussion in both research and practice. In the studies discussed in this article the meaningful learning outcomes are related to the accomplishment of explicit learning goals of various assignments. These in turn are linked to the norms laid down in curricular documents. Our findings suggest that meaningful learning outcomes are dependent of awareness in the communicative interaction between pedagogues and students about the interplay between learning goals, the character of learning assignments as researchable problems, intended knowledge contents, and information seeking practices. Assessing meaningful and intended learning outcomes will require explicit and understandable learning goals, and will require consistency among pedagogues in providing students with meaningful feed-back on various dimensions of the task. For researchers, the assessment of students' meaningful learning outcomes will likewise refer to learning goals as expressed in the context and situation under study. This underpins the research interest in focusing on the entire learning process, that is, in following up on the purpose for information seeking that goes beyond information seeking itself (Sundin & Johannisson 2005, 107).

The findings emerging from our research indicate that a closer interchange between the communities of research and of professional practice may

contribute to shaping information literacy educa-
tion for meaningful learning outcomes. The close
analysis of a series of studies led to insights into
practices of information literacy education which
were not immediately visible, due to the differ-
ences from the prevailing patterns found. This im-
plies that information literacy research may be
informed by the practices of teaching information
seeking linked to problem-based learning and
may follow new tracks through scrutinizing the
meaning and implications of the critical features
identified. Referring back to our introductory
statement about the different interests of the com-
munities of teaching and researching information
literacy, the paper constitutes an attempt to relate
the two communities more closely to each other.

Conclusions

Considering the discursive practice of school, we
may acknowledge that, by tradition, the mission of
schools has been to mediate a canon of knowledge
and provide correct answers. Global access to in-
formation and teaching methods that go beyond
the spaces of text books and classrooms require
different approaches to learning, information and
knowledge. In the public discourse, this has been
said over and over again during several decades,
but the examples from our research illustrate the
tension between the tradition of school and the
reshaped conditions for learning, linked to global
economy and modern technological tools.

As stated above, our theoretical understanding
of the object of research, that is teaching informa-
tion literacy for meaningful learning outcomes, is
that it is shaped by the discursive practice in
which it takes place. This means that information
seeking practices as well as information literacy
education in school are shaped within the discur-
sive practice of schooling. However, the critical
features of teaching discussed in this article lead
us to conclude that practices of teaching informa-
tion literacy may reshape the discursive practice
of school through introducing and upholding re-
search-based approaches to knowledge formation
related to critical information seeking and use.
This underlines the powerful potential of infor-
mation literacy education. Moreover, it indicates
the need for further research on the concept of
information literacy as an object of teaching and
learning.

Notes

1. For the title of this paper we owe inspiration to Marton, F. and P. Morris, eds. 2002. *What matters? Discovering critical conditions of classroom learning.* Göteborg: Acta Universitatis Gothoburgensis.
2. Experiencing information seeking and learning (Limberg 1999); Learning through the school library (Alexandersson & Limberg 2003; Limberg, Alexandersson & Lantz-Andersson (2008)
3. Information seeking, didactics and learning (IDOL) 2001–2004. (Limberg & Folkesson, 2006)
4. The examples of Albin and Erica are described in greater detail in a separate article (Limberg, Alexandersson & Lantz-Andersson 2008).

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