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“Just search the Internet for facts” – a
study of some English teachers’ attitudes
towards information literacy

*”Gå ut på Internet och hitta fakta” – en studie av några
engelsklärares förhållningssätt till informationskompetens*

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Preface

The following dissertation was written collaboratively by Anton Hultén and Marcus Granberg, however, some sections were influenced more by one author. The sections more influenced by Marcus were: background section, theories concerning source evaluation in addition to the analysis of the results. The sections more influenced by Anton were: the method, purpose and the sections regarding the Swedish steering documents. We would, however, like to emphasize that this dissertation was a joint effort in which each of us played an equal part.

Abstract

The purpose of this dissertation is to examine how some English teachers in secondary and upper secondary school approach using the Internet as a source for information in their profession. The focus of the investigation is to find out how the teachers perceive the concept of source evaluation and information literacy and what their attitudes are towards teaching it to their students. The aim was to learn about the teachers' thoughts and views on the possibilities as well as trials and tribulations with using Internet-based information sources in the classroom. Qualitative interviews with three secondary school teachers and three upper secondary school teachers were carried out. The semi-structured interviews we conducted contained guiding questions concerning information literacy, criteria for source evaluation and attitudes.

Our results show that all the informants have a positive attitude towards incorporating the use of the Internet when they design tasks. However the respondents indicate several difficulties regarding the teaching of information literacy skills.

Key words: information literacy, ICT, source evaluation, education, Internet, secondary school, upper secondary school.

Table of contents

INTRODUCTION	7
BACKGROUND	7
PURPOSE AND RESEARCH QUESTIONS	11
THEORY AND PREVIOUS RESEARCH	12
SOURCE EVALUATION IN THEORY	12
<i>Source evaluation – a definition</i>	12
<i>Time, dependence, authenticity and bias</i>	13
<i>Source evaluation for the Internet</i>	14
INFORMATION LITERACY IN SCHOOL	17
<i>The Swedish steering documents</i>	17
<i>The importance of source evaluation according to the Swedish curriculum</i>	18
<i>The importance of source evaluation according to the syllabi for English</i>	19
<i>Critical thinking in a dynamic school environment</i>	19
<i>The information literate student</i>	21
<i>The roles of the teacher</i>	22
METHOD	26
QUALITATIVE SEMI-STRUCTURED INTERVIEWS	26
SELECTION	28
ETHICAL CONSIDERATIONS	29
ANALYSIS AND RESULTS	30
A DESCRIPTION OF THE SCHOOLS	30
ATTITUDES TOWARDS SOURCE EVALUATION	31
<i>Criteria for trustworthiness</i>	31
USING THE INTERNET IN SCHOOL	35
<i>Attitudes towards Internet as a source for information</i>	35
<i>The roles of the teacher</i>	36
<i>Teachers' view of the information literate student</i>	40
DISCUSSION	48
WORKS CITED	50
APPENDIX 1	53

Introduction

This section provides an overview of our area of inquiry, the purpose of this dissertation and the research questions

Background

In a rapidly changing world, where digital media and the Internet have become main sources for information, the individual's ability to critically process and manage dataflow is becoming increasingly important. In the curriculum for students of English in secondary and upper secondary school, one of the goals to strive towards concerns the teacher's responsibilities to equip students with the proper tools for source evaluation in the educational environment. It also states generally that one of the main objectives for English as a school subject is to prepare the student for multilingual communication in a globalized world.

There are also goals concerning source evaluation included in the curricula for secondary and upper secondary school, Lpf94 and Lpo94. In secondary school emphasis is put on the development of critical thinking: "It is also necessary for pupils to develop their ability to critically examine facts and relationships and appreciate the consequences of the various alternatives facing them" (The Swedish National Agency for Education, 1994).

The curriculum for upper secondary education states that the student should be able to practically apply the attained knowledge from secondary school. Students should "critically examine statements and conditions" and the school should strive to "increase their ability to formulate independent standpoints based not only on empirical knowledge and critical analysis but also on rational and ethical considerations" (The

Swedish National Agency for Education, 1994a). The school is also expected to give students opportunities to attain and exercise general critical thinking and to reflect on the consequences different choices of sources for data may have.

The development of technology increasingly promotes young people to communicate through different digital forms, the main one being the Internet. This development may render other forms of communication dated and useless. With this phenomenon comes a sharp increase in the amount of data that an individual is subjected to everyday. Source criticism therefore is an essential tool for navigating successfully through life today and in the future.

One important media that is argued to be on “life support”, by national journal media critic William Powers, is the paper publicized news “It seems entirely possible that five to ten years from now, newspapers will no longer exist, at least not in the familiar form that gave them their name on paper. Some already speak of the medium in past tense.” He then refers to the heading of an article in *The Economist*, August 2006: “Who killed the newspaper?” He also writes that “there is a sense in the culture that all print media, including magazines and books, are careering toward obsolescence.” (Powers, 2007, p. 2)

Language teachers often turn to photo-copied printed media when presenting topics for discussion and debate in the classroom. It can also be argued that some, if not most, of the news items presented in classroom environments come from printed news sources, even though an increasing number of teachers already use Internet-based publications. It becomes evident that the future of the paper publication is digital.

Schools are facing great challenges with the presence of the information and communication technologies (ICT) of today. Information searching with the use of computers permeates today’s school and has altered the educational establishment in many ways. The demands on students to work more independently with investigative methods of working have increased over the past few decades. The curriculum for the non-compulsory school system states that from a school perspective the students should be able to “navigate in a complex reality, with a major information flow and rapid change. [...] The students should practice to think critically, to examine facts and

conditions and realize the consequences of different alternatives” (The Swedish National Agency for Education, 1994a). Alexandersson and Limberg (2004) argue that learning through ICT offers a different learning situation for both learners and teachers in today's school which makes new demands on the understanding of how knowledge is communicated. When a learning material is transmitted through ICT, new and not fully known learning processes occur. Above all, the dynamics between student and teacher have been influenced when computer-based information seeking is introduced in teaching. As a result of students searching for information on the Internet, the teacher loses control of the mediated messages that the students meet (pp. 7-8). The teacher is, in other words, no longer the central figure that directs the information flow in a classroom and the large amount of information generated on the Internet constitutes a challenge for both learners and teachers. Hence one can say that the great challenge to the information society is to give every citizen the possibility to acquire information in a constructive way. Kuhlthau (2006) asserts that while information technologies increase the access to information, problems arise, one of them being connected to equality. “There is a great risk that 'those that have' gain access to a lot, while 'those that have not' do not gain access to the information” (p. 20). The school has an important role when it comes to prepare students for a lifelong learning in an environment rich on information (ibid.).

In Undergraduate students' evaluation criteria when using web resources for class papers, Tsai-Youn Hung argues that students remain at a superficial level when it comes to what criteria they use to value Internet sources used in school tasks.

Undergraduate students only used one or two surface quality criteria to evaluate Web resources. They made immediate judgments about the surface features of Web pages and ignored the content of the documents themselves. (Hung, 2004, p.1)

Students rely on Internet-based information to a further extent today compared to printed media in their school work which Hung argues can be problematic since it also echoes how they assess the reliability of the same. The author maintains, referring to several studies, that there are signs that the quality of students' essays has decreased because of the difficulties in assessing information found on the Internet. A profound

analysis of the materials used is often lacking which can result in the use of wrong information.

In her dissertation *Att söka information för att lära* Louise Limberg (1998) argues, with reference to several researchers, that there is a lack of research carried out in the field of information use (Limberg, 1998 p. 51). In teaching contexts, knowledge of and understanding of how information is used is of obvious interest since the information used should lead to learning. Alexandersson and Limberg (2004) define information use as “mainly an intellectual activity that is expressed through different thoughts and actions: to read, to reflect upon oral and/or written information, to compare different sources, to analyze, examine and value, to make syntheses, and to create meaning from information” (Alexandersson & Limberg, 2004, p. 23). The actions described can take place in interaction between learners and teachers, between the learners themselves and between learners and artefacts. Kuhlthau argues (as cited in Limberg, 1998) that information literacy skills exceed the perception that information seeking is about to locate and obtain information. The author argues for the importance of making students understand the information search process as a process that creates meaning, a process that also requires different cognitive abilities from the learner. Some of the abilities that constitute information searching are such that are usually associated with critical thinking, such as to critically reflect, analyze and value information (Limberg, 1998). Alexandersson and Limberg (2004) have shown that many studies have been carried out about students' information seeking behavior but with a lack of focus on how the persons concerned understand the content of the information in a learning situation. What students learn from investigative methods of working is less explored than the ways they go about when they search for the information (Alexandersson & Limberg, 2004).

In the article *Information behaviour of the researcher of the future*, a group of researchers called CIBER (2008) that carried out a study commissioned by the British Library and JISC argue that young Internet users have a difficulty in using appropriate search terms and assess the authenticity of a website. Young people in general tend to be able computer and Internet users but there is no evidence that they are expert searchers or more information literate than others. To make effective use of Internet search tools a fully developed mental map is needed of how the Web and the Internet

function. The defectively developed understanding in the case of children “is very largely due to their lack of knowledge of the kinds of information content that exist in a particular domain [...], difficulties in moving from natural language to search queries and less command of vocabulary required to consider synonyms or other alternatives”(CIBER, 2008, p. 22). In the long run, this might have implications on how the information is assessed and what it can be used for. ”One area of current interest, and indeed, concern, is the way young people evaluate – or rather fail to evaluate – information from electronic sources [...], little time is spent in evaluating information, either for relevance, accuracy or authority” (ibid, p. 23).

Purpose and research questions

It is our purpose to examine, through empirical research, how some English teachers in southern Sweden approach using the Internet as a source for information in their profession. We examined how teachers perceive the concept of source evaluation and information literacy, and what their attitudes were towards teaching it to their students. The analysis examines attitudes towards new information technology in the context of the school and the classroom. To collect data for the basis of our analyses we interviewed a group of teachers, and posed questions related to information literacy and the use of Internet in a school context, to get a clearer understanding of the current issues that teachers face, their attitudes and how they approach these concepts. The aim of examining this issue was to attain better understanding of how and why information literacy and proficiency in evaluating information is an important part of English education today. The research questions that this thesis set out to answer are as follows.

1. What attitudes do some Swedish teachers of English have towards using the Internet as a source for information in their teaching?
2. What experiences do some Swedish teachers of English have in regards to teaching source evaluation?

Theory and previous research

Source evaluation in theory

In this section we present and discuss different aspects and theories regarding human processing of information and why source evaluation and information literacy have become so important. We discern different theoretical approaches to information literacy in the school context, and the concepts of source evaluation relevant to our degree project. This data is structured to provide the reader with a focused theoretical basis to better comprehend conclusions and discussions in the analysis.

Source evaluation – a definition

Source evaluation concerns the process of information into knowledge. This process encompasses the ability to interpret, critically review, value, compare and structure. Since the curriculum prescribes a way of working where the students' search for information is central the ability to evaluate sources becomes utterly important. With new ways of working in school, demands are put on teachers to give students tools to handle information and provide guidance for the assessment of sources. For students, learning is no longer only about taking in what the textbook states. The Internet offers an abundance of useful and less useful information and students have to learn how to distinguish relevant information from noise.

A critical and reflective attitude enables the individual to see different perspectives which promotes new thinking. The rapid rate of change in today's information society requests the ability to adapt to new situations.

Time, dependence, authenticity and bias

Source evaluation is the umbrella term for methods that were originally composed within the historical sciences to distinguish fact from speculation. The sources were to be used to reconstruct a reality that once were, but which one was in present time referred to indirect knowledge of through the sources. Sources of significance are the ones that best depict the reality. This is of great importance because sources are used to describe what has happened historically with the purpose to teach a new generation that needs a solid ground to stand at. The historical sciences distinguish between primary, secondary and tertiary sources. The traditional role of source evaluation was considerably influenced by the Internet when it came in full swing, not least in the school environment. The birth of the Internet gave many possibilities but also brought challenges for the users with it. Leth and Thurén argue that “the problems of source evaluation on the Internet are many times about finding sources that are not at all primary sources, but are still good sources” (2000, s. 19).

The Internet has become a central medium for news distribution, influencing public opinion and acquiring knowledge and offering an almost limitless number of sources and an even larger amount of information bits. Leth and Thurén (2000) make an attempt to roughly divide information up and use three concepts: facts, explanations and opinions. Facts are verifiable, at least in theory but explanations are more difficult to assess because they set out to answer the question why something is as it is. It is important to assess the credibility of a source and see whether the explanation is serious and published by for instance an established researcher at a university. It is also important to realize that there are several explanations to one problem or question. Opinions are perhaps the most precarious form of information to use from a source critical perspective. They should only be used to understand a subject’s view of something and should not be used to prove anything.

The traditional criteria for source analysis that are well applicable on the Internet can be described as time, dependence, authenticity and bias. The aspect of time relates to when a web source was last updated but to examine what was updated is equally relevant. Dependence incorporates the relation between different sources. If two sources are independent, the credibility of assertions common to both of them increases and on the other hand, if the sources are dependent on one another, credibility is diminished.

Information derived in several steps is called handover and is a common form of dependence on the Internet (Leth & Thurén, 2000, p. 143). Rules to adhere to are therefore to use primary sources as far as possible and to check against an independent source. Falsifications of various types have always occurred but when information is presented electronically it is much more difficult to distinguish the authentic from the false. The Internet medium enables users to make additions and changes to both texts and images without the risk of leaving traces. Falsification on the Internet can range from gross to subtle. A whole website claim to be something it is not in one case and in other instances information might be exaggerated. Bias is the final aspect to consider at an early point in the information seeking process. It is important to verify the publisher and what the agenda behind the publication might be. A person with an interest in something can always be suspected of being biased. Bias can range from mere lies to over- or understatements, the exclusion of unpleasant facts and the use of a misleading language. Leth and Thurén state that “every source that has an interest of lying or to distort the truth must also be suspected of doing so” (2000, p. 26). The bias criterion for sources on the Internet applies not only to facts but also to explanations.

Source evaluation for the Internet

As shown above, traditional assessment criteria can be applied to information gathering on the Internet. However, according to Leth and Thurén (2000), there are three criteria in particular to consider concerning information gathering from the Internet: world-view and conceptions of knowledge as sources of bias, credibility, and source conditions and features. Religious beliefs, traditions, values, history, language and customs are all factors that constitute a culture and can be summarized as forming various ways of understanding the world. Every source is a product of the culture in which it existed or currently exists and when reality is described from the perspective of a certain world-view bias can be at work. The fact that information from a given source is biased in a direction of a certain world-view does not make the source useless, though, but one needs to be aware of this bias in order to approach the source critically. The second criterion addresses the overwhelmingly great number and variety of websites on the Internet and how to judge whether the publisher is an authority in its field. Credible source should demonstrate “reasonableness in the argumentation, accuracy and truthfulness in the mediation of facts, as well as awareness of well known authorities

and established ideas in the area” (Leth and Thurén, 2000, p. 145). Since the Internet presents an almost limitless, and still increasing, amount of websites this criterion seems momentous. To navigate the Internet can be made easy if one only sticks to established authority sites. Nevertheless Leth and Thurén argue that

... one misses much of the point with the Internet [then], i.e. the opportunity to procure information from new alternative sources. The plurality is in fact what can widen ones horizon, and in that aspect the Internet offers a radically new information situation. (Leth & Thurén, 2000, p. 31)

The final criterion for assessment takes the features and conditions of sources into consideration. Many of the faults found on websites are not due to deception, but instead caused by mistakes, misperceptions, misjudgements and lack of knowledge and therefore one must try to ascertain the original source. Sources must often confine themselves in some respects and often they run out of time. Source conditions can also amount to definitions. The data collection and mediation with which sources are often occupied often requires that a significant event is defined. A concept though can have a plurality of meanings depending on context, and depending on how the concept is defined the source's information will vary. Several sources that claim to have information about a given concept but use different definitions can result in a difficulty to compare and compile.

In *Web Wisdom* Tate and Alexander (1999) discuss five traditional evaluation criteria that can also be applied to web resources. They all originate from the world of print but as the criteria are universal in nature they need to be addressed regardless of what medium that is being evaluated (Tate & Alexander, 1999).

The criterion *authority* corresponds to whether the information assessed is created by a person or association that is formally acknowledged as being an authority in a given field or having certain knowledge of the subject area. Tate and Alexander (1999) argues that two methods that can be used for assessing the authority of a work is to examine an author's background, experience and formal qualifications regarding the subject area in addition to an evaluation of how established the publisher is in the field. The ease of

publishing materials on the Web together with the fact that the publisher can reach out to a worldwide audience are two key factors that have made the Internet so attractive. However these great strengths of the Internet as a source for information can also leave the information seeker with some pitfalls. Materials published on the Web do not guarantee that an author's name together with information of his or her qualifications is provided. A name given on a page cannot either be automatically assumed as the author and it is often hard to confirm whether someone is ultimately responsible for the published material (ibid.).

The second criterion, *accuracy*, that Tate and Alexander (1999) mention somewhat overlaps with the previous one and deals with to what degree a material can be seen as trustworthy and faultless. Traditional media make use of a wide array of methods to establish accuracy in written work like fact checkers, editors, peer reviewing, style manuals and appropriate listings of sources for factual information. As expressed above the great advantage of the Web is the instant accessibility which can also be a limitation when it comes to assuring the accuracy of content. The process that assists in establishing accuracy of traditional media are often minimized or excluded on the Web.

Objectivity regards to what extent the information or facts expressed is unbiased or distorted by personal judgment. The conveyance of messages always comes with some kind of bias because of the motif of the sender. Nevertheless it is important to assess the degree of objectivity of the information provider. To ascertain the agenda of the author or organization can bring clarity to whether the information comes with any biases. When the source is not known to the reader objectivity can be very hard to evaluate unless the information declare point of view. If it is hard to evaluate the objectivity of traditional sources it is even more difficult to do the same with Internet sources since the Web so easily gives the opportunity for people to share their point of view (ibid.)

The fourth criterion, *currency*, relates to the degree to which information can be assessed as up to date. For print sources publication and copyright dates usually reveal when a material was first published which facilitates the evaluation of currency. There are no existing guidelines for the inclusion of dates on Web pages and thus it can be hard to judge the currency of resources found on the Web. Often dates are not even

included and when they are they can refer to either when the information was produced, when it was placed on the Web, or when the page was last updated (ibid.).

Coverage, the final criterion that Tate and Alexander discuss (1999) has to do with the range of contents comprised in a work and how careful those contents are treated. In traditional sources a preface, a table of contents or an index is often included to explain the depth of the topics addressed but on the Web the coverage is seldom evident.

Information literacy in school

The Swedish steering documents

The Swedish school system is a goal based system directed on a central level, with a high degree of local responsibility. The responsibilities of the school, teacher, and student are formulated in general and specific guidelines referred to as steering documents. The documents referred to as the school curricula are general guidelines for the school system. There are also documents with goals and directions for each specific subject referred to as course syllabi. The subject-specific guidelines provide goals to attain, goals to aim for, and also guidelines for grading the students in the specific subjects.

These documents are constituted by The Swedish National Agency of Education, a central authority for the Swedish school system for children, youth and adults, for the school program, and the school children care. The organization is lead by a general director with an observation council elected by the government.

The curriculum and the syllabus serve as frames and guidelines for how educational work should be conducted and on which values and ethics school work should rest upon. The documents are under revision in order for them to be up to date and provide equivalence and fairness. The documents relevant for this dissertation are the curriculum for the compulsory school system (Lpo94) and the curriculum for the non-compulsory school system (Lpf94) for upper secondary and the syllabi for English for the later years of compulsory school and the course syllabi for upper secondary school.

The importance of source evaluation according to the Swedish curriculum

The educational environment for students of English in Swedish schools is dependent on different types of text and interpretations of these. The different texts range from the textbook, teacher contributions through news articles, films, music, and also what the student contributes with and encounters individually when seeking information for school purposes. Source evaluation is and has increasingly become an important skill for all students in the Swedish school system. The Swedish Ministry of Education, (SOU 1998/99 Ub U1) has stated that an increase of ICT in schools inhibits learners from developing skills in problem solving and in gathering useful information (Jakobsson, 2001, p. 2).

The curriculum for the compulsory school system (Lpo94) states the importance of attaining skills to successfully navigate in an increasingly complex flow of information:

Pupils should be able to keep their bearings in a complex reality where there is a vast flow of information and where the rate of change is rapid. This is why methods of acquiring and using new knowledge and skills are important. It is also necessary for pupils to develop their ability to critically examine facts and relationships and appreciate the consequences of the various alternatives facing them (The Swedish National Agency of Education. 1994, p. 5).

In *Information and It-literacy* by Martin and Rader (2003) the information literate student is defined as someone who “determines the nature and extent of the information needed, accesses needed information effectively and efficiently, evaluates information and its sources critically and incorporates selected information into their knowledge base and value system, and uses information effectively to accomplish a specific purpose” (p. 17).

Although the steering documents do not use the concept of information literacy it is evident that the types of skills and knowledge to acquire during the later compulsory and upper secondary school years are closely connected to the definition of information literacy. According to Lpo 94, students should have the opportunity to learn about source evaluation in school and one of the goals to aim for states that the student should strive towards “critically examine and value statements and relationships”. In the goals

to attain for compulsory school students should: “have knowledge of media and their role” and “can use information technology as a tool in their search for knowledge and to develop their learning” (The Swedish National Agency for Education, 1994, pp. 10-11).

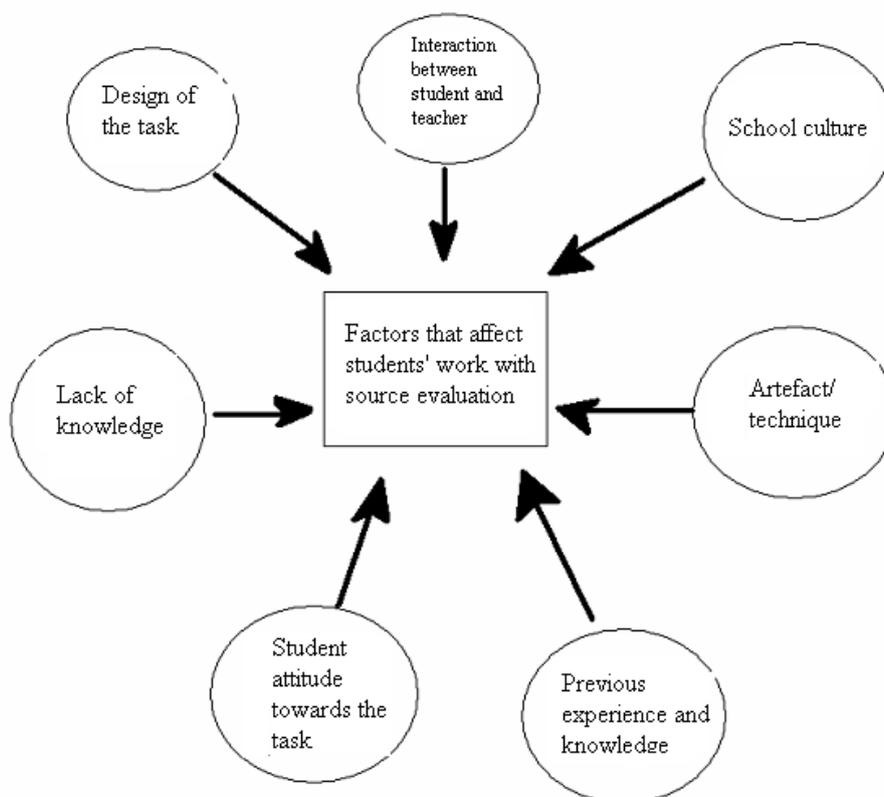
The importance of source evaluation according to the syllabi for English

The syllabi for English contain different formulated goals and guidelines for students in the context of source analysis and evaluation. In the syllabus for the compulsory school, grade 9, one of the goals is to: “develop their ability to use aids and critically examine sources of information (The Swedish National Agency for Education, 2000, our translation)”. In upper secondary school the English courses are divided up according to advancement level in English A, B & C. The syllabus for English A states that: “The student should independently gather information from different sources and should be able to process and structure this information” (The Swedish National Agency for Education 2000a). To be able to attain the highest grade for this course, special pass with distinction, the student should when reading texts “come to conclusions about the purpose of texts, perceive values and opinions and make use of details as well as main content” (ibid). The syllabus for English B states that the student should, by the end of the course, be able to “critically evaluate and analyze information from different sources” (The Swedish National Agency for Education, 2000b).

Critical thinking in a dynamic school environment

As demonstrated above, the Swedish Curricula attach great importance to critical and independent thinking for students in today's school without the need of the knowledge possessed by an adult. Furthermore it is emphasized that the school should strive towards every student increasing “their ability to formulate independent standpoints based not only on empirical knowledge and critical analysis but also on rational and ethical considerations” (The Swedish National Agency for Education, 1994a). In the literature examined, the best ways for learners to develop a critical attitude are discussed. Some argue that it is subject specific while others claim that it is more a question of developing critical thinking at a general level that can be applied in different learning situations. Craver (as cited in Limberg, 1998) argues that there is a lack of empirical research in this field and that whether skills in critical thinking are content-specific or independent from content should be further explored.

In a dissertation, *Medvetande och kultur – en studie av hur högstadiel elever arbetar med källkritik på material från nätet*, Anders Eklöf (2003) asserts that it is due to the structural culture in the school setting that students find difficulties in applying a critical attitude towards sources in school tasks. Eklöf (2003) seems to suggest that school together with many teachers overlook the self-confidence and competence that many students have regarding the use of the, Internet in the private sphere. Outside school the student's everyday life is often characterized by advanced use of information technologies but these experiences are kept separate from the formal school environment. According to Eklöf (2003), “students have no strategies to integrate Internet in their school tasks in a developed way” (p.8). He also makes the point that teachers often share that lack (ibid.). Eklöf (2003) discusses several reasons why the students in his research have a less developed critical attitude towards sources and presents a model that displays different factors that influence how students evaluate sources:



Model 1. A model for understanding students' work with source evaluation (Eklöf 2003, our translation)

As the model shows several factors have an impact on the students' information behaviour and how information literate they can become. The structure of the specific tasks that the student is assigned has a prominent effect to what extent they can apply information skills in addition to what ways that teacher and student interact in the classroom. The different roles of the teacher and his or her attitude to information literacy are highly relevant for our study and will be developed further in a following passage.

The information literate student

Information literacy as a concept was developed in 1974 by Paul Zurkowski to respond to the rapidly growing amount of information available and also because of the difficulty to negotiate the increasing complexity of a world flooded by information.

Zurkowski (as cited in Spitzer, Eisenberg & Lowe, 1998) maintains that:

People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems. (Spitzer et al., 1998, p. 22)

Since then information literate persons have been defined in several different ways. Many of the definitions share the notion that as an information-literate student you are one with your set problem and you have the ability to solve it by knowing what the relevant information to use is. An information literate student also acknowledges his or her information needs and has the right information skills for how to satisfy them. Information literacy as a concept got its definite impact in a report from the American Library Association (1989) written by librarians and pedagogues who stated that:

Ultimately information literate people are those who have learned how to learn. They know how to learn because they know how information is organized, how to find information and how to use information in such a way that others can learn from them (American Library Association, 1989, p 1).

In this report information literacy is on a par with the ability to learn. According to Limberg, Hultgren and Jarneving (2002), the transition from older ways of perceiving

education in information seeking (library skills) to establishing information literacy as a concept has involved a qualitative variation since the latter comprises different skills and abilities that are connected with learning processes in a wider sense, i.e. all the phases in an investigative method of working, not only the information seeking phase. This result in a shift of the goals of the education from a focus of learning specific skills or how to navigate in a certain library to a focus of the students' higher order thinking skills.

The sphere of an information literate person is multi-faceted and incorporates not only the ability to find words in print that relate to a posed problem but also how to manage media, computers and networks. To successfully navigate and feel confident and competent in such information environments can imply to be well-known with the procedures in the initiation phase of a task mentioned above. Competence in such environments consequently also concerns emotions. Carol Kuhlthau (2006) has produced a six stage model, the Information Search Process, henceforth referred to as ISP, of the users' holistic experience in the process of information seeking. The ISP model identifies three realms of experience common to each stage: the affective (feelings), the cognitive (thoughts) and the physical (actions). In the initiation of an information seeking process a learner's thoughts are often uncertain and ambiguous but become clearer and more focused as the process progresses. Similar to thoughts, feelings of anxiety and doubt in the initiation phase may decrease in the process and the learner becomes more confident. Hence the model emphasizes the uncertainty that the seeker experiences in connection to the information seeking. The level of uncertainty can increase and decrease throughout the process but is often prevalent in the early stages of a search process. Increased uncertainty can indicate a zone where a librarian, or teacher, need to intervene and scaffold. Hence the pedagogy and the teacher have an important role in how information literate a student can become.

The roles of the teacher

It can be presumed that how teachers perceive information seeking has a significant impact on what they teach in this field and how the teaching is organized. Several researchers have examined the teachers' view of information seeking or information literacy and the results that appear indicate that teachers have a vague apprehension of

the concept information seeking. O'Connell and Heron (as cited in Limberg et al, 2002) describe teachers' view of information literacy as naive when the researchers compared it to Kuhlthau's ISP model. Students' feelings of uncertainty and anxiety in the beginning of the information search process were dimensions not acknowledged by the teachers as they appear in Kuhlthaus model.

In a research project carried out by Moore (2000) at four schools in New Zealand the purposes were to examine how the schools met the national goals with reference to information literacy, how the teachers understood information seeking and what expectations they had on their students in this regard. A survey answered by forty teachers showed that a majority considered themselves having practical knowledge of information literacy skills. Despite this fact 46 % of the teachers could not break the information search process down into any teaching phases. Nor did teachers in the survey recognize any needs to teach information literacy specifically. Instead they expected that the skills in information literacy would simply emerge. Moore drew the conclusion that information literacy skills were highly valued by the teachers but they expressed no ideas of how to integrate them in their teaching. All the teachers in the survey also agreed that it is easier to find information if the theme is familiar compared to unknown. According to the teachers students can also fail to recognize fundamental concepts without scaffolding but still many of the teachers set their students to find information about something without a guiding framework or a clear purpose with the task. The result also shows that difficulties distinguished by the teachers concerned the formulation of a problem area and finding and selecting appropriate sources but the interpretation of the material, how to assess it and how to use it were not mentioned as particularly difficult areas.

Several studies discussed by Alexandersson and Limberg (2004) show problems with regard to how students search for and use information for project work tasks. Copy and paste plagiarism is a recurrent problem when students produce their own presentations. Some tasks invite students to copy information to a greater extent than others and open tasks described by the teacher as for example "dolphins" seem to be too vague to stimulate interpretation, analysis and critical thinking. In the study *Skriv med egna ord* by Nilsson (as cited in Alexandersson & Limberg, 2004), secondary school students' writing in connection to independent research-based tasks were examined. Nilsson

found that 50 out of 60 student texts could be characterized as reproduced where text samples from one or many sources were copied and put together.

Many studies show that learners tend to search for specific answers to questions irrespective of the nature of the questions. In a well-cited study made by Wallace and Kupperman (1997) about students' use of the Internet many learners looked for exact answers for their questions already in the search result lists in spite of the fact that the questions were open and had been formulated by the students themselves. It appears as the learners understood the nature of the task as receiving an answer to a certain question and seemed convinced of finding that answer at one single Web page. In other words the task was to find that specific site. The above can possibly reflect learner experiences of finding specific answers to questions in textbooks which contribute to similar behaviors regarding Web-based material. Deficient interest to analyze information found on the Web can be the result of the need to find the correct answer and the assumption that the Web is the place to find it.

Similar to the study above, Bergman's study (as cited in Limberg et al, 2002) shows that learners use the Web as was it a school book where answers for tasks could be found. The study showed that learners quickly browse many of the Web pages without assimilating the content and their use of the Internet as a source for information rarely resulted in an analysis and processing of the material. Teachers need to find new ways of working with information for the learners that stimulate learning rather than finding pieces of information that fit into tasks.

In a study conducted about the interplay between information seeking and learning Limberg (1998) found a pattern in the variation of the learners' ways of understanding and managing the information seeking process. The analysis dealt with different aspects of the learners' interpretation of information seeking, their criteria for relevance, the excess of information and how to evaluate sources. Three main categories were distinguished and in a comparison it emerged that an understanding of information seeking as merely a search for facts coincided with a poor learning result. The understanding of information seeking as a method of examining and analyzing coincided with a superior learning result. The results point to an immediate relation between the learners' ways of understanding information seeking and the content of the

task. The results also show that the understanding of information seeking as a search for facts was not appropriate for complex tasks. Information was perceived as isolated, neutral and objective facts without the need of processing and analysis to acquire knowledge in terms of understanding (ibid.).

Method

Methods can be explained as various techniques used for the collection of data in order to structure the research and analysis when carrying out a research project. This part of the dissertation includes methods used in the investigation, why they were used/not used, selection of informants, implementation as well as ethical considerations

Qualitative semi-structured interviews

This dissertation uses qualitative in depth interviews as its main data-collection tool to “uncover the meaning structures that participants use to organize their experiences and make sense of their words. These meaning structures are often hidden from direct observation and taken for granted by participants, and qualitative interview techniques offer tools for bringing these meanings to the surface” (Hatch, 2002, p. 91). The qualitative interview as a method was chosen after considering what types of data we needed. Hatch continues to mention the fact that interviews often are used in combination with other methods of gathering qualitative and quantitative data. However he states that, “they can be the primary or only data source in some qualitative projects” (p. 91). The discussions and conclusions in this dissertation are only based on the qualitative data collected from interviews with teachers, in combination with an in depth study of selected literature. The limitation of interviews as a method concerns the difficulty to find out what is on someone’s mind, either because the informants may be reluctant to share their thoughts or because the researcher is lacking the skills to guide the participants of the research project to uncover them.

The questions in qualitative semi-structured interviews need to allow the informants to explain and explore their thoughts and feelings in order to leave a result that is in fact

qualitative. Furthermore it is important for the researcher to remember that the data gained from qualitative interviews with only a few participants is often too thin for general conclusions to be drawn (Johansson & Svedner, 2006). With this in mind, we wish to elucidate that the aim of this research is not to generalize the results but to obtain a more in-depth understanding of the subject area. This will hopefully make us more qualified in our future profession.

The method used for the collection of the main data in this dissertation was qualitative in-depth interviews since it is a natural choice when it comes to attain better understanding of how and why information literacy and proficiency in evaluating information is an important part of the English-teaching profession today. Thus the qualitative interview was best suited since the technique aims at exploring “informants’ experiences and interpretations” (Hatch, 2002, p. 91). It gave us as researchers the opportunity to trigger the informants to disclose information and at the same time reflect, whereas a questionnaire would not allow for more detailed answers. The method selected was naturally also based on the time at hand. Observing teachers and their ways of working with information literacy in classroom situations would be interesting but very time consuming as it would take substantial time to prepare and carry through an inquiry of that kind. Another concern we had when considering the choice of methods for the collection of the data for this dissertation concerned the risk of bias involved with observations.

The interviews carried out for this degree project took the shape of semi-structured interviews since this type of interview allows for a level of flexibility regarding how the interview is administered. The questions employed in the interviews were mainly open-ended and can be found as an attachment to this dissertation. The interview guide provides the researcher with a framework but the questions must not necessarily be asked in a certain order since it is the flow rather than how the questions are arranged that decides when and how the questions are asked. Semi-structured interviews enable the researcher to ask follow-up questions and the interview guide provides a logical progression for the interview.

It is important to mention that the interviews were not constructed with an aim to prove a preconceived hypothesis that teachers do or do not oblige to or follow the

recommendations regarding source evaluation in the steering documents. The documents can arguably be interpreted differently and vary in concretization, depending on what they aim to convey and it is not relevant for this degree project to distinguish weaknesses or strengths in teachers or in the Swedish school system. As mentioned by both Kvale (1997, p. 119), and Hatch (2002, p. 10) there is a clear distinction between proving a hypothesis and conducting explorative interviews. As Bogdan and Knopp Biklen (1992) describe, you “are not putting together a puzzle, whose picture you already know. You are constructing a picture that takes shapes as you collect and examine the parts” (p. 29).

Concerning the techniques and aids used during the interviews, they were taped with a dictaphone and later transcribed. The interviews were conducted by one researcher and one participant at the time and the time frame was loosely set from thirty minutes to an hour to ensure that we would not run out of time. Full transcripts are not included in this paper, but excerpts from these are presented in the results. All the interviews were conducted in Swedish and the data collected was later transcribed. The excerpts presented in this degree project were translated into English. The interview guide can be found in appendix 1.

Selection

The six informants chosen for this dissertation are, with one exception, qualified secondary and upper-secondary teachers of English from two different schools in the Malmö area. The schools are henceforth referred to as school A and school B. The teachers that were chosen as subject for our qualitative interviews come from very varied backgrounds and age groups in order to gain a wide range of teacher perspectives. They do however have in common that they are all teachers of English in Swedish schools. To keep the interviewees anonymous we gave each subject a false name, but the names are gender associated. The interviewees are referred to as follows: Fredrik, Erik and Anna teach at school A and Jonas, Lena and Peter teach at school B.

Fredrik teaches English A and social science, and received his degree in June 2008. He teaches English for six hours every week.

Erik teaches English and physical education and he is also the least experienced in terms of teaching career length. He received his degree in January 2008 and teaches English twelve hours every week.

Anna received her degree in 2007 and has been teaching since two and a half years back. Her main subject is math and her minor subject is English. She teaches both English A and B, between six and ten hours per week.

Jonas teaches English at school B. He has been working as a teacher for 30 years and his minor subject is Music. He teaches English in grade 7-9, five hours per week.

Lena teaches English in grades 7-9, eight hours per week. She is not a certified teacher although she has studied both German and English at university level.

Peter teaches English and Physical Education in grades 7-9. He has been teaching for 14 years and teaches English for seven hours every week.

Ethical considerations

We conducted and designed the interviews in accordance to the guidelines for ethical consideration in research in the Humanities and Social Sciences formulated by The Swedish Research Council, *Svenska Vetenskapsrådet*. (Johansson & Svedner, 2006, pp. 29-30) All the interviewees were informed by the purpose of this degree project, of their anonymity, voluntariness and of the methods for analyzing the data that they had provided.

Analysis and results

The data for our qualitative study consists of six semi-structured interviews with teachers from two different Swedish schools, one upper secondary and one secondary school. We decided to process our empirical material in a summarized analysis of all interviews. To make sense of our data we categorized it so that it could easily be overviewed and so that conclusions could be drawn to help us reason with regard to the research questions of this degree project. The summarization and comparison of our data provided a red thread, a logical progression of the information, which enabled us to use it more efficiently in our analysis. The analysis section begins with a brief introduction of the two schools where our interviewees were working.

A description of the schools

The interviewees work at two different schools in southern Sweden. School A is an independent secondary school and School B is a public compulsory school. According to the ethical considerations for research, we have kept the schools and teachers that are included anonymous.

School A is an independent school. In Sweden this means that it is lead by a majority owner, opposed to public schools that lead on a communal level or on other regional levels. Independent schools in Sweden, like public schools, receive state funding for each student enrolled. In Sweden private schools are present on compulsory, secondary and upper secondary levels of education. Independent schools in Sweden often have different profiles in terms of school policy, value bases, religious views and educational objectives. They are obliged however to follow the steering documents mentioned earlier in this degree project.

School A describes itself as an upper secondary school with a profile that focuses on preparing students for a future in practical fields of work. The school combines training and preparation for the students' professional future with traditional education. School B is a public compulsory school with students from grade 1-9. The school differs slightly from the norm in that they have an international profile with both bilingual students and students with English as their native tongue.

Neither of the schools has an outspoken IT-profile nor is this reflected in the interviews. School A has no prewritten policy for Internet use. However, according to the interviewees, school B has general ethical guidelines for Internet use on school premises formulated in the general guiding documents.

Attitudes towards source evaluation

In order to obtain an understanding of our interviewees' attitudes towards source evaluation we conducted a literature analysis. In the theory chapter theories and previous research done in the field of our inquiry are reviewed that enabled us to analyze our results. Source evaluation of Internet sources do not differentiate from the source evaluation applied to sources prior to the existence of IT entirely although more assessment criteria need to be applied to Web resources. When the different criteria were compared with the results from the interviews the awareness the informants had varied.

Criteria for trustworthiness

In chapter two theoretical perspectives on source evaluation were displayed in addition to the importance for teachers to have knowledge of how to assess sources in order to be able to teach their students information literacy. The different evaluation criteria that our informants were familiar with were authority, accuracy, objectivity, currency and coverage although they did not use the theoretical concepts to define how they assessed Internet sources. However, many of the informants mentioned only one or two surface criteria in their reasoning of what constitute a reliable source. The most prominent

criterion our informants used to establish whether a source is trustworthy or not were authority. To evaluate whether the information on a Web page is true or false however can according to Leth and Thurén (2000) be an ambiguous process since it is not limpid what is true or false. Information is often subjected to values and conceptions of knowledge which can obstruct the evaluation process. Only one of our interviewees mentioned world-view as a source of bias.

The results from our interviews showed that our interviewees put their main emphasis on who has published the information when they discussed criteria for how to evaluate the trustworthiness of given information. Four informants out of six mentioned what can be interpreted as authority when they defined what constitutes a reliable source of information

Fredrik Something that has, where one can clearly see who has written the work

Erik Academic databases or information sources are a bit more reliable too compared to for example Google and Wikipedia and so on.

Anna Who has published it and so, so that one has the possibility to get in contact with that person or organization. Then I can feel that the source is reliable.

Lena Well, a reliable source is something in the lines of a newspaper or so. That the information is not solely found on Wikipedia, but that one has proceeded to something governmental or so.

The informants' responses were in accordance with how Tate and Alexander (1999) describe the evaluation criteria authority but what is significant, none of the informants mentioned how they verify whether a publisher is an authority or not if the author is unknown. In a discussion about a task that one of the informants had given to his students, where they were asked to compare two Web sites with similar design but different content, one true and the other with substantial falsifications, the informant showed that he has reflected upon this criterion

Fredrik But where the names, the author, or the senders or the authorities being referred to in the source can be found and they in their turn are reliable, that it is journalists that works with that issue and has a good reputation. That one can search

for if they refer to a researcher or professor, that there really is a result of a search on that name that correspond to how he is presented.

When information seeking and source evaluation in a school context are discussed the online encyclopedia Wikipedia is often mentioned since it is accessible and many students use it. Wikipedia is a multilingual web-based encyclopedia project based on an openly-editable model where the users themselves write, edit and peer review the articles. Three of the informants, two of whom described authority as an important criterion when assessing web resources, expressed that they use Wikipedia regularly. The three informants were all aware that anyone can edit the articles but one of them thought that Wikipedia has gotten too much undeserved criticism and another that the peer review enables some search items to have relatively high reliability.

Jonas I believe that I am fairly critical to most information I read on the Internet. I use Wikipedia a lot where actually anyone can publish anything. I do believe, however, that the peer review feature sees to that commonly searched items, with high search results, become relatively reliable.

Evidently Wikipedia is a solid example of how information found on the Internet can change rapidly. One of the informants mentioned the importance of identifying a material as up to date, described by Tate and Alexander (1999) as the criterion currency and by Leth and Thurén (2000) as the criterion time.

Erik Yes, how often the source has been reviewed for example, and who has reviewed it.

Due to lack of established guidelines for the inclusion of dates on Web pages the currency of Web resources can be difficult to determine. Facts presented on the Internet can become obsolete if the information is not regularly updated. The informant returned to the importance of currency when he described what questions his students should ask themselves when evaluating sources and mentioned that dates and time are important in addition to how often the Web resources are updated. This informant together with Jonas mentioned that one important criterion they use to establish if a source is reliable is whether it has been reviewed by independent examiners. This contradicts what they expressed regarding their use of Wikipedia as a trusted source for information.

Leth and Thurén (2000) argue that one important aspect to take into consideration when assessing the reliability of a given source is to be aware of every source being a product of the culture in which it existed or currently exists and when reality is described from the perspective of a certain world-view the information can be biased. The fact that information from a given source is biased in a direction of a certain world-view does not make the source useless, though one needs to be aware of this bias in order to approach the source critically. The only informant that expressed an understanding that corresponded to Leth and Thurén's theories regarding world-view and conceptions of knowledge as sources of bias was Fredrik. He stressed the importance of apprehending whether a source has a certain agenda and regards sources that proclaim the reasons behind publishing the given information reliable. In reasoning about a project work he set to his students where one group chose to write about Guantanamo he demonstrated an awareness of biased sources.

Fredrik Yes, they formulate their own questions and then they come to me and say: we are going to write about Guantanamo. And if they find a Web page very critical towards the USA with information about torture at Guantanamo the students are satisfied with that information because it was found on the Internet and therefore considered as a truth. Or on the contrary perhaps someone happened to find a very USA-friendly Web page that denied all atrocities, then that was perceived as the truth: it has never happened.

In addition to evaluating who wrote a certain text, the purpose behind publishing it and when the information was published, it is crucial to be aware that the reality can be described from the perspective of different world-views. A source is never independent from the culture within it was produced or currently exists in and beliefs and values affect the content. Fredrik argued that to be able to evaluate the reliability of a source one has to permeate the text and really analyze the information. That requires the information seeker to have a precognition of the field of inquiry and reading comprehension skills. These aspects will be discussed further in the next sections.

Our data indicated that the awareness of different evaluation criteria and how to apply them to Web resources varied between our informants. They did however share a level of awareness with regard to the framework established in the theory section. The

majority of the informants only mentioned two different surface criteria when they assessed the trustworthiness of a Web page with Fredrik as an exception. The most prominent criterion described by the interviewees regarded the extent to which a material is the creation of a person or organization that is recognized as having definitive knowledge of a given subject area. To navigate the Internet can be a task of ease if one only utilizes established authority sites. However Leth and Thurén (2000) argue that one misses the opportunity to procure information from alternative sources which can be argued as the main reason for the existence of the Internet. The plurality found on the Internet offers a radically new information situation that can widen one's horizon. Limiting oneself only to established authorities in the information search process can decrease the development of skills to handle biased information and halt the process of becoming information literate. As we shall see in the next chapter the teacher plays an important role for students' development of information literacy skills.

Using the Internet in school

Attitudes towards Internet as a source for information

In a changing world rich on information with Internet being a main source it is important for schools to provide students with skills to be able to critically examine those sources. In this section the informants' attitudes towards Internet as a resource for information in their profession will be discussed.

In general, all of the informants had a positive attitude towards using Internet in the school context. However the teachers gave different reasons for why they are positive. Peter stated that the use of Internet in the classroom setting facilitates his teaching and the increasing variation of the material to use as a teacher has been beneficial. In the same line Lena argued that with the use of smart boards the school is no longer an isolated island in society. With new information technology the surrounding world can be made more comprehensible for the students. Erik was very positive towards the use of Internet in his teaching and expressed several reasons.

Erik The society as a whole is moving towards more and more use of computers and, one can say, Internet based. You could almost call it an Internet based life. More and more. Social media take over and play an important role, at least in young peoples lives, to a greater extent than during one's own upbringing. For coming generations it will be a natural part of life. If the school do not keep track with the development it will be left behind and that is not preferable because according to me schools should be in front line of the development.

Fredrik had a similar attitude as the above and believed that Internet can be a fantastic source of knowledge, if it is used in the right way. However an understanding of the importance of teacher supervision for how to use the Internet has grown during his teacher career. It is essential to have a clear goal in the beginning of an information search process together with knowledge of how to evaluate sources. The informant argued that the Internet does not really create any problems but it is problematic that both students and teachers are not critical towards Web resources as sources of information.

Anna expressed a more reserved attitude and said that the Internet in her teaching serves as a tool. It is a resource but not an end of its own and as she utters, not the world's salvation.

The roles of the teacher

In the development of information literacy skills research reviewed in our theory section suggests that the teacher together with other factors affect how information literate students can become. In this chapter the informants' methods of working are discussed alongside their experiences of including source evaluation in their teaching.

Common for all the informants were as mentioned above the shared positive attitude towards the use of Internet as a source for information. They also shared an of awareness of the growing importance of information literacy skills for successful navigation in the present and future information environment. However the informants had different approaches how to design tasks that provide students with possibilities to improve learning.

Fredrik recognized a need to build on the learners' precognition when using Web resources in his teaching and he often designs tasks where Internet is used as a supplementary source to the textbook towards the end of the task. Suitable sources for the learners are suggested. He occasionally tried to give learners tasks with a loose framework where they are asked to freely search for information and decide on appropriate sources but has developed an understanding of the need to guide the learners in the information search process.

Fredrik It is a notion that has grown during the last couple of years, an understanding or how to say it, that I as a teacher must take a greater responsibility to supervise the learners how to use the Internet. So that it do not become a question of: sit down at the computer and search but that they have a clear purpose and know how to evaluate the sources. Because often times Wikipedia becomes very dominant and appears as the first, second and third search result. And then the learners use Wikipedia without really questioning or assessing which source to use which in turn leads to problems.

The reasoning that learners' knowledge of the kinds of information content existing in a certain field is often insufficient is in accordance to what the group of researchers called CIBER (2008) suggests can cause a defectively developed understanding of how to make effective use of Internet search tools. The knowledge the learner already has about the field of inquiry has implications for how well he or she manages to process the information found and also how well the learner manages to formulate search phrases. Another limitation similar to the above that Fredrik highlighted concerned the use of English in the search for information.

Fredrik The learners have a language barrier and when they are writing in English they often find information in English and then it becomes difficult to read which makes it easier for them to begin with something else. Maybe I should elaborate on ways to use Internet even more as a tool for information seeking

The importance of reading comprehension corresponds with Alexandersson and Limberg's (2004) definition of information use mainly as being an intellectual activity expressed through different thoughts and actions which involves the ability to read. Information literacy skills according to Kuhlthau (as cited in Limberg, 1998) exceed the perception that information seeking is about to locate and obtain information. The

information search process should rather involve students in meaning creating processes. Hence teaching should focus on higher order thinking in connection to inquiry-based learning rather than teaching about specific sources and tools.

Erik perceived his role as a teacher mainly as a facilitator in tasks where the students were expected to search for information on the Internet and preferred inquiry-based learning as a method of teaching. Nevertheless he approached the teaching of information literacy skills with giving instructions in a whole class setting rather than integrating it in tasks.

Erik The way I work with it is mainly as I have told you that I discuss it and so on but not directly, there is no time in my teaching immediately put at source evaluation. One could discuss whether that would be effective

Erik argued for the importance of students to think critically but had the opinion that not so much time is needed for teaching information literacy since this is prevalent throughout the whole educational system. Different dimensions of source evaluation comprise to be attentive to the publisher of a text, in whose interests it was written and how reasonable it is in relation to what one already knows about the subject. In our literature review research carried out on teaching of information seeking indicate that the teaching should be directed towards higher order thinking, where source evaluation is a central component, rather than teaching about certain sources. Research also suggests that a critical attitude towards information do not simply emerge but needs to be paid attention to as something to learn in connection to inquiry-based learning. Erik acknowledged that method of working but did not seem to perceive source evaluation as an integrated aspect in the same.

Although Anna was more reluctant towards the use of the Internet in her teaching compared to the other informants she explained several tasks where her students were required to use the Internet as a source for information to solve the task.

Anna The last task I set them involved analyzing song lyrics. They were to analyze a lyric and could choose freely any given song which involved finding information on the Internet. They had to partly download the lyrics and since they were going to

do an analysis they had to present some background facts as far as it is possible to find and then they had to search for that on the Internet as well.

Several times during the interview Anna returned to the perception of the Internet as an arena where one can search for and find facts.. Since no observations were carried out as a method for this degree project we cannot know for certain what the outcomes were of the task in question but still her understanding of how to use Internet in school is interesting to discuss. Another task described by Anna about the writing of an argumentative essay followed a similar pattern as the task mentioned above

Anna They were to write an argumentative essay about a controversial subject and to be able to do that, and that I mentioned as well, a well-written argumentative essay needs to be supported by facts, I told them: log on to the Internet and search for facts to support your arguments or what you are refuting. And they got the opportunity but they did not really manage to solve the task.

The learners' inability to solve the tasks could possibly be understood in light of Limberg's (1998) study. The results showed that an understanding of information seeking as merely a search for facts coincided with a poor learning result whereas the understanding of information seeking as a method of examining and analyzing coincided with a superior learning result. As the literature reviewed highlights, teachers play an important role in how information literate a learner can become. Their attitudes towards information literacy in general and the design of tasks particularly have an impact and if a teacher perceives the Internet mainly as a source for finding facts that can affect the learning. As Bergman (as cited in Limberg et al, 2002) have suggested teachers need to find new ways of working with information for the learners that stimulate learning rather than finding pieces of information that fit into tasks. How facts are defined by the informant are of course significant. The answers from the interview could indicate though that how tasks are designed and what Anna communicates to her learners about facts found on the Internet could be interpreted by them as information without the need of processing and analysis to acquire knowledge in terms of understanding. World-view and conceptions of knowledge as sources of bias are mentioned by Leth and Thurén (2000) as key criteria for how to evaluate the trustworthiness of sources found on the Internet and if information seeking is perceived as a search for facts the ability for the learners to develop information literacy skills are

limited. Anna also interpreted her role as a teacher as a facilitator but recognized the need to establish very clear structures for her learners. She also described many of her learners' power of deduction and abilities to analyze as weak but that will be developed further below.

Anna I need to give very clear structures. The task about the song lyrics for example. Despite of the fact that I have given them pretty clear.. many of the learners only played a song and said, I find this good. In other words, they find it very difficult.

Unlike the teachers in Moore's (2000) study Anna experiences the interpretation of pieces of information, how to assess them and how to use them as difficult for her learners but our data indicates that her strategies for how to design tasks that improve the learners' higher order thinking skills are slightly limited.

Teachers' view of the information literate student

The purpose of adopting a critical attitude towards information found on the Internet as discussed in the theory chapter involves the ability to independently evaluate information, contextualize it and process the information into knowledge. Information literate people know how to find, evaluate, use and subsequently communicate information effectively to solve certain problems or to make decisions. The steering documents for the Swedish school system also emphasize the importance for students to be able to navigate in the existing complex reality constituted by a major information flow and rapid change and be able to employ higher order thinking skills to examine facts and conditions. The students need to be prepared to manage varying information situations, not only to search for information for a certain task but develop a creative attitude towards the increasing amount of information in society. In this chapter our informants' views and understanding of information literate students will be discussed

The informants shared the view that learners make use of the search engine Google and the web-based encyclopedia Wikipedia when seeking for information on the Internet in school to solve a task if the task did not specify for the learners to use a certain web resource. They all recognized the need for teachers to include source evaluation in their teaching but the opinions of how information literate their students are diverge.

One of the results from Moore's (2000) study indicates that many teachers in the survey did not recognize any needs to teach information literacy specifically and expected that the skills in information literacy would simply emerge. Among some of our informants there seem to exist a notion that able computer users implicitly possess a wide repertoire of information literacy skills.

Marcus What is your attitude towards using Internet in your teaching?

Anna I believe that Internet is a tool, it is a resource, but I cannot say that it has a purpose of its own. And I can see that the students are very competent in... the Internet also serves as a means of communication, and they are very capable of using it as a means of communication. They are often more capable compared to the adult teachers so I believe that they learn a lot on their own.

Anna argued repeatedly during the interview that Internet has no purpose of its own in her teaching. She acknowledged, as we shall see below, that many of her students' power of deduction is insufficient and that the ability to analyze is defective. Her hesitance towards using the Internet as a source for information could be due to a lack of strategies and further education for how to enable students to evaluate and use information critically. It could also be a result of a perception of young learners as able computer users that navigate the Internet in the private sphere who are then consequently expert searchers. Similarly to Anna, Erik believes that learners acquire a critical attitude towards information in the private sphere and that the students' on-line habits require them to be critical but his view of learners' information literacy skills are more positive.

Erik And I believe that also the society at large see to that they think critically. And with that knowledge it can feel a bit like time wasted too when one can see that.. In many learning situations you can discover that they are very critical and even if they cannot, perhaps know, or understand what source evaluation is as a concept they are critical as it were and the life they lead as we talked about. On the net they have to be critical too because otherwise they will get into danger. So I believe that parents too have an important role to play.

Erik's attitude towards information literacy and his role as a teacher could be perceived as somewhat ambivalent when on the one hand he argued that school should be in frontline of the development but on the other he claimed that not so much time needs to be spent on teaching information literacy because the learners are critical towards information found on the Internet already. He also mentioned that the society at large teaches young people. However according to research there tend to be a weak correlation between proficient computer usage and advanced information literacy skills. According to CIBER (2008), young people in general tend to be capable computer and Internet users but there is no evidence that they are expert information seekers or more information literate than others. Fredrik on the other hand recognized this preconception and did not perceive a strong correlation between being an able computer user and being information literate.

Fredrik They are very good at writing fast and cyber chat and multi-task and I think that.. They have a high competence when it comes to computer usage that our generation do not have since they have grown up with it but at least many students that begin at this school and those that study here have a fairly low competence regarding the use of Internet as a resource for seeking information and how to use it in a way that is beneficial for learning.

Marcus A conception that only because a learner is an experienced computer user it implies that he or she has consequently considerable information seeking skills

Fredrik Precisely, and that is not the case!

According to Eklöf (2003), the schools together with many teachers overlook the self-confidence and competence that many students have regarding the use of Internet in the private sphere. Outside school the students' everyday life is often characterized by advanced use of information technologies but these experiences are kept separate from the formal school environment. The learners appear to have no strategies how to integrate Internet in their school tasks in a developed way and what is striking, the author maintains, the teachers share that lack. Hence learners' precognition is important to consider for teachers when designing tasks but it cannot be presumed that they are information literate.

Anna, Fredrik and Erik expressed that Google and Wikipedia are the most frequently used sources when their students engage in an information seeking process on the Internet.

Marcus Did you notice how the students proceeded when they searched for information on the Internet?

Erik Yes. They use the sources for information that they are familiar with, for example Wikipedia and Google. Not so often academic sources for information because those they have no access too and they cannot really relate to the content either.

As discussed Erik returned to the perception of his students as relatively information literate several times during the interview compared to the other informants. However he mentioned that the students need to develop their information seeking skills.

Erik They would need to practice a lot more in my opinion. The ability to search for information on the Internet, definitely. That competence is fairly varying among learners. I believe that some are very able while others are not so experienced.

On the contrary Anna perceived her students to be quite experienced information seekers but when it comes to information use which requires the abilities to compare different sources, to value, examine and critically analyze in order to create meaning the students are in general not so able. One has to bear in mind though that the informants might define information seeking differently. The process is dynamic and involves interpretation of a given problem, previous knowledge and the formulation of search queries, adequate vocabulary and evaluation of relevance. Although Anna experienced her students as able information seekers she conveyed that often the learners express feelings of uncertainty and frustration in the initiation of the search process and utters that they cannot find anything. Fredrik also several times during the interview gave the impression that his students experience the information seeking process as arduous.

Marcus How do the students go about searching for information for various tasks?

Fredrik They type in what they are looking for and then they usually raise their hands and say that they cannot find anything and then I need to have a look and

point towards some words that the learners can add to their search query. In other words supplement the searching for information to direct them towards what they are looking for... Let me see, now I am going to clarify. The students often choose any of the five search results that are uppermost displayed and then they say: I have found everything I need. Then they use the information and hopefully they have not only copied, copying is rather common actually, that they copy and do not really comprehend the content. You told us that it was OK to copy, they say. And then we come back to what we discussed earlier that perhaps I need to talk with the students in the beginning of the course about what the learner has produced individually and why one should not use works of others and put one's own name on it. They need a lot of practice, it is difficult for everyone, but it gets easier the more you practice. But their information seeking skills are limited and not very precise and they are aiming for a result as quickly as possible. The information seeking process should proceed as rapidly as possible for them to begin writing and copying and pasting.

The accounts from both Anna and Fredrik correlate well with the first stages of Kuhlthau's (2006) ISP model. In the initial stage of the information seeking process the learner becomes aware of a gap in knowledge or a lack of understanding, where feelings of uncertainty are common. At this point, the task is merely to recognize a need for information, comprehending the task, and relating the problem to prior experience and personal knowledge. In the next stage the learner needs to identify and select the general topic to be investigated and the approach to be pursued. Feelings of uncertainty often give way to optimism after the selection has been made and there is a readiness to begin the search. Thoughts centre on weighing prospective topics against the criteria of task requirements, time allotted, personal interest, and information available. The outcome of the possible choices is predicted, and the topic or approach judged to have the greatest potential for success is selected.

The exploration stage is characterized by feelings of confusion, uncertainty, and doubt which frequently increase during this time. The task is to investigate information on the general topic in order to extend personal understanding. Thoughts centre on becoming oriented and sufficiently informed about the topic to form a focus or a personal point of view. At this stage in the ISP, an inability to express precisely what information is needed can make communication between the user and the search system awkward. Actions involve locating information about the general topic, reading to become informed, and relating new information to what is already known. In this stage the

information encountered rarely fits smoothly with previously-held constructs, and information from different sources frequently seems inconsistent and incompatible. People may find the situation quite discouraging and even threatening, causing a sense of personal insufficiency as well as frustration with the system. Some actually may be inclined to abandon the search altogether at this stage. Exploration is considered the most difficult stage in the ISP when the information encountered can increase uncertainty prompting a dip in confidence. Many of the learners that Fredrik and Anna described tend to become very frustrated in the exploration stage and thus the scaffolding and supervision from a teacher or librarian is very important. As discussed above Anna recognized the need to give very clear structures in the tasks she sets her students and during the information seeking process she usually acts as a facilitator. Similarly Fredrik tries to supplement his students' search queries to direct them towards what they are looking for when they are stuck. However, as he expressed, many learners choose any of the five top results from the search result list and express that they have everything they need. This behaviour corresponds to the results from Wallace's and Kupperman's (1997) study that many learners looked for exact answers for their questions already in the search result list in spite of the fact that the questions were open ended. If a learner is used to find specific answers to questions in textbooks the behaviour might be transferred to the methods of inquiry-based learning. Furthermore this has an impact on what criteria they use to evaluate the sources and how they analyze the information. On the question of whether Anna enabled her students to use the Internet for seeking fact based information only or also information that can give solutions to questions with multiple answers she felt the need to design tasks that her students can solve because she recognized that many of her students' ability to analyze is relatively weak.

Anna I recognize a need to design tasks that I feel that the learners can solve. In my experience, if I would have asked such a question they would have said who on earth would know such a thing. Well, search the Web! But I cannot find anything, where does that say, show me where I can find the information. I experience that the learners have a very low ability to solve such problems individually, to use their power of deduction. To draw conclusions. If I cannot point at ... the answer I receive is who on earth would know, where can I find that. I experience that students cannot answer such questions and consequently I give them tasks I know they can manage and solve.

[...]

Marcus The ability to analyze, examine and think critically?

Anna Very very poor. And I get truly impressed when I meet a student that has it

This passage indicates that the learners perceive Internet almost as an encyclopedia where correct answers can be found if only the correct search query is given even though the question is complex. According to Limberg (1998) the learners' interpretation of information seeking has significance for the outcome of tasks and an understanding of information seeking as merely a search for facts coincides with a poor learning result. Research suggests that teaching should be concentrated on higher order thinking in connection to inquiry-based learning and also that the development of information literacy skills is a time-consuming process. What the passage also indicates is the teachers' attitude towards her students. It could be argued that Anna is realistic but the approach might limit her students' development.

Information seeking in learning contexts is associated with several difficulties. The hardships are connected to the nature of the tasks as well as the students' reading abilities and reading strategies, the knowledge of how to handle web tools and the interpretation of the information seeking process. Other difficult dimensions in the process of transforming information to new knowledge are exemplified by how to evaluate sources and how to use the information found. Yet another pitfall that teachers face when designing tasks that require students to use information found on the Internet regards the temptations for copy paste plagiarism. As outlined in a passage above Fredrik expressed that the phenomenon is relatively common among his students. Anna and Erik also depicted a reality in school where reproduction of text rather than production is frequently occurring. This is in accordance with the research carried out by Nilsson (as cited in Alexandersson & Limberg, 2004) where the texts produced by 50 out of 60 secondary school students could be characterized as reproduced. The situation is complex and requires multiple answers. As we have discussed above the learner's interpretation of the information seeking process influences what is learned and if it is perceived as searching for facts the information found is seldom examined and analyzed. The frustration that often occurs in the exploration stage of the

information seeking process could possibly lead to reproduction if a teacher does not scaffold the student. That requires that the teacher is aware of the different stages of the ISP and that feelings, thoughts and actions are prevalent in the process.

The difficulties could be a consequence of limited practice in independent thinking. Inquiry-based learning is frequently occurring in secondary and upper secondary school today but that does not necessarily lead to the development of higher order thinking skills which in turn implies that the ability to evaluate sources does not emerge without significant external support. Several factors influence how information literate a person can become and the concept comprise skills to analyze and reflect. Information literacy skills take time to develop and it is essential to practice how to evaluate, examine and analyze information. How students use information with purpose to develop such skills could be interesting as a future study since not so much research has been carried out in that field so far.

Discussion

This degree project concerns a highly current issue. We live in fast-paced information economy where a critical mind is becoming an increasingly valuable asset. The massive flow of information we are exposed to everyday needs to be skilfully filtered to make sense to the individual. The purpose of this degree project has been to focus on the significance of information literacy skills in today's ICT society. Our direction in this extensive field has been to examine the attitudes of some English teachers in Sweden, with regards to the concepts of source evaluation and information literacy in the school context. The aim of examining this issue was to attain better understanding of how and why information literacy and proficiency in evaluating information is an important part of English education today. We realize that the limited amount of informants would need to be quantified to be able to draw any far-reaching conclusions and the method of choice also comes with its own limitations. We do however believe that the analysis is relevant in relation to the collected material and invites to further studies.

Our analysis showed that all of our informants had a positive attitude towards using Internet as a resource for both themselves, and for their learners to search for information to solve pedagogical tasks in the classroom environment. Our interviewees also shared an over-all positive attitude towards the use of new technology and realized the importance for schools to be in par with the development. As research suggests teachers have an important role in their learners' process to develop information literacy skills and one important aspect of the concept involves the ability to evaluate sources. Hence a teacher's knowledge of what criteria to use when assessing sources of information influences their learners' opportunities to learn. Source evaluation to a great extent regards the ability process information into knowledge and can be seen as an important ability for learners to master when producing individual texts within a given subject. Our informants were aware of this process which includes the ability to

analyze, critically examine, compare, evaluate and structure information mostly found on the Internet. Since the curriculum suggests inquiry-based learning, skills to evaluate sources are central for learners in their progression towards becoming information literate. The Internet offers an increasing amount of information, both useful and less useful, and it is important to learn how to filter relevant information from noise.

The most prominent criterion our informants mentioned when they evaluate whether a source is trustworthy or not was authority. Our data indicates that the awareness of different evaluation criteria and how to apply them to Web resources varied between our informants. They did however share a level of awareness with regards to the framework established in the theory section. The majority of the informants only mentioned two different surface criteria when they assess the reliability of a Web page and time, dependence, authenticity and bias being the ones. The criterion world-view and conceptions of knowledge as sources of bias was only mentioned by one informant.

Most of our informants perceive his or her role as a facilitator when they set their learners tasks which requires them to engage in an information seeking process. This process comes with many difficulties and learners often experience frustration. Task design, the learner's previous knowledge, how the information seeking process is interpreted by the seeker and reading comprehension all have an impact on the learning possibilities.

The analysis of our material delineate a somewhat gloomy picture of how our informants perceive their learners' information literacy skills and their own approach towards how to design tasks that encourages the learners to develop their higher order thinking skills. Material gathered with no scope in this study involved the teachers' attitude towards collaborating with the school library and the informants also expressed the need for further education in this extensive field. In a future study it would be interesting to investigate in an action research project how learners evaluate and use information to create new knowledge.

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Appendix 1

Interview guide

Profil

1. Hur länge har du arbetat som lärare?
2. Vilka ämnen undervisar du i?
3. Vilken typ av utbildning har du?
4. När tog du examen?
5. Hur många timmar undervisar du i engelska i veckan?
6. Vilka åldersgrupper undervisar du i engelska?

Frågor

1. Hur använder du skolbiblioteket/mediateket som resurs i din undervisning?
2. Hur förhåller du dig till internet?
3. Kan du beskriva hur du använder internet i undervisningen?
4. Ger du eleverna uppgifter som fordrar självständigt arbete i skolans lokaler?
5. Hur brukar eleverna gå till väga i informationssökningen inför dessa uppgifter?
6. Hur har du fått kunskaper om internetanvändande i undervisningen?
7. Hur förhåller du dig till internet i undervisningen?
8. Vad finns det för regler för internetanvändande i skolan där du arbetar?
9. Hur skulle du beskriva en trovärdig källa
10. Hur ställer du dig till trovärdigheten hos internetkällor?
11. Hur förhåller du dig till källkritik i din undervisning?
12. Hur pratar du med dina elever om källkritik?