

Conflicting Approaches to User Information Seeking Education in Scandinavian Web-Based Tutorials¹

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The purpose of this paper is to make visible different approaches to university librarians' professional expertise such as they are mediated through user information seeking education. The empirical basis of the study consists of an analysis of 31 web-based tutorials in information literacy accessible via Scandinavian university libraries' web-sites. The results make apparent four, sometimes conflicting, approaches to user information seeking education expressed in the tutorials: a source approach, a behavior approach, a process approach and a communication approach. These approaches disclose different ways of defining central concepts such as information, information seeking and the user. A study of attitudes to user education is important as attitudes entail practical consequences for the operation of user education.

Introduction

The purpose of this paper is to make visible different approaches to university librarians' professional expertise such as they are mediated through user information seeking education. This is carried out through an empirical study of Scandinavian university libraries' web-based user educations in conjunction with a theoretical discussion concerning two complex issues. The first of these concerns whether it is possible to separate information or information seeking from the information content that is mediated. The second issue concerns the appropriateness of a departure point in the information source itself and its different formats contra a departure point in the user(s). Scope is in this way created in order to study a part of librarians' professional practice that is currently defined as central at the same time as user education in general and via the web, in particular, is still a relatively unexplored practice.

The importance of information and communication technology (ICT) and people's ability to use it is continually emphasized in contemporary society. University libraries' increasingly comprehensive user courses in information seeking, including web-based courses, should be seen in relation to this development; the mediation of knowledge about how information can be sought, evaluated and used has become an important practice for education on all levels. New ICT tools have not only changed our view of what is important to learn but also our views of the ways in which learning can be supported, a theme that also has been studied within library and information science (LIS) (e.g. Dewald, 1999, 2004). In this paper web-based user education is viewed from a sociocultural perspective as a genre formed in relation to the development of modern ICT. This perspective stresses the importance of studying how people act with the help of tools that have emerged, in a historical sense, from the context in which they are used (Sundin & Johannisson, 2005). These tools are not neutral but mediate perspectives on the world.

Perspectives on user education for information literacy

Different researchers understand the concept of information literacy differently and there is no general consensus. For example, Alberts Boekhurst (2003) identifies three overarching concepts that to varying degrees are usually included in the concept of information literacy; the ICT concept, the information source concept and the information process concept. In this definition of information literacy, as in several others, skills and levels of understanding are juxtaposed. However, in the present paper there is little scope for more than a short reflection on the extensive literature on information literacy. On occasion, this literature has been criticized because it focuses on lists of skills that the individual should master in order to consider him/herself information literate. In this spirit, Sheila Webber and Bill Johnston (2000, p. 384), criticize much earlier research as "the list approach to information literacy" referring to the tendency to reduce information literacy to a number of measurable and observable techniques and abilities against which students' and other groups' knowledge can be evaluated. Other attempts to define information literacy include descriptions of understanding information use. Christine Bruce (1997) emphasizes that information literacy may not only be understood as individual skills but also as a collective competence and responsibility in relation to the world around. When university libraries' web-based user education has been studied it has usually been carried out on the basis of measuring usability and effectiveness (e.g. Orme, 2004), themes that are not considered in the present paper.

Carol Kuhlthau has united an interest in the pedagogical aspects of library and information science with research in information seeking. In an article from 1987 she distinguishes between three approaches to user education: the *source approach*, the *pathfinder approach* and the *process approach*. Kuhlthau advocates the last-mentioned approach and bases this on constructivist pedagogical and cognitive theory. Kuhlthau's division builds partly on a categorization of user education in research libraries by Harold Tuckett and Carla Stoffle (1984). In this article the authors distinguish between three approaches: a *reference-tool approach*, a *conceptual framework approach* and a *theory-based approach*. The last-mentioned approach is naturally not the only one that is "theoretical", instead the authors mean that it is firmly based on cognitive and constructivist oriented theory. Today, research on information literacy and the pedagogical aspects of information seeking is dominated by the process approach (alternatively the theory-based approach). A related but an alternative approach is offered by phenomenographic research that emphasizes people's different ways of experiencing information seeking (Bruce, 1997; Limberg, 1999).

The above-mentioned theoretical approaches do not sufficiently treat information seeking as a social and cultural practice, which makes an additional perspective required. Such a perspective has, so far, had a marginal position within user research in general, and within research on information literacy in particular, but it exists. Here the focus moves from individual behaviour or experiences to the social practices in which these behaviours and experiences are embedded. Information, from this perspective, does not represent "the world" or users' cognitive structures – information is given meaning, evaluated and used within different social practices (Sundin & Johannisson, 2005). Within research on information literacy, Jack Andersen (in press), referring to Jürgen Habermas, emphasizes in a related way that information literacy ought to include knowledge of different genres' social functions and how communicative structures are created within discursive collectives. A genre supports different ways of reading, and user education, according to Andersen, should contribute to revealing them. Christine Pawley (2003) describes how library practices decontextualise information and maintains that user education has the potential to recontextualise information within the social practices in which it functions. James Marcum (2002) provides another example of social aspects of information literacy when he relates socially oriented learning theories to information literacy; information seeking and learning are not, according to Marcum, individual processes. Furthermore, David Bawden (2001) has shown how information literacy must be related to other contemporary literacies. An example of such other related literacy is IT literacy, which Sanna Talja (2005) has studied using a social constructionist approach.

Research design

The university libraries' web-based user education is found in a number of forms and types. They include everything from short annotated link collections, to guides to particular information sources as well as more comprehensive course materials that can better be described as digital learning environments. The first-mentioned version is designed in order to help the user with a concrete problem to solve, while the last-mentioned is designed to prepare the user for future information seeking. The empirical focus in this article is on more comprehensive user education that includes varied content connected by a common interface. These kinds of web-based user education are referred to as *tutorials* henceforth, and can be said to represent a genre created within the social practice of the university library (Yates & Orlikowski, 1992).

The empirical material for the study consists of 31 web-based Scandinavian tutorials for information literacy available via university libraries in Sweden, Denmark, Norway and Finland. Due to the limited scope of the paper only a few empirical examples can be given. These quotations have, together with the names of the tutorials, been translated to English. The individual tutorials have been identified through a "snow-ball" method where both professional contacts and pointers from link collections to other tutorials have been used. About half of the tutorials are general and subject independent while the other half is subject related. Most of the tutorials target undergraduate students, but there are also examples where the targets are postgraduates. The tutorials consist of a combination of texts, voices, illustrations, animations and video sequences within a common interface. The geographical range has been motivated by the similarities in educational and library activities that exist in the Scandinavian countries. At the same time, several of the tutorials claim that they are inspired by American tutorials, for example, *TILT* [Texas Information Literacy Tutorial].

Each tutorial has been studied both online and in paper format. They have been analyzed as linguistic expressions of different approaches to librarians' pedagogical expertise. These different approaches are constructions based on a dialogue between the empirical data and the theoretical departure points. It should also be emphasized that one and the same tutorial in information seeking can embrace several approaches. Approaches, in other words, should not be seen as individual models that the tutorials are based on but rather as complementary, sometimes conflicting, approaches. However, the individual tutorials, as a rule, lean on one or two of the approaches. Variations and patterns in the contents of the tutorials constitute the focus of the analysis, not the individual tutorials as such.

Approaches to user education

The analysis revealed four recurrent approaches: a *source approach*, a *behavioral approach*, a *process approach* and a *communication approach*. There are similarities but also several differences between the first three approaches and the three "models" of user education that Kuhlthau (1987) and Tuckett and Stoffle (1984) describe (see above). I also identify an additional approach, namely the communication approach.

A source approach

In this approach the focus is on the sources leading to an emphasis primarily on description of the different types or genres of primary, secondary and tertiary sources. Historically, it has always been an ideal for librarians to know their libraries and their collections. Bibliographies and indexes of different types have always been important, but the digital breakthrough has tended to allow the importance of the local library's physical primary sources to fall in significance.

In one of the tutorials the following sub-titles are used:

Books

Journals
Conference proceedings
Research reports
Theses
Standards
Patents
Statistics
Newspapers
Laws and regulations
Official publications
(Seeking information)

In this extract it is clear that it is the genres and media that libraries are most familiar with are in focus. In addition, examples of different sources with regard to content and use are described. In tutorials connected to a specific discipline, greater opportunities are afforded to examine the contents of information sources than in tutorials that are subject independent. Nevertheless, introductions to general secondary sources such as the national catalogue or the university library catalogue are given.

Guidance to information sources is a classic example of librarian expertise that is still given a great deal of weight. However, there are only a few examples where specific sources are critically analyzed with regard to content, the context in which they were created and the social practice in which they are supposed to be used. In other words, the cognitive authority of the sources is not dealt with (e.g. Wilson 1983). In all likelihood this situation depends on the general nature of tutorials where the information sources of specific disciplines are not discussed. The exception to the rule is a general and recurrent warning tone that is used as soon as resources on the Internet are presented:

Is it really necessary to devote a whole 1 credit course to information seeking and even make it obligatory for some? It is so easy to find what you need on the Internet! Yes, of course it is easy to find information on the Internet but paradoxically, that is part of the library's dilemma and the reason why the course is needed, despite everything. The amount of information on the web does not mean that it has become easier to find the right kind of information, that which is trustworthy and relevant – just the opposite, these qualities were easier to find in the little library where each book was chosen and evaluated with care. (From Question to document in the e-library)

In this extract the librarian is indirectly described as the person who owns the power to choose the "right" information. It is emphasized that the librarian's expertise has become even more important with respect to the enormous supply of information provided by the Internet. However, this problemizing tone seems more "protectionist" in relation to librarians' traditional tools than critically reflective. Moreover, the Internet is often treated as a separate phenomenon from other primary, secondary and tertiary sources.

Certainly, critical analysis is taken up in relation to sources but only in the form of general guidelines, not in the form of evaluations of particular sources. Information is then treated as a decontextualised "thing" without regard to the social practices surrounding its creation and which gives it meaning. Furthermore, a deeper understanding of secondary and primary sources ought to be of value to the expertise of librarians. The range of application of secondary and tertiary sources is often described in the tutorials but there are few examples that take a critical perspective on, for example, ranking

mechanisms and database content during information seeking. Even the status and legitimacy of secondary sources within different knowledge domains could be discussed although this is barely touched upon in tutorials. On the other hand, the construction of secondary sources is dealt with, for example, the different fields in database records and how they can be utilized in information retrieval.

A behavioral approach

In a behavioral approach information sources are still in focus but not in the same way as in the source approach, instead the order and how they should be used is described. Here, the idea is to present a behavioral structure for information seeking that the students can apply themselves. Part of this approach is close to what Kuhlthau terms a pathfinder approach and what Tucket and Stoffle term a conceptual framework approach. According to Kuhlthau's description, the pathfinder approach is tied to a specific subject, a kind of "pattern or example seeking" and it is therefore not applicable in other situations. In this paper the behavioral approach is, on the contrary, seen as a subject independent approach that illustrates the relation between the library's different sources and how the user ought to navigate between them in order to conduct a "proper behavior". An example of how this approach emerges in the tutorials is the frequent encouragement to the reader to initiate information seeking by consulting an encyclopaedia in order to acquaint him/herself with the subject. Only when this has been accomplished is the user allowed to move on to other tools:

It is usually a good idea to start your search by looking up concepts and definitions in a lexicon or an encyclopedia.
(Pedagogical Guide)

The behavioral approach is demonstrated when the users are encouraged to use their own library's resources first before moving on to databases and other bibliographic tools. Often an administrative perspective prevails when a departure point is taken in the library's own collection. As a result of this perspective, the library's own catalogue is often introduced early on in the tutorials while the Internet is introduced, as a rule, in the last modules.

The behavioral approach is also demonstrated in the space allowed to detailed search techniques. The user is guided step by step through computerized information seeking with the idea that (s)he will be able to repeat the sequence in other situations. Usually a mechanical view of information seeking dominates the different steps, which is perhaps most clearly expressed in the tutorials' treatment of relevance. Information is here presented as both without content and context and is portrayed more as a jet of water one can regulate with the help of a tap:

Information seeking is enacted between the two poles of *expand* and *contract*. This applies whether you are searching a database or via the Internet. If you don't get any hits, you have to expand your search. Too many, and you have to narrow your search. (Guide to Information Seeking)

Here, in other words, we find a case of a "classic", system oriented discussion where judgments of relevance are made against a background of precision and recall. This theory predicts that precision decreases if the number of relevant hits increases, as the so-called "noise" is expected to increase.

A behavioral approach is clearly visible in just about all of the tutorials. The user is provided with a "map" - a kind of model

for how information seeking should be carried out and with whose aid the user can tackle future information seeking. The approach gives a great deal of scope to the practical skills of information seeking seen in relation to the information and communication technique that provides users with increasing access to databases. This picture is reinforced by the recurrent tests based on a behavioral "multiple choice" principle through which students are expected to exercise their skills. This subject independent and technically oriented information seeking expertise may be contrasted with a more context or subject dependent approach.

A process approach

Information seeking seen as a process is an approach where the focus is shifted from information as such to the individual user. In the process approach the different aspects of information seeking are introduced in chronological order starting with problem formulation and attendant information needs, followed by the different components of search technique, source evaluation and sometimes even the writing process. This is exemplified in the following extract that describes the first phase of the information seeking process:

First, you have to formulate a research problem. With this accomplished you will also have defined concepts. Defined concepts are an important tool in your preliminary information seeking. What you do now is to investigate:

- The formal limitations of the project
- The thematic framework
- The scope of the project
- The time at your disposal
- The specific content requirements

(Information literacy: good information seeking for essay writing)

Behind this approach is a pedagogical framework based on constructivism and cognitive oriented learning theory. Emphasis on the importance of metacognition is characteristic for a process approach. Hence, it is not the actual behavior that is treated but rather how the user should think about information seeking; the user should understand the process that his/her information seeking is a part of by becoming aware of the different elements of the process. The process approach and the information seeking approach delineated here is often described as static, but at the same time, the dynamic character of information seeking is often accentuated. The process is described as static in the sense that it is depicted in an uncomplicated, linear way, while the more dynamic aspect, to a greater degree, focuses on the user's uncertainty while moving backwards and forwards between the different phases of the process. There are also examples of tutorials that touch on affective factors, which are a direct reflection of Kuhlthau's (2003) theoretical influence. In some cases there are even direct references to Kuhlthau, an individual attention that no other LIS researcher receives in the tutorials.

The departure point in the process approach lies in the individual's rational, common sense based information seeking, even if emotional aspects are sometimes considered:

We have noticed that many students become frustrated at the beginning of a search. They either find too much or too little. This is a part of the first phase, just when you are considering what to write about and trying to find literature, before your research question is focused and you have found the right terms to use, it is confusing. (From question to document in the e-library)

Information seeking is treated as a part of a more or less rational problem-solving process where neither the symbolic potential of information, nor leisure-related information seeking, is afforded any attention. Not even the subject or contexts of information seeking are considered of importance. Expertise in the process approach is thus knowledge of the individual's information seeking process which is generalized and applied to other individuals, situations and subjects. The librarian's expertise is based on knowledge of the users' thoughts and feelings while seeking information, while the pedagogical role consists of mediating this knowledge to the users.

A communication approach

The communication approach emphasizes the social and communicative aspects of information seeking. Compared with the process approach it emphasizes information seeking as a social practice taking place in an institutional context. The communication approach questions information seeking seen as an individual process and makes visible, among other things, the importance of interaction between users in information seeking, between cognitive authority and source evaluation, and social navigation. Examples of this approach are visible when the communicative validity of information is discussed:

The author's background is one of the more obvious criteria through which the value of a text can be judged. It tells us something about the author's specialization within his/her discipline. However, it is not always an indication of quality that the writer has a Ph.D. – or the reverse.

- What is the author's background?
- Is he/she a highly educated expert in the area or a layman?
- (i.e. a professor in English does not necessarily know more about the environment than anyone else).
- Has the author written on the subject earlier and how has this been received by colleagues?

(Information literacy: good information seeking for essay writing)

In the extract, as in several of the other criteria for the evaluation of sources, guidelines for judging the cognitive authority (comp. Wilson 1983) of documents are recurrent. This is a kind of communicative based validity where the importance given to the information and the author within a knowledge domain constitutes evidence of high validity - not its correspondence with "reality" or the "cognitive structures" of users. In this way it is emphasized that the information is given meaning in a dialogue between the actors in a social practice, but that such an approach requires "/.../sophisticated theoretical understanding, and access to, if not membership of, a relevant interpretive community" (Pawley 2003, s. 441). This is where the individual's participation in communities comes into focus, not the information itself or the individual's construction of meaning. This is exemplified in how a tutorial takes up environmental scanning:

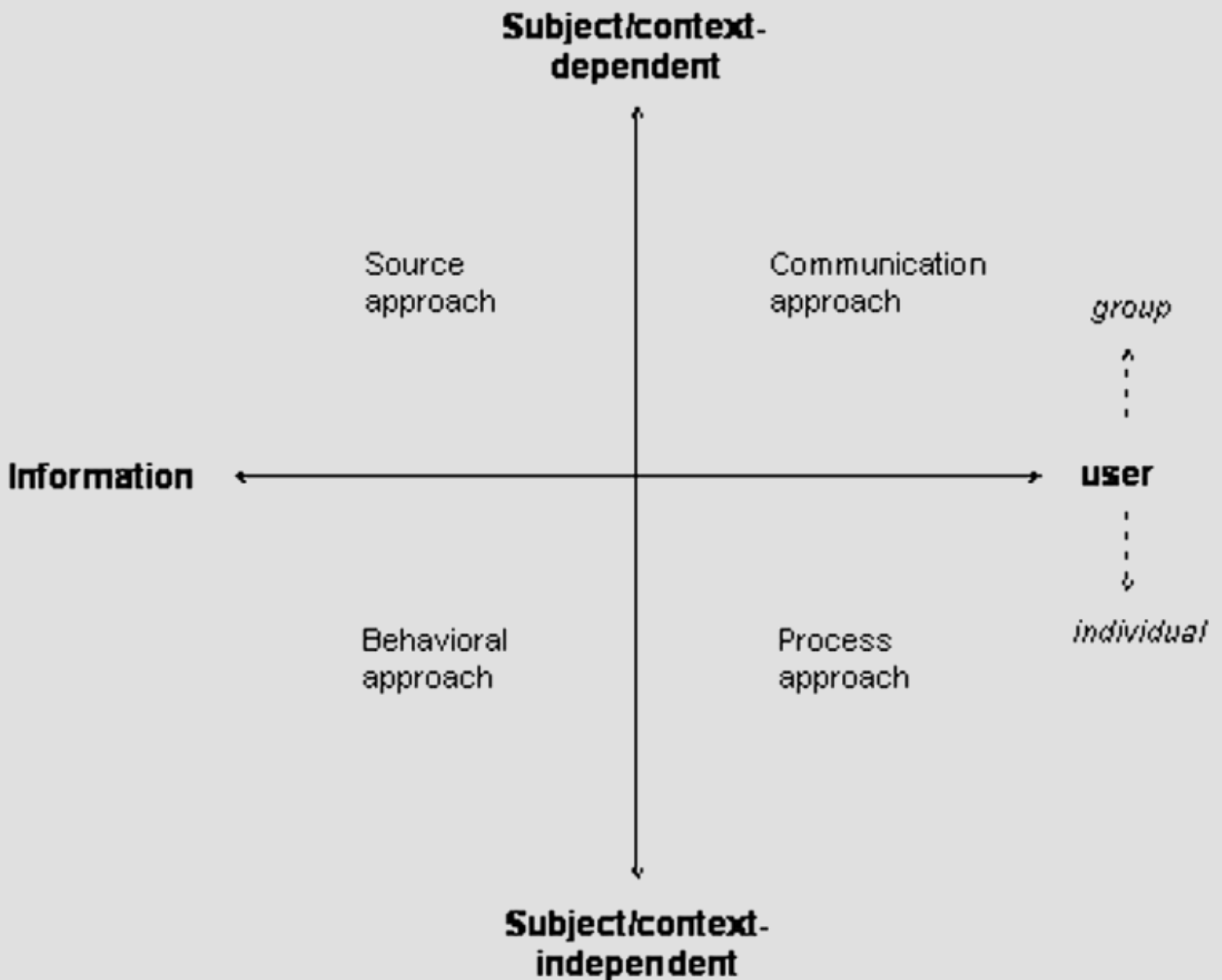
An important part of environmental scanning is to create a network of social relations and contacts. Colleagues within the same profession in other workplaces are natural members of your network. Networks allow you to interact with your contacts and colleagues. You know something that you can share with others and they know things of value to you. Coffee breaks, conferences and field studies are good examples of ways to develop your network. Remember that you can't know everything but together with others you can find answers to problems you are currently dealing with.

This example has been taken from a subject dependent tutorial for student nurses. Other examples are the discussions around how search engines can be used to search for web pages that are linked to a specific site. In both cases the user's social navigation is central and the user can use other people's search behavior as a departure point for their own.

In a communication approach the librarian's expertise consists of an understanding of the sociocultural conditions for the production, mediation and consumption of information. This expertise challenges the textbook view of how problem-solving and information seeking related to research should be executed, that is; information seeking seen as a rational and systematic process where information is sought in the same way in all disciplines and contexts. Furthermore, the mediation to the users of an understanding that information and information seeking acquire meaning in social practices emerges as an important undertaking for librarians. The communication approach is that which is least visible in the tutorials compared to the other three approaches. A possible consequence of the communication approach is an increasing interest in communication and interaction in different communities of users and in the role of information and information seeking in forming them. There are few tutorials, if any, that work on creating forums for communication between users, or between users and librarians apart from a few cases involving a more comprehensive written test. This is explained partly by the fact that tutorials are usually geared to function together with traditional teaching.

A model of four approaches to user education

Against the background of the above presentation of four different approaches to the professional expertise of librarians as they are mediated through user information seeking education, a model can be constructed that reveals the two complex issues that were raised in the introduction to the paper. The model has a transverse dimension, information – user; and a longitudinal dimension, subject/context dependent – subject/context independent. The behavioral approach and the process approach are placed on the subject/context independent side, while the source and communication approaches are placed on the subject/context dependent side. In relation to the study's empirical material it is important to remember that information sources are usually treated in a general manner and that the position of the source approach in the model should above all be seen as theoretically based in a sociocultural perspective. Further, it is possible to move the behavioral and the source approaches to the information dimension, as they in different ways take their starting point in the information itself. This is in contrast to the process and communication approaches that take their starting point in the users. The latter approaches can also be distinguished from each other in that the process approach focuses on the individual user, while the communicative approach focuses on groups of people.



It is possible to see the introduction of the four approaches in relation to time, where they have dominated in different periods in the literature (comp. Kuhlthau, 1987; Tucket & Stoffle, 1984). That which has traditionally been seen as significant knowledge within the professional practice of librarians, to be an expert in specific sources, was challenged in part during the 1960s by an interest in developing "correct" behaviour. This approach can be related to the explosion of teaching techniques during the 1960s and 1970s. This was the period when text books, built on behaviorist principles of positive reinforcement, were filled with endless drills. When information seeking with the help of ICT came within almost everyone's reach during the 1990s the behavioral approach also included information seeking behavior seen as a technical skill.

The breakthrough for the study of the information seeking process from the perspective of the user came during the 1980s and the beginning of the 1990s. Constructivist inspired research on the user in library and information science is based on the idea that the object of study should not be people's information seeking behavior, as in behaviorist inspired research, but rather to understand how the user creates knowledge or meaning through information seeking. Kuhlthau's influence cannot be underrated and she is also the only LIS researcher that any of the tutorials refer to. Her research is based on a cognitive and constructivist tradition and she builds her argument on Jerome Bruner and George Kelly, both of whom studied individual learning processes within the framework of cognitive theory building. During the 1990s the dominant pedagogical viewpoint

in educational settings emphasized students' processes of creating meaning, and in this respect the pedagogical approach "problem-based learning" can be seen as one of its clearest expressions. Kuhlthau (2003) refer to cognitive oriented researchers within library and information science, such as Robert S. Taylor and Nicholas Belkin who both see information seeking as primarily general processes.

During the 1990s constructivist research has been challenged from several quarters. Much of this criticism questions the autonomous position of the individual and rational behavior. Lately, user research has turned towards a view that information seeking is seldom a completely rational, common sense based, individual practice that is systematically and logically carried out. Instead, among other issues, is the question of how the relevance of information is negotiated in relation to its usability (Sundin & Johannisson, 2005) together with of how norms, values and expectations on information seeking are shaped in different social practices (Sundin 2003). Such a pragmatic approach rejects information as a representation of an outer or inner world in favor of a pragmatic approach to conceptions such as information needs, relevance and, hence, the concept of information itself. The communication approach relates to a pedagogic theory that has gained increasing recognition in recent years, namely a sociocultural perspective (e.g. Alexandersson & Limberg, 2003; Sundin & Johannisson, 2005; Talja, 2005). The sociocultural perspective is characterized by a view that learning and knowledge are imbedded in the culture and context of which learning is a part. With this perspective it is possible, even if it is not carried out in the tutorials examined in this study, to render a picture of the practice of information seeking that includes aspects of power, rival interests and the symbolic value of information. As yet, sociocultural aspects of learning and information seeking do not seem to have had an effect on user education to the same extent as constructive and cognitive aspects have done. Within this perspective several theories have developed, for example, *activity theory* (e.g. Engeström, 1987), *cultural psychology* (e.g. Cole, 1996) and *situated learning theory* (e.g. Lave & Wenger, 1991). As can be seen in the references, this is not new pedagogical theory. On the contrary, there is a common departure point in the work of the Russian researcher, Lev Vygotsky who was active in the 1930s.

Conclusion

The tutorials in information seeking produced by Scandinavian universities provide a comprehensive body of empirical material. It should, however, be emphasized that these tutorials comprise only a minor part of the collection of university libraries' user educations. The different expressions of librarians' expertise that are revealed in this article are a source approach, a behavioral approach, a process approach and a communication approach. The approaches entail different ways of defining central conceptions such as information, information seeking and user and a departure point for this article has been that the approaches have consequences for user education. The different approaches coexist in the practice of user education despite the theoretical inconsistencies shown above and they can be found to varying degrees in the different tutorials.

The model presented of four approaches within user information seeking education is grounded in the empirical material but supplemented and illuminated with the aid of theoretical discussion. In the description of the approaches a consideration of what is not represented in the tutorials is undertaken; exclusion is as important as inclusion. In this way a constructive discussion has been articulated about the practice of user education. Perhaps the most important dividing line is between tutorials that choose to connect user education to a subject or context and those that attempt to present it as domain independent. This dividing line has theoretical significance. The question that should be asked is whether it is fruitful to mediate knowledge of information seeking and information use if the information at issue is decontextualised. Or should user education devote itself to recontextualising the original practice of the information which can be achieved either with a focus on the information itself or with a focus on the user? The other dividing line goes between those who take their departure point in the information or in how the user should behave in relation to it, and those who take their departure point in the individual or groups of individuals. In the latter, it is a case of preparing the individual for what awaits them as seekers,

compilers and evaluators of information.

TUTORIALS

- Information Seeking Driving Licence*
 - University Library, Karolinska Institutet
 - Retrieved October 10, 2004, from http://kib.ki.se/edu/ped_resurs/webbquest/korkort/
- From Question to Document in the E-Library*
 - The University Library, Luleå University
 - Retrieved September 14, 2004, from <http://www.ltu.se/depts/lib/introkurs/index.shtml>
- Guide to Information Seeking
 - The Library, University College of Physical Education and Sports
 - Retrieved September 1, 2004, from <http://www.ihs.se/Biblioteket/sokguide/Index.htm>
- Information literacy: good information seeking for essay writing
 - Bergen University Library
 - Retrieved August 19, 2004, from <http://www.ub.uib.no/felles/IK/>
- Pedagogical Guide
 - The Library, Malmö University
 - Retrieved September 14, 2004, from <http://www.pedagogguiden.se>
- Seeking Information
 - Uppsala University Library
 - Retrieved September 3, 2004, from <http://w3.ub.uu.se/kurs/tutorial/start.cfm>

* A password is necessary to access the tutorial

Notes

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